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Individual Child Cognitive Behavioral Treatment versus Child-Parent Cognitive Behavioral Treatments for Anxiety Disorders in Children and Adolescents: Comparative Outcomes

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INDIVIDUAL CHILD COGNITIVE BEHAVIORAL TREATMENT VERSUS CHILD-

PARENT COGNITIVE BEHAVIORAL TREATMENTS FOR ANXIETY DISORDERS

IN CHILDREN AND ADOLESCENTS: COMPARATIVE OUTCOMES

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Jessica Dahan

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To: Dean Kenneth Furton
         College of Arts and Sciences

This dissertation, written by Jessica Dahan, and entitled Individual Child Cognitive Behavioral Treatment versus Child-Parent Cognitive Behavioral Treatments for Anxiety Disorders in Children and Adolescents: Comparative Outcomes, having been approved in respect to style and intellectual content, is referred to you for judgment.

We have read this dissertation and recommend that it be approved.

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The dissertation of Jessica Dahan is approved.

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Florida International University, 2013

DEDICATION

I dedicate this dissertation to my parents, for without them I could not have accomplished

everything that I have done and everything I have yet to do.

I also dedicate this dissertation to my grandma Z"L who I think about every day.

ABSTRACT OF THE DISSERTATION

INDIVIDUAL CHILD COGNITIVE BEHAVIORAL TREATMENT VERSUS CHILD-

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Anxiety disorders; such as separation anxiety disorder, generalized anxiety

disorder, social phobia and specific phobia, are widespread in children and adolescents.

Cognitive behavioral therapy (CBT) has been shown to be effective in reducing excessive

fears and anxieties in children and adolescents. Research has produced equivocal findings

that involving parents in treatment of child anxiety enhances effects over individual CBT

(ICBT). The present dissertation study examined whether parental involvement can

enhance individual treatment effect if the parent conditions are streamlined by targeting

specific parental variables. The first parent condition, Parent Reinforcement Skills

Training (RFST), involved increasing mothers' use of positive reinforcement and

decreasing use of negative reinforcement. The second parent condition, Parent

Relationship Skill Training (RLST), involved increasing maternal child acceptance and

decreasing maternal control (or increasing autonomy granting). Results of the present

dissertation findings support the use of all three treatment conditions (ICBT, RLST,

RFST) for child anxiety; that is, significant reductions in anxiety were found in each of the three treatment conditions. No significant differences were found between treatment conditions with respect to diagnostic recovery rate, clinician rating, and parent rating of child anxiety. Significant differences between conditions were found on child self rating of anxiety, with some evidence to support the superiority of RLST and RFST to ICBT. These findings support the efficacy of individual, as well as parent involved CBT, and provide mixed evidence with respect to the superiority of parent involved CBT over ICBT. The conceptual, empirical, and clinical implications of the findings are discussed.

Keywords: anxiety disorders, children, adolescents, cognitive-behavioral therapy, parental involvement, reinforcement, relationship

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CHAPTER I.

INTRODUCTION

Anxiety disorders are among the most prevalent and impairing mental disorders in children and adolescents (4th ed., text revision; *DSM–IV–TR*; American Psychiatric Association, 2000). As outlined in the Diagnostic and Statistical Manual of Mental Disorders, anxiety disorders include but are not limited to: separation anxiety disorder (SAD), generalized anxiety disorder (GAD), panic disorder (PD; with and without agoraphobia), social phobia (SoP), and specific phobias (SP; 4th edition, text revision; *DSM–IV–TR*; American Psychiatric Association, 2000). The type of anxiety disorders in children and adolescents generally changes throughout developmental stages. For example, children younger than 12 years old typically present with SAD or SP whereas adolescents often present with SoP, GAD, or PD with or without agoraphobia (NIMH).

Some anxiety in children and adolescents represents a normative pattern of the developmental process (Last, Perrin, Hersen, & Kazdin, 1996). However, some forms of anxiety and excessive worry may develop into clinically diagnosable disorders that interfere with daily functioning and warrant treatment (Kashani & Orvaschel, 1988; McGee, Feehan, Williams, Partridge, Silva, & Kelly, 1990). If left untreated, anxiety disorders can lead to other debilitating conditions such as depression, substance abuse, behavioral disorders, and other anxiety disorders (Cole, Peeke, Martin, Truglio, & Serocynski, 1998; Dobson, 1985).

Interventions for Anxiety Disorders in Children and Adolescents.

   Cognitive Behavioral Therapy. Cognitive behavioral therapy (CBT) is a psychosocial intervention with strong evidence for efficacy in reducing excessive fears

and anxieties in children and adolescents (Silverman, Pina, & Viswesvaran, 2008).

Cognitive Behavioral Therapy involves asking youth to engage in in vivo and/or

imaginary exposures to feared situations and stimuli, and changing maladaptive thinking

into more optimal and rational thoughts. Cognitive Behavioral Therapy is efficacious

whether delivered to the youth using a group approach, individually, and to the parent

and youth together (Chorpita & Daleiden, 2002; Cartwright-Hatton, Roberts,

Chitsabesan, Fothergill, & Harrington, 2004; Herren, In-Albon & Schneider, 2007;

Silverman et al., 2008), as well as online (Khanna & Kendall, 2010; Spence, Donavan,

March, Gamble, Anderson, Prosser, & Kenardy, 2011).

As a result of equivocal results from past research in demonstrating whether

parent involvement enhances individual outcome, my dissertation reports the results of a

randomized controlled trial comparing an individual cognitive behavioral intervention

(ICBT) and parent-child CBT interventions. The study focuses on whether targeting two

specific parent variables (i.e., parental reinforcement and parent-child relationship)

produce enhanced treatment effects on child anxiety outcomes. The following section

provides a summary of CBT's research evidence for reducing anxiety disorders in

children and adolescents.

Comparative Trials on ICBT and Parent-Child CBT

Research has produced equivocal findings that involving parents in treatment of

child anxiety enhances effects over individual CBT (Silverman, Pina, & Viswesvaran,

2008). My dissertation examined whether parental involvement can enhance individual

treatment effects if the parent conditions are streamlined by targeting specific parental

variables. The two parent conditions essentially dismantled respective key components

that represent parent treatment prototypes used in past literature. The first parent condition was Parent Reinforcement Skills Training (RLST); that is, increasing mothers' use of positive reinforcement and decreasing use of negative reinforcement. The second parent condition was Parent Relationship Skills Training (RLST); that is, increasing maternal child acceptance and decreasing maternal control (or increasing autonomy granting).

No studies have been conducted on whether training parents in specific parenting skills leads to enhanced effects on childhood anxiety. Thus, the aim of my study was to evaluate the following research question: Does parental involvement enhance treatment outcome relative to individual CBT, the baseline comparison? That is, are child treatment outcomes significantly enhanced in the parent involvement conditions (ICBT-RFST and ICBT-RLST) relative to the baseline comparison condition (ICBT)?

Treatment outcome

My dissertation conducted a comparative clinical trial to examine whether there are treatment enhancement effects of parent-involvement on child anxiety outcomes. The study targeted the same DSM-IV anxiety disorders targeted in previous clinical trials: SoP, SAD, and GAD (4th edition, text revision; *DSM–IV-TR*; American Psychiatric Association, 2000). These are the most common anxiety disorders in children. Participants underwent one of three treatment conditions, all involving the basic components of cognitive behavioral therapy (Kendall, 1994). Two of the interventions included a parental component, each with a different parent skills training focus.

The two parent involvement conditions were: (1) ICBT + Parent Reinforcement Skills training (ICBT+ RFST) and (2) ICBT + Parent Relationship Skills Training (ICBT

+ RLST). The ICBT-RFST treatment condition targeted increasing the mother's use of positive reinforcement/reward and decreasing use of negative reinforcement. The ICBT-RLST treatment condition targeted increasing maternal child acceptance and decreasing maternal control. The ICBT treatment condition served as the baseline comparison condition relative to the two parent conditions. The set of hypotheses tested for differential treatment outcome. Was child treatment outcome enhanced in the parent involvement conditions relative to the baseline comparison condition? Specifically, was child treatment outcome enhanced in ICBT-RFST relative to ICBT? And was child treatment outcome enhanced in ICBT-RLST relative to ICBT?

In the following literature review, an overview of parent-child relationships linked to anxiety in youth will be discussed (i.e., autonomy granting and parental acceptance). Next, parental reinforcement (i.e., negative reinforcement and positive reinforcement) and its effects on youth anxiety will be discussed. Lastly, effective treatments of childhood anxiety disorders are discussed. The clinical trials reviewed in the following section have incorporated individual, family, group and/or parent-involvement to treat anxiety in youth.

CHAPTER II.

LITERATURE REVIEW

First, the literature review will discuss specific parent-child relationship variables (i.e., autonomy granting, parental warmth, positive and negative reinforcement) and parental reinforcement variables (i.e., negative reinforcement and positive reinforcement) and their effect on child anxiety. Lastly, the review will discuss CBTs (individual and parent involved) that have been shown to be efficacious in reducing anxiety and its disorders in youth.

Specific variables targeted in present dissertation study.

Parent-child relationship. The relationship between parent and child has been found to play a role in youth development and in the development and maintenance of childhood anxiety disorders (Lieb. et al., 2000; Harris, 2002; Maccoby, 2002; Rutter, 2002; Kagan, 2003). The relationship may be involved in the etiology and maintenance of anxiety disorders, but this relationship does not necessarily mean that it is involved in the treatment of anxiety disorders. Although some of the studies discussed below use the term "parent", most reviews are specific to mothers.

Autonomy Granting. Parental psychological control is defined as the encouragement of child dependence on parents, excessive interference in child activities, and instruction of the child on how to think and feel (Barber, 1996; Steinberg, Elmen, & Mounts, 1989). The opposite of parental psychological control is known as granting autonomy in the child: that is allowing the child to think and feel on his/her own. Extensive research shows a positive relationship between parental psychological control

and the development and maintenance of youth anxiety and its disorders, as will be reviewed in the following paragraphs (Barber, Olsen, & Shagle, 1994; Muris & Merckelbach, 1998; Chorpita & Barlow, 1998).

Barber, Olsen, and Shagle (1994) examined the data collected from the Tennessee Adolescents in Families Project (TAIFS), a school based survey study of pre-, early-, and middle-adolescent students to distinguish between parental psychological control and parental behavioral control and their associations with internalizing and externalizing behaviors in youth. A total of 524 youth (ages 10 to 14 years old) participated in the study. Examples of psychological control from Schludermann & Schludermann's Child Report of Parent Behavior Inventory (CRPBI, 1988) included "my mother is a person who is always trying to change me"/"my mother is a person who says, if I really cared for her, I would not do things that cause her to worry". Results of the study demonstrated that psychological control was significantly correlated with internalizing problems but not externalizing problems. My study thus shows a positive significant correlation between psychological control and internalizing problems. As will be discussed below, other studies examining the parent-child relationship have shown that psychological control is linked specifically to a higher rate of anxiety disorders in youth.

Muris and Merckelbach (1998) conducted a study to examine the relationship between perceptions of parenting behaviors and anxiety symptoms in youth. Thirty-four children (ages 7 to 10 years old) participated in this study. Results indicated that children who perceived both their mother and father as having anxious rearing styles and controlling behavior demonstrated higher levels of anxiety symptoms than those children who did not perceive their parents as having anxious and controlling rearing styles.

Specifically, with regards to the child's perception of the mothers' parenting styles, a mother's anxious and controlling rearing style was significantly associated with symptoms of GAD and SAD. My study demonstrates that children's perception of mothers as controlling and anxious is correlated with higher symptoms of anxiety in children.

Chorpita and Barlow (1998) reviewed findings that examined environmental influences (e.g., parenting styles and attachment theory) on the development of anxiety. Parents who are less intrusive and protective (i.e., autonomy granting) allow the child to develop new skills and a sense of control over events. On the other hand, parents who constantly interfere and intrude on the child's events (i.e., psychological control) give the child reason to solicit reinforcement from the parent in later events. Based on their review, the authors concluded that the children who have early experiences with diminished control over a situation may interpret future events as out of one's control, which may make children more susceptible to anxiety.

Pettit, Laird, Dodge, Bates, and Criss (2001) conducted a longitudinal multi-informant study to assess for mother's psychological control and its effect on children's behavior problems (anxiety/depression). A total of 440 children (aged 13 years old) and their mothers participated in my study. Mothers, teachers and adolescents reported on the behavior problems of the child (symptoms of anxiety and depression) at ages 8 through 10 and again later at ages 13 to 14. Results indicated that mother psychological control was associated with harsh parenting and early reports of the child's anxiety/depression problems. Higher levels of anxiety and depression were found in children whose mothers

were high on psychological control. These results demonstrated that maternal psychological control is a significant prospective predictor of child anxiety.

Wood, McLeod, Sigman, Hwang, and Chu (2003) presented a conceptual framework to help interpret findings on the topic of parenting behaviors and childhood anxiety disorders. Mixed results were obtained. On one hand, researchers found that a few studies indicated that parental warmth/control is not specifically related to anxiety problems in children. On the other hand, observational data during parent-child interaction demonstrated that controlling parents led to more rates of child anxiety disorders across studies. As a result of inconsistent findings, more research is needed to shed light on the effects of parenting on childhood anxiety.

The previous studies all demonstrate that a harsh parent-child relationship (high in psychological control and low in parental warmth) is linked to high levels of internalizing problems in youth. Although some studies demonstrate a link between rearing styles and internalizing problems, it is not clear which factor causes the other. The relationship may be a bidirectional one: parents of children with anxiety disorders have been found to be more controlling and unlikely to grant autonomy than parents of children with no anxiety disorders (Siqueland, Kendall, & Steinberg, 1996). Parental psychological control inhibits child mastery, autonomy (Chorpita & Barlow, 1998), and self-efficacy (Bandura, 1998), which may be stepping stones towards anxiety and depression (Barber, 1996; McClure et al., 2001; Barber & Harmon, 2002; Silk, Morris, Kanaya, & Steinberg, 2003). Optimal child development is seen within warm and supportive families that provide autonomy granting (Garmezy & Masten, 1994; Rutter & Quinto, 1984).

As previously mentioned, the relation between parent-child relationship and child anxiety disorders is likely to be bidirectional in nature. Evidence has shown that high parental control can precede child anxiety. However, child anxiety can precede high parental control. In an observational study of anxious and non anxious mothers of anxious children, the former were more negative and more controlling (Dumas, & LaFreniere, 1993; Moore, Whaley & Sigman, 2004) as well as less warm, less positive and more critical than the latter (Whaley et al., 1999). Reviews on retrospective reports indicate that anxious adult participants are more likely to recall their mothers as more overprotective and less warm (i.e., more controlling) than non-anxious adult participants (see Gerlsma, Emmelkamp, &Arrindell, 1990; Rapee 1997, for reviews).

Parental Acceptance. Parental acceptance is defined as the demonstration by the parent of positive respect, affection, and support towards the child (McLeod, Wood, & Weisz, 2007; Maccoby & Martin, 1983). Some research has shown that the absence of this parenting characteristic is linked to childhood anxiety disorders (Barber, Olsen, & Shagle, 1994; Scott, Scott, & McCabe, 1991). Moreover, low parental acceptance engenders a sense of helplessness and low self-esteem in children (Garber & Flynn, 2001). However, other research has shown opposing findings not supporting the relationship between parenting and child anxiety (McLeod, Wood, & Weisz, 2007).

Litovsky and Dusek (1985) investigated the relationship between parenting behaviors and adolescents levels of self-esteem. Participants were 130 seventh, eighth and ninth graders (ages 11 to 14 years old). Children's perceptions of their parental rearing practices (i.e., acceptance, autonomy granting and psychological control) and their subsequent self-esteem were examined. Results indicated that the adolescents who

perceived their parents as warm and accepting with more autonomy granting had higher self-esteem than the adolescents who did not perceive their parents as warm and accepting. The above finding supports the theory that high self-esteem is negatively correlated with perceived parental control and positively correlated with perceived parental acceptance (Kaslow, Deering, &Racusin, 1994).

Hudson and Rapee (2001) conducted an observational study using a sample of clinic-referred and non-referred youth and their mothers to observe the relationship between parenting and child anxiety. Participants were 95 children (ages 7 to 15 years old) and their mothers. Results showed that as parents engaged in more negative, intrusive and over-involved interactions with their child, the child's anxiety increased. The authors concluded that mothers of anxious children were more intrusive and negative during difficult or stressful situations. These findings raise the possibility that adding a parental acceptance component to treatment may ameliorate the mother/child relationship, which may lessen anxiety in children.

When examined more closely, the parent-youth relationship between a parent and an anxious youth is characterized as avoidant (Ginsburg, Silverman, & Kurtines, 1996; Silverman, Cerny, & Nelles, 1988), low in problem solving and communication skills (Kearney & Silverman, 1995), lacking support and negative talk (Hudson & Rapee, 2005). Prior studies therefore do not demonstrate a concrete link between parental acceptance and child anxiety. Additional follow-up studies must be done to evaluate the type and the strength of the parent-child relationship and its effect on child anxiety.

In a meta-analysis of 47 studies, McLeod, Wood, and Weisz (2007) examined the association between parenting and child anxiety and the impact of possible moderators.

The studies were derived from journal articles published from 1960 to 2002 and included 12,879 participants (aged 2 to 18 years old). The meta-analysis found that parenting accounted for only about 4% of the variance in child anxiety. Although this was not a significant finding, some limitations were present. First, parenting factors include many other variables not specifically examined in this meta-analysis. Also, the direction of effects linking parenting and child anxiety was not clearly examined here.

The relationship between parenting behaviors and childhood anxiety is unclear and more research is needed. Most of the studies discussed in the literature review examine parental involvement entirely and its effect on treatment. However, parental involvement is comprised of many variables that may or may not lead to a change in anxious youth when targeted exclusively in treatment. **Thus, according to the above findings, the present dissertation is aimed at improving the parent-child relationship by increasing autonomy granting of the child and increasing maternal child acceptance, which may in turn lead to a reduction of child anxiety.**

Parental Reinforcement

Reinforcement strategies (i.e., positive reinforcement and negative reinforcement) have been implicated in the etiology, development and maintenance of anxiety disorders (e.g., Zabin & Melamed, 1980; Krohne & Hock, 1991; Barrett, Rapee, Dadds & Ryan, 1996). It is important to decipher between the two types of parental reinforcement, as they are both essential to the treatment outcome of the present dissertation study.

Positive Reinforcement. Positive reinforcement, first described by B.F. Skinner in his theory on operant conditioning, is defined as a supplementary tangible or non-tangible reward following a behavior, which leads to an increase in that behavior. Few

research studies have demonstrated the effects of targeting positive parental reinforcement to treat anxious youth (e.g., van der Sluis, van der Bruggen, Brechman-Touisssant, Thissen & Bogels, 2012).

Negative Reinforcement. Negative reinforcement is described as approving the child's avoidant behavior, specifically letting and in some cases helping the child escape a fearful situation. Past research has shown that there is a correlation between parenting styles and coping in children; specifically, frequent negative feedback and parental restriction is significantly correlated with high anxiety in youth (Krohne & Hock, 1991). As such, it is possible that children may learn to react in avoidant ways due to the negative feedback they received.

Zabin and Melamed derived the Child Development Questionnaire (1980) to assess parent's positive and negative reinforcement strategies, which would encourage the child to develop the skills to face his/her fear. An example of parental positive reinforcement is "telling the child that if he/she went to the doctor, he/she would be doing a good job; telling the child that if he/she stayed home by him/herself, he/she would go to a fun park when parents returned; telling the child that if he/she did the report, he/she would get a special surprise from the parent" (Zabin & Melamed, 1980). An example of parental negative reinforcement is "taking the child home from the doctor's office, staying home with the child, ask teacher to excuse the child from an assignment" to reduce the child's level of distress (Zabin & Melamed, 1980).

Research has demonstrated that the parent's use of positive and negative reinforcement is significantly correlated with child anxiety symptoms. Van der Sluis et al. (2012) conducted a pilot study to examine a CBT intervention delivered to parents of

young anxious youth. Participants consisted of 26 young children (ages 4 to 7 years old) and their parents. Parents underwent The Confident Kids program (Brechman-Toussaint & Anderson, 2003), a CBT derived intervention program for parents of anxious toddlers. The eight-session program consisted of teaching parents to avoid using negative reinforcement (i.e., letting the child avoid) and instead employ other various techniques to guide the child while facing his/her fear. Results from parent, child and teacher reports at posttreatment demonstrated that child participants significantly decreased in child anxiety symptoms, internalizing problems and behavioral inhibition. In addition, mothers showed an increase in their use of positive reinforcement, modeling and reassurance. Mothers also showed a decrease in reinforcing dependency (i.e., managing an anxious situation with their child). These preliminary results from a pilot study indicate that working with parents and specifically targeting parenting styles may be beneficial in reducing anxiety disorders in children.

These results give further evidence of the possible role that parents' use of reinforcement plays in the etiology and maintenance of anxiety disorders in youth. **Thus, according to the above findings, the present dissertation is aimed at employing positive parental reinforcement/reward and preventing negative reinforcement, which may in turn enhance the child's ability to face his/her fears.** Targeting these variables in treatment (ICBT-RFST and ICBT-RLST) answered the question if including parent involvement reduced anxiety in children and adolescents over a baseline comparison (ICBT only). The following portion of the literature review will delve deeper into the involvement of parents in treating anxious youth.

Parental involvement in treatment of youth anxiety

Involvement of parents, specifically mothers, has yet to be found to enhance the treatment outcomes of child and adolescent anxiety relative to ICBT. The following section will summarize studies comparing individual CBT and parent involvement CBT. For the purposes of this review, all studies that involved parents only and not the family unit were abbreviated as PCBT. All ratings reported by parents were completed by mothers, unless otherwise specified.

Barrett, Dadds, and Rapee (1996b) in Australia conducted a study to test for the efficacy of individual cognitive behavioral treatment with parental involvement. Seventy-nine children (ages 7 to 14 years old) were randomly assigned to three conditions: ICBT, PCBT, and a wait list. The treatment sessions for the ICBT, adapted by Kendall's Coping Cat (1994) were 60 to 80 minutes in length and provided over the length of 12 weeks. The treatment sessions for PCBT included parents and were also 60 to 80 minutes in length and provided over the length of 12 weeks. The waitlist control condition also lasted 12 weeks.

Results demonstrated that both ICBT and PCBT were successful in reducing anxiety in participants relative to the waitlist control condition. Approximately 70% of the children in both interventions no longer met diagnostic criteria for an anxiety disorder compared to 26% of the children in the waitlist condition. Moreover, the children in the PCBT condition showed significantly less threat interpretation and avoidant plans at post treatment compared to the ICBT and waitlist condition. At the 12-month follow up, treatment gains were maintained for both active treatment conditions. These results demonstrate that both conditions are efficacious in treating anxiety in children; parental

involvement is efficacious in treating anxious youth. However, there is still no knowledge about what specific variables of parental involvement enhances the effects of child anxiety treatment outcome. Thus, the issue of treatment specificity needs to be pursued more.

Barrett (1998) conducted a follow up study and evaluated the efficacy of group CBT (GCBT) and GCBT plus Family Anxiety Management (G-PCBT). A total of 60 youth (ages 7 to 14 years old) were randomly assigned to the three conditions: GCBT, G-PCBT and a waitlist control condition. The GCBT condition included CBT treatment provided in-group format. The G-PCBT condition included specifically targeting the parent-youth relationship (i.e., communication and problem solving skills). Results demonstrated that both GCBT and G-PCBT were successful in reducing anxiety in participants relative to the waitlist control condition. Approximately 60% of the children in both interventions no longer met criteria for an anxiety disorder compared to 25% of the children in the waitlist condition. At the 12-month follow up, treatment gains were maintained for both active treatment conditions. Compared to the other two conditions, participants in G-PCBT showed greater improvement on diagnostic severity ratings and six of the seven clinical evaluation scales (i.e., overall anxiety, overall functioning, avoidant behaviors, youth's ability to deal with difficult situations, parent's perception of own ability to deal with youth's behaviors, and family disruption by the youth's behavior). Although more specifically targeted in this study, the quality of the parent-youth relationship was not measured and therefore the issue of treatment specificity could not be investigated further.

Cobham, Dadds, and Spence (1998) conducted a study to test the efficacy of individual cognitive behavioral treatment with parental involvement. Participants were 67 children (ages 7-14 years old) who were randomly assigned to two different treatment conditions. The first condition was an ICBT program based on the Coping Koala program (Barrett et al., 1991) including relaxation, cognitive restructuring, exposure in and out of session, and contingency management. The second condition was a CBT + PAM (parent anxiety management) intervention which consisted of the CBT program as mentioned above as well as a parent training component. PAM consisted of educating the parents about how they may play a role in the development and maintenance of their child's anxiety. Also, parents were made aware of and taught how to manage their own anxiety. Results showed that the parenting component significantly improved the efficacy of CBT relative to ICBT for children with at least one anxious parent. Of the children who participated in the CBT + PAM condition, 76.5% no longer met diagnosis for an anxiety disorder. Of the children who participated in the ICBT condition, 38.9% no longer met diagnosis for an anxiety disorder. The above finding suggests that adding a parenting component to traditional CBT may be more efficacious for those children who have one or more anxious parent, yet not for children with both non-anxious parents.

The same group of investigators (Cobham, Dadds, Spence, & McDermott, 2010) completed a long term follow up study involving family cognitive behavioral therapy, including parental anxiety management (PAM) compared with ICBT to treat clinically anxious youth. Sixty out of the sixty-seven children (ages 10-17 years old) participated in evaluation at the three-year follow up. Results demonstrated that 80% of the PAM

participants were free of any anxiety disorder at the three-year follow up versus 85% of the ICBT participants. The results demonstrate no significant differences in the two conditions.

Nauta, Scholing, Emmelkamp, and Minderaa (2003) evaluated the effects of CBT with a cognitive parent-training program using a sample of 79 children and adolescents (ages 7 to 18 years old). Participants were randomly assigned to one of the three following treatment conditions. The first was CBT, adapted from Kendall's Coping Cat Program (1994). The second treatment condition was CBT + CPT (cognitive parent training); this entailed a seven week intervention where parents were provided with psycho education on anxiety disorders followed by behavioral advice and parenting skills. The rest of the participants were randomized into a wait list control group condition. Results indicated that at posttreatment, 54% of children in CBT and 59% in CBT + CPT no longer met criteria for an anxiety disorder. Participants in CBT and CBT+CPT demonstrated significant gains relative to participants in the waitlist control condition. However, there was no significant difference between either of the two active treatment conditions. The above result again exemplifies the finding that adding a parenting component to treatment of child anxiety does not lead to superior outcomes than ICBT alone.

Siqueland, Rynn, and Diamond (2005) assigned 11 adolescents (ages 12 to 14 years old) to either: (1) ICBT or (2) ICBT-ABFT. ICBT-ABFT is individual CBT with an attachment-based family therapy, this condition focused on how the parent can play an active and helpful role in the reduction of their adolescent's anxiety by increasing parent-child intimacy and attachment. Both conditions involved a 16-week program. Individual

Cognitive Behavioral Therapy followed a modified standardized manual (Kendall, Kane, Howard, & Siqueland, 1989) while ICBT-ABFT included parent involvement. Results demonstrated that 67% of participants in the ICBT condition and 40% of participants in the ICBT-ABFT condition no longer met DSM criteria for an anxiety disorder. Adolescents in both conditions reported an increase in parental warmth and acceptance. Additionally, participants in the ICBT condition reported an increase in parental control and participants in the ICBT-ABFT condition reported a decrease in parental control. As with many research studies with small sample sizes, additional research is needed.

In a study comparing ICBT and PCBT, Wood, Piacentini, Southam-Gerow, Chu, and Sigman (2006) randomly assigned 40 clinically anxious youth (6-13 years old) to either of the two interventions. Participants met criteria for a DSM-IV (APA, 1994) diagnosis of at least one anxiety disorder. Both interventions consisted of 12-16 therapy sessions, which lasted 60-80 minutes each. Results indicated that 52.6% of participants in ICBT were diagnosis free at post treatment while 78.9% of PCBT participants were diagnosis free. Further, PCBT led to greater improvement on parent ratings of the youth's anxiety, but not on children's self-ratings. Once more, these findings demonstrate that it is still unknown whether adding parents in the treatment of anxious youth enhances outcomes over ICBT.

Kendall, Gosch, Hudson, Flannery-Schroeder, and Suveg (2008) conducted a clinical trial to compare (1) ICBT, (2) family CBT (PCBT), and (3) family-based educational and support program (FESA), the comparison control condition. FESA provided therapeutic support and educational support about anxiety to the families. At post assessment, results demonstrated that compared to FESA, ICBT and PCBT were

both more efficacious in reducing anxiety in youth measured by the child's principal

anxiety disorder using the ADIS-C/P (Silverman & Albano, 1996). Results showed that

64% of participants in both ICBT and PCBT no longer had a principal diagnosis at post

treatment, while only 42% of participants in FESA no longer had a principal diagnosis at

post treatment. These results demonstrate that there is no difference in reducing or

eliminating anxiety disorders in ICBT and PCBT. Therefore, there is no evidence that a

family based approach is better than individual therapy in the treatment of anxious youth.

This demonstrates the need to streamline parental involvement to see if it enhances

treatment outcome for anxious children. Streamlining has also been called dismantling

and refers to the breaking apart of different components of parental involvement.

Although many studies, as discussed above, have incorporated a parental

component within the treatment of anxiety disorders in youth, only one study (i.e., Bogels

& Siqueland, 2006) specifically targeted and measured the parenting component (i.e.,

parental psychological control).   Bogels and Siqueland evaluated a family cognitive

behavioral treatment for 17 children (ages 8 to 17 years old). Children presented with

anxiety diagnoses from the DSM-IV (APA, 1994). Treatment consisted of a family based

CBT based on the earlier works of Siqueland and Diamond (1998), Ginsburg et al.

(1995), and Barrett et al (1996). The treatment consisted of three phases: (1) traditional

CBT, (2) negating parental beliefs and ameliorating the communication between parent

and child and (3) problem solving and communication. Results indicated that 46% of

treatment completers no longer met diagnostic criteria for an anxiety diagnosis. Results

also demonstrated that FCBT was significantly correlated with reduced anxiety in child,

reduced externalizing symptoms in the child, improved parenting skills and better overall

family functioning. FCBT was also effective in changing dysfunctional beliefs in parents concerning their role in their child's psychopathology and their child's anxious behavior. Therefore, the clinical implications of my study suggest that incorporating a parenting component may be efficacious to treat anxiety disorders in children and adolescents.

In summary, studies have shown that parental involvement sometimes has a positive effect in treating anxious children. However, there is still much to consider within the concept of parental involvement, including the effects of specific parenting behaviors targeted in this dissertation. My dissertation proposes to streamline two parent conditions and focus on two variables: 1) RLST: parent-child relationship, namely, autonomy granting and parental acceptance qualities; and 2) RFST: parental reinforcement, namely, rewards contingent on facing one's fear. These two distinct conditions involving the parent will help us answer the question of which, if any, of the parenting variables enhance treatment effects. For example, will the RFST condition be demonstrated to be more effective than the RLST condition or vice versa?

As a result of extensive research including parental involvement, more research is needed to identify what specific parental component, if any, enhance treatment outcome. Therefore, the present dissertation targeted specific parenting variables (i.e., parent-child relationship/autonomy granting and parental reinforcement/reward) to see if targeting such variables leads to a change in anxious youth.

Summary of CBT with parental involvement

The clinical trials summarized demonstrated the efficacy of ICBT for children with anxiety disorders. The addition of family/parental involvement, however, has demonstrated mixed results. Some studies have found that the incorporation of parental

skills have enhanced outcome (e.g., Barrett, Dadds, Rapee, 1996; Barrett, 1998; Cobham et al., 1998; Heyne et al., 2002; Mendlowitz et al., 1999), while others have not (e.g., Bögels & Siqueland, 2006; Nauta et al., 2003). Because of the inconsistency of findings, additional research is still needed to determine the efficacy of incorporating specific, streamlined parent components in CBT interventions.

The literature reviewed above has shown the efficacy of individual cognitive behavioral therapy, including exposures in the treatment of anxiety in youth. Recent research, as highlighted above, has included parental and group components within the treatment of youth anxiety (Silverman et al., 2009; Wood et al, 2006). With regards to my dissertation, focus is on the effects of parent involvement in CBT, which have been inconsistent across clinical trials (Barrett et al., 1996; Cobham et al., 1998; Thienemann, et al., 2006). Although significant results have been demonstrated when involving certain parenting skills (e.g., parents' reinforcement skills; parent's' relationship skills), no research has been conducted to demonstrate which parental components, if any, are associated with treatment outcome. Therefore, including parenting components within CBT for the treatment of childhood anxiety at this time is derived on speculation rather than empirical data (Barmish & Kendall, 2005; Wood et al., 2003).

To bridge the gap, the two following interventions employed in this dissertation were selected to represent each of the parenting skills: ICBT-RLST (individual cognitive behavioral therapy with a parent-child relationship component) and ICBT-RFST (individual cognitive behavioral therapy with a parental reinforcement/reward component). The present study was the first study to evaluate whether incorporating specific parent/child contexts and targeting particular parenting variables (relationships or

reinforcement) produced positive effects in the treatment of anxiety in youth. The present study's specific aims are described below.

Treatment outcome

The current dissertation study focused on one set of hypotheses: treatment outcome. Approaches used to test for treatment outcome, or change in reduction of anxiety, evaluated whether positive change in child treatment outcome is significantly greater in the parent involved conditions (ICBT-RFST and ICBT-RLST) than in the baseline comparison condition (ICBT). All three conditions included a cognitive behavioral component, which was shown to be effective in individual therapy (e.g., Kendall, 1994; Kendall et al., 1997; Silverman et al., 2008). However, past research was limited because parenting variables encompassed so many different behaviors. Therefore my dissertation was designed to dismantle components representative of the prototypes of parent involvement.

Figure 1 demonstrates the first set of hypotheses with respect to whether all three treatment conditions (ICBT, ICBT-RLST, and ICBT-RFST) would produce positive treatment response. The main hypothesis tests for treatment outcome: Will positive change in child treatment outcome in the parent involvement condition be significantly greater than positive change in child treatment outcome in the ICBT treatment? Specifically, will the ICBT-RFST condition show greater improvement in terms of child anxiety than the ICBT condition? Will the ICBT-RLST condition show greater improvement in terms of child anxiety than the ICBT condition? The hypothesis states that positive change in child treatment outcome in the parent involvement conditions

(ICBT-RFST and ICBT-RLST) is expected to be significantly greater than positive

change in child treatment outcome in the baseline comparison condition (ICBT).

CHAPTER III.

METHODOLOGY

Participants

The sample consisted of 310 children and adolescents (ages 5 to 17 years; $M=$ 9.53; $SD=$ 2.47) who presented to the Child Anxiety and Phobia Program (CAPP) within the Child and Family Psychosocial Research Center at Florida International University in Miami. All participants were referred to CAPP by pediatricians, psychologists, school personnel or other mental health professionals because difficulties with excessive fear and/or anxiety. The age range of the participants (5 to 17 years old) was similar to the age range of the children that participated in prior studies (e.g., Kendall, 1994; Barrett et al., 1996; Barrett et al., 1998; Silverman et al., 1999; Silverman et al, 2009). The age range was also similar to the age of onset of the presenting disorders in the population. Of the 310 children who participated in the treatment, 27% (n = 84) dropped out of treatment: 32% in the ICBT condition (n =27); 39 % in the ICBT-RLST condition (n = 33); and 29 % in the ICBT-RFST condition (n = 24). After attrition, the number of patients that completed treatment was 226. Attrition was not statistically significant across treatment conditions. These attrition rates are comparable with rates reported by other U.S. investigators in the youth anxiety area (e.g., Kendall, 1994). My study analyzed data for the treatment completed sample.

The present dissertation provides pre-treatment and post-treatment data for 226 treatment completers (ages 5 to 17 years; $M=$ 9.37; $SD=$2.39) and their parents. The sociodemographic information for participants who completed the treatment is presented in Table 1. As shown in Table 1, the youths' age range of 5 and 17 years reflects the

modal age range of the age of onset of separation anxiety disorder (SAD), social phobia (SOP), specific phobia (SP), and generalized anxiety disorder (GAD) in the population and is reflective of CAPP's referral patterns.

As shown in Table 1, The majority of children were born in the U.S. ($n = 194$), and the remaining children were born in Cuba ($n = 3$), Argentina ($n = 1$), Colombia ($n = 4$), Venezuela ($n = 7$), Puerto Rico ($n = 2$), Ecuador ($n = 1$), Uruguay ($n = 1$), Nicaragua ($n = 1$), Dominican Republic (n =1), Costa Rica (n=1), Mexico (n =1), Panama (n=1), El Salvador (n=1), China (n = 1), Philippines (n =1), Belgium (n =1) and 1 did not report the child's county of birth. In terms of ethnicity, children had various backgrounds, 12 % (n = 28) were European American; 82 % (n = 185) were Hispanic/Latino; 1% (n = 3) was African-American; and 3% (n = 6) were of other ethnic backgrounds or did not report their ethnicity.

To participate in the study, youth were required to meet the following inclusion criteria: (A) have a primary diagnosis of a DSM-IV anxiety or phobic disorder; (B) receive a mean score of 4 or greater on the Clinician's Rating Scale of Severity (see Measures); (C) must terminate all other psychosocial treatment after consulting with both CAPP counselor and external service provider; (D) between 6 and 16 years old; (E) parents/guardians agreed to participate in the child's treatment; and (F) children/parents agreed to be randomized into either the ICBT condition, ICBT-RLST condition, or the ICBT-RFST condition. The treatment conditions included weekly involvement in therapy (approximately 60 minutes in length).

The exclusion criteria were: (A) the child's primary diagnosis was not a DSM-IV anxiety or phobic disorder; or (B) children/parents met diagnoses (e.g., primary,

secondary, tertiary) for any one of the following disorders: Pervasive Developmental

Disorders, Mental Retardation, Organic Mental Disorders, Schizophrenia and Other

Psychotic Disorders; and/or (C) children/parents showed intent of hurting themselves or

others. Screening for exclusionary criteria was accomplished through a standardized

telephone screen, and if necessary, child and parent interview schedules were

administered (ADIS-IV: C/P; Silverman & Albano, 1996).

Children who met criteria for a primary diagnosis of a DSM-IV anxiety and/or

phobic disorder were evaluated on the basis of the ADIS-IV: C/P (Silverman & Albano,

1996); a structured interview administered to the child and parent individually. Youth

that completed treatment in the study met for primary diagnoses of: SAD (n = 57), SoP (n

= 51), SP (n = 35), GAD (n = 51), OCD (n = 2), PD with agoraphobia (*n* = 9), PD

without agoraphobia (*n* = 1), and Selective Mutism (n = 10). 70.6 % of the children (n =

219) had at least one comorbid diagnosis.

Procedures

Families interested in the program were contacted by a doctoral level student and

scheduled two appointments to meet with a diagnostician to interview and administer the

questionnaires. Upon arrival, informed consent and assent were obtained from parent and

child, respectively. Next, parents and children were administered the ADIS-P/C-IV in a

randomly determined order. While the parent was interviewed, the child filled out

questionnaires with the help of a trained undergraduate assistant. During the second

appointment, children and parents completed any incomplete questionnaires.

Diagnosticians were all doctoral students trained to administer the interview and

questionnaires by watching previously administered video-taped and/or live interviews.

All students had to meet 100% reliability criteria on five parent and child interviews. As per the ADIS-C/P guide, in the event of multiple diagnoses, assessors had to distinguish between primary diagnosis, secondary diagnosis, etcetera. (see Albano & Silverman, 1996).

Participants who met inclusion criteria for primary anxiety diagnoses were randomly assigned to a counselor (another doctoral student) as well as to one of the three manualized treatment conditions: ICBT, ICBT-RLST, and ICBT-RFST (discussed below). Participants who did not meet inclusion and exclusion criteria were referred to an appropriate mental health service.

Study Design

The design for the present dissertation was a 3 (Intervention; ICBT versus ICBT-RLST versus ICBT-RFST) by 2 (Time; Pre versus Post) between-within design. The Intervention was the between factor and Time was the within factor. Parents and children were randomly assigned to one of the three intervention conditions because the study examined treatment outcome. The questionnaires used for outcome purposes were administered to parent, child and/or clinician at pre-treatment and at post-treatment for all three conditions (ICBT, RLST, RFST).

Measures

Child Completed Outcome Measures

Revised Children's Manifest Anxiety Scale (RCMAS/C; Reynolds & Richmond, 1978; 1985). The RCMAS was used as a primary outcome measure and was found to be a good measure of change in multiple studies (e.g., Kendall, 1994; Kendall et al., 1997; Silverman et al., 1999a). The RCMAS is a 37-item scale, using a Yes (1) or No (0)

response system, intended to assess anxiety in children. The test-retest reliability was reported as r = .98 for the total anxiety scale (Pela & Reynolds, 1982). Concurrent validity has been reported to range from (*rs*) .65 to .76 (Lee, Piercel, Friedlander, & Collamer, 1988). The present study used the RCMAS total anxiety scale, which had an internal consistency (Cronbach's alpha) of .83 for the present sample.

Multidimensional Anxiety Scale for Children (MASC; March, 1997). The MASC is a 39-item measure to assess for four dimensions of anxiety: physical symptoms, harm avoidance, social anxiety, and separation/panic. The scale uses a 4-point scale: (0) never true about me, (1) rarely true about me, (2) sometimes true about me, (3) often true about me. The MASC demonstrated to have satisfactory test-retest reliability (March et al., 1997) and acceptable validity as it correlates with the RCMAS (Kovacs, 1992). The present study used the MASC, which had an internal consistency (Cronbach's alpha) of .89 for the present sample.

Parent Completed Outcome Measures

Revised Children's Manifest Anxiety Scale (RCMAS/P; Reynolds & Richmond, 1978; 1985*).* Parents rated the occurrence of anxious symptoms in youth using the RCMAS, a parent anxiety rating scale. The RCMAS was changed from "I…" to "My child…" similar to other studies done in the area of child fear/anxiety (Kendall, 1994; Strauss, Lease, Kazdin, Dulcan, & Last, 1989). The test-retest reliability for the RCMAS/P has been reported as r = .85 for the total anxiety scale (Pina et al., 2001). The present study used the RCMAS total anxiety scale, which had an internal consistency (Cronbach's alpha) of .80 for the present sample.

Child Behavior Checklist (CBCL; Achenbach &Rescorla, 2001). The CBCL is a 118-item questionnaire that assesses children's competencies and behavior problems. The questionnaire uses a three-point scale: (0) not true, (1) somewhat or sometimes true, and (2) very true or often true. Specifically, the parents' ratings on the CBCL's Internalizing subscale were used to evaluate youth treatment response, as in past research studies. The test-retest reliability has been reported as satisfactory (e.g., $r = .89$ for Internalizing scores; Achenbach, 1991). Concurrent validity has been reported to range from (*rs*) .52 to .88 (Achenbach, 1991). Similar to previous research (e.g., Shortt et al., 2001; Silverman et al., 1999a, b), clinically significant improvement for Internalizing subscale was defined as a minimum criterion *T* score of less than 63 and clinically significant improvement for the Anxious/Depressed subscale was defined as a minimum criterion *T* score of less than 70 (adjusted according to age norms).

Clinician Completed Outcome Measures

The Anxiety Disorders Interview Schedule for DSM-IV: Child and Parent Versions (ADIS for DSM-IV: C/P; Silverman & Albano, 1996). The ADIS for DSM-IV was administered to all youth and parents to assess for internalizing disorders (e.g., anxiety, phobia) and screen for externalizing (e.g., ADHD, oppositional defiant disorder, conduct disorder) or other related disorders (e.g. major depression, dysthymia, enuresis). Interviewers considered which diagnosis was the most interfering as per the child and mother's separate interview. If multiple diagnoses were given, interviewers assessed for interference to prioritize which diagnosis was the most intrusive in the child's life. Interference was established in four areas of the child's life: (1) school/academic performance, (2) family disruption/accommodation, (3) peer interactions, and (4)

personal distress. Interference was assessed using a "Feelings Thermometer" included in the ADIS-C/P interview (Silverman & Albano, 1996). The thermometer contained ratings from 0-8 point scale (0 = none, 4 = some, 8 = very, very much). Previous research demonstrates good to excellent test-retest reliability for the diagnosis of anxiety disorders (e.g., κ = .63 to .83 for the ADIS-C child version, κ = .65 to .88 for the ADIS-C parent version, and κ = .80 to .92 for the composite diagnosis; Silverman, Saavedra, & Pina, 2001). Reliability for the clinician severity ratings has been found to range from .74 to .88 (Silverman & Eisen, 1992; Silverman & Nelles, 1988).

Children's Global Assessment Scale (C-GAS; Bird, Shaffer, Fisher, & Gould, 1993). Global impairment was rated by a team of assessors headed by Wendy Silverman through the use of the C-GAS. Youths' functioning on the C-GAS is rated on a 1 to 100 scale with higher scores reflecting higher levels of functioning. The scale is divided into ten levels of impairment each demarcated by anchor points that include predominantly behavioral descriptors of symptoms that may occur at each level of impairment (e.g., repeated suicide attempts at 11-20 and school refusal at 41-50). Scores less than 67 are considered to be in the clinical range. As in previous research, C-GAS ratings were derived during case conference meetings headed by Wendy Silverman or Jeremy Pettit. Findings from studies in community (e.g., Shaffer et al., 1983) and clinic (e.g., Dyrborg et al., 2000; Rey, Starling, Wever, Dossetor, &Plapp, 1995) settings suggest that the C-GAS has acceptable inter-rater reliability of .66 (ICC) with validity shown by "caseness" (Bird et al., 1993).

Manualized Treatment Conditions

Participants were assigned to one of three treatment conditions through random assignment. The first condition (ICBT, ICBT-RLST, or ICBT-RFST) and all subsequent conditions to be used were assigned by a table of random numbers. A manual for each treatment condition was created to standardize each session. Each session within each manual contained the goals, tasks, homework assignments, treatment schedules and questionnaires needed to collect for that particular session. However, therapists were still notified to adhere to a treatment style of fidelity with flexibility, that is, to consider the child's developmental needs and the family's expectations (Kendall & Beidas, 2008). Since a high percentage of the participants were Hispanic families, the family conditions were delivered in bilingual format. The ICBT treatment condition was delivered in English given that the majority of the youth spoke English.

All three treatment conditions comprised of in vivo exposures to the fearful situations and training the child to use cognitive and behavioral strategies to lessen and/or eliminate the fear. The treatment conditions involving the parent (ICBT-RLST and ICBT-RFST) differed in skills taught to parent to assist the child (i.e., learning to use autonomy granting/maternal acceptance or learning to use positive reinforcement/discouraging child avoidance, respectively). All treatment conditions consisted of twelve to fourteen sessions. Treatment sessions for all three conditions were 60 to 80 minutes in length.

Although the targeted diagnosis (the diagnosis that was most interfering and what parent and child decided they wanted to most help on) was confirmed at the end of the pre-assessment, therapists verified the child's primary targeted diagnosis with both parties by the fourth treatment session to ensure agreement for treatment. The primary

diagnosis became the targeted diagnosis for treatment by session five. The targeted diagnosis (what parent and child deemed most interfering and wanted help with) was the diagnosis used for the data analyses during pre-treatment and post-treatment. Additionally, diagnostic status was an index of clinically significant improvement. In other words, I examined how many participants across conditions no longer had an anxiety diagnosis at post treatment.

Below is a summary of the fundamental principals in each of the three treatment conditions.

ICBT

Session One. Introduced and discussed child's presenting problems. Discussed an overview of treatment goals, in session and out of session exposures and behavioral/cognitive strategies that will be learned and applied in session. Reviewed words for fear that will be used in treatment: worried, nervous, fearful, afraid, anxious, scared, etcetera. Discussed how we are in this program to learn ways to better handle these feelings. Reviewed STIC tasks (Show That I Can: out of session exposures).

Session Two. Reviewed treatment rationale and goals. Review 3 ways we know we are afraid/nervous. 1) Bodily reactions such as stomachache, headache, sweating, heart rate going up, etcetera. 2) Negative thoughts that make us upset/nervous. 3) Behavior such as staying away or avoiding the situation that makes us nervous or anxious. Instead, therapist and child discuss the concept of facing our fears and not avoiding the scary situation. Discussed how child will be taking small steps up the ladder in order to achieve treatment goals. Began devising hierarchy for child's in session and out of session exposures. **Session Three.** Reviewed last week's session. Finalize top 10 list and create

hierarchy from least scary to most scary situation using the feelings thermometer. Assign first out of session STIC task (something relatively low on the hierarchy). **Session Four.** Reviewed last week's out of session STIC task. Conduct in session STIC task. Provided feedback and praise. Introduce STOP: explained how first a child is scared. Second, the child will have negative/scary thoughts. Third, explained the cognitive strategies for changing Ts to Os by identifying negative thoughts and exploring alternative more positive thoughts. Explained the importance of the child praising himself, that effort is just as important as being successful. Assigned STIC task using STOP. **Session Five.** Reviewed last week's out of session STIC task. Conducted in session STIC task. Used STOP to review child's STIC task. Provided feedback and praise. Continued working on changing Ts to Os by collecting evidence for your Ts. Went over different cognitive strategies the child can use to change Ts to Os: The Burnt Cookie, Possible versus Probable, and Non-Negative Thinking. Assigned STIC task. **Session Six.** Reviewed last week's out of session STIC task. Conduct in session STIC task. Used the concept of STOP, reviewed cognitive strategies and utilize them in session. Provided feedback and praise. Assigned STIC task. **Session Seven.** Reviewed last week's out of session STIC task. Conducted in session STIC task. Used the concept of STOP, reviewed cognitive strategies and utilize them in session. Provided feedback and praise. Assigned STIC task. **Session Eight.** Reviewed last week's out of session STIC task. Conducted in session STIC task. Used the concept of STOP, reviewed cognitive strategies and utilized them in session. Provided feedback and praise. Assigned STIC task. **Session Nine.** Reviewed last week's out of session STIC task. Conducted in session STIC task. Used the concept of STOP, reviewed cognitive strategies and utilized them in session. Provided feedback and

praise. Assigned STIC task. **Session Ten.** Reviewed last week's out of session STIC task. Conducted in session STIC task. Used the concept of STOP, reviewed cognitive strategies and utilize them in session. Provided feedback and praise. Assigned STIC task. **Session Eleven.** Reviewed last week's out of session STIC task. Conducted in session STIC task. Used the concept of STOP, reviewed cognitive strategies and utilized them in session. Reviewed relapse prevention, slipping, the importance of practice and discuss treatment termination. **Session Twelve.** Reviewed progress and topics covered in last week's session (i.e., treatment termination, relapse prevention, slipping, etcetera). Answered any questions. Assigned STIC task. **Session Thirteen.** Reviewed and summarized treatment, goals, progress and bring closure to the therapeutic relationship. **Session Fourteen**. Reviewed treatment program and treatment termination. Distributed end of treatment certificate and complete post assessment.

ICBT-RLST

   Session One. Introduced and discussed child's presenting problems. Discussed an overview of treatment goals, in session and out of session exposures and behavioral/cognitive strategies that will be learned and applied in session. Reviewed words for fear that will be used in treatment: worried, nervous, fearful, afraid, anxious, scared, etcetera. Discussed how we are in this program to learn ways to better handle these feelings. Reviewed STIC tasks (Show That I Can: out of session exposures). **Session Two.** Reviewed treatment rationale and goals. Reviewed 3 ways we know we are afraid/nervous. 1) Bodily reactions such as stomachache, headache, sweating, heart rate going up, etcetera. 2) Negative thoughts that make us upset/nervous. 3) Behavior such as staying away or avoiding the situation that makes us nervous or anxious. Instead,

therapist and child discussed the concept of facing our fears and not avoiding the scary situation. Discussed how child will be taking small steps up the ladder in order to achieve treatment goals. Began devising hierarchy for child's in session and out of session exposures. **Session Three.** Reviewed last week's session. Finalized top 10 list and create hierarchy from least scary to most scary situation using the feelings thermometer. Assigned first out of session STIC task (something relatively low on the hierarchy). **Session Four.** Reviewed last week's out of session STIC task. Conducted in session STIC task. Provided feedback and praise. Introduce STOP: explained how first a child is scared. Second, the child will have negative/scary thoughts. Third, explained the cognitive strategies for changing Ts to Os by identifying negative thoughts and exploring alternative more positive thoughts. Explained the importance of the child praising himself, that effort is just as important as being successful. Assigned STIC task using STOP. **Session Five.** Reviewed last week's out of session STIC task. Conducted in session STIC task. Used the concept of STOP, reviewed cognitive strategies and utilized them in session. Provided feedback and praise. Continued working on changing Ts to Os by collecting evidence for your Ts. Went over different cognitive strategies the child can use to change Ts to Os: The Burnt Cookie, Possible versus Probable, and Non-Negative Thinking. Assigned STIC task. Explained the importance of fostering and positive parent-child relationship. Began devising list of positive child qualities. Assigned out of session STIC task. **Session Six.** Reviewed last week's out of session STIC task. Conducted in session STIC task and have parent provide feedback and encouragement. This included the notion of child acceptance; such as, helping the child feel better when upset, cheering up child when sad, making the child feel he is one of the most important

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persons in the parent's life. Introduce communication skills. With the parent and child's assistance, created two lists to assist parent and child communication skills: 1) Top things about child and 2) Ways to show child I accept him/her. Assigned out of session STIC task. **Session Seven.** Reviewed last week's out of session STIC task and the use of parental encouragement. Conducted in session STIC task and promote the use of parental encouragement, communication, and problem solving skills. Discussed parental autonomy granting skills; such as, not telling the child what to do all the time, not keeping rules only when it suits the parent, being friendly with the child, etcetera. Created a list to help parent-child communication skills: Ways to let the child do it on his/her own. Conducted in session STIC task. Used the concept of STOP, review cognitive strategies and utilize them in session. Assigned out of session STIC task using contract. **Session Eight.** Reviewed last week's out of session STIC task and unconditional acceptance. Conducted in session STIC task. Used the concept of STOP, reviewed cognitive strategies and utilize them in session. Encouraged parent to provide positive feedback and encouragement on child's effort and success of exposure. Assigned out of session STIC task. **Session Nine.** Reviewed last week's out of session STIC task and unconditional acceptance. Conducted in session STIC task. Used the concept of STOP, reviewed cognitive strategies and utilize them in session. Encouraged parent to provide positive feedback and encouragement on child's effort and success of exposure. Assigned out of session STIC task. **Session Ten.** Reviewed last week's out of session STIC task and unconditional acceptance. Conducted in session STIC task. Use the concept of STOP, reviewed cognitive strategies and utilize them in session. Encouraged parent to provide positive feedback and encouragement on child's effort and success of

exposure. Assigned out of session STIC task. **Session Eleven.** Reviewed last week's out

of session STIC task and unconditional acceptance. Conducted in session STIC task.

Used the concept of STOP, reviewed cognitive strategies and utilize them in session.

Encouraged parents to positive feedback and encouragement on child's effort and success

of exposure. Reviewed relapse prevention, slipping, the importance of practice and

discuss treatment termination. Assigned out of session STIC task. **Session Twelve.**

Reviewed progress and topics covered in last week's session (i.e., treatment termination,

relapse prevention, slipping, etcetera). Answered any questions. Assigned STIC task.

Session Thirteen. Reviewed and summarize treatment, goals, progress and bring closure

to the therapeutic relationship. **Session Fourteen**. Reviewed treatment program and

treatment termination. Distributed end of treatment certificate and complete post

assessment.

ICBT-RFST

      Session One. Introduced and discuss child's presenting problems. Discussed an

overview of treatment goals, in session and out of session exposures and behavioral/cognitive

strategies that will be learned and applied in session. Reviewed words for fear that will be used

in treatment: worried, nervous, fearful, afraid, anxious, scared, etcetera.... Discussed how we

are in this program to learn ways to better handle these feelings. Reviewed STIC tasks (Show

That I Can: out of session exposures). **Session Two.** Reviewed treatment rationale and goals.

Reviewed 3 ways we know we are afraid/nervous. 1) Bodily reactions such as stomachache,

headache, sweating, heart rate going up, etcetera. 2) Negative thoughts that make us

upset/nervous. 3) Behavior such as staying away or avoiding the situation that makes us

nervous or anxious. Instead, therapist and child discussed the concept of facing our fears and

not avoiding the scary situation. Discussed how child will be taking small steps up the ladder in order to achieve treatment goals. Began devising hierarchy for child's in session and out of session exposures. **Session Three.** Reviewed last week's session. Finalized top 10 list and create hierarchy from least scary to most scary situation using the feelings thermometer. Assigned first out of session STIC task (something relatively low on the hierarchy). **Session Four.** Reviewed last week's out of session STIC task. Conducted in session STIC task. Provide feedback and praise. Introduced STOP: explained how first a child is scared. Second, the child will have negative/scary thoughts. Third, explained the cognitive strategies for changing Ts to Os by identifying negative thoughts and exploring alternative more positive thoughts. Explained the importance of the child praising himself, that effort is just as important as being successful. Assigned STIC task using STOP. **Session Five.** Reviewed last week's out of session STIC task. Conducted in session STIC task. Used STOP to review child's STIC task. Provided feedback and praise. Continued working on changing Ts to Os by collecting evidence for your Ts. Go over different cognitive strategies the child can use to change Ts to Os: The Burnt Cookie, Possible versus Probable, and Non-Negative Thinking. Assigned STIC task. Explained the importance of parental reinforcement via positive reinforcement. Began devising "Thing I Like" Rewards List. Assigned STIC task and reward contingent on child's effort in out of session exposure. **Session Six.** Reviewed last week's out of session STIC task. Conducted in session STIC task. Use the concept of STOP, reviewed cognitive strategies and utilize them in session. Explained rationale for contingency management and positive reinforcement. Explained the notion of "Protection Trap": protecting children from fearful or anxious things and/or situations that may be a good thing in short term but not a good thing in long term. Created two lists to assist in helping child reinforcement: 1) Small stuff I like:

consisting of tangible rewards the child can receive after he/she successfully completes his/her STIC task; such as, pencils, basketball, cards, etcetera. 2) Untouchable small stuff I like: consisting of non-tangible rewards the child can receive after he/she successfully completes his/her STIC task; such as riding bikes with parents, going to movies with parents, etcetera. Assigned out of session STIC task using contract. **Session Seven.** Reviewed last week's out of session STIC task and reinforcement provided, if any. Conducted in session STIC task. Used the concept of STOP, reviewed cognitive strategies and utilize them in session. Encouraged parent to provide positive reinforcement contingent on child's effort and success of exposure. Explained the notion of "Negative Reinforcement": when parents allow the child to avoid, the child learns to keep avoiding. Therefore it is important to identify avoidant behaviors and not allow the child to avoid. Created how my child stays away and what mom can do to help list. Assigned out of session STIC task using contract. **Session Eight.** Reviewed last week's out of session STIC task and reinforcement provided, if any. Conducted in session STIC task. Used the concept of STOP, review cognitive strategies and utilize them in session. Encouraged parent to provide positive reinforcement contingent on child's effort and success of exposure. Assigned out of session STIC task using contract. **Session Nine.** Reviewed last week's out of session STIC task and reinforcement provided, if any. Conducted in session STIC task. Used the concept of STOP, review cognitive strategies and utilize them in session. Encouraged parent to provide positive reinforcement contingent on child's effort and success of exposure. Assigned out of session STIC task using contract. **Session Ten.** Reviewed last week's out of session STIC task and reinforcement provided, if any. Conducted in session STIC task. Use the concept of STOP, review cognitive strategies and utilize them in session. Encouraged parent to provide positive reinforcement contingent on child's effort and success of exposure.

Assigned out of session STIC task using contract. **Session Eleven.** Reviewed last week's out of session STIC task and reinforcement provided, if any. Conducted in session STIC task. Use the concept of STOP, reviewed cognitive strategies and utilized them in session. Encouraged parent to provide positive reinforcement contingent on child's effort and success of exposure. Reviewed relapse prevention, slipping, the importance of practice and discuss treatment termination. Assigned out of session STIC task using contract. **Session Twelve.** Reviewed progress and topics covered in last week's session (i.e., treatment termination, relapse prevention, slipping, etcetera). Answered any questions. Assigned STIC task using contract. **Session Thirteen.** Reviewed and summarized treatment, goals, progress and bring closure to the therapeutic relationship. **Session Fourteen**. Reviewed treatment program and treatment termination. Distributed end of treatment certificate and complete post assessment.

Therapists

The therapists who treated the majority of the cases were doctoral students in psychology. These students were trained under the supervision of Wendy Silverman and had at least one year of experience at the Child Anxiety and Phobia Program. As recommended by Kazdin (1994), therapists provided all three types of treatment since treatment conditions, as well as skills therapists required overlapped. The cross between conditions allows the investigator to analyze if change is a consequence of treatment variance as opposed to therapist variance (Kazdin, 1994). Training of the therapists consisted of three separate meetings led by Wendy Silverman and her two post-doctoral students, Carla Marin and Yasmin Rey; this included extensive role-playing and open discussions. The training highlighted the similarities within treatment conditions (i.e., STIC tasks, hierarchies, treatment goals/rationales). The training emphasized the

differences between all three treatment (positive reinforcement/reward, parent-child relationship, versus traditional cognitive behavioral therapy enforcing self-praise). Along with the training, weekly supervision meetings were held to discuss treatment cases.

CHAPTER IV

RESULTS

Preliminary Analyses

    Missing Data. Missing data were examined to verify if the data were missing at random or if there was a systematic bias in the pattern of the missing data. Missing data were minimal for all variables, with no more than eight percent missing on a given variable. Missing data bias was assessed by computing a dummy variable reflecting the presence or absence of missing data for each variable in the model and then this dummy variable was correlated with all other variables in the model as well as an array of demographic variables. No meaningful or significant associations were observed. Given the absence of significant correlations between missingness and measured variables, as well as the minimal univariate missing data, missing data were accommodated by employing full information maximum likelihood (FIML) missing data methodology (Wothke, 2000) on Mplus Version 6.0.

    Outliers. Outlier analyses were undertaken prior to the main analyses. The outlier analyses were both non-model based and model based. For the non-model based analyses, multivariate outliers were identified by examining leverage indices for each individual and defining an outlier as a leverage score four times greater than the mean leverage. Two outliers were found using this approach. Outcome analyses were conducted both with and without the two outliers. Results were comparable across the

two forms of analysis. Hence, all paths that were significant with outliers were significant without outliers and all paths that were non-significant with outliers were also non-significant without ouliers. Because results were analogous across the two analyses, the analyses in the present dissertation are presented with ouliers included.

An additional set of outlier analyses was pursued using model-based outlier analysis. The outlier analyses involved randomly selecting an indicator for each variable and then regressing the indicator for each endogenous variable onto an indicator for variables of which that the endogenous variable is assumed to be a linear function. The analysis used ordinary least squares regression in a limited information estimation framework. Standardized dfbetas were examined for each individual and each predictor as well as the intercept. An outlier was defined as anyone with an absolute standardized dfbeta larger than 1.0. No outliers were found using this approach.

Non Normality. Univariate indices of skewness and kurtosis were examined to determine if the absolute value of any of these indices was greater than 2.0. There was no univariate non-normality present in the data using the approach mentioned. Multivariate normality was evaluated by testing Mardia's index (1985). The multivariate kurtosis score was 4.06 ($p<.05$). To account for the multivariate non-normality present in the data, structural equation modeling (SEM) analyses were pursued in Mplus by using an estimator (MLR) robust to violations of normality based on the Huber-White algorithm.

Comparing Treatment Completers and Non-completers. Of the 310 participants assigned to the conditions, 226 participants (72.6%) completed the interventions (ICBT, RLST, RFST). The non-completion rate across the three

interventions was 27.4%. These rates are comparable with rates reported by U.S.

investigators in the child anxiety area (e.g., there were 22% non-completers in Kendall

[1994], 20% non-completers in Kendall [1997], and 27% non-completers in Last et al.

[1998]). To determine any potential sample bias associated with attrition, treatment

completers and non-completers were compared at pretreatment using chi-square tests and

t-tests along the following sociodemographic and clinical variables: socioeconomic

status, parent's marital status, youth ethnicity, youth age, youth sex. Comparison of

pretreatment clinical variables across treatment completers and non-completers included

interference rating on the child's primary/target diagnosis, child anxiety measures (i.e.,

RCMAS/C and RCMAS/P total scores), and clinician reported CGAS ratings. There were

no statistically significant differences between completers and non-completers, with the

exception of child's age [$\chi 2$ (291) = -2.02, $p < .05$] and marital status [$\chi 2$ (1) = 10.93, $p <$

.001]. In terms of age, youth who completed treatment were statistically significantly

younger than youth who dropped out of treatment. In terms of marital status, more

completers than non-completers were from families in which the mothers were in intact

marriages.

      Group comparability. Differences across the three treatment conditions (ICBT,

ICBT-RLST and ICBT-RFST) were examined at pre-treatment using chi-square tests and

one-way analyses of variance. Comparisons of sociodemographic variables across

treatment conditions included socioeconomic status, marital status, child's ethnicity,

child's age and child's gender. Comparison of pretreatment clinical variables across

treatment conditions included interference ratings on the child's primary/target diagnosis,

and all child and parent completed measures. There were no statistically significant

differences on any of the sociodemographic or clinical variables.

Main Analyses

  Treatment Outcome. Treatment outcome or change in reduction of anxiety from

pre- to post-treatment was evaluated using two approaches: Clinically significant change

and analyses of variance within a SEM framework on Mplus Version 6.0. The correlation

between the parents' ratings of youth anxiety and the youths' self-ratings of anxiety was

.23 at pretest and .29 at posttest. Although statistically significant ($p < .001$), these

generally modest correlations are typical of past research (Achenbach, McConaughy, &

Howell, 1987). As a result, the parent and youth ratings on the respective versions of the

RCMAS were treated as separate primary outcome measures.

  Clinically significant change was reported for all treated children across all three

conditions as well as for each condition separately. Youth who received IBCT, youth

who received RLST, and youth who received RFST were compared along each of the

three clinically significant change indices using a series of logistic regressions via SEM

on Mplus. Clinically significant change was evaluated using three methods: 1) diagnostic

recovery rates or percent of children no longer meeting diagnostic criteria for their

primary/treated diagnosis, 2) percent of children no longer in the clinical range according

to the C-GAS using a minimum criterion score of less than 67, and 3) percent of children

no longer in the clinical range according to the CBCL Internalizing subscale, using a

minimum criterion T score above 63 (adjusted according to age norms), as well as

percent of children no longer in the clinical range according to the CBCL Anxious/Depressed subscale, using a minimum criterion T score above 70 (adjusted according to age norms).

In terms of diagnostic recovery rates, 82% of youth across the three conditions did not have their primary diagnosis present at post treatment, derived using the ADIS: C/P. For participants in ICBT, 77.4% of youth did not have their primary diagnosis present at post treatment. For participants in RFST, 83.5% of youth did not have their primary diagnosis present at post treatment. For participants in RLST, 87.5% of youth did not have their primary diagnosis present at post treatment. There were no significant differences on diagnostic recovery rates between treatment conditions (RLST versus ICBT: z = -1.41, p > 05; RFST versus ICBT: z = -1.01, p > 05; RFST versus RLST: z = .62, p > 05).

In terms of the C-GAS scores at post-treatment diagnostic recovery rates, 67.7% of youth across the three conditions were no longer in the clinical range. For participants in ICBT, 64.3% of youth were no longer in the clinical range. For participants in RFST, 69.4% of youth were no longer in the clinical range. For participants in RLST, 70.8% of youth were no longer in the clinical range. There were no significant differences between treatment conditions on likelihood of being in the non-clinical range according to the C-GAS at post treatment (RLST versus ICBT: z = -.77, p > .05; RFST versus ICBT: z = -.71, p > .05; RFST versus RLST: z = .17, p > .05).

In terms of the CBCL Internalizing subscale scores at post-treatment diagnostic recovery rates, 71.6% of youth across the three conditions were no longer in the clinical range. For participants in ICBT, 70.1% of youth were no longer in the clinical range. For

participants in RFST, 72.1% of youth were no longer in the clinical range. For

participants in RLST, 73.1% of youth were no longer in the clinical range. (RLST versus

ICBT: $z = -1.27$, $p > .05$; RFST versus ICBT: $z = -.72$, $p > .05$; RFST versus RLST: $z =$

.68, $p > .05$). Moreover, in terms of the CBCL Anxious/Depressed subscales scores at

post-treatment diagnostic recovery rates, 65.3% of youth across the three conditions were

no longer in the clinical range. For participants in ICBT, 60.9% of youth were no longer

in the clinical range. For participants in RFST, 69.8% of youth were no longer in the

clinical range. For participants in RLST, 65.4% of youth were no longer in the clinical

range. (RLST versus ICBT: $z = -1.25$, $p > .05$; RFST versus ICBT: $z = -1.64$, $p > .05$;

RFST versus RLST: $z = -.14$, $p > .05$).

Youth Ratings. The SEM equivalent of 2x3 between-within analyses of variance

were conducted on the youth completed measures, namely, the RCMAS and MASC

respectively, the type of treatment intervention (ICBT, RLST, RFST) representing a

between-subjects factor and time (pre and post) representing a within subjects factor.

In terms of the youth completed RCMAS, both main effects of time and treatment

intervention as well as the interaction effect were statistically significant. Table 2

presents the cell means and standard deviations for the youth completed RCMAS. Table

3 presents the relevant single degree of freedom contrasts and their associated statistics.

The contrasts used non-pooled error terms for the contrasts involving repeated measures

(across time) but pooled terms for the contrasts across the between-subjects factor (across

groups within time).

The first row of Table 3 presents the single degree of freedom contrasts for the

main effect of time collapsing across treatment intervention. The mean difference for the

main effect of time collapsing across treatment condition was 4.86, with average scores at post being significantly lower than average scores at pre. Rows 2, 3, and 4 of Table 3 present the comparison for treatment intervention collapsing across time. Tests of these comparisons were performed both with and without experiment wise controls across the three contrasts (using the Holm modified Bonferroni procedure). Only the comparison between ICBT and RFST was statistically significant. The mean difference was -2.56, with youth who participated in RFST having lower average RCMAS scores than youth who participated in ICBT.

Simple main effects (SME) contrasts were performed to determine if the time difference occurred at each treatment intervention. Rows 5, 6, and 7 of Table 3 presents statistics for these contrasts. The time difference was statistically significant for all three treatment interventions, with post scores showing a decrease relative to pretreatment scores on the youth completed RCMAS.

To formally test if the time difference was statistically significantly stronger for one intervention group than other, three single degree of freedom interaction contrasts were evaluated. These are reported in rows 8 to 10. The first contrast compared the time difference at ICBT versus RLST. The second contrast compared the time difference at ICBT versus RFST. The third contrast compared the time difference at RLST versus RFST. After using the Holm modified Bonferroni procedures, only the first contrast was statistically significant. The time difference from pre to post for ICBT (3.61) was significantly lower than the time difference from pre to post for RLST (6.90).* (Refer to footnote in Table 3).

In terms of the MASC, both main effects of time and treatment intervention as well as the interaction effect were statistically significant. Table 4 presents the cell means and standard deviations for the youth completed MASC. Table 5 presents the relevant single degree of freedom contrasts and their associated statistics. The contrasts used non-pooled error terms for the contrasts involving repeated measures (across time) but pooled terms for the contrasts across the between-subjects factor (across groups within time).

The first row of Table 5 presents the single degree of freedom contrasts for the main effect of time collapsing across treatment intervention. The mean difference for the main effect of time collapsing across treatment condition was 11.18, with average scores at post being significantly lower than average scores at pre. Rows 2, 3, and 4 of Table 5 present the comparison for treatment intervention collapsing across time. Tests of these comparisons were performed both with and without experiment wise controls across the three contrasts (using the Holm modified Bonferroni procedure). Both the comparison between ICBT and RLST and the comparison between RLST and RFST were statistically significant. The mean difference between ICBT and RLST was 12.96, with youth who participated in RLST having lower average MASC scores than youth who participated in ICBT. The difference between RLST and RFST did not remain statistically significant after using a Holm modified Bonferroni correction for the multiple contrasts.

Simple main effects (SME) contrasts were performed to determine if the time difference occurred at each treatment intervention. Rows 5, 6, and 7 of Table 5 presents statistics for these contrasts. The time difference was statistically significant for all three treatment conditions, with post scores showing a decrease relative to pretreatment scores on the MASC.

To formally test if the time difference was statistically significantly stronger for one intervention group than other, three single degree of freedom interaction contrasts were evaluated. These are reported in rows 8 to 10. The first contrast compared the time difference at ICBT versus RLST. The second contrast compared the time difference at ICBT versus RFST. The third contrast compared the time difference at RLST versus RFST. Both the first and third contrasts were statistically significant. The time difference from pre to post for ICBT (6.79) was significantly lower than the time difference from pre to post for RLST (19.75). The time difference from pre to post for RLST (19.75) was statistically higher than the time difference from pre to post for RFST (10.56). These findings held after using the Holm modified Bonferroni procedure.

Parent ratings. The SEM equivalent of a 2 X 3 between-within analysis of variance was conducted on the parent completed RCMAS; with the type of treatment intervention (ICBT, RLST, RFST) representing a between-subjects factor and time (pre and post) representing a within subjects factor. The main effect of time and the interaction effect were statistically significant. Table 6 presents the cell means and standard deviations for the parent completed RCMAS. Table 7 presents the relevant single degree of freedom contrasts and their associated statistics. The contrasts used non-pooled error terms for the contrasts involving repeated measures (across time) but pooled terms for the contrasts across the between-subjects factor (across groups within time).

The first row of Table 7 presents the single degree of freedom contrasts for the main effect of time collapsing across treatment intervention. The mean difference for the main effect of time collapsing across treatment condition was 4.99, with average scores at post being significantly lower than average scores at pre. Rows 2, 3, and 4 of Table 7

present the comparison for treatment intervention collapsing across time. Tests of these comparisons were performed both with and without experiment wise controls across the three contrasts (using the Holm modified Bonferroni procedure). Only the comparison between ICBT and RFST was statistically significant. The mean difference was -1.84, with youth who participated in RFST having lower average RCMAS scores than youth who participated in ICBT. However, after applying the Holm modified Bonferroni correction, the contrast was no longer statistically significant.

Simple main effects (SME) contrasts were performed to determine if the time difference occurred in each treatment intervention. Rows 5, 6, and 7 of Table 7 present statistics for these contrasts. The time difference was statistically significant for all three treatment conditions, with post scores showing a decrease relative to pretreatment scores in parent ratings of child anxiety. To formally test if the time difference was statistically significantly stronger for one intervention group than other, three single degree of freedom interaction contrasts were evaluated. These are reported in rows 8 to 10. The first contrast compared the time difference at ICBT versus RLST. The second contrast compared the time difference at ICBT versus RFST. The third contrast compared the time difference at RLST versus RFST. None of the contrasts was statistically significant.

Supplemental Analyses

Formal interaction analyses on Mplus were pursued to evaluate whether treatment outcome (as measured by child completed RCMAS and MASC; and parent completed RCMAS) varied as a function of the youth's age, sex, and ethnicity. Product terms were created to test for moderation, as discussed in Jaccard, Turrisi, and Wan (1990) and Jaccard and Wan (1996). All continuous variables (i.e., age, pre-treatment scores on

RCMAS-C/P and MASC) were mean centered for ease of interpretation of regression coefficients (see Jaccard and Turrisi, 2003).

Of particular interest was whether differences across treatment conditions on post scores varied as a function of child age, child ethnicity and child gender (controlling for pre-treatment scores). For each of the moderators (child age, ethnicity and gender), treatment condition was reflected by three dummy codes with ICBT serving as the reference group for the first regression analysis and RLST serving as the reference group for the second regression analysis.

To evaluate whether the effect of different treatment condition differed as a function of child age, pretreatment scores and child age were mean centered and the interaction terms were generated by multiplying mean centered age by two of the three dummy codes for treatment condition. For the first run, six predictors (mean centered age, mean centered pre-treatment outcome measure score, dummy coded RLST, dummy coded RFST, and the 2 product terms) were entered into a regression equation simultaneously. For the second run, six predictors (mean centered age, mean centered pre-treatment RCMAS score, dummy coded ICBT, dummy coded RFST, and the 2 product terms) were entered into a regression equation simultaneously. All path coefficients from the treatment interventions (ICBT, RLST or RFST) to the posttreatment parent and child completed measures (i.e., parent/child RCMAS and child MASC) were not statistically significant ($p > .05$), indicating there was no meaningful treatment specificity between ICBT, RLST, RFST in terms of child age.

To evaluate whether the effect of different treatment condition differed as a function of child ethnicity, ethnicity was dummy coded (1= Hispanic, 0 = non-Hispanic).

Pretreatment scores were mean centered and the interaction terms between pretreatment scores and ethnicity were generated by multiplying ethnicity by two of the three dummy codes for treatment condition. For the first run, six predictors (dummy-coded ethnicity, mean centered pre-treatment outcome measure score, dummy coded RLST, dummy coded RFST, and the 2 product terms) were entered into a regression equation simultaneously. For the second run, six predictors (dummy-coded ethnicity, mean centered pre-treatment outcome measure score, dummy coded ICBT, dummy coded RFST, and the 2 product terms) were entered into a regression equation simultaneously. The regression equation was run again changing the gender dummy codes (1 = non-Hispanic, 0 = Hispanic). All path coefficients from the treatment interventions (ICBT, RLST or RFST) to the posttreatment parent and child completed measures (i.e., parent/child RCMAS and child MASC) were not statistically significant ($p > .05$), indicating there was no meaningful treatment specificity between ICBT, RLST, RFST in terms of child ethnicity.

To evaluate whether the effect of different treatment condition differed as a function of child gender, gender was dummy coded (1= males, 0 = females). Pretreatment scores were mean centered and the interaction terms between pretreatment scores and gender were generated by multiplying gender by two of the three dummy codes for treatment condition. For the first run, six predictors (dummy-coded gender, mean centered pre-treatment outcome measure score, dummy coded RLST, dummy coded RFST, and the 2 product terms) were entered into a regression equation simultaneously. For the second run, six predictors (dummy-coded gender, mean centered pre-treatment outcome measure score, dummy coded ICBT, dummy coded RFST, and the 2 product

terms) were entered into a regression equation simultaneously. The regression equation was run again changing the gender dummy codes (1 = females, 0 = males). All path coefficients from the treatment interventions (ICBT, RLST or RFST) to the posttreatment parent and child completed measures (i.e., parent/child RCMAS and child MASC) were

not statistically significant ($p > .05$), indicating there was no meaningful treatment specificity between ICBT, RLST, RFST in terms of child gender.

CHAPTER V

DISCUSSION

The aim of the present dissertation was to evaluate treatment outcome or change in reduction of anxiety. Specifically, the aim of the study was to examine whether positive change in child treatment outcome was significantly greater in the parent-involved conditions (RFST and RLST) than in the comparison condition (ICBT). The aim of the present study was evaluated using two approaches: categorical clinically significant change and analyses of variance within a SEM framework. The study also evaluated whether treatment outcome varied as a function of youth age, sex and ethnicity. This was evaluated using the SEM equivalent of a three-way analysis of variance on both parent and youth completed measures.

Summary of Dissertation Findings

Clinically Significant Change. The dissertation's results indicated that when analyzed individually, all three treatment conditions (RFST, RLST and ICBT) were efficacious in reducing anxiety and its disorders in children and adolescents. A statistically significant pattern of anxiety reduction was found in all treatment outcome measures competed by both the youth and parent versions of the RCMAS and the child MASC questionnaires. These findings are consistent with past research studies that demonstrate the efficacy of both individual CBT (e.g., Kendall, 1994; Kendall 1997; Silverman et al., 2008) and parent involved CBT (e.g., Barrett et al., 1996; Barrett, 1998, Cobham et al., 1998; Mendlowitz et al., 1999; Heyne et al., 2002; Bogels & Siqueland, 2006).

In terms of diagnostic recovery rates, the majority of the children that were treated at CAPP with one of the three treatment conditions no longer met for their primary diagnosis (82%) at post derived using the ADIS: C/P. There was no statistically significant difference at post treatment between the treatment conditions in terms of diagnostic recovery rate. Overall, 77.4% of ICBT youth, 83.5% of RFST youth and 87.5% of RLST youth did not have their primary diagnosis present at post treatment. These findings are consistent with past research (e.g., Barrett et al., 1996; Kendall, 1994; Silverman et al., 1999a, b; Wood et al., 2006).

In terms of clinically significant change according to the CGAS, the majority of the children that were treated at CAPP with one of the three treatment conditions were no longer within the clinical range at post (i.e., they received ratings less than 67). There was no statistically significant difference at post treatment between the treatment conditions on CGAS scores (64.3% in the ICBT condition, 70.8% in the RLST condition, and 69.4% in the RFST condition). The CGAS measures the child's overall global functioning in school, with friends and with family. Results indicated that most of the children progressed in these areas of functioning; that is most of the children fell below clinical levels of impairment according to the CGAS at posttreatment. These findings are consistent with past research (e.g., Manassis et al., 2002; Wood et al., 2006).

In terms of clinically significant change according to the CBCL Internalizing subscale scores, the majority of the children (71.6%) that were treated at CAPP with one of the three treatment conditions were no longer within the clinical range at post. There was no statistically significant difference at post treatment between the treatment conditions (70.1% in the ICBT condition, 73.1% in the RLST condition and 72.1% in the

RFST condition). Moreover, in terms of clinically significant change according to the CBCL Anxious/Depressed subscale scores, the majority of the children (65.3%) that were treated at CAPP with one of the three treatment conditions were no longer within the clinical range at post. In terms of the CBCL Anxious/Depressed scores, there were no statistically significant differences at post treatment between the treatment conditions (60.9% in the ICBT condition, 65.4% in the RLST condition and 69.8% in the RFST condition). These findings are consistent with past research (e.g., Barrett, 1998; Flannery-Schroeder & Kendall, 2000; Silverman et al., 1999a).

Continuous Anxiety Symptom Ratings

In terms of the primary outcome measures of anxiety (child and parent RCMAS and child completed MASC), the results of the analyses from pre to post showed statistically significant improvement for treated children over time. Specifically, in terms of the child completed RCMAS, the pre to post difference was higher for participants in the RLST treatment condition than in the ICBT treatment condition. This result demonstrates that including a parent-child component in the treatment of childhood anxiety, in which the parent is trained to increase parental acceptance and decrease parental control, is linked to incremental reduction in anxiety symptoms in youth beyond individual CBT.

In terms of the youth completed MASC, the pre to post difference was higher for participants in the RLST treatment condition than participants in the RFST treatment condition. This result is consistent with the possibility that including a parent-child component that focuses on the parent-child relationship rather than parental reinforcement of child behaviors may be more efficacious in treating anxious youth.

However, due to the fact that the child self report MASC was the only outcome measure on which RLST demonstrated statistically superior outcome relative to RFST, it is premature to conclude that the RLST condition is superior to the RFST condition. Perhaps, in examining various time points (e.g., one year follow up), research will demonstrate that lagged effects are more visible in the parent-involved treatment conditions than in the individual treatment condition.

In terms of the parent completed RCMAS, the pre to post difference was high in participants in all three treatment conditions (ICBT, RLST, RFST) with no differences between each condition. This result demonstrates that, as previous studies have shown, CBT (whether individual or with a parental component) is efficacious in treating anxiety in children and adolescents as measured by parent rated child anxiety symptoms. This finding does not support the superiority of parent involved CBT over individual CBT.

Given the fact that very limited differential treatment effects were found in this dissertation and attrition rates did not significantly differ across condition, patient preference may be used when selecting a CBT treatment for children with anxiety disorders.

Outcome Measures. According to the primary outcome measures of anxiety (child completed RCMAS and child completed MASC), the cognitive behavioral treatment condition that incorporated parent relationship skills training (RLST) showed more improvement compared to the baseline treatment conditions (ICBT). Earlier findings examining the parent-child relationship and child anxiety disorders provide some explanation for the mechanisms of therapeutic change in these anxious youth (Silverman et al., 2009). Parents who were more autonomy granting, a skill taught in the RLST

condition, allow the child to have more control over situations, which reduces child anxiety (Chorpita & Barlow, 1998).

Overall, the findings obtained for the RLST condition are consistent with previous research showing that parent-child relationship (specifically, those high in psychological control and low in autonomy granting) and the development of anxiety disorders are linked (e.g., Muris, Meesters, Merckelbach, Sermon, Zwakhalen, 1998; Pettit et al., 2001). Muris and Merckelbach (1998) found that symptoms of anxiety in children were significantly associated with a mother's anxious and controlling rearing style. Treatment of youth anxiety involving parents provides evidence that parenting plays a significant role in alleviating their child's anxiety symptoms or anxiety disorders.

Minimal significant effects were found for the superiority of RLST conditions over the baseline condition only on youth self-ratings, not parent and clinician ratings. An explanation may be that just as a child's perception of mothers as controlling and anxious is correlated with higher symptoms of anxiety in children (Muris and Merckelbach, 1998), a child's perception of mothers as accepting and autonomy granting may be correlated with lower symptoms of anxiety in children.

In contrast to the hypothesis of the present dissertation, the youth in the RFST condition did not demonstrate significant improvement in anxiety compared to youth in the ICBT condition. These results demonstrate that the RFST condition showed improvement but not improvement that exceeded that of ICBT. This has demonstrated that a child's context, including parenting, has an effect on the development, maintenance and outcome of childhood psychopathology (Brent & Kolko, 1998). The notion of reinforcement, specifically positive reinforcement, is a concept that may need to be

performed multiple times in order for the child to turn the repeated behavior of facing his/her fear into a habit. Perhaps the one year follow up study will demonstrate significant differences between RFST and ICBT (i.e. lagged effects) if the parent continues to provide consistent reinforcement of the child's behavior immediately following the facing his/her fears task.

Contributions and Implications of the Present Study

The present dissertation study contributes to the field of developmental psychology on various levels. The present dissertation findings support clinical evidence that using Cognitive Behavioral Therapy (both individual and parent-involved) is efficacious when treating youth with anxiety disorders. The general absence of any significant differences between treatment conditions suggests the shared component that all three treatment conditions (ICBT, RLST, and RFST) hold may explain the majority of the positive treatment outcome. Specifically, these components entail using cognitive strategies and the concept of facing one's fears to reduce anxiety in youth (Silverman et al., 2008). These shared mechanisms across treatment conditions appear to be the primary drivers of anxiety reductions in youth.

The significant anxiety reduction effect found for youth in the RLST condition is consistent with the previously demonstrated associations between parental control and youth anxiety. A less psychologically controlling and more accepting relationship between the parent and child will lead to less anxiety in children. These results solidify past research that adding a parental acceptance component to treatment may lead to improvements the mother/child relationship, which may lessen anxiety in children. If replicated, the theoretical implications of the dissertation study direction may be aimed at

incorporating the parent in session; including the parent in treatment and focusing on parental acceptance is an efficacious way to treat child anxiety. However, due to the limited evidence found to support differential treatment effects, choosing a particular treatment condition should be based on patient preference.

The sample size in the present dissertation allowed adequate statistical power to detect a between-groups mean difference of small to medium size. Therefore, the present dissertation findings would have been able to detect a meaningful effect had it been present. However, no significant differences between treatment conditions (ICBT, RLST and RFST) were found to assert that one condition is superior to another.

Limitations and Future Directions

One of the limitations of this dissertation study is the inability to examine the follow-up effects of treatment outcome. As mentioned above, perhaps a reason the RFST condition was not found to be statistically superior to the ICBT condition at post is because parental reinforcement needs a lengthier period of time and repeated practice to produce more reductions in youth anxiety. Future research examining whether treatment effects change or stay the same at various follow-up times may explain possible maintenance effects and lagged effects of treatment conditions.

A second limitation of the present dissertation study is the inability to examine treatment specificity effects of the two parenting conditions. Future direction may be aimed at examining specificity of effects, i.e., whether adding these specific parenting components (relationship and reinforcement) has the expected specific effects on the targeted parenting skills. Each parenting component involves different therapeutic strategies, which may or may not be efficacious in treating anxious youth. Future

research also may be aimed at examining mediation effects, i.e., whether the effects of changes within each of the two conditions lead to significant change in treatment outcome of anxious youth.

A third limitation of the present dissertation study is the inability to examine potential treatment outcome predictors. To date, no clinically randomized research trial has demonstrated 100% recovery rate of anxiety in youth, even though strong evidence has been shown for the efficacy of CBT. Inconsistent findings have been shown when researching potential predictors of treatment outcome (e.g., Berman, Weems, Silverman, and Kurtines, 2000; Kazdin, 1995; Kendall, 1994; Kendall et al., 1997). Therefore, future research should be aimed at examining predictors of treatment outcome to improve the efficacy of CBT in anxious youth. A few predictor variables that could be examined are the client's expectations of treatment and the client-therapist relationship. Client's expectations may contribute to differences in treatment response (Borkovec & Nau, 1972). The Client Credibility Questionnaire (CCQ; Borkovec & Nau, 1972) is used to assess client expectancies; specifically, how logical the treatment seemed to them and how certain they were the treatment would be successful. The client's satisfaction with the treatment, as measured by the Youth Client Satisfaction Questionnaire may also contribute to differences in treatment response (Shapiro, Welker, & Jacobson, 1997).

Lastly, a limitation of the present dissertation study is the inability to examine treatment effectiveness according to the child's primary/targeted diagnosis. Perhaps different primary/targeted anxiety disorders require different treatment interventions. A child presenting with SAD, for example, may benefit more from a treatment intervention targeting the parent-child relationship. No research thus far has established this

correlation; therefore, future research should be aimed at examining whether treatment

outcome and treatment specificity differ by the child's presenting anxiety disorder.

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Figure 1

Conceptual Model of Treatment Outcome
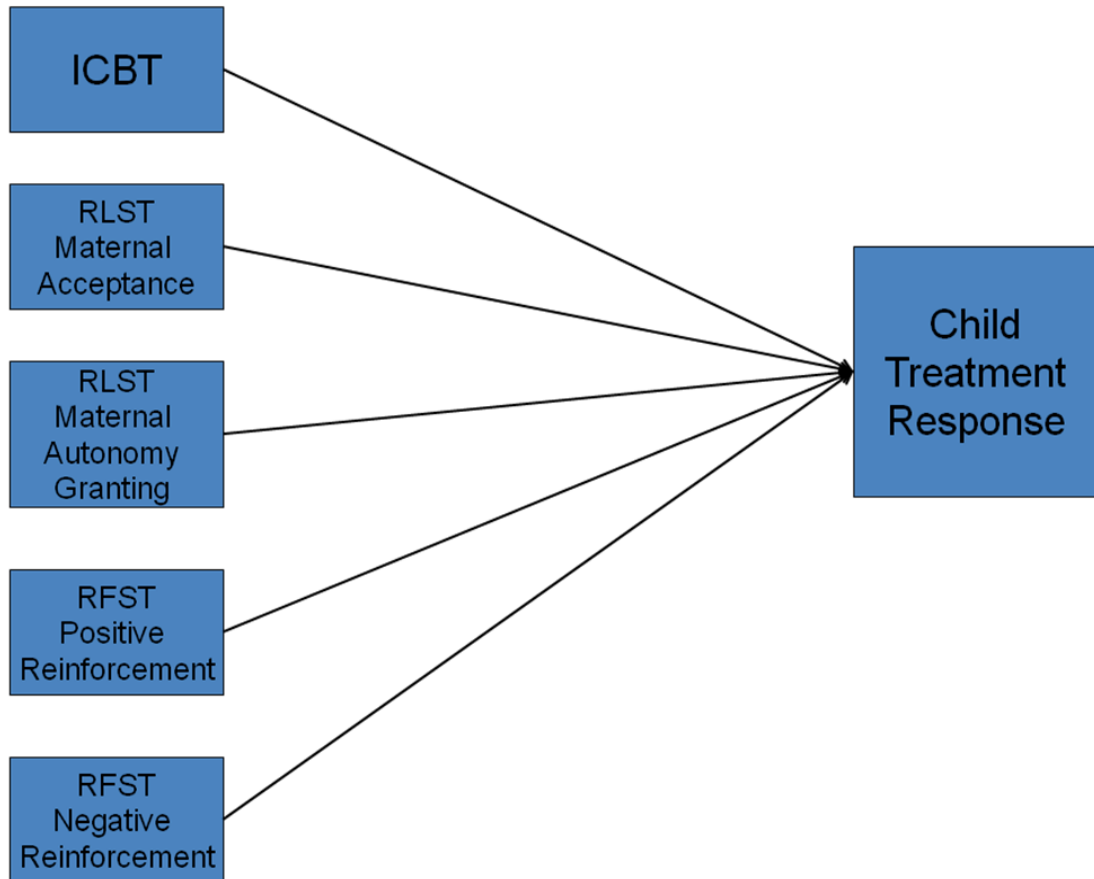
Table 1

Demographic and Diagnostic Information by Treatment Condition

Variable	ICBT (n= 87)				RLST (n= 53)				RFST (n=86)			
	n	%	M	SD	*n*	%	M	SD	*n*	%	M	SD
Age (years)			9.48	2.59			9.17	2.25			9.43	2.74
Gender (male)	57	85.7			27	51			47	54.7		
Target Diagnosis												
Separation Anxiety	17	19.5			16	30.2			24	27.9		
Social Phobia	13	14.9			14	26.4			24	27.9		
Specific Phobia	15	17.2			6	11.3			14	16.3		
Generalized Anxiety	22	25.3			11	20.8			18	20.9		
OCD	2	2.3			0	0			0	0		
PD w/Agoraphobia	4	4.6			3	5.7			2	2.3		
PD w/out Agoraphobia	1	1.1			0	0			0	0		
Selective Mutism	6	6.9			1	1.9			3	3.5		
Ethnic Background												
Euro-American	10	11.5			6	1.3			12	14		
Hispanic/Latino	73	83.9			44	83			68	79.1		
African-American	1	1.1			1	1.9			1	1.2		
Other/Not Reported	3	3.4			1	1.9			2	2.3		
Annual Income												
$0-$20,999	15	17.2			5	9.4			13	15.1		
$21,000-$40,999	14	16.1			7	13.2			21	24.4		
$41,000-$60,999	15	17.2			7	13.2			11	12.8		
$61,000-$80,999	11	12.6			12	22.6			12	14		
$81,000-$99,999	7	8			8	15.1			11	12.8		
$100,000-$149,999	16	18.4			5	9.4			13	15.1		
>$150,000	2	2.3			5	9.4			4	4.7		
Not Reported	3	3.4			2	3.8			1	1.2		
Marital Status												
Married	72	82.8			44	83			70	81.4		
Divorced	7	8			6	11.3			8	9.3		
Single	2	2.3			1	1.9			5	5.8		
Separated	0	0			0	0			2	2.3		
Remarried	0	0			0	0			1	1.2		
Unmarried living w/partner	2	2.3			2	3.8			0	0		
Widowed	1	1.1			0	0			0	0		
Not reported	2	2.3			0	0			0	0		

Table 1 (continued)

Demographic and Diagnostic Information by Treatment Condition

	ICBT (n= 87)				RLST (n= 53)				RFST (n=86)			
Variable	*n*	%	M	SD	*n*	%	M	SD	*n*	%	M	SD
Mother's Education												
Grade School	1	1.1			1	1.9			1	1.2		
Some High School	0	0			0	0			1	1.2		
High School	7	8			3	5.7			7	8.1		
GED	3	3.4			1	1.9			1	1.2		
Some college	11	12.6			8	15.1			7	8.1		
College	7	8			7	13.2			11	12.8		
Bachelor's	23	26.4			16	30.2			29	33.7		
Master's	20	23			8	15.1			11	12.8		
Ph.D.	3	3.4			0	0			1	1.2		
Technical Degree	7	8			6	11.3			9	10.5		
Advanced Degree	1	1.1			2	3.8			8	9.3		
Other/Not reported	1	1.1			1	1.9			0	0		
Father's Education												
Grade School									1	1.2		
Some High School	2	2.3			1	1.9			2	2.3		
High School	10	11.5			6	11.3			8	9.3		
GED	1	1.1							6	7		
Some college	16	18.4							8	9.3		
College	8	9.2			10	18.9			9	10.5		
Bachelor's	18	20.7			13	24.5			21	24.4		
Master's	12	13.8			4	7.5			10	11.2		
Ph.D.	1	1.1			0	0			1	1.2		
Technical Degree	7	8			4	7.5			7	8.1		
Advanced Degree	1	1.1			2	3.8			6	7.0		
Other/Not Reported	3	3.4			1	1.9			2	2.3		

Note. Mother's Education = Highest education mother attained. Father's Education = Highest education father attained.

Table 2

Mean and Standard Deviation for Youth Completed RCMAS

	Pre-treatment			Post-treatment	
	M	*SD*		*M*	*SD*
Treatment Outcome Measure					
RCMAS/C					
ICBT (n=87)	12.46	6.39		8.85	6.51
RFST (n=86)	10.74	6.07		5.77	5.38
RLST (n=53)	13.12	6.26		6.22	5.66

Table 3

Single Degree of Freedom Contrasts: Treatment Outcome, Child Completed RCMAS

	Parameter	SE	*t* value	*p* Value	95% CI
RCMAS/C					
ME: Time	15.07	3.24	4.64	<.001	8.71 to 21.42
ME: Treatment for RLST-ICBT	-1.09	.98	-1.11	.27	-3.01 to .84
ME: Treatment for RFST-ICBT	-2.56	.84	-3.05	<.05	-4.20 to -.92
ME: Treatment for RFST-RLST	-1.47	.94	-1.57	.12	-.84 to 3.01
SME: Pre-Post for ICBT	19.83	4.86	4.08	<.001	10.31 to 29.35
SME: Pre-Post for RLST	6.54	6.85	.95	<.001	-6.89 to 19.96
SME: Pre-Post for RFST	12.09	5.18	2.33	<.001	1.94 to 22.25
IC: (pre-post) at ICBT – (pre-post) at RLST	3.21	1.14	2.8	<.01	.97 to 5.44
IC: (pre-post) at ICBT – (pre-post) at RFST`	.97	.92	1.05	.29	.84 to 2.78
IC: (pre-post) at RLST – (pre-post) at RFST	-2.24	1.11	-2.02	.04	-4.41 to -.06

Note: ME = Main effects. SME = Simple Main Effects. IC= Interaction contrast; RCMAS = Revised Children's Manifest Anxiety Scale. ICBT = Individual cognitive behavior treatment. RLST = Parent relationship training. RFST = Reinforcement Skills Training.

*Reader should note that minor differences are found in the parameters provided in the table from those in the results section because FIML was invoked for the former analyses.

Table 4

Mean and Standard Deviation for Youth Completed MASC

	Pre-treatment		Post-treatment	
	M	*SD*	*M*	*SD*
Treatment Outcome Measure				
MASC				
ICBT (n=87)	51.84	16.86	45.05	20.20
RFST (n=86)	52.17	17.47	41.61	16.68
RLST (n=53)	56.92	17.59	37.18	15.44

Table 5

Single Degree of Freedom Contrasts: Treatment Outcome, Child Completed MASC

	Parameter	SE	*t* value	*p* Value	95% CI
MASC					
ME: Time	87.25	22.20	3.93	<.001	43.73 to 130.76
ME: Treatment for ICBT-RLST	-2.37	2.67	-.89	<.001	-7.61 to 2.87
ME: Treatment for ICBT-RFST	-1.92	2.33	-.82	.41	-6.48 to 2.64
ME: Treatment for RLST-RFST	.45	2.59	.18	4.52	-4.62 to 5.53
SME: Pre-Post for ICBT	120.39	34.87	3.45	<.001	52.04 to 188.74
SME: Pre-Post for RLST	42.70	51.87	.82	<.001	-58.97 to 144.36
SME: Pre-Post for RFST	80.03	34.57	2.32	<.005	12.28 to 147.79
IC: (pre-post) at ICBT – (pre-post) at RLST	11.02	3.44	3.21	<.05	4.28 to 17.75
IC: (pre-post) at ICBT – (pre-post) at RFST`	3.06	3.13	.98	.33	-3.08 to 9.20
IC: (pre-post) at RLST – (pre-post) at RFST	-7.96	3.33	-2.39	<.05	-14.49 to -1.43

Note: ME = Main effects. SME = Simple Main Effects. IC= Interaction Contrasts. MASC= Multidimensional Anxiety Scale for children. ICBT = Individual cognitive behavior treatment. RLST = Parent relationship training. RFST = Reinforcement Skills Training.

Table 6

Means and Standard Deviations for Parent Completed RCMAS

	Pre-treatment		Post-treatment	
	M	*SD*	*M*	*SD*
Treatment Outcome Measure				
RCMAS/P				
ICBT (n= 87)	14.03	6.01	9.21	6.04
RFST (n=86)	12.28	5.79	7.41	5.22
RLST (n=53)	13.15	5.44	7.65	5.22

Table 7

Single Degree of Freedom Contrasts: Treatment Outcome, Parent Completed RCMAS

	Parameter	SE	*t* value	*p* Value	95% CI
RCMAS/P					
ME: Time	12.04	2.85	4.23	<.001	6.46 to 17.62
ME: Treatment for ICBT-RLST	-.87	.87	-1.01	.31	-2.57 to .83
ME: Treatment for ICBT-RFST	-1.84	.80	-2.30	.02**	-3.42 to -.27
ME: Treatment for RLST-RFST	-.97	.85	-1.15	.25	-2.63 to .69
SME: Pre-Post for ICBT	14.36	4.73	3.04	<.001	5.09 to 23.62
SME: Pre-Post for RLST	1.46	5.40	.27	<.001	-9.11 to 12.03
SME: Pre-Post for RFST	14.21	4.26	3.34	<.001	5.86 to 22.57
IC: (pre-post) at ICBT – (pre-post) at RLST	1.60	1.06	1.52	.13	-.47 to 3.67
IC: (pre-post) at ICBT – (pre-post) at RFST`	-.20	.83	-.24	.81	-1.82 to 1.42
IC: (pre-post) at RLST – (pre-post) at RFST	-1.81	.99	-1.83	.07	-3.74 to .13

Note: ME = Main effects. SME = Simple Main Effects. RCMAS = Revised Children's Manifest Anxiety Scale. ICBT = Individual cognitive behavior treatment. RLST = Parent relationship training. RFST = Reinforcement Skills Training. ** = non-significant after Holm modified Bonferroni.

VITA

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EDUCATION

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PUBLICATIONS

Williams, S., Dahan, J., Silverman, W.K., Pettit, J.W. (2013). Heterogeneous classes of
    co-occurring externalizing symptoms in a sample of youth referred for anxiety
    disorders. *Journal of Anxiety Disorders*, 27, 340-346.

Kasler, J., Dahan, J., Elias, M.J. (2008). The relationship between sense of hope, family
    support and post-traumatic stress disorder among children: The case of young
    victims of rocket attacks in Israel. *Vulnerable Children and Youth Studies*, 3(3),
    182-191.

CONFERENCE PRESENTATIONS/POSTERS

Marin, C.E., Rey, Y., Motoca, L., Pienkowski, M., Dahan, J., Hernandez, I., del Busto, C.
    Silverman, W.K. (March, 2014). Directionality of Peer Influence on Childhood
    Anxiety Treatment Outcome. Submitted for poster presentation at the Anxiety and
    Depression Association of America. Chicago, Illinois.

del Busto, C.T., Hill, R., Rey, Y., Pienkowski, M., Dahan, J., Pettit, J. & Silverman, W.K.
    (November, 2013). Anxiety sensitivity and suicidal ideation in a clinic referred
    sample of anxious youth. Submitted for poster presentation at the Association for
    Behavioral and Cognitive Therapies Convention. Nashville, Tennessee.

Motoca, L. M., Hernandez, I., Pienkowski, M., Dahan, J., & Silverman, W. K. (April,
    2012). Using Behavior Observation Tasks to Assess Parenting Behaviors in a
    Clinic Referred Sample of Anxious Children and Adolescents. In J. Fox (Chair),
    Early Intervention of Internalizing Disorders: The Current State of Family-Based
    Approaches. Symposium conducted at the annual convention of the Anxiety

Disorders Association of America (ADAA), Arlington, VA.

Dahan, J. (April, 2007). *How do factors such as social support and sense of hope serve as a protective shield against Post Traumatic Stress Disorder symptoms in Israeli Children ages 9-12 after the Israel-Lebanon war of 2006?* Aresty Research Symposium, New Jersey.

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