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## Cognitive-Behavioral Treatment of Childhood Anxiety: Examining a Parent Consultation Model

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COGNITIVE-BEHAVIORAL TREATMENT OF CHILDHOOD ANXIETY:

EXAMINING A PARENT CONSULTATION MODEL

BY ALLISON M. SMITH

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## **Abstract**

Strong evidence supports the use of cognitive-behavioral therapy (CBT) for the treatment of clinical anxiety in children. As parents may play an etiological role in the development, progression, and maintenance of childhood anxiety, researchers have noted that including parents in child treatment confers some benefit upon child outcomes. Conducting CBT solely with the parents of anxious children may be equally beneficial and potentially more cost-effective than treatment modalities with only the child. The present study examined the efficacy of a ten-session parent-only CBT intervention delivered individually to parents of anxious children (ICBT) in comparison to a ten week wait-list control condition (WL). Conditions were compared at three time-points, with regard to the child's anxiety symptoms (by child, parent, and teacher reports) and diagnostic status (by structured interview with parents), as well as parents' self-reported anxiety, protective parenting behaviors, parenting satisfaction, and parenting self-efficacy. The ICBT intervention was more effective than the WL condition in reducing total number of anxiety disorder diagnoses, the total parent-rated interference of those diagnoses, and the total clinician-rated severity of those diagnoses (via structured diagnostic interview), as well as reducing maternal protective parenting behaviors. These changes were maintained at 3-month follow-up in the ICBT group. There were no significant differences between conditions in father-report of any variables, in child self-report or teacher-report of child anxiety, or mother-report on maternal anxiety, satisfaction, or self-efficacy. These findings suggest that treatment with the parents of anxious children can be an effective treatment modality. They also suggest that the influence of parenting factors such as

protective behaviors should be a fundamental consideration for practitioners when planning childhood anxiety treatment in any modality. Future research is warranted with larger, more diverse samples and long-term follow-up in order to elucidate the mechanisms through which individual CBT with the parents of anxious children results in symptom reduction for the child and whether these gains are maintained over time.

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## **Cognitive-Behavioral Treatment of Childhood Anxiety: Examining a Parent Consultation Model**

It is widely purported that anxiety is the most common disorder of childhood and adolescence, more common than depressive disorders and disorders of behavior (Cartwright-Hatton, McNicol, & Doubleday, 2006; Kessler et al., 2005). However, epidemiological studies vary substantially in their reported prevalence rates, particularly with regard to pre-adolescent youth. According to Cartwright-Hatton and colleagues (2006), the prevalence of anxiety disorders in pre-adolescents may range between 2.6% and 41.2%. While some fears and anxiety can be adaptive and developmentally appropriate, clinical levels of fear and anxiety can engender significant distress in children and their families (Ezpeleta, Keeler, Alaatin, Costello, & Angold, 2001), and are likely to interfere with academic and social functioning.

Numerous studies, meta-analyses, and reviews have examined gender differences in the prevalence of anxiety disorders in children. Findings are inconsistent; in some population studies, females demonstrate almost twice the risk of males for childhood anxiety disorders (e.g., Costello, Mustillo, Erkanli, Keeler, & Angold, 2003), while other population studies have failed to demonstrate significant gender differences in prevalence of anxiety disorders (e.g., Canino et al., 2004). Among treatment-seeking anxious youth in particular, childhood anxiety disorder presentation appears to be consistent across gender and race (Kendall, et al., 2010). Further, childhood anxiety does not appear to be consistently related to other demographic variables, such as family size, parents' marital status, education level, race or ethnicity (e.g., Canino et al., 2004). Some data indicates a small negative

association with socioeconomic status, although such results have not been consistent (e.g., Xue, Leventhal, Brooks-Gunn, & Earls, 2005).

Childhood anxiety disorders often do not present as a single disorder. Rather, they overlap significantly in symptoms and are highly comorbid among themselves (Kendall et al., 2010), with 40-75% of anxious children meeting criteria for more than one anxiety disorder (Rapee, Schneiring, & Hudson, 2009; Seligman & Ollendick, 2011). Childhood anxiety disorders are also highly comorbid with other internalizing disorders, such as depression (Angold, Costello, & Erkanli, 1999; Seligman & Ollendick, 1998), and moderately comorbid with externalizing disorders (Russo & Beidel, 1994), which adds to an already complex diagnostic profile. Therefore, the treatment of childhood anxiety disorders must necessarily take into account the presence of comorbid conditions.

Moreover, childhood anxiety demonstrates continuity. That is, children who meet criteria for an anxiety disorder at one time are at moderate to high risk to meet criteria for an anxiety disorder later in life (Rapee et al., 2009), though not necessarily the same disorder (Kendall et al., 2010). Notably, anxiety disorders generally do not remit if left untreated (Costello & Angold, 1995). In general, although as many as 40% of youth with mental health diagnoses may be accessing services across sectors, only about one in five receives care from a specialty mental health provider (Burns et al., 1995). Further, despite strong support in favor of evidenced-based practice, few individuals accessing services receive empirically supported treatments (ESTs; U.S. Department of Health and Human Services, U.S. Department of Education, & U.S. Department of Justice, 2000).

Considerable evidence has supported the use of cognitive-behavioral therapy (CBT) for the treatment of childhood anxiety disorders (Silverman, Pina, & Viswesvaran, 2008). CBT is a collaborative, problem-focused approach that seeks to address the underlying and maintaining factors of a child's distress (Kendall, 2011a). Numerous randomized clinical trials have demonstrated its efficacy (e.g., Kendall, et al., 1997; Kendall, Hudson, Gosch, Flannery-Schroeder, & Suveg, 2008). Taken together, these studies provide the empirical support to identify CBT as an evidence-based treatment for childhood anxiety (Ollendick & King, 2011). Based on Chambless and Hollon's (1998) established standards, CBT for children with anxiety disorders is deemed "probably efficacious" and is recommended as the first-line treatment of choice (Ollendick et al. 2006). Comorbidity does not seem to predict treatment outcome, which suggests that CBT for anxiety disorders can be effective regardless of the presence of comorbid conditions (Ollendick, Jarrett, Grills-Taquechel, Hovey, & Wolff, 2008). Moreover, CBT for childhood anxiety disorders appears to be efficacious across ethnic and cultural groups as well (e.g., Ginsburg & Drake, 2002; Pina, Silverman, Fuentes, Kurtines, & Weems, 2003).

Most available CBT programs for childhood anxiety specifically target the anxious child. For example, the *Coping Cat* program (Kendall & Hedtke, 2006, 3<sup>rd</sup> edition) is an empirically-validated CBT program for anxious children, ages 7-17. The primarily child-focused sessions employed by programs such as the *Coping Cat* are seen as the first component of the learning process, wherein skills are introduced and challenges are problem-solved. The next component, at-home assignments, provide the repeated practice necessary for complete skill acquisition and refinement.

Given the importance of the context in which the anxious behavior occurs in behavioral theory, it necessarily follows that CBT for child anxiety often introduces new skills for the anxious child, as well as for parents, teachers, and even siblings or peers (Seligman & Ollendick, 2011), all of whom have the potential to become major agents of change. As Friedberg and McClure (2002) state, involving family members and teachers is crucial to treatment success because the environments fostered by these individuals "can either reinforce or extinguish adaptive coping skills" (p. 8).

Furthermore, a growing body of literature suggests that parents play an important etiological role in the development and maintenance of child anxiety, through both biological and environmental mechanisms (Ginsburg & Schlossberg, 2002; Hudson & Rapee, 2004). Children of anxious parents are believed to be at heightened risk for developing childhood anxiety disorders (Micco et al., 2009). Family aggregation studies indicate that 1) among anxious parents, up to 60% of their children meet criteria for an anxiety disorder and 2) among children with anxiety disorders, up to 80% of their parents have an anxiety disorder (Ginsburg & Schlossberg, 2002).

Parental anxiety may also place offspring at an increased risk for an anxiety disorder through environmental mechanisms. Compared to non-anxious parents, parents who are experiencing anxiety demonstrate increased cognitive biases towards threat, increased perceptions of danger, and elevated sensitivity to their child's distress (Hudson & Rapee, 2004), as well as increased apprehension when watching their child engage in routine activities (Turner, Beidel, Roberson-Nay, & Tervo, 2003). Thus, as a function of their own anxiety, anxious parents may place limits on their child's

experiences, restricting the child's opportunities to face the developmentally appropriate, yet challenging circumstances that will allow the child to develop adaptive coping skills (Murray, Creswell, & Cooper, 2009). Anxious parents may also view anxiety as powerful and something to be avoided, seemingly unable to tolerate anxiety internally or in their child (Suveg et al., 2006).

Further, parental anxiety may enhance child anxiety through modeling and information transfer (Turner et al., 2003). Through vicarious acquisition processes, children learn to fear what they observe their parents fearing. Murray and colleagues (2009) reviewed several studies in which parental modeling of anxious behavior elicited fearful and avoidant responses to the same stimuli from the child, even in infancy. Anxious parents may also model maladaptive coping strategies for their children, if they lack the skills to effectively cope with their own anxiety. Additionally, all parents consciously and unconsciously transmit their evaluative cognitions to their child, through information transfer of verbalizations and behaviors. In this constant communication about the environment, anxious parents may transfer their own perceptions of threat (Hadwin, Gardner, & Perez-Olivas, 2006).

Numerous theoretical models and accumulating research findings also support relationships between specific parenting behaviors and the development, maintenance, and amelioration of childhood anxiety (McLeod, Wood, & Avny, 2011). In particular, parental overprotection and over-involvement have been found to be related to childhood anxiety (Ginsburg & Schlossberg, 2002; Wood, McLeod, Sigman, Hwang, & Chu, 2003; Gallagher & Cartwright-Hatton, 2008). However, additional factors

such as parental psychopathology, rejecting or negative familial communication, and general family dysfunction have been identified as well.

Protective parenting behaviors in particular are often elicited by and in response to the child's anxious behavior. For instance, parents might allow their child to avoid anxiety-provoking situations (e.g., staying home from school), rescue their child when they demonstrate anxiety (e.g., relieving the child of responsibilities, performing tasks for the child), or provide continuous reassurance. Such protective behaviors can interfere with the child learning adaptive coping strategies to deal with anxiety (Simpson, Suarez, & Connolly, 2012).

Many parents view protective behaviors as beneficial to their child and part of their parenting responsibility (Suveg et al., 2006). In reality, such behaviors often reduce the child's sense of autonomy, increase perceptions of having no control over stressors, and in turn, maintain the child's anxiety (Simpson et al., 2012). While protective behaviors can occur in both anxious and non-anxious parents, they are particularly likely to arise in parents who are prone to anxiety themselves (Murray et al., 2009). In fact, Waters, Zimmer-Gembeck, and Farrell (2012) found that maternal self-reported anxiety and children's perceptions of their mother as having an "anxious/overprotective" child-rearing style were both associated with higher levels of child anxiety in a sample of children ages 7-12. Increased perceptions of danger may deter anxious parents from granting their child autonomy. Few studies have examined gender and racial/ethnic differences in protective parenting behaviors, especially in samples of anxious children. However, it is possible that gender roles and cultural

backgrounds may play a role in the development and function of anxiety-eliciting parent behaviors.

Additional parenting processes that may influence both protective parenting behaviors and child anxiety include parenting self-efficacy and parenting satisfaction. Parenting self-efficacy refers to a parent's perceived capacity to provide an adaptive, stimulating, and nurturing environment for their child. Decreased parental self-efficacy is correlated with defensive and controlling parent behavior (Donovan, Leavitt, & Walsh, 1990) and passive coping styles (Wells-Parker, Miller, & Topping, 1990). On the other hand, increased parental self-efficacy is related to active coping styles (Wells-Parker et al., 1990) and may promote positive outcomes for anxious children. Eisen, Raleigh, and Neuhoff (2008) suggested that enhanced parental self-efficacy and parental satisfaction leads to more effective parenting (i.e., fewer protective parenting behaviors), and ultimately, reduced childhood anxiety. Indeed, they found that when parents participated in a child anxiety education and training program, only children of parents experiencing clinically significant improvement in self-efficacy and satisfaction achieved "high end-state functioning" (Eisen et al., 2008).

Overall, it is important to note that the role of the parents in child's anxiety is likely neither causal nor unidirectional (Kendall & Ollendick, 2004). While there are a number of pathways that contribute to the development and maintenance of childhood anxiety, the literature consistently indicates that a synergy exists between anxious children and their parents. Child risk factors (e.g., genetic vulnerability, temperament) may interact with parental anxiety and/or maladaptive parenting behaviors and



attitudes, resulting in an increased risk for child anxiety (Murray et al., 2009). While this knowledge has yet to be fully translated into efficacious treatment, the past decade has seen increased attention placed upon parental involvement in childhood anxiety treatment. Involving parents in the therapeutic process is highly encouraged in nearly all treatment modalities when working with children who exhibit internalizing disorders (Kendall, 2011b). Recent studies have examined whether treatments that target anxious children could be enhanced by increased parental involvement in the treatment process. Doing so may allow parents to learn new, adaptive ways of thinking and behaving that would impact the child's anxiety (Breinholst, Esbjørn, Reinholdt-Dunne, & Stallard, 2012). Given that parental factors appear to contribute to the development and maintenance of anxiety in children, therapeutically modifying such factors may also facilitate treatment gains (Barmish & Kendall, 2005).

Kendall (2011a) discusses three ways in which parents may be involved in treatment programs for anxious youth. As consultants, parents primarily provide the therapist with extensive information regarding the nature of the child's anxiety. As collaborators, parents facilitate the implementation of treatment components. As co-clients, parents are involved in the treatment to the extent that they are exhibiting behaviors believed to be contributing to or maintaining the child's anxiety. Currently, most CBT programs include the anxious child's parents to some degree, but the nature of such involvement varies extensively (Breinholst et al., 2012). In some programs, parents receive brief information and directed readings; in others, they are more actively involved. The content addressed with parents differs as well. More intensive parent programs typically engage parents as treatment collaborators, through behavior

management training and teaching strategies for cultivating courage and independence in their child (e.g., Rapee, Wignall, Hudson, & Schniering, 2000). Other programs target parents as co-clients in that they address parents' own anxiety (e.g., Cobham, Dadds, & Spence, 1998). The context for parent involvement in treatment also varies considerably across programs (i.e., group vs. individual format, conjoint vs. concurrent therapy sessions with the child).

The majority of recent studies compare child CBT to child CBT with additional parent sessions (often termed “family CBT”). Again, because of the variability in this family component, comparisons across studies are difficult. Existing reviews (e.g., Creswell & Cartwright-Hatton, 2007) tentatively suggest that including the family in child CBT for anxiety is superior to no treatment and equal to or better than child-only CBT. Further, while including parents appears to have a beneficial effect on child diagnostic outcomes, statistical significance is often lacking due to small sample sizes (Rapee, Schniering, & Hudson, 2009). A meta-analysis conducted by Deveney, Baillie, Hudson, and Rapee (2010) demonstrated a clear benefit for family-based CBT when assessed by changes in children’s diagnostic status made by the clinician. Still, in a randomized controlled trial (RCT), family-based CBT and child CBT were equally superior to an active control in reducing the presence of the principal anxiety disorder, but child CBT outperformed family-based CBT on teacher reports of child anxiety (Kendall et al., 2008).

There are also studies that report improvement in family-based CBT and child CBT based on questionnaires. For example, Bodden et al. (2008) reported similar improvement for child CBT and family-based CBT compared to wait-list controls,

using both diagnostic status and questionnaires. Another study reported a faster decline in parent report of child anxiety symptomatology following family-based CBT in comparison to child CBT (Wood, Piacentini, Southam-Gerow, Chu, & Sigman, 2006). In Kendall and colleagues' RCT (2008), family-based CBT outperformed child CBT when both parents had an anxiety disorder, using both assessment methods. Thus, the evidence regarding the benefits of directly involving parents in the treatment of childhood anxiety disorders remains somewhat equivocal (Waters, Ford, Wharton, & Cobham, 2009), perhaps due in part to the variability in parent involvement.

There also appears to be a dearth in the knowledge base regarding the specific processes of change when parents are involved in the treatment of child anxiety. It is well-established that parental anxiety works against optimal treatment outcomes for the child (Creswell & Cartwright-Hatton, 2007). However, whether it is parents' own anxiety or specific parenting behaviors that should be targeted in treatment has yet to be determined. For example, Cobham and colleagues (1998) did not find a post-treatment reduction in parental anxiety, despite their specific focus on the management of parental anxiety. At the same time, their parental anxiety management component provided a significant advantage in *child* anxiety outcome. In another family-based CBT study, Bögels and Sigueland (2006) targeted anxiety-enhancing parenting and poor family functioning. As a result, they found a tertiary benefit: a decrease in parental anxiety. Additionally, following a parent-child preventive intervention for children between ages 3-5, Fox et al. (2012) reported reduced child and parental anxiety, as well as increased attitudes reflecting enhanced parental confidence in their children's ability to cope with anxiety. Based on these mixed targets and findings, it

appears that researchers are still defining how best to involve parents and which parenting factors should be targeted to improve outcomes for anxious children.

Some findings (e.g., Mendlowitz et al., 1999; Heyne et al., 2002) suggest that conducting sessions solely with the parents of anxious children may be equally beneficial to treatment that involves the child. Delivering CBT exclusively to the parents of anxious children may reduce the costs (e.g., time and resources) associated with family CBT and child-only CBT. Thus, parent-only CBT may increase accessibility to potentially efficacious CBT for anxious children. Further, parent-only treatment may prove particularly beneficial for the parents of pre-adolescent anxious youth. Younger children are often less able to effectively participate in and ultimately benefit from individual CBT than adolescents, due to differences in abilities to engage in the requisite tasks associated with CBT (Doherr, Reynolds, Wetherly, & Evans, 2005).

Currently, most parent-only treatments follow a transfer of control model (Silverman & Kurtines, 1996), in combination with to the management of the parent anxiety (Walker, 2012). The transfer of control model stipulates that effective reduction in childhood anxiety involves a gradual transfer of knowledge, skills, and strategies for the management of anxiety, wherein the therapist transfers control to the parents, concordantly teaching the parents to transfer control to their children. By learning how to transfer control to the child, parents encourage the child's natural development of autonomy and guard against overprotective tendencies. This enables the child to independently implement their own coping skills in response to anxiety (Kendall, 2011b). Such anxiety-reducing CBT strategies can be applied via parent

consultation model and tailored to the child's age, developmental level, cultural background, and specific difficulties. Khanna and Kendall (2009) found that, when examining family CBT outcomes, both transfer-of-control techniques and parent anxiety management techniques significantly contributed to improvement on clinician and parent ratings of child global functioning but not on measures of child anxiety. They also reported that communication skills training and contingency management training alone did not significant contribute to improvement overall. To our knowledge, no studies to date have examined individual components in this manner with parent-only treatment programs.

Relatively few studies have explored the efficacy of parent-only CBT for childhood anxiety. Doing so would allow researchers to draw more specific conclusions about parental contributions to the effective treatment of childhood anxiety. Existing findings do point toward the efficacy of parent-only treatment. One study revealed equal improvement among school-refusing children in parent and teacher CBT conditions, regardless of whether the child received CBT. Children's reported fears also decreased most significantly in the parent CBT condition (Heyne et al., 2002). Another study showed equivalent reductions in children's anxiety symptomatology for those receiving family CBT, child CBT, and parent CBT group interventions, when compared to a wait-list control condition (Mendlowitz et al., 1999). Similarly, Thienemann, Moore, and Tompkins (2006) showed that a parent-only group-based CBT intervention for children with anxiety disorders produced significant reductions in the number of diagnoses post-treatment. More recently, Waters and colleagues (2009) found that both the parent-only and parent-child group

treatment conditions were superior to the wait-list condition, with 55.3% of children in the parent-only condition and 54.8% of children in the parent-child condition no longer meeting criteria for their principal diagnosis post-treatment. In this study, treatment gains were maintained at six-month and 1-year follow-up assessments. Rapee, Abbott, and Lyneham (2006) did not find significant differences between family CBT (i.e., 10 sessions of parents and children attending parallel groups) and a bibliotherapy condition in which parents were provided with an anxiety management book with five accompanying parent sessions. Lastly, Cartwright-Hatton, McNally, and White (2005a) showed that parent-only CBT for anxious children significantly reduced internalizing symptoms at post-treatment. These effects were maintained at a three-month follow-up.

Although these results are promising, these studies and others examining parent-only CBT have methodological limitations. For instance, some studies have not included comparison treatment conditions or waitlist control groups (e.g., Thienemann et al., 2006; Cartwright-Hatton et al., 2005a; Bögels & Sigueland, 2006). Some studies focus exclusively on young children (e.g., Cartwright-Hatton et al., 2005a; Waters et al., 2009), which limits generalization of findings to that age group. Additionally, follow-up results are not always reported, so it is unclear if therapeutic gains are maintained over time. Also, though not necessarily a limitation, the majority of studies examine group-based parent interventions, rather than individual work with parents/parent dyads. While there are merits and drawbacks to each modality, it is likely that each would differentially impact child and parent functioning. Last, and perhaps most important, many studies examining the impact of parent involvement in

treatment of childhood anxiety, regardless of modality or format, have not systemically targeted (in both intervention and its evaluation) those parental behaviors found to be associated with childhood anxiety (Breinholst et al., 2012). In fact, few studies, if any, have targeted and measured changes to specific parental cognitions or behaviors, despite the fact that these variables are often theoretically described as crucial in the reduction of anxiety in children.

The present study aimed to address these limitations by examining the efficacy of a ten-session parent-only CBT intervention delivered individually to parents of anxious children in comparison to a ten week wait-list control condition. The treatment and control conditions were compared in terms of the child's anxiety symptoms (by child-, parent-, and teacher-report on questionnaires), the child's diagnostic status, as well as parents' self-reported anxiety, protective parenting behaviors, parental self-efficacy, and parental satisfaction.

The parent CBT intervention examined here is a ten-module program for the treatment of anxiety disorders in children, exclusively through individual consultation with the parents of the anxious child. The intervention integrates effective behavioral principles with modification of the cognitions associated with both child and parent anxiety. The aims of the intervention are three-fold: (1) to provide education about the nature of anxiety and its development, (2) to teach parents techniques for responding adaptively to their child's anxiety, and (3) to demonstrate effective cognitive-behavioral techniques for parents and children to recognize and manage anxiety. In this way, the intervention attempts to engage parents as consultants, collaborators, *and* co-clients the treatment of their child's anxiety (Kendall, 2011a).

Previous studies indicate that CBT for anxious youth produces medium to large treatment effect sizes when compared with a wait-list control condition (as cited in Barmish & Kendall, 2005). Similarly, it was hypothesized that in this study, child anxiety symptom severity scores as reported by parents, teachers, and the child themselves, the number of child anxiety disorder diagnoses, parent interference ratings for child anxiety disorder diagnoses, and clinician severity ratings for child anxiety disorder diagnoses would be significantly reduced post-treatment for those in the intervention condition, but not for those in the waitlist condition. It was also hypothesized that parents in the intervention condition, but not those in the waitlist condition, would show significant decreases in self-reported anxiety and protective parenting behaviors, as well as significant increases in parenting self-efficacy and parenting satisfaction. Lastly, it is hypothesized that these changes would remain at three-month follow-up in the intervention condition, as treatment effects may continue to accrue after the intervention.



## Method

### Participants

Parents of anxious children, referred from multiple community resources, pediatricians, and schools, served as participants. Participation in the study was equally open all to genders, races, ethnicities, and sexual orientations within the referred, treatment-seeking sample. The parents of 35 anxious children provided consent to participate in the study. Of these, two consented families were referred for more appropriate clinical treatment, based the information they provided during the initial structured diagnostic interview regarding the child's symptoms. Additionally, two more consented families withdrew from the study shortly after the diagnostic interview to pursue child treatment elsewhere, prior to group assignment.

Demographic and diagnostic characteristics of the participants are presented by condition in Table 1. The final sample consisted of 31 families: 33 mothers/female primary caregivers, 20 fathers/male primary caregivers, and 31 children. Although we targeted additional recruitment efforts in areas of Rhode Island known to be ethnically diverse, the whole of the sample identified as White. One family identified as Hispanic/Latino. Adult participants ranged in age from 21 to 50 years for mothers/female primary caregivers ( $M = 42.04$ ,  $SD = 6.03$ ) and from 35 to 66 years for fathers ( $M = 45.07$ ,  $SD = 6.07$ ). The majority of parents/parent dyads ( $n=29$ ) reported being married/in a domestic partnership, while two dyads reported being divorced and not re-married. Of the twenty parents/parent dyads who reported, annual household incomes ranged from \$55,000 to \$300,000

( $M = \$128,400$ ,  $SD = \$77,730$ ), with half of these reporting incomes between \$55,000-100,000 and the other half between \$116,000-300,000.

The children of the 31 families ranged in age from 7-13 years ( $M = 9.80$ ,  $SD = 1.78$ ) and were 61.3 percent male ( $n=19$ ). In order for parents to participate in the study, their children met DSM-IV diagnostic criteria for at least one of the following childhood anxiety disorders as determined by structured diagnostic interview:

Separation Anxiety Disorder, Social Anxiety Disorder, Specific Phobia, and/or Generalized Anxiety Disorder.

At baseline, 23 children received diagnoses of Specific Phobia, six received diagnoses of Social Anxiety Disorder, 26 received diagnoses of Generalized Anxiety Disorder, and 18 received diagnoses of Separation Anxiety Disorder. Of the children diagnosed with Specific Phobia(s), six had Animal phobias, 13 had Natural Environment phobias (e.g., darkness, thunderstorms), ten had Blood-Injection-Injury phobias, four had Situational phobias (e.g., airplanes, elevators), and 11 had Other phobias (e.g., clowns, costumed characters). In addition to the anxiety disorders enumerated above, one child met diagnostic criteria for Panic Disorder and one child met diagnostic criteria for Obsessive-Compulsive Disorder, in addition to their primary/inclusionary diagnosis. Nearly all children ( $n=28$ , 90.3%) met diagnostic criteria for more than one anxiety disorder. In this sample, Generalized Anxiety Disorder was the most common principal diagnosis ( $n= 14$ ), followed by Specific Phobia ( $n=11$ ), then Separation Anxiety Disorder ( $n=3$ ) and Social Anxiety Disorder ( $n=3$ ).

As noted earlier, cases in which the child's primary diagnosis was not an anxiety disorder ( $n=2$ ) were referred for more appropriate treatment, prior to randomized group assignment. Additional exclusionary criteria for participation in the study included a diagnosed comorbid pervasive developmental disorder (e.g., Autism Spectrum Disorder), traumatic brain injury or organic brain damage, or symptoms of psychosis (e.g., hallucinations, delusions). Notably, comorbid mood or externalizing disorders did not serve as exclusionary criteria given the high comorbidity between anxiety and such disorders (Craske & Waters, 2005) and the finding that comorbidity with non-anxiety disorders does not predict treatment outcomes (Ollendick et al., 2008). Seven children whose parents participated in the study met diagnostic criteria for Attention Deficit-Hyperactivity Disorder at baseline. One child met diagnostic criteria for Oppositional Defiant Disorder and two children had subclinical symptoms of Dysthymia at baseline. No children met diagnostic criteria for Major Depressive Disorder or for Conduct Disorder at any point during the study. Clinicians also provided treatment recommendations (e.g., bibliotherapy, behavioral management strategies, and supplemental therapeutic services) regarding comorbid externalizing and mood disorders where appropriate. Lastly, parents of children who were engaged in concurrent psychological and/or pharmacological treatment for anxiety disorders were also excluded, so as not to not to confound outcomes.

## **Measures**

Parents, their children, teachers, and diagnosticians completed a variety of instruments to provide a multi-method assessment of child and parent functioning. Structured diagnostic interviews, child self-report measures, parent self-report

measures, parent ratings of child functioning, and teacher ratings of child functioning were completed at baseline, post-treatment, and three-month follow-up in the immediate treatment condition, and at baseline, post-waitlist, and post-treatment in the delayed treatment (waitlist) condition (described in detail in the procedures section).

**Structured Diagnostic Interview.** Trained diagnosticians, blind to treatment condition and time-point (to the extent possible), interviewed parents using the Anxiety Disorder Interview Schedule – Child Version (ADIS-IV-C; Silverman & Albano, 1996) to assess child functioning. While the ADIS is geared toward the diagnosis of childhood anxiety disorders, the inclusion of other disorders (e.g., mood disorders, externalizing disorders) allowed the diagnostician to assess potentially comorbid conditions within a single interview. The ADIS has excellent inter-rater reliability, retest reliability, and concurrent validity (Bodden et al., 2008; Lyneham, Abbott, & Rapee, 2007; Wood et al., 2006), and has been shown to be sensitive to treatment change (Hudson et al., 2009).

Within the ADIS, diagnosticians generated impairment ratings, referred to as clinician severity ratings, for each diagnostic category. Clinician severity ratings range from 0 (least severe) to 8 (most severe). A clinician severity rating of 4 or higher is required to meet criteria for a DSM-IV diagnosis. In this study, the disorder with the highest clinician severity rating was established as the principal (i.e., most disabling) diagnosis. Clinician severity ratings for each diagnosis were summed to create a clinician severity composite score. Parents also rated their child's functional impairment in each diagnostic category, referred to as parent interference ratings. Parent interference ratings also range from 0 (no interference) to 8 (maximum

interference). Parent interference ratings for each diagnosis were summed to create a parent interference composite score. When multiple caregivers were participating in the interview, they provided a single set of responses for each child. Disparate ratings between reporting caregivers were averaged by the diagnostician.

**Child Measure.** The anxious children of parent participants completed the Multidimensional Anxiety Scale for Children (MASC-C; March, 1997). The MASC is a 39-item questionnaire that assesses anxiety across four domains: (1) physical symptoms (including tense/restless and somatic/autonomic subfactors), (2) social anxiety (including humiliation/rejection and public performance subfactors), (3) harm avoidance (including anxious coping and perfectionism subfactors), and (4) separation/panic anxiety. It is currently the most widely used general self-report measure of child anxiety (Langley, Bergman, & Piacentini, 2002). The MASC factor structure is invariant across gender and age and shows excellent internal reliability (Cronbach's  $\alpha = .87$  with children in this sample), as well as adequate convergent and divergent validity. Three-week and 3-month test-retest reliability has been shown to be satisfactory to excellent (March, Parker, Sullivan, Stalling, & Conners, 1997).

**Parent Measures.** Studies examining parent-child reporting differences (e.g., Barbosa, Tannock, & Manassis, 2002) suggest that it is inadvisable to rely exclusively on self-report measures when assessing childhood anxiety. Thus, the MASC has been reworded for use with parents as a research instrument, which permits direct comparison between child and parent report (Villabø, Gere, Torgersen, March, & Kendall, 2012). Baldwin and Dadds (2007) demonstrated that the factor structure, reliability, and predictive validity of the parent version of the MASC are consistent

with that of the child version. In this sample, Cronbach's  $\alpha$  was .91 for mothers and .82 for fathers. Villabø and colleagues (2012) also noted that while parent-child agreement on the MASC is typically low, mother-father agreement is typically high.

Parents also completed the Adult Manifest Anxiety Scale (AMAS; Reynolds, Richmond, & Lowe, 2003) as a measure of their own anxiety. The AMAS is a 36-item self-report questionnaire assessing three dimensions: Worry & Oversensitivity, Social Concerns/Stress, and Physiological Anxiety. Lowe and Reynolds (2004) reported that the AMAS has adequate internal consistency (Cronbach's  $\alpha = .67-.89$ ), as well as high test-retest reliability ( $r = .67-.89$ ). In this sample, the AMAS had a high internal consistency (Cronbach's  $\alpha = .91$  for mothers, .95 for fathers). Strong evidence also exists for the AMAS's concurrent validity with other measures of anxiety (Lowe & Reynolds, 2004).

Parents completed the Parent Protection Scale (PPS; Thomasgard, Metz, Edlebrock, & Shonkoff, 1995) a 25-item measure assessing parent reports of their own protective behavior in four broad areas: Supervision, Separation, Dependence, and Control, all of which contribute to the total score. Items include "I keep a close watch on my child" (Supervision scale item), "I have difficulty leaving my child with a babysitter" (Separation scale item), "I comfort my child immediately when he/she cries; I go to my child if he/she cries during the night" (Dependence scale items), and "I allow my child to do things on his/her own" (Control scale item, reverse-scored). The PPS total score has moderate to high internal reliability ( $r = .73$ ), test-retest reliability for the total score ( $r = .86$ ), and criterion validity with clinical histories (Thomasgard et al., 1995) in studies conducted with parents of children ages two to

ten years. However, Mullins and colleagues (2004) reported comparable internal reliability in parents of children ages eight to 12 years, which was also demonstrated in this sample (Cronbach's  $\alpha = .69$  for mothers and  $.52$  for fathers).

Parents also completed the Parent Sense of Competence scale (PSOC; Johnston & Mash, 1989), one of the most commonly used tools for measuring parental competence (Jones and Prinz, 2005). The PSOC's eight-item parenting Efficacy scale examines self-perceived understanding, problem-solving, and meeting one's expectations as related to parenting. On this scale, lower scores represent more agreement with statements that reflect increased efficacy. The PSOC's nine-item parenting Satisfaction scale examines anxiety, frustration, and motivation associated with the parent role. On this scale, lower scores represent more agreement with statements that reflect dissatisfaction. Johnston and Mash (1989) as well as Ohan, Leung, and Johnston (2000) have provided evidence for the PSOC's construct validity, internal consistency (average Cronbach's  $\alpha = .76$  across subscales), and test-retest reliability ( $r = .46 - .82$ ). In this sample, the parenting Efficacy subscale had a Cronbach's  $\alpha$  of  $.79$  for mothers and  $.73$  for fathers, while the parenting Satisfaction subscale had a Cronbach's  $\alpha$  of  $.83$  for both mothers and fathers.

**Teacher Measure.** In order to be consistent with a multiple indicator approach, the child's current teacher, described to parents as "a teacher who knows your child well," completed the Behavior Assessment System for Children, Second Edition (BASC-2) Teacher Rating Scales (TRS; Reynolds & Kamphaus, 2004). Child and Adolescent Forms were used as appropriate to the child's age. Parents provided the form to the same teacher at all three time-points whenever feasible. The BASC-2

TRS is a multimethod, multidimensional system used to measure adaptive and problem behaviors in the school setting. It instructs teachers to rate 139 specific behaviors on a scale of frequency, resulting in 14 subscales. For all individual scales, internal consistencies are generally in the .80s, test-retest reliabilities yield average correlations in the .70s-.80s, and median inter-rater reliabilities range from .53-.65, in general and clinical samples (Reynolds & Kamphaus, 2004). The BASC Anxiety subscale (BASC-ANX) consists of seven items related to anxious behavior observed in the classroom setting. In this sample, the BASC-ANX scale had a Cronbach's  $\alpha = .91$ . BASC-ANX scale scores were converted to *T*-scores for ease of comparison across both the Child and Adolescent forms.

### **Procedure**

The current study was approved by the Institutional Review Board (IRB) of the University of Rhode Island (URI). Multiple community agencies, pediatricians, and school staff routinely refer anxious children and their parents to the Child Anxiety Program within the Psychological Consultation Center at URI. This program will henceforth be referred to as "the clinic" for the sake of clarity. At the outset of recruitment, the clinic had numerous families who were seeking treatment for their children in the traditional context, in which the therapist would meet individually with the anxious child. Families with children in the inclusionary age range were called by study staff in the order in which they initially contacted the clinic and offered the opportunity to participate in the research study, provided they did not meet exclusionary criteria. Additionally, information about the parent program and research



study was distributed widely to pediatricians, school nurses, school psychologists, and additional child mental health professionals to increase recruitment.

Interested families met with staff to learn about the research study. If the parents and child wished to participate, they signed the informed consent and assent forms, respectively, and completed the paper and pencil questionnaires. Parents then completed the ADIS interview with a trained diagnostician to confirm their diagnostic eligibility for the study. Parents who were not eligible for the study were provided with referrals for more appropriate treatment and retained their original place on the list of individuals seeking traditional clinic treatment for their child.

Parents who were eligible for the study were randomly assigned to either the immediate cognitive-behavioral treatment group (ICBT,  $n = 18$ ) or the wait list control group (WL,  $n = 13$ ). Randomization occurred dichotomously using a coin flip procedure following completion of consent procedures and baseline assessment measures (ADIS and questionnaires). Use of the coin-flip procedure ensured that it was not possible for research staff to anticipate future group assignments on the basis of past assignments. We did not attempt to balance the sizes of the two groups, and there were no deviations from random assignment. See Figure 1 for more detailed information regarding the recruitment and assessment timeline for each group.

A randomly assigned clinician contacted parents assigned to the ICBT group in order to begin the ten-week intervention immediately. At the end of the intervention, they completed a second packet of questionnaires and ADIS (Time 2) with a diagnostician blind to condition and time-point. Staff sent the child and teacher questionnaires home with parents, including pre-addressed, stamped envelopes for

ease of prompt return. After three months, they completed the final packet of questionnaires and ADIS (Time 3), again, with a diagnostician blind to condition and time-point. The child and teacher questionnaires were again sent home with parents.

Parents assigned to the WL group began a ten week waiting period. At the end of the waiting period, they completed a second packet of questionnaires and ADIS (Time 2) with a diagnostician blind to condition and time-point. Staff sent the child and teacher questionnaires home with parents, including pre-addressed, stamped envelopes for ease of prompt return. Then, a randomly assigned clinician contacted them to begin the intervention. After completing the intervention, they completed their final packet of questionnaires and ADIS (Time 3), again, with a diagnostician blind to condition and time-point. The child and teacher questionnaires were again sent home with parents.

All 31 families completed baseline ADIS interviews and 29 families completed baseline questionnaires (see Figure 2). Thirty of the 31 families completed Time 2 ADIS interviews, as one family elected to pursue child-focused treatment and withdrew from the study before the Time 2 assessment. Of the 31 families, 22 completed Time 2 questionnaires. Between Time 2 and Time 3, three families became eligible to begin traditional clinic treatment, two of which elected to engage in the study and traditional child-focused sessions concurrently. One additional family elected to pursue concurrent child-focused treatment elsewhere, also between Time 2 and Time 3. Given that exclusionary criteria for the study included being engaged in treatment elsewhere, data provided by those three families who engaged concurrent treatment for their child's anxiety was not analyzed for Time 3. Additionally, six

families withdrew from the study for undisclosed reasons prior to their Time 3 assessment. Taken together, 21 of the 31 original families completed their Time 3 ADIS interviews, with 13 families completing the questionnaires. Retention rates were not significantly different across the ICBT and WL groups at any time-point. As reimbursement for time and effort, all participants received the intervention at no cost.

### ***Intervention***

The intervention was provided by trained clinic therapists – specifically, clinical and school psychology doctoral students who had received intensive training, including didactic presentations, directed readings, role-plays, videotape observation, live observation, and discussion. Clinicians participated in two hours of weekly clinical supervision, provided by a licensed clinical psychologist as well as advanced graduate students. Caregivers met with the same clinician for every session. All primary caregivers were encouraged to take part in the study. At a minimum, one parent consistently attended all sessions. To address concerns of inconsistency, digital audio recordings of session content were provided for regularly-attending caregivers who sporadically missed a session.

The intervention addressed the essential components of cognitive-behavioral therapy (CBT) for childhood anxiety with parents: psychoeducation, coping skills (affective differentiation, somatic education and management, modification of self-talk, and problem solving), exposure methods and contingency management, and relapse prevention plans (Albano & Kendall, 2002; Gosch, Flannery-Schroeder, Mauro, & Compton, 2006). Each of the ten CBT modules of the intervention constituted one weekly one-hour session. Each module contains a description of the

content to be covered with an overarching goal, explicit objectives, and detailed explanations of and rationale behind the tasks. Modules 1 & 2 are content-driven and psycho-educational. They are intended to provide basic information about the development and treatment of anxiety. Modules 3-6 are focused on building specific coping skills (e.g., affective awareness, somatic symptom management through deep breathing and relaxation training, cognitive restructuring, positive self-talk). Modules 7-9 involve practicing those skills with exposure tasks that are planned and rehearsed in session, but conducted at home. Module 10 shifts attention to relapse prevention. Additionally, clinicians sought feedback at the end of each module regarding the importance of the module's content and parents' confidence in their ability to transmit skills to their child and implement strategies discussed during that module.

### **Data Analyses**

**Missing Data.** All participants completed the requisite minimum number of items for each measure's scale or subscale(s). Using SPSS Missing Values Analysis, it was determined that missing data was convincingly missing at random; that is, the missing data would not potentially bias the results and thus, the observed data can be assumed to be representative of the intended population. Mean substitution (wherein items from the individual's scale/subscale to which the missing item belonged are averaged) was used to replace missing values (<1% of data points).<sup>1</sup>

There is notable contention about the use of mean substitution. However, in cases where the internal consistency of the scale is high (e.g., psychological scales containing multiple, highly correlated items assessing well-defined constructs, such as

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<sup>1</sup> A subset of participants ( $n=5$ ) refused consent specifically for their child's participation at baseline but provided consent at later time-points. These data were not imputed.

those used in this study), it is more desirable to substitute that individual's mean for the missing item rather than to discard the individual from the analysis. In fact, provided the scale is unidimensional, the bias does not appear to be substantial (Osborne, 2013). In this study, when measures had multiple subscales (i.e., AMAS, MASC, PSOC), items from the specific subscale to which the missing item belonged were averaged. Thus, this type of mean substitution, which is similar to imputation and based on strong inter-item relationships, is defensible practice (Osborne, 2013)

**Data Assumptions.** Tests of group differences assume that data are linear, normal, and homoscedastic. A preliminary analysis of univariate normality (e.g., means, standard deviations, skewness, and kurtosis) indicated that all scales and subscales scores for mothers, fathers, children, and teachers approximated normal distributions in their raw data form.

## Results

### Power Analyses

An a priori power analysis was conducted for the primary set of analyses planning to compare the two conditions across the first two time-points, assuming two-tailed  $p$  values, medium to large effects (based literature reviewed above), and power = .80. The power analysis revealed that at least eight participants were required in each of the two groups in order to detect large effects, for a total of 16 participants. At least 17 participants were required in each of the two groups in order to detect medium effects, for a total of 34 participants. A second power analysis was conducted after data collection and prior to analyses. Respective sample sizes at Time 2 were 17 for the ICBT group and 13 for the WL group for diagnostic status measures, and 14 for the ICBT group and 8 for the WL group for most questionnaire measures. Using Cohen's (1988) guidelines, the power to detect between-within group interactions in diagnostic status variables was .99 for large effects, .75 for medium effects, and .18 for small effects. The power to detect between-within group interactions in questionnaire variables was .95 for large effects, .61 for medium effects, and .15 for small effects. Consequently, the study was likely only sensitive to large between-within group interactions and main effects.

Another a priori power analysis was conducted for the set of analyses planning to examine within-group changes across all three time-points, first in the ICBT group and then in the WL group examined (again, assuming two-tailed  $p$  values, medium to large effects, and power = .80). Twelve participants were required to detect large effects and 28 participants were required to detect medium effects.

With 12 ICBT participants completing the diagnostic status measures at all three time-points, the power to detect within-group main effects in the ICBT group was .82 for large effects, .41 for medium effects, and .10 for small effects in these variables. With only 6 ICBT participants completing most questionnaire measures, the power to detect within-group main effects in the ICBT group was .44 for large effects, .19 for medium effects, and .07 for small effects in these variables.

With 9 WL participants completing the diagnostic status measures at all three time-points, the power to detect within-group main effects in the WL group was .66 for large effects, .30 for medium effects, and .09 for small effects in these variables. With only 7 WL participants completing most questionnaire measures, the power to detect within-group main effects in the WL group was .52 for large effects, .23 for medium effects, and .08 for small effects in these variables. Consequently, this study was only sensitive to large within-group differences in the ICBT group for diagnostic status measures. The same cannot be said for questionnaire measures completed by the ICBT group or for either measures completed by the WL group. Therefore, such results should be interpreted with extreme caution.

### **Descriptive Statistics**

Means and standard deviations, as well as the observed ranges for all scales at all time-points for both groups individually as well as the full sample are presented in Tables 2-5. Baseline descriptive data are discussed below. Changes in these variables over time are discussed later. Although there were no a priori hypotheses about gender differences in parent-report variables, a series of independent samples *t*-tests explored potential differences between maternal and paternal reports. These are discussed

below as well.

**Diagnostic Status.** At baseline, the total number of child anxiety disorders was 3.35 ( $SD=1.62$ ). The mean parent interference composite score was 18.71 ( $SD=9.01$ ) and the mean clinician severity composite score was 18.68 ( $SD=8.01$ ). For the child's principal anxiety disorder taken independently, the mean parent interference rating was 6.29 ( $SD=.82$ ) and the mean clinician severity rating was 5.97 ( $SD=1.40$ ) at baseline.

**Parental Anxiety.** At baseline, seven mothers and four fathers reported parental anxiety scores in the Clinically Significant range. One paternal anxiety score fell in the Extreme range. Overall, the average parental anxiety score at baseline for both mothers ( $M=12.63$ ,  $SD=7.50$ ) and fathers ( $M=10.67$ ,  $SD=8.72$ ) fell in the Mild Elevation range. Although mothers reported slightly more baseline anxiety than fathers, this difference was not statistically significant. Of note, eight mothers and six fathers in this study reported having a diagnosed anxiety disorder via the demographic form. In fact, four dyads reported that both caregivers had diagnosed anxiety disorders.

**Parenting Variables.** At baseline, mothers ( $M=31.77$ ,  $SD=6.06$ ) and fathers ( $M=32.43$ ,  $SD=5.94$ ) reported similar levels of parenting satisfaction, with higher scores representing more satisfaction. There were no significant gender differences in baseline parenting satisfaction scores. However, mothers ( $M=20.27$ ,  $SD=4.31$ ) reported significantly more parenting self-efficacy than fathers ( $M=22.86$ ,  $SD=4.49$ ) at baseline,  $t(49) = -2.076$ ,  $p < .05$ , with lower scores representing increased efficacy. Lastly, mothers ( $M=51.34$ ,  $SD=5.55$ ) and fathers ( $M=49.62$ ,  $SD=5.56$ ) had similar



baseline protective parenting behavior scores, with no significant gender differences.

**Parent-Reports of Child Anxiety.** Mothers ( $M=55.74$ ,  $SD=17.44$ ) and fathers ( $M=51.38$ ,  $SD=12.31$ ) also reported similar baseline levels of anxiety in their children. Based on profiles for age and gender created by March (1997), nine mothers reported that their child's anxiety fell in the Clinically Significant range ( $T$  score of 65+), with another 11 mothers reporting their child's anxiety to be in the At-Risk range ( $T$  score between 56-64). Just two fathers indicated that their child's anxiety fell in the Clinically Significant range, with another seven fathers reporting their child's anxiety to be in the At-Risk range. However, despite these differences in categorical descriptors, an independent samples  $t$ -test confirmed that there were no significant differences in mother and father reports of child anxiety overall.

**Child- & Teacher-Reports of Child Anxiety.** Using the same measure as parents, child reports of their own anxiety at baseline ( $M=56.54$ ,  $SD=16.58$ ) were relatively consistent with parent reports. Categorical descriptions of children's own anxiety were slightly more consistent with maternal reports than with paternal reports of child anxiety. However, independent samples  $t$ -tests confirmed that there were no significant differences between child self-report and either parent's report of child anxiety symptoms. Using March's (1997) profiles described above, seven children in this sample reported Clinically Significant anxiety and another nine children reported anxiety in the At-Risk range at baseline. Teacher-reports of child anxiety in the classroom setting ( $M=69.70$ ,  $SD=18.41$ ) indicated that four children had anxiety in the At-Risk range ( $T = 60-69$ ) and nine children had scores in the Clinically Significant range ( $T = 70+$ ).

## **Bivariate Correlation Analyses**

Pearson correlation coefficients were analyzed to understand the underlying relationships between variables (see Table 6). Maternal and paternal anxiety scores were not significantly correlated with one another, nor were maternal and paternal parenting satisfaction scores. However, maternal and paternal parenting self-efficacy scores were strongly correlated ( $r = .66, p < .01$ ), as were maternal and paternal reports of child anxiety ( $r = .66, p < .01$ ). The correlation between maternal and paternal protective behavior scores was not significant ( $r = .41, p = .07$ ). Because some but not all parent-report variables were correlated, maternal and paternal data were analyzed separately.

There was a moderate positive correlation between maternal anxiety scores and maternal protective behavior scores ( $r = .35, p < .05$ ). There was a strong positive correlation between paternal anxiety scores and paternal protective behavior scores ( $r = .75, p < .01$ ). Maternal parenting satisfaction scores were negatively correlated with maternal anxiety scores ( $r = -.44, p < .05$ ), paternal anxiety scores ( $r = -.45, p < .05$ ), paternal protective behavior scores ( $r = -.45, p < .05$ ), and maternal parenting self-efficacy scores ( $r = -.46, p < .05$ ). Similarly, paternal satisfaction scores were negatively correlated with paternal anxiety scores ( $r = -.62, p < .01$ ), paternal protective behavior scores ( $r = -.48, p < .05$ ), maternal parenting self-efficacy scores ( $r = -.69, p < .01$ ) and paternal parenting self-efficacy scores ( $r = -.68, p < .01$ ). Maternal parenting self-efficacy scores were also positively correlated with paternal anxiety scores ( $r = .51, p < .05$ ) and paternal protective behavior scores ( $r = .49, p < .05$ ). Again, for interpretation, it is important to note that higher parenting self-efficacy

scores represent *decreased* efficacy, while lower parenting self-efficacy scores represent *increased* efficacy.

Maternal reports of child anxiety were moderately correlated with child reports of anxiety ( $r = .42, p < .05$ ), as well as with the total number of child anxiety disorder diagnoses ( $r = .63, p < .01$ ), parent interference composite scores ( $r = .59, p < .01$ ), clinician severity composite scores ( $r = .65, p < .01$ ), parent interference ratings of the principal disorder ( $r = .43, p < .05$ ), and clinician severity ratings of the principal disorder ( $r = .57, p < .01$ ). Child reports of anxiety was also correlated with the total number of child anxiety disorder diagnoses ( $r = .54, p < .01$ ), parent interference composite scores ( $r = .47, p < .05$ ), and clinician severity composite scores ( $r = .47, p < .05$ ).

The relationships described above provide evidence for convergent validity of the ADIS structured diagnostic interview with the MASC child and parent reports. They also demonstrate the inter-rater reliability of the MASC across reporters. However, despite the correlation between maternal and paternal reports of child anxiety, paternal reports of child anxiety were not significantly correlated with child reports of anxiety, parent interference composite scores, or clinician severity composite scores. However, paternal anxiety scores were significantly related to parent interference ratings of the principal disorder ( $r = .44, p < .05$ ). There were no significant correlations between teacher-reported child anxiety and child anxiety reported by mothers, fathers, or the child themselves.

### **Group Comparability**

Chi-square analyses and independent samples *t*-tests indicated that there were

no pre-existing significant differences between the ICBT and WL groups on any demographic variables (e.g., gender/age of the child, reported household income, parental ages), potential covariates (e.g., number of siblings, parental diagnoses of anxiety, comorbid mood disorders, comorbid externalizing disorders) or the dependent variables analyzed in this study.

### **Treatment Outcome (ICBT vs. WL)**

**Structured Diagnostic Interview.** A series of mixed between-within subjects analyses of variance (ANOVAs) was conducted to assess changes in the following variables reported via the ADIS in the ICBT and WL groups over time: total number of child anxiety disorder diagnoses, parent interference composite scores, clinician severity composite scores, parent interference ratings of the principal anxiety disorder, and clinician severity rating of the principal anxiety disorder. Partial eta squared ( $\eta^2_p$ ) is reported as a measure of effect size, indicating the proportion of variance of the outcome measure explained by the interaction or main effects. Using Cohen's guidelines (1988), 1% conveys a small effect, 6% conveys a medium effect, and 13.8% conveys a large effect. When significant results were found, post-hoc pairwise comparisons of means were evaluated.

There was a significant Time x Group interaction for total number of child anxiety disorder diagnoses, Wilks' Lambda = .65,  $F(1, 27) = 15.40$ ,  $p < .01$ ,  $\eta^2_p = .36$ . Post-hoc pairwise comparisons of means indicate that the total number of disorders decreased in the ICBT group and increased in the WL group from baseline to Time 2. There was a significant Time x Group interaction for parent interference composite scores, Wilks' Lambda = .64,  $F(1, 28) = 15.92$ ,  $p < .01$ ,  $\eta^2_p = .36$ . Post-hoc pairwise

comparisons of means indicated that parent interference composite scores decreased in the ICBT group and increased in the WL group from baseline to Time 2. Similarly, there was a significant Time x Group interaction for clinician severity composite scores, Wilks' Lambda = .70,  $F(1, 28) = 12.01$ ,  $p < .01$ ,  $\eta^2_p = .30$ . Again, post-hoc pairwise comparisons of means indicated that clinician severity composite scores decreased in the ICBT group and increased in the WL group from baseline to Time 2.

The Time x Group interaction for parent interference ratings of the principal disorder was not significant ( $p = .09$ ), nor was the main effect for Group. However, there was a significant main effect for Time, Wilks' Lambda = .73,  $F(1, 28) = 10.56$ ,  $p < .01$ ,  $\eta^2_p = .27$ . Post-hoc pairwise comparisons of means indicated that parent interference ratings for the principal disorder decreased in both groups from baseline to Time 2. Similarly, the Time x Group interaction for clinician severity ratings for the principal disorder was not significant ( $p = .09$ ), nor was the main effect for Group. There was a significant main effect for Time, Wilks' Lambda = .47,  $F(1, 28) = 31.31$ ,  $p < .001$ ,  $\eta^2_p = .53$ . Post-hoc pairwise comparison of means comparisons indicated that clinician severity ratings of the principal disorder decreased in both groups from baseline to Time 2. Notably, the mean interference and severity ratings for the principal disorder for the ICBT group declined more sharply than those for the WL, but this difference did not reach conventional levels of significance.

**Clinical Significance.** Assurances of clinically significant improvement cannot necessarily be derived from statistically significant improvement. Clinically significant improvement is defined as changes that return participants who had initially fallen in the clinically significant range to at least subclinical levels, if not

within normal limits. Chi-square analyses were used to assess group differences over time in the presence/absence of the principal child anxiety disorder and in the presence/absence of any child anxiety disorder. For the principal anxiety disorder, this chi-square was not significant. However, six children with parents in the ICBT group no longer met diagnostic criteria for the principal anxiety disorder at Time 2 vs. three children with parents in the WL group. Furthermore, two children with parents in the ICBT group did not meet criteria for any anxiety disorder at Time 2 vs. zero children with parents in the WL group. Again, this difference was not statistically significant.

**Parent-, Child-, & Teacher-Report Measures.** A series of mixed between-within subjects analyses of variance (ANOVA) was conducted to assess changes in child-, parent-, and teacher-report measures in the ICBT and WL groups over time. Again, partial eta squared ( $\eta^2_p$ ) is reported as a measure of effect size and, where appropriate, post-hoc pairwise comparisons of means were evaluated. The Time x Group interaction effect and the main effects for Time and Group were not significant for maternal and paternal reports of child anxiety, parental anxiety scores, and parenting satisfaction scores, or for child self-reported anxiety or teacher-reported child anxiety.

There was a significant Time x Group interaction for maternal protective behavior scores, Wilks' Lambda = .72,  $F(1, 21) = 8.05$ ,  $p < .01$ ,  $\eta^2_p = .28$ . Post-hoc pairwise comparison of means indicated that protective behavior scores decreased for mothers in the ICBT group and increased for mothers in the WL group from baseline to Time 2. However, neither this interaction nor main effects for Time and Group were significant for paternal protective behavior scores.

The Time x Group interaction for maternal parenting self-efficacy scores was not significant ( $p = .12$ ), nor was the main effect for Group. However, there was a significant main effect for Time for maternal parenting self-efficacy scores, Wilks' Lambda = .62,  $F(1, 20) = 12.23$ ,  $p < .01$ ,  $\eta^2_p = .38$ . Post-hoc pairwise comparison of means indicated that maternal parenting self-efficacy scores increased in both groups from baseline to Time 2. Notably, maternal parenting self-efficacy scores in the ICBT group declined more sharply (suggesting an increase in efficacy) as compared to those for the WL, but this difference did not reach conventional levels of significance. The Time x Group interaction effect and the main effects for Time and Group were not significant for paternal parenting self-efficacy scores.

### **Maintenance: 3-Month Follow-Up in ICBT group**

A series of repeated measures ANOVAs (within-group factors only) was used to assess changes in all dependent variables across all three time-points (pre-intervention, post-intervention, and 3-month follow-up) in the ICBT condition. Mauchly's Test of Sphericity was used to formally assess the assumption of sphericity. Despite criticism for failing to detect departures from sphericity in small samples, this test remains the most widely used of its kind (Laerd Statistics, 2013). Partial eta squared ( $\eta^2_p$ ) is reported as a measure of effect size. When significant results were found, Tukey post-hoc analyses employed a Bonferroni adjustment to correct for multiple comparisons.

**Diagnostic Status.** The total number of child anxiety disorder diagnoses differed significantly across the three time-points,  $F(2, 22) = 19.08$ ,  $p < .001$ ,  $\eta^2_p = .73$ . Tukey post-hoc comparisons revealed that ICBT elicited a significant reduction in

total number of child anxiety disorder diagnoses from baseline ( $M=3.50$ ,  $SD=1.83$ ) to post-treatment ( $M=1.67$ ,  $SD=1.30$ ),  $p < .01$ , and from baseline to 3-month follow-up ( $M=1.08$ ,  $SD=.90$ ),  $p < .001$ . There was also a continued, though non-significant ( $p = .08$ ) reduction in total child anxiety disorder diagnoses from post-treatment to 3-month follow-up. Therefore, ICBT elicited a statistically significant reduction in total diagnoses that was evident at post-treatment and maintained at 3-month follow-up.

Parent interference composite scores also differed significantly across the three time-points,  $F(2, 22) = 18.25$ ,  $p < .001$ ,  $\eta^2_p = .62$ . Tukey post-hoc comparisons revealed that ICBT elicited a significant reduction in parent interference composite scores from baseline ( $M=20.33$ ,  $SD=11.28$ ) to post-treatment ( $M=11.00$ ,  $SD=7.73$ ),  $p < .01$ , and from baseline to 3-month follow-up ( $M=8.46$ ,  $SD=5.36$ ),  $p < .01$ . There was also a continued slight reduction in parent interference composite scores from post-treatment to 3-month follow-up, but this reduction was not statistically significant ( $p = .32$ ). Therefore, ICBT elicited a statistically significant reduction in parent interference composite scores that is evident at post-treatment and maintained at 3-month follow-up.

Clinician severity composite scores also differed significantly across the three time-points,  $F(1.38, 15.19) = 19.63$ ,  $p < .001$ ,  $\eta^2_p = .64$ , using a Greenhouse-Geisser correction for sphericity. Tukey post-hoc comparisons revealed that ICBT elicited a significant reduction in clinician severity composite scores from baseline ( $M=19.08$ ,  $SD=9.77$ ) to post-treatment ( $M=11.33$ ,  $SD=6.76$ ),  $p < .05$ , from post-treatment to 3-month follow-up ( $M=7.83$ ,  $SD=5.13$ ),  $p < .05$ , and from baseline to 3-month follow-up ( $p < .01$ ). Therefore, ICBT elicited a statistically significant reduction in clinician



severity composite scores that is evident at post-treatment and continues to significantly decrease at 3-month follow-up.

Parent interference ratings for the principal disorder also differed significantly across the three time-points,  $F(2, 22) = 15.76, p < .001, \eta^2_p = .59$ . Tukey post-hoc comparisons revealed that ICBT elicited a significant reduction in the principal disorder's parent interference ratings from baseline ( $M=6.42, SD=1.00$ ) to post-treatment ( $M=3.50, SD=1.98$ ),  $p < .01$ , and from baseline to 3-month follow-up ( $M=3.67, SD=2.19$ ),  $p < .01$ . There was no change in the principal disorder's parent interference ratings from post-treatment to 3-month follow-up ( $p > .99$ ). Therefore, ICBT elicited a statistically significant reduction in the principal disorder's parent interference ratings that is evident at post-treatment and maintained at 3-month follow-up.

Clinician severity ratings of the principal disorder differed significantly across the three time-points,  $F(2, 22) = 27.44, p < .001, \eta^2_p = .71$ . Tukey post-hoc comparisons revealed that ICBT elicited a significant reduction in the principal disorder's clinician severity ratings from baseline ( $M=6.25, SD=.75$ ) to post-treatment ( $M=3.33, SD=1.30$ ),  $p < .001$ , and from baseline to 3-month follow-up ( $M=3.33, SD=1.92$ ),  $p < .01$ . There was no change in the principal disorder's clinician severity ratings from post-treatment to 3-month follow-up ( $p > .99$ ). Therefore, ICBT elicited a statistically significant reduction in the principal disorder's clinician severity ratings that is evident at post-treatment and maintained at 3-month follow-up.

**Child-, Parent-, & Teacher-Report Measures.** Differences in maternal protective behavior scores were not significant across the three time-points,  $p = .13$ .

However, examination of mean scores indicates a decline in maternal protective behavior scores from baseline ( $M=51.75$ ,  $SD=2.99$ ) to post-treatment ( $M=44.75$ ,  $SD=2.50$ ), ( $p < .05$ ) and a slight increase from post-treatment to 3-month follow-up ( $M=47.75$ ,  $SD=5.19$ ), resulting in a non-significant change from baseline to 3-month follow-up. Paternal protective behavior scores did not change significantly over the three time-points. Additional repeated measures ANOVAs determined that all remaining parent-report measures (i.e., parental anxiety, parent-report of child anxiety, parenting satisfaction, parenting self-efficacy) and teacher-report of child anxiety did not differ significantly across all three time-points in the ICBT group.

Child self-reported anxiety scores differed significantly across the three time-points,  $F(2, 6) = 5.25$ ,  $p < .05$ ,  $\eta^2_p = .64$ . However, Tukey post-hoc pairwise comparisons did not reveal significant changes, due to the impact of the Bonferroni adjustment on the power to detect changes in a small sample size. Still, examination of mean scores indicated that ICBT elicited reductions in child self-reported anxiety scores from baseline ( $M=74.25$ ,  $SD=6.30$ ) to post-treatment ( $M=67.00$ ,  $SD=7.94$ ) and to 3-month follow-up ( $M=52.25$ ,  $SD=7.98$ ) that were not statistically significant.

### **Waitlist Group Post-Treatment Analyses**

A series of repeated measures ANOVAs (within-group factors only) were used to assess changes in all dependent variables across all three time-points (baseline, post-waitlist, and post-treatment) in the WL condition. Again, Mauchly's Test of Sphericity was used to formally assess to assumption of sphericity. Partial eta squared ( $\eta^2_p$ ) is reported as a measure of effect size. When significant results were found, Tukey post-hoc analyses employed a Bonferroni adjustment to correct for multiple

comparisons.

**Diagnostic Status.** The total number of child anxiety disorder diagnoses differed significantly across the three time-points,  $F(2, 16) = 16.38, p < .001, \eta^2_p = .67$ . Tukey post-hoc comparisons revealed that WL did not elicit a significant change in total number of diagnoses from baseline ( $M=3.67, SD=1.12$ ) to post-waitlist ( $M=3.33, SD=1.41$ ). However, there was a significant reduction in total diagnoses from post-waitlist to post-treatment ( $M=1.33, SD=1.73$ ),  $p < .05$ , and from baseline to post-treatment,  $p < .01$ . Therefore, while the waitlist participants reported no change in the total number of child anxiety disorder diagnoses after the ten-week waiting period, they reported a significant reduction in total diagnoses after treatment.

Parent interference composite scores differed significantly across the three time-points,  $F(2, 16) = 4.93, p < .05, \eta^2_p = .38$ . However, Tukey post-hoc pairwise comparisons did not reveal significant changes, again due to the impact of the Bonferroni adjustment on the power to detect changes in a small sample size. Still, examination of mean scores indicated that WL did not elicit a change in parent interference composite scores from baseline ( $M=18.11, SD=4.73$ ) to post-waitlist ( $M=18.89, SD=6.72$ ), but the scores did decrease from post-waitlist to post-treatment ( $M=10.11, SD=9.91$ ),  $p = .11$ , and from baseline to post-treatment,  $p = .14$ . Therefore, while the waitlist participants reported little change in parent interference composite scores after the ten-week waiting period, they reported a notable but non-significant reduction in parent interference composite scores after treatment.

Clinician severity composite scores differed significantly across the three time-points,  $F(2, 16) = 13.21, p < .001, \eta^2_p = .62$ . Tukey post-hoc comparisons revealed

that WL did not elicit a significant change in clinician severity composite scores from baseline ( $M=20.00$ ,  $SD=5.27$ ) to post-waitlist ( $M=19.11$ ,  $SD=6.13$ ). However, there was a significant reduction in clinician severity composite scores from post-waitlist to post-treatment ( $M=9.78$ ,  $SD=9.36$ ),  $p < .05$ , and from baseline to post-treatment,  $p < .01$ . Therefore, while the waitlist participants reported no change in clinician severity composite scores after the ten-week waiting period, they reported a significant reduction in clinician severity composite scores after treatment.

Parent interference ratings of the principal disorder did not differ significantly across the three time-points,  $p = .09$ . Examination of the mean scores indicated little change between baseline ( $M=5.11$ ,  $SD=1.62$ ) and post-waitlist ( $M=4.89$ ,  $SD=2.80$ ), and more observable change between post-waitlist and post-treatment ( $M=2.44$ ,  $SD=2.70$ ). Therefore, while the waitlist participants reported little change in the principal disorder's parent interference ratings after the ten-week waiting period, they reported a notable, but non-significant reduction in those ratings after receiving treatment.

Clinician severity ratings of the principal disorder differed significantly across the three time-points,  $F(2, 16) = 13.15$ ,  $p < .001$ ,  $\eta^2_p = .62$ . Tukey post-hoc comparisons revealed no significant change from baseline ( $M=6.56$ ,  $SD=.73$ ) to post-waitlist ( $M=5.44$ ,  $SD=2.55$ ). However, there was a significant reduction from post-waitlist to post-treatment ( $M=2.00$ ,  $SD=2.12$ ),  $p < .05$ , and from baseline to post-treatment,  $p < .01$ . Therefore, the diagnosticians for waitlist participants reported no change in the principal disorder's clinician severity ratings after the ten-week waiting period, they reported a significant reduction in those ratings after treatment.

**Child, Parent, & Teacher Reports.** Differences in maternal anxiety scores were significant across the three time-points,  $F(2, 10) = 4.25, p < .05, \eta^2_p = .46$ . However, Tukey post-hoc pairwise comparisons did not reveal significant changes, due to the impact of the Bonferroni adjustment on the power to detect changes in a small sample size. Still, examination of mean scores indicated that maternal anxiety scores decreased slightly from baseline ( $M=15.17, SD=9.02$ ) to post-waitlist ( $M=14.00, SD=9.70$ ), and more substantially from post-waitlist to post-treatment ( $M=10.83, SD=8.54$ ). Paternal anxiety scores did not change significantly over the three time-points. Additional repeated measures ANOVAs determined that all remaining parent-report measures (i.e., parent-report of child anxiety, parenting satisfaction, parenting efficacy, protective behaviors), child self-report of anxiety, and teacher-report of child anxiety did not differ significantly across all three time-points in the WL condition.

## Discussion

### Overview

In this study, we examined the efficacy of a ten-session cognitive-behavioral intervention delivered individually to the parents of anxious children in comparison to a ten week wait-list control condition. After receiving the intervention, the ICBT group reported significant decreases in the total number of child anxiety disorder diagnoses, parent interference composite scores, clinician severity composite scores, and maternal protective parenting behaviors, as compared to the WL group who did not report significant changes in these variables. The ICBT group also reported decreases in the parenting interference rating and the clinician severity rating of the child's principal anxiety disorder, but these changes were not statistically significant. The WL group did not report such decreases. These results replicate and extend previous similarly-designed studies (e.g., Mendlowitz et al., 1999, Thienemann et al., 2006) who found that parent-only treatment modalities resulted in reductions in child anxiety symptomatology.

However, child anxiety reported via questionnaires completed by the child, parents, and teachers did not change significantly in either the ICBT or the WL condition. Further, parental anxiety, parenting self-efficacy, and parenting satisfaction did not change significantly for parents in either condition. It should be noted that the sample size of the present study, particularly for father-, child-, and teacher-report variables, may not have produced sufficient power to allow for the detection of statistically significant differences between the two conditions. Thus, although the intervention appears to have had beneficial effects, the present results should be

considered preliminary until a larger randomized controlled trial is undertaken.

### **Summary of Findings**

As hypothesized, from baseline to Time 2, there were significant differences between conditions in total number of child anxiety disorder diagnoses, parent interference composite scores, and clinician severity composite scores, reported via structured diagnostic interview. Although the majority of children in both groups retained their principal anxiety disorder at Time 2, the parent interference and clinician severity ratings for the principal disorder decreased over time in both groups. These ratings appeared to decline more sharply in the ICBT than those for the WL, but this difference did not reach conventional levels of significance.

In addition, the ICBT group, examined individually, reported significant decreases in the total number of child anxiety disorder diagnoses, parent interference and clinician severity composite scores, and parent interference and clinician severity ratings of the principal anxiety disorder that were maintained at 3-month follow-up. In fact, clinician severity composite scores continued to decrease significantly at 3-month follow-up.

The WL group, examined individually, did not report significant changes in any diagnostic interview variables after the waiting period. However, parents in the WL condition who went on to participate in the intervention after the waiting period reported significant decreases in total number of child anxiety disorder diagnoses and clinician severity composite scores after receiving treatment. Post-treatment decreases in parent interference composite scores and in parent interference ratings and clinician severity ratings of the principal anxiety disorder were notable but not statistically

significant.

Also as hypothesized, from baseline to Time 2, there was a significant difference between conditions in maternal protective parenting behaviors. Specifically, mothers in the ICBT group reported a significant decrease in such behaviors, a decrease that was maintained at 3-month follow-up. Mothers in the WL group reported no significant changes in protective parenting behaviors. Such protective behaviors are arguably the outcome most directly targeted and explicitly addressed by the intervention. Notably, there was not a significant difference between conditions across time in paternal protective parenting behaviors. Fathers had lower baseline protective behaviors which may have produced a floor effect. Fathers also had a smaller sample size than mothers, which may have rendered the study underpowered to detect small or medium effects in this subset of participants. Still, the significant change for maternal protective behaviors in the ICBT group may suggest the importance of considering the influence of parental factors on child anxiety treatment.

Similar to Waters et al. (2009) and Thienemann et al. (2006), the parent-only intervention examined in this study required parents to work on treatment activities at home with their anxious child in order to facilitate treatment goals, while also addressing parenting behaviors known to elicit and maintain anxiety. Taken together, the findings described above support the notion that anxious children can achieve decreases in anxiety symptoms, using the transfer of control model (from the therapist to the parent) without the direct involvement of children in treatment (Silverman & Kurtines, 1996). As Waters and colleagues (2009) suggested, it is possible that in this



parent-only treatment condition, parents may have taken greater responsibility for changing their own behavior in addition to their child's behavior, whereas in child therapy, the therapist may be viewed as most responsible for producing change. Moreover, because parents spend significantly more time with their children than do outpatient therapists, parents are much more able to intervene with youth and process difficult situations on a real-time basis.

Additionally, it is possible that the decrease in protective parenting behaviors in the intervention group may serve as a possible mechanism for the decreases in diagnostic status, parent interference ratings, and clinician severity ratings for childhood anxiety disorders. Because parents of anxious children often see their child experiencing significant distress and worry, it is viewed as natural for them to want to protect or remove their child from distressing situations, to supervise and monitor their children more closely, and even have difficulty being away from their child. This precludes the child from learning important skills for coping with stress and may inadvertently send the message that parents do not believe their child is capable of coping independently (Simpson et al., 2012). Thus, working directly with parents (and asking them to tolerate a certain degree of their own distress) may help the child to learn first, that they are capable of coping with anxiety and second, the specific skills for doing so. This parent intervention likely engendered parent readiness to encourage their children to face their fears through fewer protective and accommodating behaviors on the part of the parents, which in turn can promote skill mastery and successful coping with anxiety for the child (Fox et al., 2012). Explicitly encouraging parents to monitor and modify their responses to their child's anxiety may have

increased opportunities for the anxious child to develop and practice coping skills (Chansky, 2004). Additionally, the relationship cultivated between the therapist and parents during the intervention appears to have fostered continued anxiety management once therapy concluded (Suveg et al., 2006), as evidenced by the maintenance of change at 3-month follow-up assessments in this study.

Contrary to our hypotheses, there were no significant differences between conditions in mother, father, or child reports of child anxiety over time, reported via questionnaire. This is in contrast to the post-intervention decreases in child anxiety reported via structured diagnostic interview in the ICBT group (but not the WL group). It is important to recall that diagnosis according to a structured diagnostic interview is typically considered to be the “gold-standard” outcome measure (Creswell & Cartwright-Hatton, 2007) in treatment outcome studies. The interview used in this study, the ADIS, has been found to be sensitive to treatment change (Hudson et al., 2009). Conversely, it is possible that the parent- and child-report questionnaire used in this study, the MASC, was not sensitive enough to detect post-treatment changes in a sample of this size.

However, when examining the ICBT group independently, child-reported anxiety did decrease significantly over the three time-points, with decreasing mean scores at post-treatment and at 3-month follow-up. These changes may reflect the mechanism of “sowing and reaping,” wherein parents are trained in skills to teach during treatment but their child may not master coping with anxiety until they have had sufficient time to implement and practice these skills, in the months that follow treatment (Nauta, Scholing, Emmelkamp, & Minderaa, 2001). This mechanism may

not have come to completion at the time of our 3-month follow-up assessment.

Further, with a larger sample size, there may have been more power to detect small or medium treatment effects as early as three months after receiving treatment.

Alternatively, psychoeducation around the nature of anxiety and increased parent attention to the behaviors of the anxious child during the parent intervention may have contributed to increased parent awareness of child impairment. In turn, this raised awareness may have compensated for true decreases in child anxiety post-intervention. Another explanation could be that parents' perceptions change slowly; parents may need more salient positive experiences with their child before they begin to report decreases in their child's anxious symptoms. Lastly, parents may have been externally motivated to report continuously elevated child anxiety, even after completing the intervention, due to their original (and continued) interest in traditional clinic treatment for their child.

There were also no significant differences between conditions in maternal or paternal anxiety over time. This finding is interesting in light of the fact that a sizeable percentage of participants (20-25%) reported clinically significant levels of anxiety at baseline, with at least one quarter endorsing having a diagnosed anxiety disorder.

There are several possible explanations for this finding. First, the explicit emphasis in this parent intervention was upon the child's anxiety, with changes in parental anxiety examined as a potential secondary benefit of the child-focused intervention. While several cognitive-behavioral coping strategies discussed in the intervention modules are highlighted as "useful to parents," the intervention was not designed to target parental anxiety. Therefore, parents may not have applied the coping skills discussed

in the ICBT intervention to their own anxiety. It is also possible that study clinicians placed differential emphasis on the utility of cognitive-behavioral strategies for parents' own application. Additionally, parents with high baseline levels of anxiety may have lacked the necessary coping skills to manage the distress brought on by discussing their child's anxiety.

This finding is also relevant in that the transfer of control model used in this intervention relies on the parents' ability to communicate treatment techniques to their child. Breinholst and colleagues (2012) indicated that this model may be problematic when the parent is experiencing their own anxiety. They suggested that anxiety may interfere with parents' motivation to collaborate with treatment and may even obstruct treatment goals, unless they are willing to address their own maladaptive thoughts and behaviors. Others (e.g., Cobham et al., 1998), however, reported that the beneficial effects of parent interventions were present for parents who reported significant anxiety themselves. Therefore, future studies should examine whether there are differential outcomes for children whose parents participate in a parent intervention depending on parental anxiety level.

Also contrary to our hypotheses, there were no significant differences between conditions in parenting satisfaction or parenting self-efficacy over time. Instead, mothers in both conditions reported an increase in parenting self-efficacy from baseline to Time 2. Maternal self-efficacy appeared to increase more notably in the ICBT group as compared to the WL, but this difference was not statistically significant. Psychoeducation, targeted discussion, and modeling of specific coping skills to teach the anxious child as well as strategies for responding to child anxiety

may have empowered mothers in the ICBT group to feel that they are able to respond adaptively when the child becomes anxious. In the WL group, parents became aware that they would, in ten weeks time, receive the intervention and invested significant time in providing clinical information about their child. Therefore, this increased attention to their child's functioning and the overall anticipation of treatment may have contributed to increased self-efficacy for mothers during the waiting period.

There are other potential explanations for these findings. First, it is possible that the intervention did not influence parenting satisfaction and self-efficacy, given that these variables were not specifically targeted by the intervention. Second, factors other than participation in child anxiety treatment may exert significant influence upon these parenting process variables. It is also possible that the intervention did have some impact on parenting satisfaction and self-efficacy but the effects were not large enough to be detected in a sample of this size. Furthermore, it is also possible that we did not find significant changes in parenting satisfaction or self-efficacy because parents were still in the process of applying new strategies at post-treatment and thereafter, making it too soon after treatment to assess significant changes in these variables in either condition.

Moreover, the personal responsibility and commitment of parents in the intervention, whether real or perceived, may have had an unintended impact on parenting satisfaction. Implementing strategies for responding to child anxiety are often challenging and even counterintuitive. For some parents, the idea of helping their child to manage anxiety by facing fears may feel "foreign, uncomfortable, and even mean" (Chansky, 2004, p.7). And, as anxious children become more competent

and independent, they rely less on their parents, which may lead to a decrease in the secondary gain that parents of anxious children may receive.

Also contrary to our hypotheses, there were no significant differences between conditions in teacher's reports of child anxiety over time. Given the small sample of teachers that returned questionnaires at baseline and Time 2 ( $n=12$ ), it is quite likely that the study was underpowered to detect significant treatment effects. Therefore, generalizations about teacher observations of child anxiety should not be made based on this finding. It is also possible that the anxiety subscale used to obtain teacher observations of child anxiety may not have been sensitive enough to treatment change. Additionally, teachers in this study reported baseline levels of child anxiety that paralleled reports by mothers and the anxious children themselves, based on *T* score comparisons. This is in contrast with Youngstrom, Loeber, and Stouthamer-Loeber (2000) who reported that teachers generally report fewer internalizing problems than do caregivers or youth, because internalizing disorders are by nature more difficult to observe than externalizing disorders (i.e., behavioral challenges that in general would be more likely to disrupt the classroom setting).

### **Strengths of the Study**

Overall, this study bridges multiple gaps in the literature by paying greater attention to parental involvement in treatment for childhood anxiety, emphasizing modeling and parental support of adaptive coping and non-avoidance, as suggested by Simpson and colleagues (2012), in addition to cognitive-behavioral strategies to be transferred from therapist to parent to child using the transfer of control model.

First, this study directly answers the call of other experts (e.g., McLeod et al., 2011, Wood et al., 2003) for the precise study of the linkage between parenting and child anxiety, focusing on the salient parenting behaviors that may influence the acquisition, progression, and maintenance of anxiety. To our knowledge, it is one of the first studies to directly address and measure a specific maladaptive parenting behavior. Parents' protective behaviors were a pivotal target of the intervention and one that was specifically assessed throughout the study. Doing so addresses a criticism by Breinholz and colleagues (2012) that the literature in parental treatment involvement does not directly measure the impact of individual treatment elements.

Second, Simpson and colleagues (2012) suggested that parent motivation for change should be addressed at all times in treatment. This intervention attempted to address this need by asking parents to rate the importance of and their confidence related to session content. These were meant to maintain motivation, clarify information, and trouble-shoot challenging areas. However, it should be noted that the extent to which clinicians used these strategies in this intervention may have varied.

Third, the majority of existing studies in the area of parent-focused treatment for childhood anxiety employ samples of parents with younger children, because younger children have yet not reached a stage of cognitive development in which they are able to benefit from cognitive-behavioral therapy. This study expands this body of literature by examining a parent-only intervention for the treatment of anxiety in elementary to middle-school aged children. It demonstrates the important role that parents continue to play in not only the development and maintenance of childhood anxiety, but also in its treatment.

Fourth, the study design itself has several strengths. The individual treatment modality through which the intervention was provided allowed for more targeted treatment of each child's individual needs, as compared to the more generalized treatment provided in group formats utilized in the majority of studies in the literature. Additionally, the study employed a multi-modal assessment at each time-point, measuring variables from the perspectives of the child, parents, diagnosticians, and teachers, as well as incorporating multiple formats for reporting (e.g., structured diagnostic interview, paper/pencil questionnaires). In fact, in contrast to studies reporting poor parent-child agreement, we found moderate correlations between parent and child reports when using the same measure. Additionally, while it is unclear which report should be deemed most accurate, positive treatment outcomes appear possible despite less than perfect agreement (Safford, Kendall, Flannery-Schroeder, Webb, & Sommer, 2005). Further, the study utilized independent assessors at each time-point (i.e., families were assessed by different diagnosticians at each time-point; clinicians could not serve as both diagnostician and clinician for a family). Lastly, many previous studies examining child- or parent-focused CBT for childhood anxiety have reported pre-treatment and post-treatment findings, without reporting follow-up data. This study did report follow-up results indicating the ways in which gains are maintained over time.

Finally, the general type of treatment (CBT) that produced the beneficial effects described here is already designated as "probably efficacious" (Ollendick et al., 2006) for childhood anxiety disorders. As such, CBT is widely used and a standard part of training and practice for many mental health providers (Cartwright-Hatton,



McNally, White, & Verduyn, 2005b). Therefore, the findings of this study are extensively applicable to vast number of professionals.

### **Limitations of this Study**

Although this study contributes significantly to an understanding of the role of parents in the treatment of childhood anxiety disorders, there are a number of relevant limitations to note. First, as indicated earlier, while the power calculations reported herein indicated that the study's power was sufficient to detect large effects between the active intervention group and waitlist control, it is likely that there was insufficient power to detect smaller between-group differences due to small sample size. As a result, several potentially useful follow-up analyses such as examining the effects of gender or reporting findings by specific child anxiety disorder or parental anxiety status were rendered impractical.

Related to this, the lack of racial/ethnic and socioeconomic diversity in the sample limited the generalizability of these findings to White, middle to upper class families and precluded separate analyses by race and/or ethnicity. It is unclear whether such an intervention for the parents of anxious children would have similar effects in culturally and economically diverse samples. For instance, such groups may exhibit differences in parenting styles and general coping strategies, as compared to this sample, which might influence engagement in the intervention and implementation of recommended strategies. However, previous research has indicated that race and ethnicity are not strong moderators of childhood anxiety. For example, Pina and colleagues (2012) noted that cognitive and behavioral strategies established for White, non-Hispanic youth and their families may be promising for Hispanic/Latino children,

provided they are applied in a culturally responsive manner. Still, one must give consideration to the social determinants of childhood anxiety, in addition to the behavioral determinants (e.g., modeling, information transfer, reinforcement of avoidance) addressed in this intervention. Bronfenbrenner (1979) posited that in order to understand human development, the entire ecological system in which development occurs needs to be taken into account, including the bi-directional influences between subsystems and the individual. Thus, triggers for and responses to anxiety in children likely stem from factors beyond modeling within family system. They may be influenced by factors in other microsystems (e.g., schools, peer relationships, religion/spirituality, health services), broader systems (e.g., neighborhood, mass media, politics), and cultural attitudes and ideologies. Further, the perceived importance of treatment and access to behavioral health services to address childhood anxiety may vary, depending on the systems to which the child and family belongs.

While this study made every effort to involve all primary caregivers of the anxious child in assessment and in the intervention itself, for practical reasons, this was not always possible. For instance, employment schedules and child-care concerns made it difficult for some families to have multiple caregivers participate simultaneously or attend consistently. Per reports from study clinicians, fathers attended less consistently and participated in fewer sessions overall, as compared to mothers. While digital recordings of session content were provided when caregivers missed sessions, the level to which participants engaged with these recordings outside of the session is unknown.

With regard to assessment, as noted earlier, significant effort was also made to

ensure that study diagnosticians were blind to participants' treatment condition and time-point during assessments in attempts to prevent bias in clinician severity ratings. However, diagnosticians may have been able to determine this information based on participant reporting during structured diagnostic interviews, and therefore be susceptible to bias. Additionally, the BASC was returned by just two thirds of teacher participants at baseline, a return rate that decreased over time. Just twelve of the sample's teachers returned the BASC at both baseline and Time 2. Only four teachers returned the questionnaire at all three time-points. In addition to the many competing responsibilities faced by teachers, it is notable that many families' participation spanned summer months, when identified classroom teachers were simply unavailable to complete the questionnaire. Further, we had requested that families ask the same teacher to complete the form at each time-point, but in some cases, because participation spanned grade changes, this was not possible and parents elected not to distribute the questionnaire.

Another concern relates more generally to the use of parent-report instruments to evaluate change in children. This commonly used technique for evaluating outcomes of parenting interventions does in fact run the risk of confounding genuine change with change in parental *perceptions* of child functioning (Cartwright-Hatton et al., 2005b). In this study, as described above, we addressed this concern by obtaining information about child anxiety symptoms from parents, teachers, and the child themselves. However, with regard to the structured diagnostic interview, information was obtained solely from parents. It is interesting that the diagnostic variables resulting from such interviews were those for which we found significant change post-

treatment and at 3-month follow-up. Still, even if it is the case that the interview-derived variables are assessing changes in parental perceptions of child functioning, such change is by no means a meaningless outcome. In fact, it can be argued that these changes in perceptions are pivotal to changes in the parental behaviors that maintain child anxiety.

This study employed what could be described as a short-term follow-up assessment. Given the sowing and reaping mechanism described earlier, three months post-intervention may not have provided sufficient time for all effects of treatment to consolidate and manifest in observable ways, particularly with regard to the parenting process variables (e.g., self-efficacy and satisfaction). However, we were able to report the maintenance of gains for diagnostic variables at three months, suggesting that observable change is possible in this shorter window. Additionally, similar studies suggests that treatment gains can be maintained at three months (Cartwright-Hatton et al., 2005a), six months (Cartwright-Hatton et al., 2005b), and one year (Waters et al., 2009).

Additionally, control groups are widely regarded as an indispensable element of psychotherapy outcome research (Leichsenring & Rabung, 2006), particularly when piloting new interventions through randomized clinical trials. However, many contend that waitlist control groups are not necessarily “untreated” because they are contacted, consented, randomized, diagnosed, and measured throughout the waiting period (Gallin & Ognibene, 2012). Similarly, the act of being included in the study may result in alleviation of symptoms as result of positive expectations, social interaction during interviews, repeated outcome assessments, and so forth (Hesser, Weise, Rief, &

Andersson, 2011). There are also ethical considerations regarding withholding treatment from clinical populations and unanticipated detrimental effects due to disappointment or suspicion (Hesser et al., 2011). In this study, particular emphasis was placed on the possibility of being allocated to the WL condition during the consent process, in attempts to prepare families for potential disappointment. No participants in the WL condition waited longer than the ten-week period to begin the intervention. Furthermore, the majority of participants were already in the process of waiting for available child-focused treatment. Even those allocated to the WL condition received the parent intervention prior to availability of this alternative child-focused treatment.

### **Conclusions & Future Directions**

In summary, the present study demonstrated that an individual parent-only CBT intervention was more effective than a waitlist control condition in reducing children's anxiety as reported by structured diagnostic interview and in reducing maternal protective parenting behaviors. These findings highlight Walker's (2012) suggestion that the influence of parenting factors on childhood anxiety should be a fundamental consideration for practitioners when planning treatment in any modality.

Future research will need to establish that treatment gains made in this parent-only intervention are equal to, if not surpass, the treatment gains made in more traditional child- or family-focused modalities. These findings could then contribute to the assertion that parent-only CBT interventions are viable options for improving accessibility to efficacious treatment for children with anxiety disorders, and in a

format that may be more cost-effective (i.e., same treatment gains in fewer sessions than the average child-focused CBT intervention).

Further, as suggested by Breinholz and colleagues (2012), more long term follow-up studies are needed to establish whether parent-only interventions for the treatment of childhood anxiety in general have long-term benefits, perhaps extending beyond the three, six, and twelve month benchmarks established thus far in the literature. Such studies should also seek to elucidate the specific factors and treatment elements that contribute to the maintenance of therapeutic gains if such gains exist. In fact, it would also be instructive to learn what participants perceived to be the most effective components of the intervention, perhaps even using the importance and confidence ratings provided during modules described here. In a similar vein, it may be useful to utilize a measure of parents' perceptions of their own responsibility for change prior to commencing parent-only interventions to better target the application of such motivational interviewing strategies.

Future studies should also give careful consideration to the selection of outcomes measures, as these determine how treatment success is measured. Current outcome measures, even those deemed to be the gold-standard of assessing treatment outcome, may fall short of assessing whether interventions truly lead to meaningful change in the lives of youth. It is recommended that future studies go beyond paper-and-pencil questionnaires to determine whether interventions are leading to change in functional outcomes (e.g., decrease in avoidant behaviors, increase in sleeping in child's own bed) and in quality of life (Chambless and Hollon, 1998). In fact, it is

possible that such functional changes may even precede changes in anxious symptomatology.

More broadly, many researchers (e.g., Seligman & Ollendick, 2011) have suggested that that future research needs to move beyond the basic question of whether cognitive-behavioral therapy is efficacious in the treatment of childhood anxiety disorders. There is still insufficient evidence to suggest who will benefit from traditional child-focused CBT interventions, as well as for parent-focused interventions. Therefore, it is imperative that studies of any modality seek to establish important moderators and mediators of treatment outcome (e.g., parental anxiety, protective parenting behaviors). This information will help to elucidate for whom CBT in any modality is more or less effective, as well as why it works. Particularly with regard to parent-focused interventions, studies utilizing more diverse samples will help researchers and clinicians to better understand cultural differences and offer a more tailored approach to treating anxiety in children and adolescents. Presently, while clinicians must adapt CBT interventions to a child's developmental level and other contextual factors (Kingery et al., 2006), little systematic research is available to guide these decisions.

Finally, while research provides strong support for the efficacy and effectiveness of CBT for the treatment of child anxiety, dissemination and implementation of CBT outside of academic settings remains limited (Elkins, McHugh, Santucci, & Barlow, 2011). This study aimed to train parents to "transfer" cognitive-behavioral coping strategies from the therapy session to their child at home, utilizing externally valid "real-world" situations to practice those skills. Additional

creative modifications to existing treatment modalities are needed to deliver CBT for childhood anxiety in a more transportable format.



Table 1

*Demographic & Diagnostic Characteristics of Participants*

Variable	Groups		Difference	<i>p</i>
	ICBT ( <i>n</i> =18)	WL ( <i>n</i> =13)		
Child's Sex				
Male	11	8		
Female	7	5	$\chi^2 = .001$	n.s.
Family's Ethnicity				
Hispanic/Latino	1	0		
Non-Hispanic/Latino	17	13	$\chi^2 = .746$	n.s.
Mean age of child in yrs ( <i>SD</i> )	10.04 (1.80)	9.46 (1.76)	$t(29) = .893$	n.s.
Maternal mean age in yrs ( <i>SD</i> )	42.48 (7.49)	41.64 (2.50)	$t(22) = .334$	n.s.
Paternal mean age in yrs ( <i>SD</i> )	46.12 (7.21)	43.45 (3.39)	$t(26) = 1.141$	n.s.
Mean Household Income ( <i>SD</i> )	131000 (82417)	123571 (74202)	$t(18) = .199$	n.s.
Parental Status				
Married/Dom. Partnership	16	13		
Divorced, Not Remarried	2	0	$\chi^2 = 1.544$	n.s.
Principal Anxiety Disorder				
Separation Anxiety	3	0		
Social Anxiety	3	0		
Specific Phobia	5	6		
Generalized Anxiety	7	7	$\chi^2 = 5.426$	n.s.
Comorbidity				
None	1	3		
+1 Anxiety Dx	5	2		
+2 or more Anxiety Dx	12	8	$\chi^2 = 2.340$	n.s.
+ Externalizing Dx	4	2	$\chi^2 = .226$	n.s.

*Note.* ICBT: Immediate Cognitive-Behavioral Therapy group; WL: Waitlist control group; Dx: Disorder Diagnosis

Figure 1. Recruitment and treatment of participants over time.

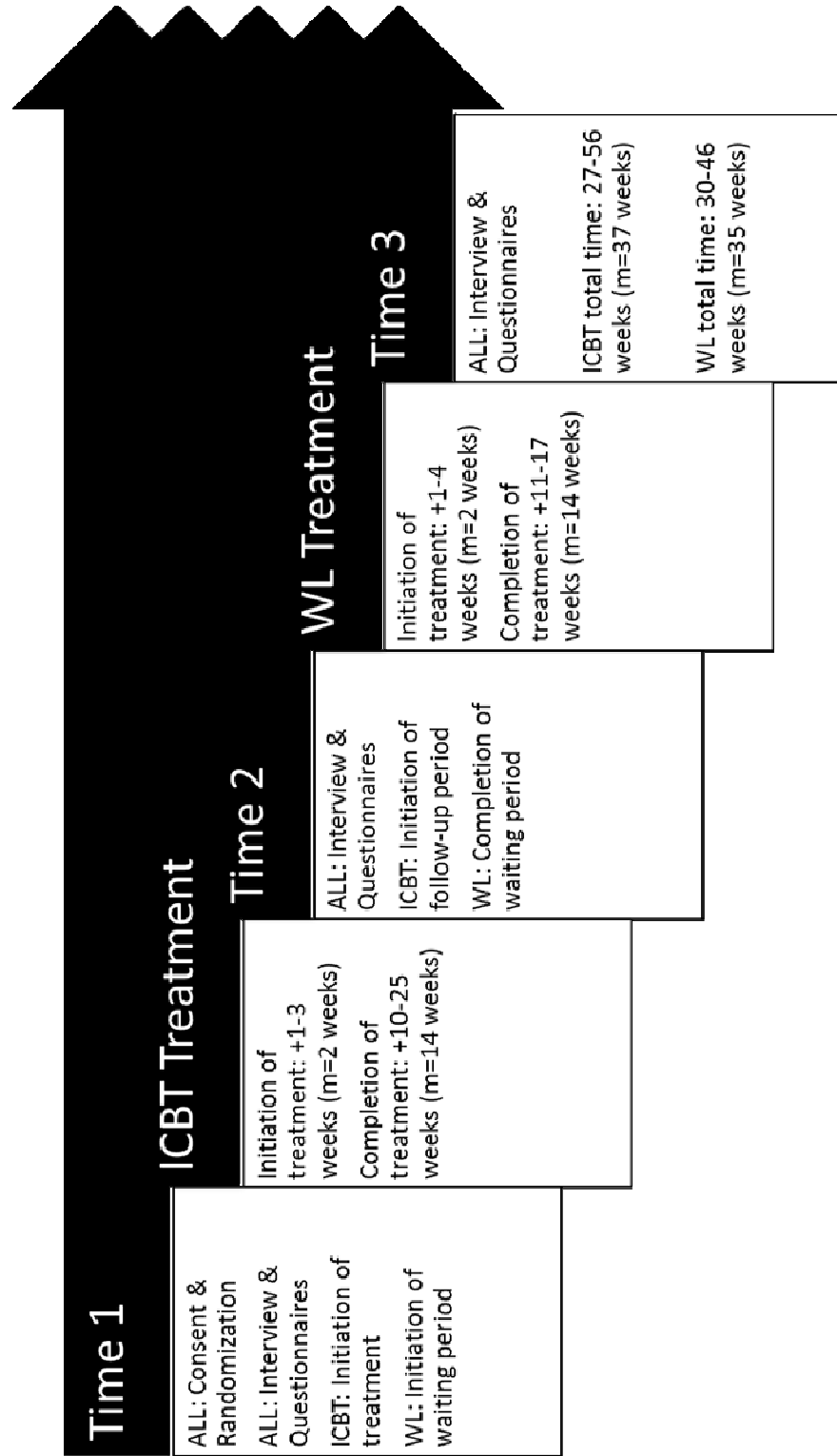
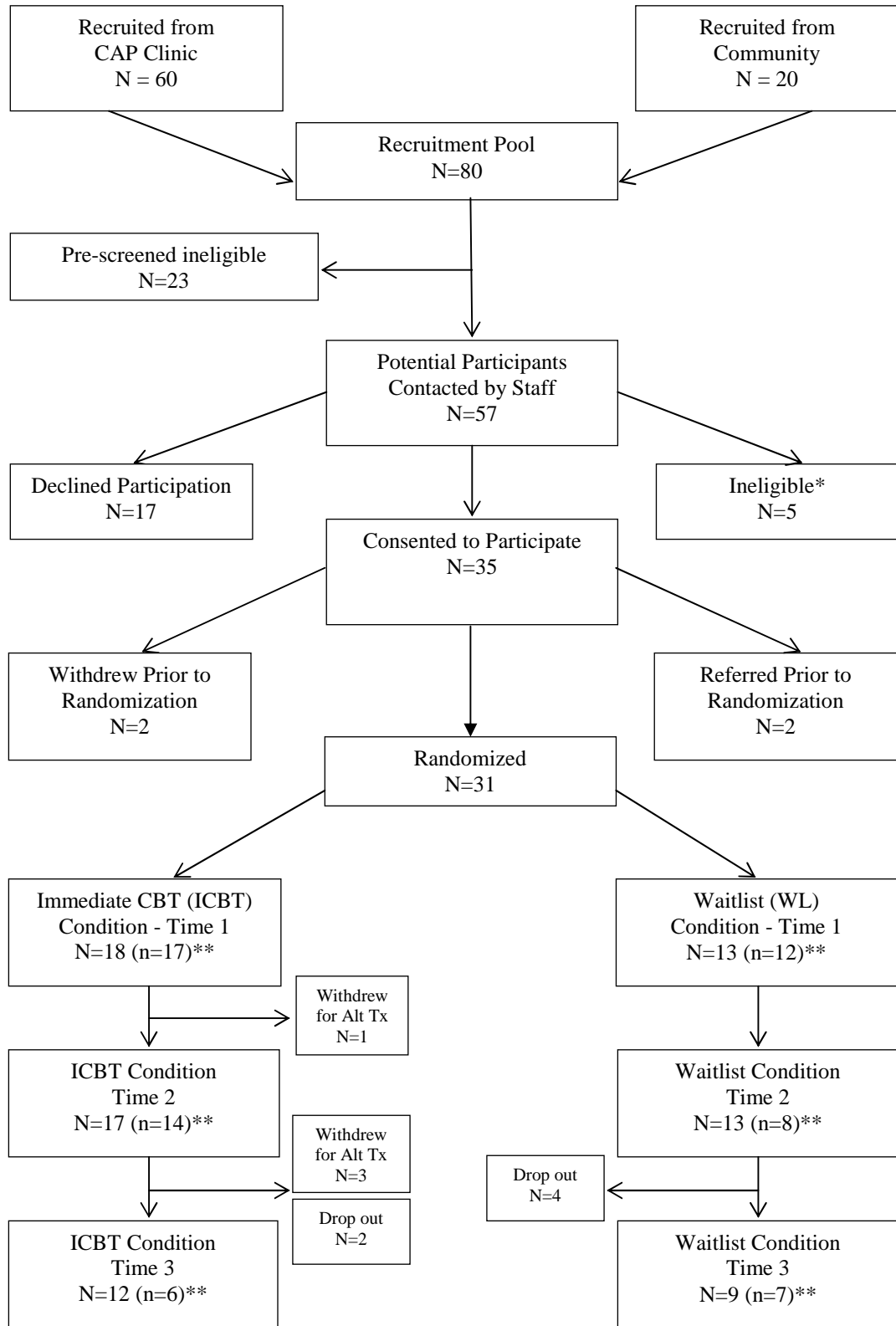


Figure 2. Flow diagram of participants through the study.



\* Excluded from study based on failure to satisfy inclusion and/or exclusion criteria

\*\* n's listed parenthetically refer to sample sizes for mother's questionnaire data

Table 2

*Sample Sizes Completing Measures by Reporter*

Variable	Baseline (N)	Time 2 (N)	Time 3 (N)
ICBT			
ADIS	18	17	12
Mother	17	14	6
Father	13	11	3
Child	16	14	6
Teacher	13	10	5
WL			
ADIS	13	13	9
Mother	12	8	7
Father	8	5	5
Child	10	7	7
Teacher	7	6	4
Total			
ADIS	31	30	21
Mother	29	22	13
Father	21	16	8
Child	26	21	13
Teacher	20	16	9

Table 3

*Means & Standard Deviations for Structured Diagnostic Interview<sup>§</sup>*

Variable	Baseline <i>M (SD)</i>	Time 2 <i>M (SD)</i>	Time 3 <i>M (SD)</i>	Observed Range
ICBT				
TOTDX	3.67 (1.68)	1.88 (1.62)	1.08 (0.90)	0-7
TOTPIR	21.28 (10.05)	12.71 (8.59)	8.46 (5.36)	2-42
TOTCSR	20.06 (8.75)	12.71 (7.27)	7.83 (5.13)	2-35
PRINPIR	6.50 (0.99)	3.88 (1.87)	3.67 (2.19)	0-8
PRINCSR	6.33 (0.69)	3.76 (1.39)	3.33 (1.92)	0-7
WL				
TOTDX	2.92 (1.50)	3.23 (1.59)	1.33 (1.73)	0-6
TOTPIR	15.15 (6.03)	17.46 (7.88)	10.11 (9.91)	0-32
TOTCSR	16.77 (6.73)	18.15 (7.37)	9.78 (9.36)	0-31
PRINPIR	5.23 (1.59)	4.46 (2.47)	2.44 (2.70)	0-8
PRINCSR	6.23 (1.01)	4.92 (2.33)	2.00 (2.12)	0-8
TOTAL				
TOTDX	3.35 (1.62)	2.47 (1.72)	1.19 (1.29)	0-7
TOTPIR	18.71 (9.01)	14.77 (8.49)	9.17 (7.47)	0-42
TOTCSR	18.67 (8.01)	15.07 (7.69)	8.67 (7.11)	0-35
PRINPIR	5.97 (1.40)	4.13 (2.13)	3.14 (2.43)	0-8
PRINCSR	6.29 (0.82)	4.27 (1.91)	2.76 (2.07)	0-8

*Note.* TOTDX: Total number of anxiety disorder diagnoses per ADIS; TOTPIR: Parent interference composite score per ADIS; TOTCSR: Clinician severity composite score per ADIS; PRINPIR: Parent interference rating for principal diagnosis; PRINCSR: Clinician severity rating for principal diagnosis.

<sup>§</sup> Statistics are for non-transformed variables.

Table 4

*Means & Standard Deviations for Maternal Self-Report Measures<sup>§</sup>*

Variable	Baseline <i>M (SD)</i>	Time 2 <i>M (SD)</i>	Time 3 <i>M (SD)</i>	Observed Range
ICBT				
AMAS	12.18 (7.55)	9.93 (6.90)	12.50 (11.11)	0-29
MASC	58.53 (16.95)	52.73 (21.17)	50.17 (18.41)	18-85
SAT	32.39 (5.76)	34.50 (4.50)	34.33 (4.03)	23-42
EFF <sup>□</sup>	20.61 (4.63)	18.21 (3.85)	19.00 (3.41)	13-30
PPS	51.18 (5.61)	46.93 (7.45)	46.00 (6.36)	33-63
WL				
AMAS	13.33 (7.69)	14.13 (8.41)	9.86 (8.21)	2-26
MASC-P	51.33 (18.03)	48.09 (17.07)	52.29 (13.59)	17-71
SAT	30.83 (6.63)	33.13 (6.31)	31.19 (3.95)	22-44
EFF <sup>□</sup>	19.75 (3.93)	19.50 (3.30)	19.50 (3.73)	13-26
PPS	51.58 (5.70)	51.63 (7.03)	47.71 (4.42)	38-65
Total				
AMAS	12.63 (7.50)	11.39 (7.55)	11.08 (9.33)	0-29
MASC-P	55.74 (17.44)	55.12 (19.57)	51.31 (15.32)	17-89
SAT	31.77 (6.06)	34.00 (5.13)	32.76 (4.15)	22-44
EFF <sup>□</sup>	20.27 (4.31)	18.68 (3.63)	19.25 (3.41)	13-30
PPS	51.34 (5.55)	48.57 (7.50)	46.92 (5.24)	33-65

*Note.* AMAS: Adult Manifest Anxiety Scale total score; MASC-P: Multidimensional Anxiety Scale for Children – Parent Version total score; SAT: Parenting Sense of Competency Satisfaction subscale, EFF: Parenting Sense of Competency Efficacy subscale; PPS: Parent Protection Scale total score.

<sup>§</sup> Statistics are for non-transformed variables.

□ Lower EFF scores represent increased efficacy.

Table 5

*Means & Standard Deviations for Paternal Self-Report Measures<sup>§</sup>*

Variable	Baseline <i>M (SD)</i>	Time 2 <i>M (SD)</i>	Time 3 <i>M (SD)</i>	Observed Range
ICBT				
AMAS	9.15 (7.83)	8.91 (7.38)	14.00 (11.53)	1-27
MASC	51.08 (12.61)	52.73 (16.41)	53.33 (16.07)	22-76
SAT	32.69 (5.47)	33.27 (6.26)	30.00 (6.56)	22-39
EFF <sup>□</sup>	22.62 (4.37)	22.09 (5.54)	25.33 (2.08)	14-30
PPS	48.54 (5.81)	47.55 (4.80)	50.67 (8.14)	38-60
WL				
AMAS	13.13 (10.05)	14.00 (8.15)	8.20 (6.18)	2-29
MASC-P	51.88 (12.65)	59.20 (15.74)	57.40 (17.53)	27-76
SAT	32.00 (7.01)	28.60 (9.56)	33.00 (7.58)	18-44
EFF <sup>□</sup>	23.25 (4.95)	23.00 (8.34)	19.80 (6.22)	10-33
PPS	51.38 (4.98)	50.00 (4.06)	45.20 (3.03)	42-59
Total				
AMAS	10.67 (8.72)	10.50 (7.75)	10.38 (8.30)	1-29
MASC-P	51.38 (12.31)	54.75 (15.97)	55.87 (15.93)	22-76
SAT	32.43 (5.94)	31.81 (7.45)	31.88 (6.90)	22-44
EFF <sup>□</sup>	22.86 (4.49)	22.38 (6.26)	21.86 (5.62)	10-33
PPS	49.62 (5.56)	48.31 (4.60)	47.25 (5.68)	38-60

*Note.* AMAS: Adult Manifest Anxiety Scale total score; MASC-P: Multidimensional Anxiety Scale for Children – Parent Version total score; SAT: Parenting Sense of Competency Satisfaction subscale, EFF: Parenting Sense of Competency Efficacy subscale; PPS: Parent Protection Scale total score.

<sup>§</sup> Statistics are for non-transformed variables.

□ Lower EFF scores represent increased efficacy.

Table 6

*Means & Standard Deviations for Child Self-Report & Teacher-Report Measures<sup>§</sup>*

Variable	Baseline <i>M (SD)</i>	Time 2 <i>M (SD)</i>	Time 3 <i>M (SD)</i>	Observed Range
ICBT				
MASC-C	58.44 (16.14)	52.21 (20.48)	47.00 (16.78)	20-88
BASC-T	66.31 (18.32)	61.50 (20.39)	53.00 (18.00)	38-103
WL				
MASC-C	53.50 (17.68)	51.11 (23.63)	56.29 (25.90)	26-96
BASC-T	76.00 (18.19)	75.50 (7.58)	62.00 (16.17)	45-93
TOTAL				
MASC-C	56.54 (16.58)	51.85 (20.98)	52.00 (21.82)	20-96
BASC-T	69.70 (18.41)	66.75 (17.82)	57.00 (16.81)	38-103

*Note.* MASC-C: Multidimensional Anxiety Scale for Children – Child Version total score; BASC-T: Behavior Assessment System for Children –Teacher Rating Scales, Second Edition, Anxiety subscale *T* scores

<sup>§</sup> Statistics are for non-transformed variables.



Table 7

Significant Pearson Correlation Coefficients<sup>§</sup>

	AMAS-M	AMAS-F	MASC-M	MASC-F	SAT-M	SAT-F	EFF-M	EFF-F	PPS-M	PPS-F	MASC-C	BASC-T
AMAS-F	-											
MASC-M	-											
MASC-F	-		0.66**									
SAT-M	-0.44*	-0.45*	-									
SAT-F	-	-0.62**	-									
EFF-M	-	0.51*	-	-0.46*	-0.69**							
EFF-F	-	-	-	-	-0.68**	0.66**						
PPS-M	0.35*	-	-	-	-	-						
PPS-F	-	0.75**	-	-0.45*	-0.48*	0.49*						
MASC-C	0.42*	-	-	-	-	-						
BASC-T	-	-	-	-	-	-						
TOTDX	0.63**	-	-	-	-	-					0.54**	-
TOTPIR	0.59**	0.44*	-	-	-	-					0.47*	-
TOTCSR	0.65**	-	-	-	-	-					0.47*	-

Note. M: Mother-reported; F: Father-reported; C: Child-reported; T: Teacher-reported; AMAS: Adult Manifest Anxiety Scale total score; MASC: Multidimensional Anxiety Scale for Children total score; SAT: Parenting Sense of Competency Satisfaction subscale, EFF: Parenting Sense of Competency Efficacy subscale; PPS: Parent Protection Scale total score; BASC-T: Behavior Assessment System for Children –Teacher Rating Scales, Second Edition, Anxiety subscale *T* scores; TOTDX: Total number of anxiety disorder diagnoses per ADIS; TOTPIR: Parent interference composite score per ADIS; TOTCSR: Clinician severity composite score per ADIS.]

\*  $p < .05$ ; \*\*  $p < .01$

§ Statistics are for non-transformed variables.

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