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The Relationship between Child and Parent Anxiety:

Assessing Direction of Change during a CBT-based Intervention

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Abstract

The Relationship between Child and Parent Anxiety:

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by

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This document proposes a study to ascertain if a relationship exists between levels of child and parent anxiety symptoms during an intervention designed to decrease anxiety in youth. This document systemically describes family variables related to anxiety in youth at the individual, parent-child, marital, whole family, and extra familial subsystem levels, in addition to previous research analyzing parental anxiety and the direction of change between child and parent anxiety during youth-focused interventions. The study involves gathering anxiety symptom data from parent and child participants at 14 time points and analyzing it using dependent samples *t*-test, regression, and ANOVA repeated measure analyses. These analyses serve to answer the research questions of whether child and parent anxiety symptoms improve in a youth-focused CBT intervention for anxiety from pre- to post-treatment, whether there exists a significant relationship between the severity of anxiety symptoms in youth and parents surrounding a youth-focused anxiety intervention, and whether this relationship is consistent.

Table of Contents

List of Figures

Chapter 1: Introduction

Anxiety disorders are a cluster of psychiatric disorders defined by the presence of intense and/or excessive fear and worry (American Psychiatric Association, 2000). A review of epidemiological studies reported that the 12-month prevalence rate for the presence of any anxiety disorder in children and adolescents has been estimated to range from 8.6 to 20.9 percent (Costello, Egger, & Angold, 2005). Anxiety disorders are some of the most common psychiatric disorders in children and adolescents (Costello, Mustillo, Erkanli, Keller, & Angold, 2003). When youth suffer from anxiety disorders, the areas of general, academic, and social functioning may all be impaired (Ezpeleta, Keeler, Erkanli, Costello, & Angold, 2001) and the risk for additional psychopathology later in life increases (Biederman et al., 2007; Kessler, Berglund, Demler, Jin, & Walters, 2005).

Youth whose parents have an anxiety disorder are at an even greater risk to develop an anxiety disorder themselves. In fact, researchers found that youth of parents with anxiety disorders are up to seven times more likely to develop an anxiety disorder compared to youth whose parents do not have anxiety disorders (Beidel & Turner, 1997). Additionally, the literature demonstrates that parents of children with anxiety disorders show an increased prevalence of anxiety disorders themselves compared to adults in the general population (Last, Hersen, Kazdin, Orvaschel, & Perrin, 1991). Even though researchers are aware of this trend, the relationship between parent and child anxiety is not fully understood. Studies evaluating anxiety interventions for youth have shown that parents' anxiety symptoms sometimes decrease even when the parents are *not* involved in their child's treatment (Silverman, Kirtines, Jacard, & Pina, 2009), and sometimes youth's anxiety decreases when their parents are the *only* ones involved in the anxiety treatment (Thienemann, Moore, & Tompkins, 2006). A bidirectional model of parent

and child anxiety has been proposed to explain the development and direction of effect of child anxiety, and there has been a call for more research to understand this relationship (Thienemann et al., 2006; Silverman et al., 2009; Simon, Bögels, & Voncken, 2011).

An anxiety intervention enhancement study is currently being researched to investigate a cognitive behavioral therapy (CBT) intervention for youth with the addition of a parent training component. The parental component of the intervention provides parents with the same skills that their child is learning in the CBT sessions, in addition to the skills necessary to implement these practices outside of the therapeutic setting. The research methodology to analyze the effectiveness of the intervention mirrors that used in in the National Institute of Mental Health (NIMH) funded Child/Adolescent Anxiety Multimodal Study (CAMS; Walkup et al., 2008). This intervention consists of recruiting children with Generalized Anxiety Disorder, Separation Anxiety Disorder, and Social Phobia; implementing a 12-session CBT intervention; and implementing a parallel manualized parent training sequence (Stark, Banneyer, Wang, & Kendall, in progress). Analysis of this relationship with repeated measures data will help address the gap in the literature surrounding the relationship between parent and child anxiety symptoms during youth-focused anxiety treatment. Ultimately, this analysis will also investigate the directionality of anxiety transmission between parent and child and inform the determination of best practice for the treatment of anxiety disorders in youth. In order to more fully understand the relationship between levels of parent and child anxiety symptoms, the author proposes to monitor anxious symptoms of the parents and children in this intervention program on a weekly basis.

Chapter 2: Integrative Analysis

While there are significant internal contributions to the development of anxiety, including genetic and cognitive factors, research shows that external variables, such as familial and social-environmental factors, also account for a significant contribution to the etiology of anxiety disorders (Kendler, Neale, Kessler, Heath, & Eaves, 1992; Fisak & Grills-Taquechel, 2007; Turner, Beidel, Roberson-Nay, & Tervo, 2003; Wood, McLeod, Sigman, Hwang, & Chu, 2003). Young children spend the majority of time with their families, and thus, family variables have been vigorously examined with regard to their relationship to the development of anxiety in children (Bögels & Brechman-Toussaint, 2006; Fisak & Grills-Taquechel, 2007; Ginsburg, Siqueland, Masia-Warner, & Hedke, 2004; Wood et al., 2003). Because of the overwhelming evidence demonstrating that families impact the development of anxiety in children, parents have been included in several youth anxiety treatment programs (Barmish & Kendall, 2005) and youth and parent anxiety levels have been analyzed to assess directionality of anxiety transmission (Fisak & Grills-Taquechel, 2007).

Systemic Description of Familial Variables Related to Childhood Anxiety

One way to describe family processes as they contribute to anxiety in children is to take a systemic approach (e.g. Restifo & Bögels, 2009). In this approach, variables analyzed for their link to child anxiety are examined in five subsystem levels, ranging from the individual to broader social subsystem levels. Familial variables and findings, as they relate to the development of youth anxiety, will be analyzed and interpreted below at all five subsystem levels: the individual (both parent and child), parent-child, marital, whole family, and extra familial subsystems.

Individual subsystem. The individual level focuses on anxiety characteristics of individual members of the family (i.e. child and parent). This level can include factors related to pathology, personality/temperament, cognitive style, and genetics/heredity.

Child factors.

Anxiety/Other Pathology. A meta-analysis found that anxiety disorders in children are most often comorbid with depression and also show comorbidity with Conduct Disorder/Oppositional Defiant Disorder and Attention-Deficit/Hyperactivity Disorder (Costello et al., 2005).

Personality/Temperament. The majority of research examining the relationship between anxiety and personality/temperament in children focuses on behavioral inhibition. Behavioral inhibition is the tendency for an individual to show fear or avoidance when confronted with unfamiliar stimuli (Kagan, Reznick, & Snidman, 1987; Ollendick & Benoit, 2012). Generally, youth with high behavioral inhibition have increased anxiety. This effect has been demonstrated in young children, school-age children, and adolescents, both by self-report and parent-report and in longitudinal studies (Biederman et al., 1990, 1993; Hirshfeld et al., 1992; Kagan & Snidman, 1999; Muris et al., 1999, 2001, 2003; Rosenbaum, Biederman, Hirshfeld, Bolduc, & Chaloff, 1991; Rosenbaum et al., 1991b; van Brakel, Muris, Bögels, & Thomassen, 2006). Additionally, van Brakel and colleagues (2006) found that behavioral inhibition accounted for a unique proportion of the variance of anxiety disorder symptomatology.

Cognitive Style. Interpretation bias, an information processing bias, has repeatedly been found to be associated with, and even play a causal role in, the development of youth anxiety disorders (Bögels, van Dongen, & Muris, 2003; Muris, Huijding, Mayer, & Hameetman, 2008; Ollendick & Benoit, 2012). Interpretation bias is the tendency for an individual to interpret an

ambiguous stimulus as threatening (Muris et al., 2008). Specifically, studies have found that children with anxiety, compared to children without a heightened level of anxiety, interpret these stimuli or situations in a dysfunctional manner (Bögels et al., 2003b). Bögels and colleagues (2003b, p.243) state that this bias can cause children with anxiety to "make more threat interpretations and more avoiding action plans (Barrett, Rapee, Dadds, & Ryan, 1996; Chorpita, Albano, & Barlow, 1996), make more negative interpretations (Bögels and Zigterman, 2000), overestimate danger (Bögels, Snieder, & Kindt, 2003), underestimate their own capabilities to cope with danger (Bögels and Zigterman, 2000), and interpret situations as dangerous based on less data (Muris et al., 2000a)."

Genetic Factors. A genetic predisposition to anxiety indicates that heritability impacts the etiology of anxiety disorders (Eley & Gregory, 2004; Fisak, & Grills-Taquechel, 2007; Stein, Jang, & Livesley, 2002). Twin, sibling, and adoption studies estimate that genetic heredity explains 50% of the etiological variance of anxious *symptoms* in children (Eley et al., 2003; van Beijsterveldt, Verhulst, Molenaar, & Boomsma, 2004) and 30-40% of the etiological variance of anxiety *disorders* in children (Eley, 2001; Hettema, Neale, & Kendler., 2001; Jang, 2005; Kendler, Neale, Kessler, Heath, & Eaves, 1992). Genetic factors have also been examined in familial aggregation studies. These studies indicate that familial aggregation of anxiety disorders occurs and is largely due to genetic factors in specific anxiety disorders such as Panic Disorder, Generalized Anxiety Disorder, and phobias (Hettema et al., 2001).

Parent factors. Individual parent factors also impact the development of anxiety disorders in youth. In addition to the categories listed within individual child factors, the individual parent subsystem level also includes factors related to parental attachment history.

Anxiety/Other Pathology. The estimated 12-month prevalence rate of anxiety disorders among adults in the United States is 18.1 percent (Kessler, Chiu, Demler, & Walters, 2005). When examining child anxiety from a "top down" perspective, research clearly demonstrates that when parents suffer from anxiety disorders, their children are at an increased risk for suffering from anxiety disorders themselves (Bayer, Sanson, & Hemphill, 2006; Beidel and Turner, 1997; Bernstein, Layne, Egan, & Nelson, 2005; Biederman et al. 2001; Bögels & Phares, 2008; Drake & Kearney, 2008; Fisak & Grills-Taquechel, 2007; Francis & Chorpita, 2011; Manassis & Hood, 1998; Merikangas, Avenevoli, Dierker, & Grillon, 1999; Ollendick& Horsch, 2007; Turner, Beidel, & Costello, 1987; Warner, Mufson, & Weissman, 1995). Some researchers have even proposed that parental anxiety is the most important factor related to the development of anxiety in children (Cobham, Dadds, & Spence, 1998).When a mother suffers from an anxiety disorder, her child's risk of having an anxiety disorder is doubled compared to children of mothers without a history of anxiety disorders (McClure, Brennan, Hammen, & Le Procque, 2001; Merikangas, Dierker, & Szatmari, 1998).

Additionally, a parental diagnosis of depression also puts children at an increased risk for developing an anxiety disorder (Bayer et al., 2006; Beidel & Turner 1997; Biederman et al. 2001; Bögels & Phares, 2008; Burstein, Ginsburg, Petras, & Ialongo, 2010; Drake & Kearney, 2008; McCombs & Forehand, 1993; Merikangas et al. 1999; Turner et al. 1987; Warner et al. 1995). Youth whose mothers have comorbid anxiety and depression have a three-fold risk for an anxiety disorder during childhood compared to those youth whose mothers have an absence of psychiatric diagnoses (McClure et al., 2001). Furthermore, other researchers have specifically found that paternal anxiety and depression are related to increased levels of anxiety in adolescent females (Bosco, Renk, Dinger, Epstein, & Phares, 2003).

Personality/Temperament. Parental personality and temperament can also affect anxiety in youth, although this domain has not been studied as extensively as parental psychopathology. One finding in this area is that fathers who self-reported attitudes of male superiority were more likely to have daughters with anxious depression (Silverstein & Lynch, 1998).

Cognitive Style. Parental cognitions and cognitive style have repeatedly been found to affect the presence and development of anxiety in children (Bögels et al. 2003b; Bögels and Brechman-Toussaint 2006; Francis & Chorpita, 2011; Ginsburg et al. 2004; Hudson & Rapee 2005; Lindhout et al. 2006; McLeod, Wood, & Weisz, 2007; Moore, Whaley, & Sigman, 2004; Turner, et al., 2003; van Brakel et al. 2006; Woodruff-Borden, Morrow, Bourland, & Cambron, 2002). For example, mothers with anxiety model a fearful cognitive style (Whaley et al., 1999), and maternal anxious cognitions impact children's interpretation biases (Creswell & O'Connor, 2006). Parental locus of control is also related to anxiety in children in terms of parental expectations for the child and parental perceived control over anxiety (Wheatcroft & Cresswell, 2007).

Genetic Factors. As discussed in the individual child section above, it has been well-established that anxiety disorders have a heritable component and demonstrate familial aggregation, which cannot be solely based on environmental factors (Eley & Gregory, 2004; Fisak, & Grills-Taquechel, 2007; Stein, Jang, & Livesley, 2002).

Attachment History. Generally, parents with a history of insecure attachment are more likely to present with anxious symptoms or suffer from anxiety disorders (Ginsburg, Siqueland, Masia-Warner, & Hedke, 2004; Manassiss et al., 1994, 1995).

Parent-child subsystem. The parent-child subsystem level includes factors related to the relationship between the parent and the child such as attachment, parenting styles and behaviors,

and parenting dimensions (parental acceptance, control, and modeling). Research has shown that the parent-child relationship is linked to the occurrence and severity of anxiety in youth (Bögels & Brechman-Toussaint, 2006; Fisak & Grills-Taquechel, 2007; Ginsburg et al., 2004; McLeod et al., 2007; van der Bruggen, Stams, & Bögels, 2008). In fact, it has been argued that the quality of the parent-child relationship is central to the etiology of youth anxiety disorders (Chorpita & Barlow, 1998; Hudson & Rapee, 2001; Krohne, 1990; Manassiss & Bradley, 1994; Rapee, 2001; Rubin & Mills, 1991).

The presence of negative family relationships and interactions is increased in youth with anxiety, compared to youth without these disorders, and also leads to increased impairment (Manassis & Hood, 1998; Messer & Biedel, 1994). Some analyses have shown that parenting accounts for only four percent of the variance in childhood anxiety, but these authors cite that moderators are likely present, indicating that parenting actually does have more of an effect (McLeod et al., 2007). The parent-child subsystem includes parent-child dyadic factors such as attachment, parenting styles and behaviors, and parenting dimensions.

Attachment. Parent-child attachment is the emotional bond that develops between an infant and his or her parent (Bowlby, 1969/1982). The two types of attachment that have been associated with anxiety in youth are insecure attachment (Manassis & Bradley, 1994; Ollendick & Benoit, 2012; Warren et al., 1997) and anxious-ambivalent attachment (Warren et al., 1997).

Insecure attachment. Insecure attachment is a type of parent-infant attachment that can present when an infant's caregiver is insensitive, unavailable, uncommunicative, unreliable, and/or untrustworthy (Manassis & Bradley, 1994; Ollendick & Benoit, 2012). This type of attachment has repeatedly been linked to anxiety in both children and adolescents (Manassis & Bradley, 1994; Manassis, Bradley, Goldburg, Hood, & Swinson, 1994; Muris, Mayer, &

Meesters, 2000; Muris, Meesters, Merckelbach, & Hülsenbeck, 2000; Muris, Meesters, van Melick, & Zwambag, 2001; van Brakel et al., 2006; Warren et al., 1997). Furthermore, van Brakel and colleagues (2006) found that attachment accounted for a unique proportion of the variance of anxiety disorder symptomatology. Because of this relationship, Ollendick & Benoit (2012) have posited an interactional parent-child model that includes parent-child attachment as a contributing factor to parent anxiety and child social anxiety, the anxiety disorder in which the researchers were investigating.

Anxious-ambivalent attachment. Anxious-ambivalent attachment is a subcategory of insecure attachment and occurs when a child feels uncomfortable because he or she does not have a strong intimate relationship with a caregiver (Ainsworth, Blehan, Waters, & Wall, 1978; Bögels & Brachman-Toussaint, 2006). Children with this type of attachment react by becoming overinvolved in the relationships that are present in their lives (Ainsworth et al., 1978; Bögels & Brachman-Toussaint, 2006). This subcategory of insecure attachment has been less studied than general insecure attachment, but Warren and colleagues (1997) have found that anxious-resistant attachment between mothers and infants predicted anxiety disorders in adolescents.

Parenting Style and Behavior. Parenting practices, comprised of parenting style and behavior, have been linked to anxiety in youth (Craske, 1999; Whaley, Pinto, & Sigman, 1999; Wood et al., 2003). Wood and colleagues (2003) differentiate parenting styles and parenting behaviors by stating that parenting style is usually assessed with questionnaires completed by parents and/or children, and parenting behavior is usually assessed using observational methods during an interactive parent-child task.

Style. The parenting style that has been most associated with anxiety in children and adolescents is an anxious rearing style (van Brakel et al., 2006; Wood et al., 2003). Parents with

an anxious rearing style encourage anxious behaviors and cognitions in their children (Barrett, et al., 1996; Grüner, Muris, & Merckelbach, 1999). Van Brakel and colleagues (2006) found by youth-report that higher levels of anxious rearing were related to higher youth anxiety. Additionally, they found that this parenting style accounted for a unique proportion of the variance of anxiety disorder symptomatology in youth (2006). Further evidence to support this finding is that an authoritative parenting style, which does not encourage anxious behaviors and cognitions, is associated with lower levels of youth anxiety (Ginsburg et al., 2004; Stark, Humphrey, Crook, & Lewis, 1990; Stark, Humphrey, Laurent, Livingston, & Christopher, 1993).

Behavior. Parent childrearing behaviors have repeatedly been found to be linked to anxiety in children (Barrett, Fox, & Farrell, 2005; van Brakel et al., 2006; Francis & Chorpita, 2011; Ginsburg et al., 2004; Moore et al., 2004; Whaley et al., 1999). However, researchers have found contradictory results as to how paternal compared to maternal parenting behaviors affect youth; Whaley and colleagues (1999) found that *maternal* behaviors predicted youth anxiety whereas van Brakel (2006) and colleagues found that *paternal* behaviors were predictive of child anxiety whereas maternal behaviors were not.

Specific parental behaviors that have been linked to child anxiety disorders and symptoms are the expression of frustration (Crawford & Manassis, 2001), aggression (Schwartz et al., 2012), and reinforcement of anxious behaviors in children (Barrett et al., 1996b; Barrett et al., 2005; Dadds, Barrett, Rapee, & Ryan, 1996; Ehlers, 1993; Fisak & Grills-Taquechel, 2007; Watt & Stewart, 2000; Watt, Stewart, & Cox, 1998).

Parenting Dimensions. According to Wood and colleagues (2003), parenting dimensions related to anxiety have been studied in three categories: acceptance, control, and modeling.

Similar categories have been identified in other descriptions of parenting behaviors related to youth anxiety (e.g. Ginsburg & Schlossberg, 2002).

Acceptance. Low levels of parental acceptance have been found to predict anxiety in adolescents (Pedersen, 1994). Parental acceptance refers to the warmth, responsiveness, and involvement that parents show toward their children (Wood et al., 2003). These constructs, as well as the absence of these constructs, have been researched in regard to childhood anxiety and described in terms of the following dimensions: warmth and support, criticism, and rejection.

Some research demonstrates that youth whose parents display more warmth and support are less likely to present with anxiety (Barrett et al., 2005; Bögels & Phares, 2008; Caster, Inderbitzen, & Hope, 1999; Dadds et al., 1996; Dumas, LaFreniere, & Serketich,1995; Jorm, et al., 2003; Moore et al., 2004) as demonstrated by both youth report (e.g. Caster et al., 1999) and observational studies (e.g. Barrett et al., 2005; Moore et al., 2004). Additionally, low levels of parenting warmth and encouragement predict internalizing difficulties such as anxiety in young children (Bayer et al., 2006). Researchers have also found a relationship between low family encouragement of child autonomy and increased levels of child anxiety (Peleg-Popke, 2002; Siqueland, Kendall, & Steinberg, 1996).

However, these findings have not been replicated in all studies examining parental warmth and support in families with an anxious child (Ginsburg et al., 2004). Differences exist regarding whether researchers have investigated the maternal or paternal figure. For example, Jorm, Dear, Rodgers, and Christensen (2003) and Bosco (2003) both found a relationship between parental acceptance and anxiety symptoms in children when examining both parents. However, Jorm and colleagues (2003) found that high paternal affection cannot compensate for low maternal affection in terms of anxiety risk in children, and Bosco (2003) found that

adolescent daughters' perceptions of higher paternal acceptance, and not maternal acceptance, were related to lower anxiety.

Parental criticism and rejection is also related to childhood anxiety disorders (Bögels & Phares, 2008; Ginsburg et al., 2004). The literature shows a consistent relationship reflecting increases in youth anxiety in the presence of increased levels of parental criticism (Dumas et al., 1995; Hibbs, Jamburger, Kruesi, & Lenane, 1993; Hibbs et al., 1991; Hummel & Gross, 2001; Leib et al., 2000; Muris, Steernman, Merckelbach, & Meester, 1996) and increased levels of parental rejection (Arrindell et al., 1989; Dumas et al., 1995; Gerlsma, Emmelkamp, & Arrindell, 1990; Hibbs et al., 1991; Hibbs et al., 1993; Hudson & Rapee, 2001; Leib et al., 2000; Lindhout et al., 2009; Muris et al., 1996).

Control. Parental control is another construct that has been repeatedly associated with anxiety disorders in youth (Wood et al., 2003; van Brakel et al., 2006). Parental control is a parent's tendency to intrusively control and direct his or her child in daily activities and decisions with the effect of reducing the development of autonomy (Rapee, 1997). Increased parental control is related to anxiety symptoms in youth, as reflected in studies using both child- and parent-report (Grüner et al., 1999; Hudson & Rapee, 2005; Muris et al., 2000c; Muris, Meesters, & van Brakel, 2003) and observational methods (Barrett et al., 2005; Greco & Morris, 2002; Hudson & Rapee, 2001, 2002; Moore et al., 2004; Whaley et al., 1999). The effect of parental control has also been confirmed in meta-analytic studies (Rapee, 1997; Wood et al., 2003; Bögels & Brechman-Toussaint, 2006; van der Bruggen et al., 2008). In addition, van Brakel and colleagues (2006) found that parental control accounts for a significant amount of variance in child anxiety disorder symptomatology.

Overprotective parenting and overinvolved parenting are two sub-categories of parental control that are related to anxiety disorders in youth and have been included in etiologic models of childhood anxiety (Chorpita & Barlow, 1998; Hudson & Rapee, 2001; Krohne, 1990; Manassiss & Bradley, 1994; Ollendick & Benoit, 2012; Ollendick & Horsch, 2007; Rapee, 2001; Rubin & Mills, 1991; Wood et al., 2003). Longitudinal research has demonstrated that overprotective and overinvolved parenting predicted internalizing difficulties in young children (Bayer et al., 2006). These two sub-categories of parental control have also been studied individually with similar results in that increased levels of parental overprotection are related to youth anxiety (Hudson & Rapee, 2005; Last & Strauss, 1990; Leib et al., 2000) as are increased levels of parental over-involvement (Chorpita, Brown, & Barlow, 1998; Dumas et al., 1995; Hudson & Rapee, 2001, 2002; Krohne & Hock, 1991; Rapee, 1997).

Modeling. Parental modeling of anxious or avoidant behavior is a contributing factor to the presence and prognosis of anxiety in youth (Bögels et al., 2003b; Fisak & Grills-Taquechel, 2007; Muris et al., 1996). Parents can unknowingly model and encourage anxious behaviors and cognitions by discussing their own anxious thoughts with their child and by displaying anxious or fearful behaviors, such as avoidance, in front of their child (Barrett et al., 1996a; Dadds et al., 1996; Fisak & Grills-Taquechel, 2007, Moore et al., 2004). Researchers have consistently found that youth with anxiety have parents who model anxious behaviors (Barrett et al., 1996a; Chorpita et al., 1996; Dadds et al., 1996; Ginsburg et al., 2004; Muris et al., 1996), and this link has been shown to have a positive linear relationship such that as parental modeling of anxious behaviors increases, so does anxiety experienced by the child (Muris et al., 1996).

Marital subsystem. The next systemic level that can impact childhood anxiety is the marital subsystem level. The domains of marital discord, support, and satisfaction in male-

female partnerships have primarily been studied (Bögels & Brechman-Toussaint, 2006; Bögels & Phares, 2008). For example, youth perception of parental conflict was related to anxiety and depression in male children (Bosco et al., 2003). During parental conflict, children's state anxiety is related to the amount of aggression in the conflict, and children's trait anxiety is related to parent's negative emotions and lack of problem-solving during the conflict (Cummings Goeke-Morey, & Pappa, 2003; Du Rocher Schudlich & Cummings, 2003). Marital relationships also show prediction of youth anxiety. Poor marital adjustment predicted a four-fold increase in anxiety disorders in youth after a ten-year follow-up (Nomura, Wickramaratne, Warner, Mufson, & Weissman, 2002), and parental marital satisfaction measured in families with children aged one year predicted anxiety in the child at age four (McHale & Rasmussen, 1998).

Whole family subsystem. Research has shown that family characteristics are greater predictors of childhood anxiety disorders than childhood characteristics alone (Messer & Beidel, 1994). Whole family factors that have been researched in relation to youth anxiety include the mother, father, child triadic system; co-parenting; the global family environment; and relations between subsystems.

Mother, Father, Child Triadic System. Some of the variance in child anxiety may occur because of the presence of a shared environment with anxious parents (Bögels & Brechman-Toussaint, 2006; Eley, 2001). When both parents have insecure models of attachment, their children are more likely to have insecure parent-child attachment, which can lead to childhood anxiety (see attachment section above; Cohn, Cowan, Cowan, & Pearson, 1992). Another dynamic than can occur in the mother, father, child triadic system is that anxious children develop a preference for their maternal caregiver; children with high levels of anxiety report that they get along better with their mothers than their fathers, whereas children without elevated

anxiety report no difference between parents (Perry & Millimet, 1977). Further, adolescent females' negative perceptions of their fathers are related to increased levels of anxiety (Renk, McKinney, Klein, & Oliveros, 2006).

***Co-parenting*.** Co-parenting refers to behaviors that each parent displays to their children that suggest how much they each support the other parent, regardless of whether the other parent is present or not (Bögels & Brechman-Toussaint, 2006; Bögels & Phares, 2008). Mother and father co-parenting inconsistency, as perceived by the child, is related to higher child trait anxiety (Kohlman Schumacher, & Streit, 1988). Also, a relationship exists between observed levels of hostile-withdrawn co-parenting and parent-reported anxiety in pre-school aged children (Katz & Low, 2004). Effects of co-parenting have also been observed in longitudinal studies; lack of co-parenting or a large discrepancy in co-parenting observed when a child is one year of age and parent self-report of co-parenting three years later predicted the presence of child anxiety at age four (McHale & Rasmussen, 1998).

Global family environment. Certain variables in the global family environment, such as control, support, communication, and cohesion, can lead to anxiety in youth (Bögels & Brechman-Toussaint, 2006; Crawford & Manassis, 2001; Ginsburg et al., 2004; Hibbs et al., 1993; Kashani, Lourdes, Jones, & Reid., 1999; Stark et al., 1990; Stark et al., 1993; Thomsen, 1994). In general, families of children with anxiety show higher levels of control and involvement and lower levels of intimacy compared to families of children without anxiety (Crawford & Manassis, 2001; Dadds et al., 1996; Rapee, 1997; Siqueland et al., 1996; Stark et al., 1990). Additionally, anxious children describe their families as having lower levels of support in comparison to children from a non-clinical sample (Stark et al., 1990).

However, not all family effects are yet well understood. For example, poor family communication is related to childhood test anxiety (Peleg-Popko, 2002). However, parent-reported family expressiveness, a construct of communication, was negatively related to adolescent social anxiety by mother-report and positively related to social anxiety by father-report (Noguchi & Ollendick, 2009). Furthermore, Nomura and colleagues (2002) found that low family cohesion is unrelated to the presence of anxiety disorders in children, and Peleg-Popko and Dar (2001) found that high family cohesion is associated with childhood social anxiety and fear.

Relations between subsystems. Variables described in one subsystem can also contribute to variables in another subsystem to affect anxiety in children. There are many relationships between individual parent factors and factors in other levels of the family system. For example, in families of lower socioeconomic status (an extra-familial subsystem factor; see below), child psychopathology, including anxiety, is increased in children of parents with psychopathology (Beidel & Turner, 1997). Also, family dysfunction (a whole family subsystem factor) increases when one of the parents in the home has Generalized Anxiety Disorder (an individual parent subsystem factor), and both of these components are related to increased anxiety in youth (Fristad & Clayton, 1991). Family stress (an extra-familial subsystem factor) is a factor that has a negative effect on parenting practices (a parent-child subsystem factor) which are related to anxiety difficulties in youth (Bayer et al., 2006). In addition, parental anxiety and depression (individual parent subsystem factors) predicts poor parenting practices which in turn predict the presence of anxiety in youth (Bayer et al., 2006; Lindhout et al., 2006; Whaley et al., 1999).

Furthermore, there are also factors that can also mediate or moderate the relationship between familial variables and child anxiety. When one variable mediates a relationship, this

indicates that the variable has an indirect effect on the relationship (Keith, 2006). A moderating variable indicates that an interaction exists between the variables (2006). There is evidence to support a mediational role of parenting behaviors, including conflict (Drake & Kearney, 2008), control (Drake & Kearney, 2008), disengagement (Woodruff-Borden et al., 2002), and withdrawal (Woodruff-Borden et al., 2002), in the presence and course of childhood anxiety. Additionally, certain child variables, such as anxiety sensitivity (Drake & Kearney, 2008), mediate the relationship between psychopathology in the parent and anxiety in the child. Parenting practices have also been found to moderate the relationship of parenting behaviors and child behavioral inhibition (Rubin, Burgess, & Hastings, 2002; Rubin, Cheah, & Fox, 2001).

Extra-familial subsystem. About one third of the variance in childhood anxiety disorders is attributable to the non-shared environment. The non-shared environment includes biological factors and non-biological factors, such as peer relationships and traumatic events, which are outside the scope of the whole family subsystem and yet continue to impact the family (McLeod et al., 2007). Factors such as socioeconomic status, culture, and community that are beyond the scope of a nuclear family can affect anxiety in youth. For example, Angold, Egger, Erkanli, Keeler (2005) found that in preschoolers, African American youth were less likely to have an anxiety disorder compared to non-African American youth.

Summary of Systemic Description of Familial Variables. Overall research has shown that specific variables within each subsystem of the family are related to the presence of anxiety in youth. Some researchers have found no effect of some of the aforementioned variables on childhood anxiety (see Ginsburg et al., 2004), but the overwhelming evidence supports the contribution of the family environment and parenting practices to the presence and course of anxiety in children.

Directionality of Anxiety Transmission

Research demonstrates that anxiety symptoms cluster within families and that anxiety disorders are often interconnected (Beidel & Turner, 1997; Bögels & Brechman-Toussaint, 2006; Francis & Chorpita, 2011; Last et al., 1991). Because of this relationship, researchers hypothesize that it is likely that anxiety is somehow "transmitted" between family members (Fisak & Grills-Taquechel, 2007). Although most assume that anxiety transfers from an anxious parent to his or her child due to genetic and heredity factors, evidence also supports that child to parent and bidirectional transmission may occur (2007). Wood and colleagues (2003, p.136) postulate that four possible pathways exist that link parent and child anxiety: a) parenting style and behavior causes childhood anxiety, b) child anxiety elicits certain parenting styles and behaviors, c) genetics accounts for the anxiety present in both parent and child, and d) multiple child and parent variables interact with one another in a feedback loop to cause anxiety in both the parent and child.

Parent to Child. Children of parents with anxiety disorders have a heightened risk of meeting criteria for an anxiety disorder compared to the general population (Bögels & Phares, 2008). Because of this, numerous top-down studies have examined the effect that anxious parents have on their children (Beidel et al., 1997; Bögels & Brechman-Toussaint , 2006; Lindhout et al., 2006; McLeod et al., 2007; Turner et al., 2003; Whaley et al., 1999; Woodruff-Borden et al., 2002). The most common variables that offer explanations for parent to child anxiety transmission are genetic disposition (Stein, Jang, & Livesly, 2002), parental psychopathology of internalizing disorders (Bayer et al., 2006), and parental childrearing behaviors (Barrett et al., 2005; Moore et al., 2004; Whaley et al., 1999). Fisak & Grills-Taquechel (2007) proposed the following mechanisms by which anxious parents demonstrate

anxiety learning experiences to their children: (a) modeling (vicarious learning), (b) information transfer, and (c) reinforcement of anxious/avoidant behaviors (p. 214). Bögels & Brechman-Toussaint (2006) assert that an explanation for the elevated rate of anxiety that occurs in children of parents with anxiety disorders is that parents with anxiety provide these types of anxiety learning experiences more often than parents without anxiety.

Mediation models also provide explanations of anxiety transmission from parent to child. For example, Cresswell and O'Connor (2006) found that mothers' interpretations partially mediated the link between mother and child cognitions. Thus, mothers who interpret certain situations as fearful expect their children to do the same, and this influences how children actually do form interpretations. Francis and Chorpita (2011) conclude that parental interpretation bias impacts child interpretation bias in that parents who interpret ambiguous situations in a threatening way and believe that anxious feelings are harmful will express that message to their children and will believe that anxious feelings are also harmful to their children. Another mediation pathway, evaluated by Francis and Chorpita (2011), proposed that parental beliefs about anxiety mediate the relationship between parent and child anxiety (Refer to Figure 1). Bayer and colleagues (2006) have also proposed and evaluated models that included parent anxiety and depression, family stress, and parenting practices as causes for internalizing difficulties in toddlers and preschoolers (Refer to Figure 2 and Figure 3).

Child to Parent. Some research literature shows that child factors contribute to anxiety in parents. This link has been found in bottom-up studies that have examined the parents of children with anxiety disorders (Fisak & Grills-Taquechel, 2007). Research shows that parents of youth with anxiety disorders are more likely to have anxiety themselves, compared to parents of children without anxiety (Fisak & Grills-Taquechel, 2007; Ginsburg & Schlossberg, 2002; Last

et al., 1987; Muris et al., 1996). In a study of children with anxiety disorders and their parents, Cooper and colleagues (2006) found that there is a lifetime risk of paternal anxiety (specifically social phobia) and an elevated risk of current maternal anxiety. Up to 80% of parents who have children with anxiety disorders suffer from anxiety (Fisak & Grills-Taquechel, 2007; Ginsburg & Schlossberg, 2002; Last et al., 1987); mothers of children with anxiety are three times more likely to have an anxiety disorder themselves compared to mothers of children without psychopathology (Hughes, Furr, Sood, Barmish, & Kendall, 2009).

There is also evidence to show that child anxiety is the primary predictor and determinant of parent behavior, which leads to the hypothesis that child behavior largely impacts parent behavior (Manassis & Bradley, 2004; Moore et al., 2004). Multiple studies found that child anxiety was a better predictor of maternal behavior patterns than maternal anxiety or a combination of maternal and child anxiety (Moore et al., 2004; Whalet et al., 1999). Other evidence for this hypothesis is that child shyness emerges before parental control and overprotective behavior, with early parental control not having a predictive effect on child shyness (Rubin, Nelson, Hastings, & Asendorpf, 1999).

Bidirectional. Because of the results of research analyzing parent to child and child to parent anxiety transmission, some researchers proposed that this process is most likely bidirectional. Rapee (2001) proposed the first bidirectional model for Generalized Anxiety Disorder in children and explained his model as such: parents with anxiety have children with a genetic predisposition for anxiety; these children display cognitions and behaviors because of this predisposition. Then, parents respond with over-controlling and overprotective parenting practices which, with the contribution of socio-environmental influences, contribute to the development of anxiety onset in the children (Refer to Figure 4). Ginsburg and colleagues (2004)

also proposed a bidirectional model for the development of anxiety in children (Refer to Figure 5). Their model posits that parental anxiety and child anxiety contribute to one another by way of individual and parent-child system factors; it is the quality of this relationship, with the addition of contributing socio-environmental factors, which leads to the presence of an anxiety disorder in the child (2004).

Finally, Ollendick & Benoit (2012) proposed a parent-child bidirectional model for the development of Social Anxiety Disorder in youth (Refer to Figure 6). Their model involves the contribution and moderating effects of parental anxiety, parent and child information processing biases, parent-child attachment, parenting behaviors, and child behavioral inhibition. The authors note that their model posits only one possible pathway to childhood Social Anxiety Disorder, but go on to describe implications for practice and treatment in following with this model (2012).

Currently, none of these bidirectional models have been empirically evaluated, but other researchers have found evidence to support the claim that the development of anxiety in children involves a bidirectional, interconnected model. For example, Creswell and colleagues (2006) found that mothers' expectations predicted change in their children's anxious cognitions and that specifically daughters' cognitions also predicted change in the mothers' expectations.

Summary. Because of the genetic component of anxiety, it is difficult to determine whether parent anxiety or child anxiety has the larger impact on parenting styles and behaviors (Moore et al., 2004). The current general consensus in the field is that evidence exists to demonstrate the link between parental and youth variables as relating to anxiety presence in youth, but the directionality is not yet well understood (Simon et al., 2011; Silverman et al., 2009; Thienemann et al., 2006; Van der Bruggen et al., 2008; Wood et al., 2003).

Anxiety Interventions with Parental Involvement

As described above, many researchers have examined familial variables as they relate to anxiety disorders in children. The literature demonstrates that there is a definite relationship between these variables and the presence of anxiety in youth. Because of these findings, researchers argue that parents should be included in anxiety treatments for children and that addressing some of the factors described above, such as parental pathology and family functioning, should lead to greater response rates for youth anxiety interventions (Podell & Kendall, 2011). Simon and colleagues (2009) specified that parental involvement in youth anxiety treatment could result in the following benefits: parental anxiety and the risk of transmitting this anxiety to the child could be reduced, treatment components could be generalized outside of the therapeutic setting, parents could be trained as a "coach" for the child, and the feasibility of the intervention would depend less on the cognitive level of the child. Other researchers in the field have also identified these benefits along with others, such as the ability to better address the child's global functioning, to better increase the child's coping skills, to address parents' beliefs and attitudes that could impact treatment, and to guide parents through the changes that occur in their child as treatment progresses (Mendlowitz et al., 1999; Siqueland & Diamond, 2008).

Currently, most youth anxiety treatments focus on the child and do not include significant familial or parental involvement (Bögels & Phares, 2008). Results from a survey of practitioners indicated that, in current practice, mothers are included in children's treatment about 65% of the time, and fathers are included about 30% of the time. For treatment with adolescents, these percentages decrease to 51% of the time for maternal involvement and 31% of the time for

paternal involvement (Duhig et al., 2002). Overall, the researchers found that approximately 41% of sessions for youth with emotional and behavioral difficulties did not include parental involvement (2002).

These findings are not surprising because no clear evidence currently exists to demonstrate that parental involvement is actually beneficial in increasing youth response rates to anxiety treatment (Barmish & Kendall, 2005; Bögels & Phares, 2008; Podell & Kendall, 2011; Reynolds, Wilson, Austin, & Hooper, 2012). A recent meta-analysis of studies evaluating the effectiveness of anxiety treatments for youth identified 55 studies, of which 40 included some component of familial involvement (Reynolds et al., 2012). Eleven of these 40 studies included minimal parental involvement, 11 included moderate parental involvement, and 18 included significant parental involvement, as defined by the amount of time that parents were involved in therapy compared to their children. The researchers found that response rates did not improve as the amount of parental involvement in the intervention increased (2012).

However, this finding does not necessarily indicate that parental involvement is not beneficial in youth anxiety interventions. Studies to this point analyzing parental involvement differ in terms of the therapeutic components used, the amount of time that parents are involved, the role that parents take, and the presence of parental pathology. Researchers have argued that these differences may account for the mixed results present in the literature (Kendall, 2006; Podell & Kendall, 2011).

Assessment of Anxiety Transmission Directionality. Only recently have researchers considered taking parental pathology into account when intervening with anxious children (e.g. Hirshfeld-Becker et al., 2010; Kendall, Hydsin, Gusch, Flannery-Schroeder, & Suveg, 2008; Silverman et al., 2009; Simon et al., 2011; Thienemann et al., 2006). Of these few reported

studies, only a subset has examined the relationship between parent and child anxiety during the intervention (Silverman et al., 2009; Simon et al., 2011; Thienemann et al., 2006).

Overall, the literature shows that CBT is efficacious for treating anxiety disorders in youth (Barmish & Kendall, 2005). However, within CBT treatments, there have been results to suggest both parent to child, child to parent, and bidirectional anxiety transmission during anxiety treatment. For example, in a study that compared youth-only CBT to youth CBT with parental involvement, researchers found that both child and parent anxiety improved regardless of assigned treatment condition (Silverman et al., 2009). Another study compared parent-focused CBT to youth-focused CBT and a control condition to assess improvement of youth anxiety. These researchers found that youth anxiety levels in both CBT conditions improved, and parental anxiety in all conditions, including the control condition, improved (Simon et al., 2011). Other researchers assessed a parent-only CBT intervention aimed at improving youth anxiety and found that some children's anxiety did improve, but only if the parent involved in the intervention also suffered from an anxiety disorder (Thienemann et al., 2006). In summary, researchers have proposed different models for anxiety transmission between parents and children, but there has not been any conclusive evidence to support one model over another. A few longitudinal studies have attempted to examine this relationship, but they found evidence indicating both parent to child and child to parent anxiety transmission (Pedersen, 1994; Rubin et al., 2002; 1999).

Interpretation of Current Research

An examination of the literature relating to the relationship between parent and child anxiety yields very mixed results. From studies examining different parent and child variables in relation to anxiety, it is clear that there is a link in anxiety between parents and children beyond a

genetic influence. However, the field is still uncertain about many of these variables. Some relationships have been replicated numerous times, such as the link between over-controlling parenting and anxiety in children, but many other variables have been found significant in some studies and insignificant in others. Even though the impact of these variables is not yet completely understood, researchers and theorists have proposed models to explain the transmission of anxiety from parent to child. In addition to models supporting a parent to child transmission, others have been proposed suggesting a child to parent transmission or a bidirectional transmission. Currently there is not enough evidence from intervention studies to support or disclaim any of the three proposed directional relationships.

Chapter 3: Proposed Research Study

Statement of Problem

The lifetime prevalence of anxiety disorders in adolescents is about 25.1% (Merikangas et al., in progress) and in children ranges from eight to 27% (Costello et al., 2005). These statistics are shocking since the presence of an anxiety disorder in youth can impair general functioning (Ezpeleta et al., 2001) and can lead to increased risk for a psychiatric disorder later in life (Kessler et al., 2005a). Furthermore, youth whose parents have an anxiety disorder are up to seven times more likely to develop an anxiety disorder themselves (Beidel & Turner, 1997), and research shows that parents whose children have anxiety disorders also show an increased prevalence of anxiety disorders compared to the general population (Last et al., 1991). However, the relationship between parental and child anxiety is not fully understood. Studies evaluating anxiety interventions for youth have shown that parents' anxiety symptoms sometimes decrease even when the parents are not involved in their children's treatments (Silverman et al., 2009), and sometimes youth's anxiety decreases when their parents are the only ones involved in the anxiety treatment (Thienemann et al., 2006). Various researchers have proposed models to explain the direction of effect of anxiety transmission between parents and children. Currently, a parent to child model, a child to parent model, and a bidirectional model of parent and child anxiety have been proposed, and there has been a call for more research to understand this relationship (Thienemann et al., 2006; Silverman et al., 2009; Simon et al., 2011).

A new study is currently underway to investigate the effectiveness of a parental intervention component in addition to a cognitive behavioral therapy (CBT) intervention for anxiety in youth. The proposed study will provide parents with the same skills that their children are learning in CBT sessions, in addition to the skills necessary to implement these practices

outside of the therapeutic setting. The methods and measures used will mirror those in in the NIMH-funded Child/Adolescent Anxiety Multimodal Study (CAMS; Walkup et al., 2008). The current study will involve recruiting children with Generalized Anxiety, Separation Anxiety, and Social Phobia; implementing a 12-session CBT intervention; and implementing a parallel manualized parent training sequence (Stark, Banneyer, & Wang, in progress). Anxious symptoms of the parent and child will be monitored weekly throughout the intervention with well-established measures of anxiety. To combine the suggestions of Silverman and colleagues (2009), Wood and colleagues (2003), and McLeod and colleagues (2007), the author proposes a study that assesses parent and child anxiety levels in a repeated measures fashion during this anxiety intervention study.

Research Questions and Hypotheses

Research Question 1. Will child and parent anxiety symptoms improve in a youth-focused CBT intervention for anxiety from pre- to post-treatment?

Hypothesis1a. It is hypothesized that the overall severity of child anxiety will improve from pre- to post-treatment.

Rationale. The literature has repeatedly demonstrated that CBT is efficacious for treating anxiety disorders in youth (Barmish & Kendall, 2005).

Hypothesis1b. It is hypothesized that the overall severity of parent anxiety will improve from pre- to post-treatment.

Rationale. Even though parent(s)' specific anxiety symptoms are not targeted during youth-focused CBT interventions, a trend in the literature demonstrates that parental anxiety levels decrease when their anxious children undergo CBT-based anxiety treatment (Ginsburg et al., 2004; Silverman et al., 2009; Simon et al., 2011).

Research Question 2. Is there a significant relationship between the severity of anxiety symptoms in youth and parents surrounding a youth-focused anxiety intervention?

Hypothesis 2. It is hypothesized that a significant relationship will exist between parent and child anxiety symptoms.

Rationale. As described in the literature review above, there have been findings in each subsystem of the family system that demonstrate a relationship between certain familial variables and the presence of anxiety in youth. Although the exact association between parent and child anxiety is not well understood, numerous models suggest that this relationship does exist (Bayer et al., 2006; Francis & Chorpita, 2011; Ginsburg et al., 2004; Ollendick and Benoit, 2011; Rapee, 2001). Additionally, results to support a positive relationship between parent and child anxiety symptoms have been found in multiple anxiety intervention studies (e. g. Simon et al., 2011; Silverman et al., 2009; Thienemann et al., 2006).

Research Question 3. If a relationship does exist between youth and parent anxiety symptoms during a youth-focused anxiety intervention, is this relationship consistent?

Hypothesis 3. It is hypothesized that the relationship between symptom severity scores will vary over time, indicating some sort of direction of effect.

Rationale. Results from CBT intervention studies have suggested both parent to child, child to parent, and bidirectional anxiety transmission (e.g. Silverman et al., 2009, Simon et al., 2011; Thienemann et al., 2006). Also, several longitudinal studies have attempted to examine the direction of effect of anxiety between parents and children, but similarly they found evidence indicating both parent to child and child to parent anxiety transmission (Pedersen, 1994; Rubin et al., 2002; 1999). Because of these results, it follows that the relationship between parent and child anxiety scores will not remain consistent because anxiety symptoms in one individual will

impact anxiety symptoms in the other at varying times throughout treatment. Therefore, a sharper decrease in one individual's symptoms compared to the other may be observed at some of the measurement time points indicating that it is a combination of the effect of treatment and the effect of the other's anxiety that impacts symptom severity.

Methods

Participants. The proposed study will recruit at least 27 youth and parent dyad participants, as determined from an a priori power analysis (alpha = .05; beta = 0.8). Ideally the study will involve youth participants from diverse ethnic and cultural backgrounds. To be eligible to participate in the study, youth participants must be 7-17 years old. The youth participants must have a primary diagnosis of Generalized Anxiety Disorder (GAD), Separation Anxiety Disorder (SAD), or Social Phobia (SoP) as determined in the study intake interview, the Anxiety Disorders Interview Schedule for DSM-IV (see measures section below), with a current severity rating (CSR) of 4 or higher. The participants also cannot meet criteria for any of the following Axis 1 disorders: Major Depressive Disorder, Bipolar Disorder, Psychotic Disorder, Pervasive Developmental Disorder, Uncontrolled ADHD (combined or primarily hyperactive type), Eating Disorders, Substance Use Disorders, or any other Axis I disorder with a CSR greater than or equal to the CSR of the disorder(s) of interest (SAD, GAD, and/or SoP). Youth also are ineligible for the study if they have school refusal behavior characterized by missing more than 25% of school days in the most recent term or if the youth cannot speak or read and write English. Additionally, each youth participant must have at least one parent who is a primary guardian that can serve as a participant by attending the weekly intervention sessions. Parent participants are ineligible if they cannot speak or read and write English.

Measures.

Demographic Form. Parents of participants will fill out an intake information form that includes family information (parents' marital status, individuals living in the home), school information, previous evaluations and treatments, medical and drug treatment history, developmental/health history, medical history, and family history.

Screen for Child Anxiety Related Emotional Disorders (SCARED; Birmaher, Khetarpal, Cully, Brent and McKenzie, 1997). The SCARED is a 41-item measure that screens for childhood anxiety disorders including Generalized Anxiety Disorder, Separation Anxiety Disorder, Panic Disorder, and Social Phobia. Two versions of this measure exist; this study involves both the parent report version and the child self-report version. Respondents report severity of anxiety symptoms for the past three months on a 0-2 point scale (0 = never true, 1 = sometimes true, 2 = often true). For the total score and each of the five factors, both the child and parent SCARED have demonstrated good internal consistency (alpha = .74 to .93), test-retest reliability (intraclass correlation coefficients = .70 to .90), discriminative validity (both between anxiety and other disorders and within anxiety disorders), and moderate parent-child agreement (r = .20 to .47, $p < .001$, all correlations; Birmaher et al., 1997).

Anxiety Disorders Interview Schedule for DSM-IV: Child Version and Parent Version (ADIS for DSM-IV: C and P; Silverman & Albano, 1996). These semi-structured interviews are designed to permit the diagnosis of DSM-IV anxiety disorders. They also include sections for assessing mood and externalizing disorders, which allow for evaluation of comorbid conditions. In a study of ADIS diagnoses for 153 seven- to 16-year-old children conducted by Lyneham, Abbott, and Rapee (2007), inter-rater reliability for principal diagnosis (kappa = .92) and the individual anxiety disorders (kappa = .80-1.0) was excellent when information from both parent and child interviews was used.

ADIS for DSM-IV: C and P interviews will be conducted for all potential participants prior to inclusion in the study. Only those participants who meet criteria for Separation Anxiety Disorder, Social Phobia, or Generalized Anxiety Disorder will be included.

State Trait Anxiety Inventory for Adults (STAI; Spielberger, Gorsuch, & Lushene,1970). The STAI consists of 40 questions assessing anxiety symptoms and has been normed on working adults. This measure has been widely used in the research literature and has good reliability (alpha coefficients from .83 to .92) and validity (coefficients range from .52 to .80; Spielberger et al., 1970).

Parents will fill out this measure to assess their own general anxiety symptoms during weekly intervals as well as at baseline and post-intervention.

Multidimensional Anxiety Scale for Children (MASC; March, 1997). The full measure (MASC) yields a total of 13 scores including the Total Anxiety Scale Score, which is divided into the following four subscales: Physical Symptoms (consisting of Tense and Somatic subscales), Harm Avoidance (consisting of the Perfectionism and Anxious Coping subscales), Social Anxiety (consisting of the Humiliation Fears and Performance Fears subscales), and Separation/Panic. It also provides an Anxiety Disorders Index and a validity scale. The MASC is normed for children ages 8-19. It shows satisfactory to excellent reliability (March, Parker, Sullivan, Stallings, & Conners, 1997; March, Sullivan, & Parker, 1999) and adequate validity (March et al., 1997).

Youth participants will fill out the full 39-item MASC measure at baseline and post-intervention. In addition, on a weekly basis during intervention, youth will also fill out the MASC-10, a 10-item short form of the full scale that shows satisfactory test-retest reliability and good discriminant validity (March et al., 1999).

Procedure.

Recruitment. Male and female youth age 7-17 and at least one parent or guardian for each youth participant will be recruited for this study. Recruitment referrals will come from the Texas Child Study Center and from psychiatrists, psychologists, and other mental health professionals in the community that are aware of the study. The first contact between the study team and the families will be initiated by the potential participants and made via phone. The phone conversation will include a screening questionnaire (SCARED parent version) to determine the presence of anxious symptoms and other eligibility criteria in the prospective youth participant. If symptoms appear to be present and other eligibility criteria seem to be met, potential youth and parent participants will be invited to give informed assent and consent (See Appendices A-D), complete an intake demographic form, and attend an intake interview (ADIS for DSM-IV: C and P) in order to establish initial diagnosis in the child of either generalized anxiety disorder (GAD), social phobia (SoP) or separation anxiety disorder (SAD) and to rule out exclusionary criteria. Once deemed eligible from the ADIS for DSM-IV: C and P, parents and youth will give informed consent and assent (See Appendices E-H) to participate in the study.

Data-collection. Pre-intervention data (STAI; MASC) will be collected from youth and parent participants at a baseline session no more than one week prior to the initial treatment session. Additionally, at check-in prior to each of the twelve weekly sessions, an administrative assistant will ask parent and youth participants to complete weekly measures assessing anxiety symptoms (child will complete MASC-10 to evaluate child's anxious symptoms over the past week; parent will complete STAI to evaluate parent's symptoms over past week). Parents and youth will complete all measures regardless of study condition. After the 12-week intervention,

participants from both conditions will complete an exit interview to determine presence of anxiety disorder in the youth participant (ADIS for DSM-IV: C and P), and both child and parent participants will complete post-intervention measures (MASC and STAI).

Intervention. For the CBT-only and CBT + Parent Training groups, the intervention will be composed of 12 individual therapy sessions for the youth participants that will follow the Coping Cat manual (Kendall & Hedtke, 2006) used in the Child/Adolescent Anxiety Multimodal Study (CAMS; Compton et al., 2010).

CBT + Parent Training condition. For those youth randomized into the CBT + Parent Training condition, at least one parent or guardian will also participate in a concurrent parent intervention program. The parent intervention program will follow a new treatment protocol currently in progress that follows the structure of the Coping Cat program and focuses on psychoeducation about anxiety disorders, minimizing family accommodation behaviors, and forming hierarchies and planning exposures to extend treatment practice outside of the youth therapy sessions. During the parent session, the therapist and parent will be able to watch video of the child's session in order to explain and instruct the parent on the concepts that the child is learning. In the CBT + Parent Training condition, each session meeting will last approximately 60 minutes; the first 45-50 minutes will consist of individual meetings and the last 10-15 minutes will consist of a group meeting with youth and parent participants and both youth and parent therapists.

CBT-only condition. For the CBT-only condition, each youth session will last approximately 60 minutes and the last 5 minutes of the session will include a brief update with the youth's parent(s) or guardian(s). The CBT-only condition also involves two meetings between the youth's therapist and the parents as dictated in Coping Cat.

Analyses and Expected Results

The primary purpose of the proposed study is to examine the effect of anxiety change and transmission in parents and children during a youth-focused CBT-based intervention for anxiety.

Preliminary Analyses. Prior to testing the research hypotheses using dependent sample *t*-tests, regression, and ANOVA repeated measure analyses, descriptive statistics and frequencies will be computed and examined, including means, standard deviations, ranges, and minimum and maximum values. Scatterplots of the data will be created to check for violations in the data, and sensitivity analyses will determine the effect of outliers. These preliminary analyses will assure that no statistical assumptions for any of the chosen statistical procedures are violated. It is important to note a dependent samples t-test must be utilized because child and parent participants exist within family units indicating correlated data.

An a priori power analysis using G*Power version 3.1 software determined that to examine both aspects of the first hypothesis, 27 dyad participants will be necessary to achieve over 80% power. This sample size is necessary to find a critical $t(26) = 1.705$ with a significance level (alpha) of .05 at a moderate effect size. For the second hypothesis, 55 individuals, or 27-28 dyad participants, are necessary for a design demonstrating a moderate effect size with a power level of at least 80% to find critical $F(1, 53) = 4.023$ at a .05 significance level. For the third hypothesis, only 12 parent and child dyad participants are needed in the proposed study to result in a design with 80% power for a moderate effect size and a correlation between anxiety measures of 0.5. This sample would result in 84% power to detect a critical $F(13, 143) = 1.789$ with a significance level (alpha) of .05.

Tests of Research Questions. The t-test for dependent samples procedure will be used to conduct the t-test analyses necessary for Research Question 1, a linear regression will be used to

address Research Question 2, and the ANOVA repeated measure procedure for a within-factors design will be used to evaluate Research Question 3. These procedures are described by Stevens (2007) and Keith (2006).

Hypothesis 1a. It is hypothesized that overall levels of child anxiety will improve from pre- to post-treatment. This hypothesis will be examined using a *t*-test for dependent samples comparing the pre-treatment child MASC self-report score and the post-treatment MASC score for each youth participant. It is expected that this hypothesis will be confirmed with an analysis that will yield significant results at the alpha = .05 significance level.

Hypothesis 1b. It is hypothesized that overall levels of parent anxiety will improve from pre- to post-treatment. This hypothesis will also be examined using a *t*-test for dependent samples. This analysis will compare the pre-treatment parent self-report STAI score and the post-treatment STAI score for each parent participant. It is expected that this analysis will be confirmed yielding significant results at alpha = .05.

Hypothesis 2. It is hypothesized that a significant relationship will exist between parent and child anxiety symptoms. This hypothesis will be analyzed using two regression analyses; parent anxiety symptom scores on the STAI will be regressed on child anxiety scores on the MASC-10 at both pre-treatment (time 0) and post-treatment (time 13) time points. It is hypothesized that the child scores will explain a statistically significant amount of the variance in parent scores at both pre-treatment and post-treatment, indicating a relationship between parent and child anxiety both before and after the intervention.

Hypothesis 3. It is hypothesized that the relationship between symptom severity scores will vary over time, indicating some sort of direction of effect. A within-factors repeated measures ANOVA analysis will be used to test this hypothesis. The difference between parent

and child anxiety scores will be computed at each of the 14 time points. This analysis will account for the repeated measures design and will be able to assess if the difference between parent and child scores significantly differs over time. If a difference exists, the hypothesis that either the parent or child score decreased at a faster rate compared to the other will be supported. It is expected that there will be a significant difference between levels of parent and child anxiety symptoms over time. As described earlier, this would indicate that a direction of effect likely exists between parent and child anxiety symptom transmission.

Chapter 4: Conclusion

Summary

The proposed study attempts to ascertain if a relationship exists between levels of child and parent anxiety symptoms and if this relationship is consistent during a CBT-based intervention designed to decrease anxiety in youth. Participants in the study will include 27 youth and parent dyads. Youth participants ages 7-17 with a primary anxiety diagnosis of Generalized Anxiety Disorder, Separation Anxiety Disorder, and/or Social Phobia, will be included as these are the most common anxiety disorders in youth and call for similar treatment strategies. Self-report questionnaires of anxiety symptoms will be completed at 14 weekly time points during a 12-week anxiety intervention, including baseline (Week 0) and post-treatment (Week 13) data collection days.

It is expected that both parent and child anxiety symptoms will decrease from the pre-treatment baseline period to post-treatment. Furthermore, it is hypothesized that there will be a significant relationship between parent and child anxiety symptoms during the intervention, with significant differences between the parent and child anxiety symptoms over time. However, the results of this proposed research study should be interpreted with caution due to potential limitations that may affect significant findings.

Limitations

One limitation of this proposed study concerns the method used to assess anxiety. Both parent and child weekly anxiety symptom measurements are based on self-report. While both proposed questionnaires are valid, reliable, and used repeatedly in the literature, the validity of this type of measure has been questioned due to social desirability bias (Wood et al., 2003). The self-report method of anxiety measurement is used most commonly in the literature, but reports

of anxiety from additional sources, such as therapist or study examiner ratings, would strengthen these results. Future research can employ other forms of anxiety symptom measurement in addition to self-report.

Another possible limitation of this study is the generalizability of the findings. While the author hopes to recruit a sample of youth from various cultural backgrounds, a homogeneous sample would impact the external validity of the results. Additionally, mothers are most often the parent involved in anxiety intervention programs because fathers are less likely to attend treatment sessions (e.g. Cobham et al., 1998; Thienemann et al., 2006). Because of this, fathers' roles are less understood (Duhig, Renk, Epstein, & Phares, 2000; Moreno, Silverman, Saavedra, & Phares, 2008). If the same trend exists for the participants in this study, the current findings may only be generalizable to the direction of effect between mother and child anxiety symptoms. Future researchers should mimic these methods and include a sample of paternal guardians as parent participants to evaluate the direction of effect between father and child anxiety symptoms.

Additionally, other mediating or moderating variables may interact with the variables under analysis in this proposed study. Some proposed models have included such factors (Bayer et al., 2006; Francis & Chorpita, 2011) based on findings related to familial variables and anxiety in youth (e.g. Cresswell & O'Connor, 2006). Additional studies should analyze other parenting and familial variables to search for mediating or moderating effects and to evaluate such proposed models.

Even with these limitations, this study serves as an integral stepping stone to enhance this area of research. This proposal outlines a preliminary study utilizing repeated measures to assess parent and child anxiety levels; its findings should be replicated and expanded in future research

so the relationship and direction of effect between parent and child anxiety may be more fully understood.

Implications

The overarching purpose of this study is to improve the current response rate of therapy for children with anxiety. Results from this study will provide a currently unanalyzed intermediary step to determine the direction of effect of anxiety transmission between parents and youth. If no relationship between parent and youth anxiety symptoms is found, it may not be essential to include parents in the treatment of youth anxiety. On the contrary, if evidence to suggest such an effect is present, further studies should analyze the direction of this effect. Results could lead to recommendations for the inclusion of parents in the treatment of youth anxiety as standard practice. Findings will add to the literature of evidenced-based explanations for anxiety treatment in youth resulting in best possible response rates to anxiety treatment. The conclusions that emerge from this proposed study will also add to the literature on the relationship between familial variables and child anxiety. Similarly, it will provide evidence for some of the proposed models of anxiety development in youth (See Figures 1-6). Ultimately and most importantly, this study will offer essential information regarding the use of the most evidenced-based practice, which will aid practitioners in the prevention and intervention of anxiety disorders in youth.

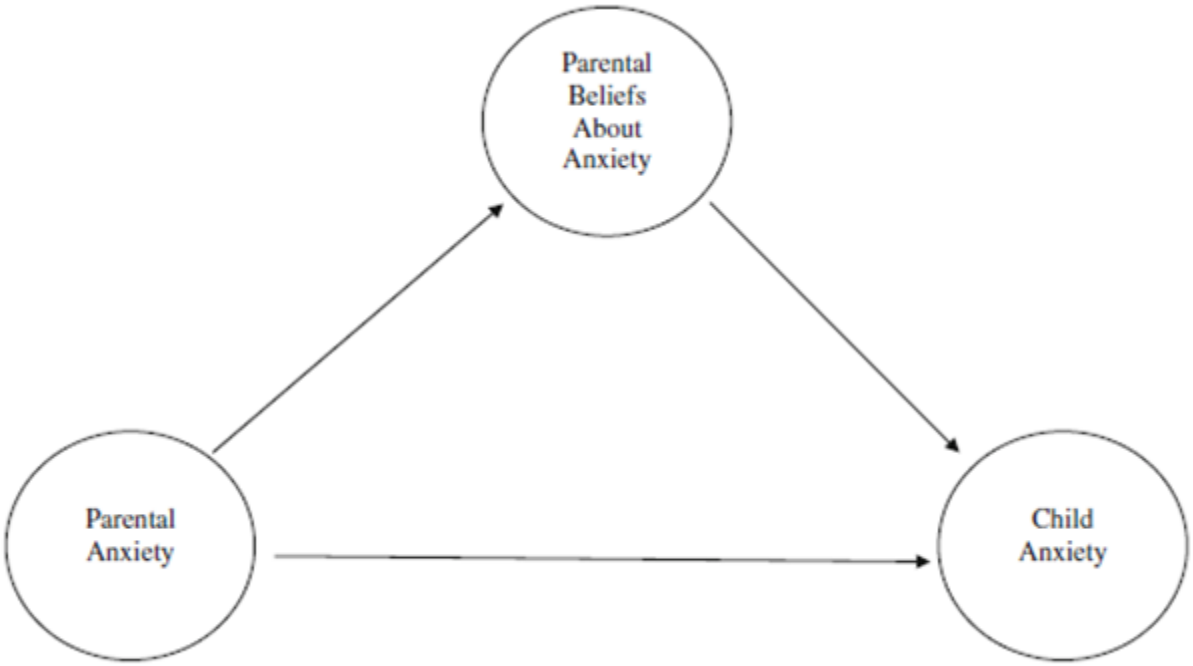

Figure 1. Francis and Chorpita's Model of the Mediational Relationship between Parental Anxiety, Parental Beliefs about Anxiety, and Child Anxiety (2011, p.25).

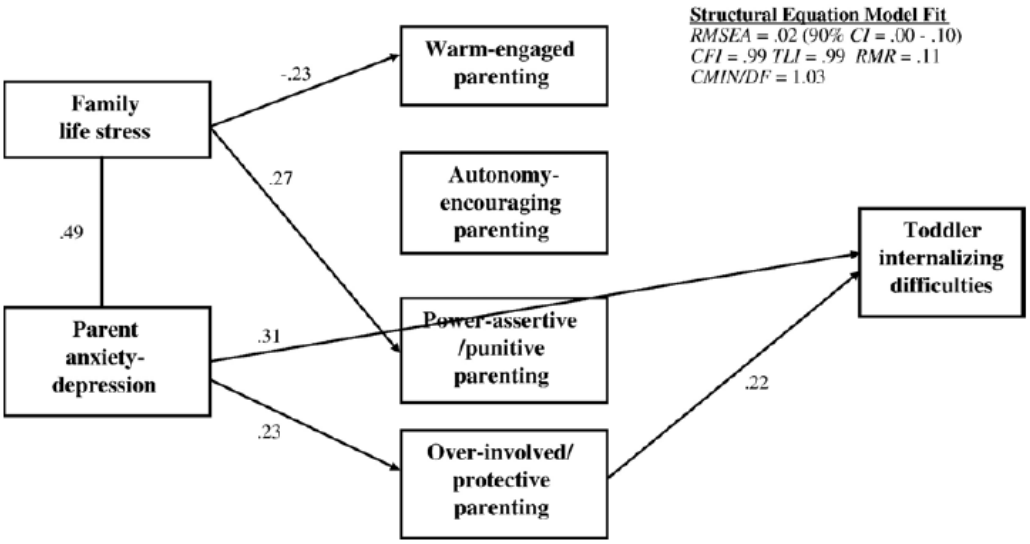

Figure 2. Bayer and Colleague's Model of Parent Influences on Internalizing Difficulties of 2-year-olds (2006, p.553).

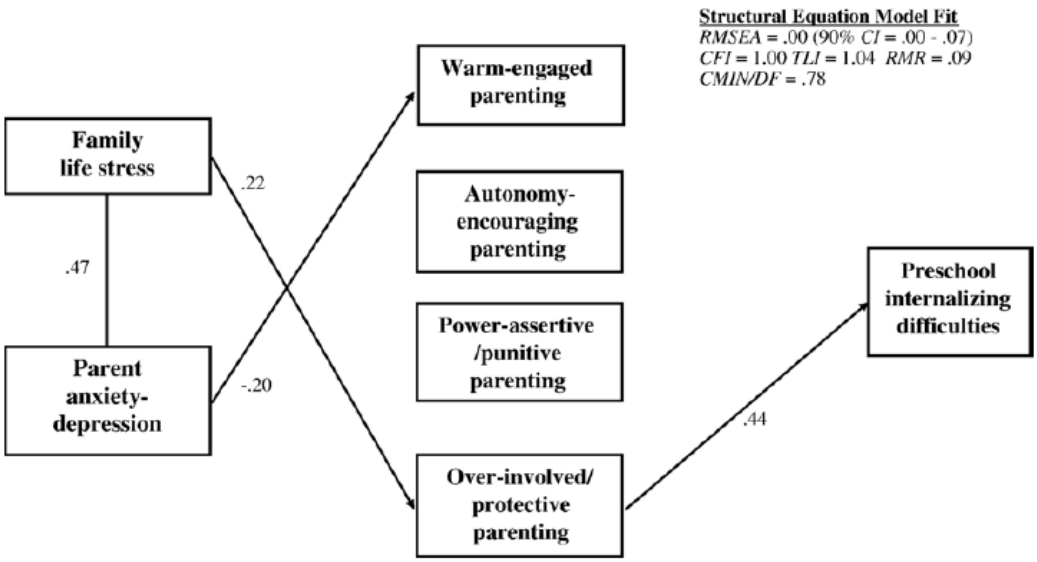

Figure 3. Bayer and Colleague's Model of Parent Influences on Internalizing Difficulties of 4-year-olds (2006, p.554).

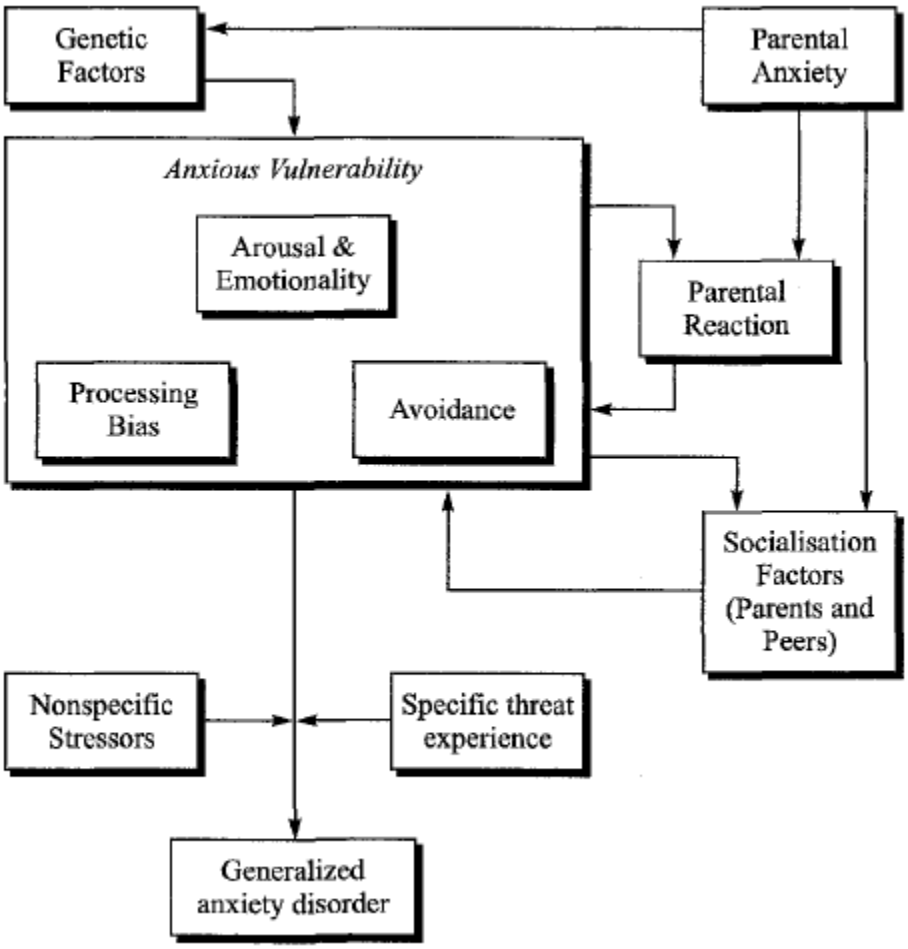

Figure 4. Rapee's Model of the Development of Generalized Anxiety in Children (2001, p.495).

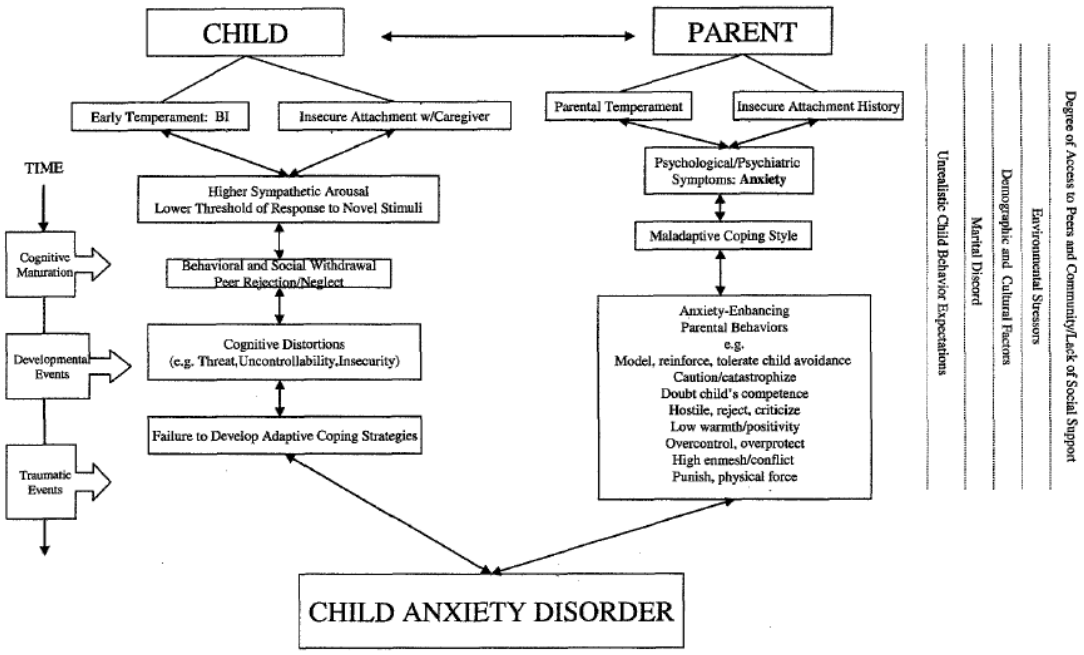

Figure 5. Ginsburg and Colleagues's Model of the Development of Anxiety Disorders in Children (2004, p.29).

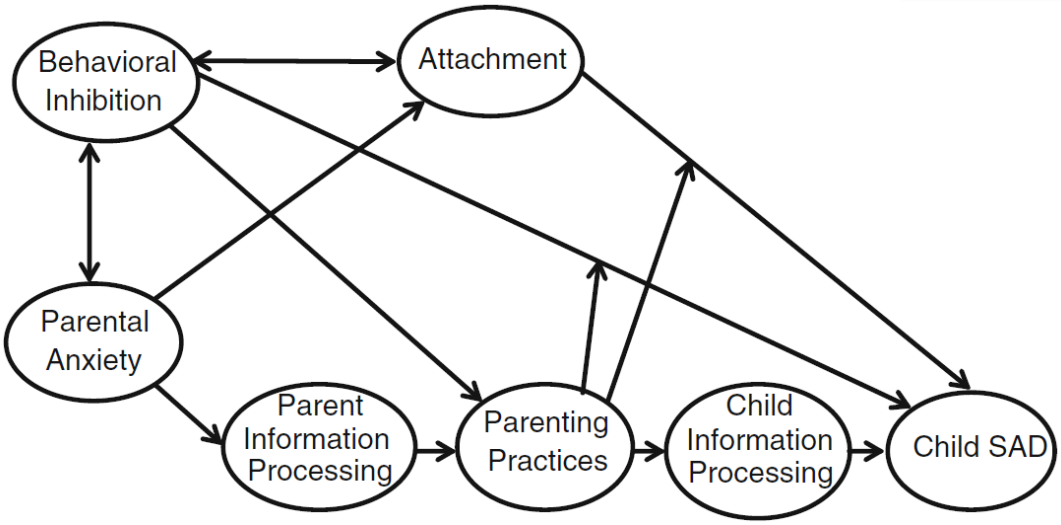

Figure 6. Ollendick and Benoit's Interactional Model of the Development of Social Anxiety Disorder in Children (2012, p.82).

Appendix A

Consent for Participation in Research - ADIS:P for DSM-IV

Title: Investigating the Effects of an Added Parent Component to Cognitive Behavior Therapy (CBT) for Youth with Anxiety Disorders

Introduction

The purpose of this form is to provide you with information that may affect your decision as to whether or not to participate in this research study interview. Please read the information below and ask any questions you might have before deciding whether or not to take part. The researcher will describe the study interview to you and answer all of your questions. If you decide to be involved in this study, this form will be used to record your consent.

Purpose of the Study

You have been asked to complete this interview in order to determine if your child meets criteria for participation in a research study investigating a new manualized parent component to treatment for youth with anxiety disorders.

What will you to be asked to do?

If you agree to complete this study interview, you will be asked to answer questions as part of a diagnostic interview to measure your child's anxiety symptoms (ADIS:P for DSM-IV), and to rule out exclusionary criteria. This interview should take a maximum of three hours. There will be more than 60 other parents completing this interview about their children. The interview will be audio or video recorded for research purposes.

What are the risks involved?

Completing this interview may involve risks that are currently unforeseeable. Possible risks associated with this study are discussed below:

- Following the intake interview, you may experience discomfort surrounding newly gained insight into the severity of your child's anxiety disorder. If this occurs, researchers will model relaxation strategies and distraction techniques, and offer to process or talk through your discomfort in person or by phone. If a psychiatric emergency occurred, professional care would be immediately available.

- Possible disclosure or discovery of information about familial, child, or other forms of abuse or neglect is another risk of participating in this study. Any disclosed abuse will be reported to Child and Family Protective Services, 1-800-252-5400, in accordance with Texas State Law.

What are the possible benefits?

- Increased insight into your child's emotional functioning
- Potential admission into this research study

Do you have to participate?

No, your participation is voluntary. You may decide not to participate at all or, if you start the interview, you may stop at any time, thus withdrawing your interest in participating in the study. Withdrawal or refusing to participate will not affect your relationship with The University of Texas at Austin or the Texas Child Study Center in any way.

If you would like to participate, please sign this form and return it to the study coordinator. You will receive a copy of this form for your records.

By completing this interview you and your child are not under any obligation to participate in the study. If your child meets criteria for the study, you will be contacted and provided with another consent form with more information about the study.

What are the alternatives to participating?

If you do not want to participate, your child cannot participate either. If you choose not to participate, the study coordinators will provide you with information for alternate avenues of support for your family.

Will there be any compensation?

Neither you nor your child will receive any type of payment for participating in this study.

What are my confidentiality or privacy protections when participating?

This study is confidential and every effort will be taken to maintain your privacy. To protect participant confidentiality, each participant will be assigned a number before beginning the interview. All data collected in the interview will be identified solely with this number. A roster of individual names and their corresponding researcher-assigned numbers will be maintained in a password protected document on a password-protected computer. All paper data will be stored in a locked filing cabinet in a locked office throughout the duration of the study, and for ten years after the minor reaches the age of majority, in keeping with guidelines set forth by the Texas State Board of Examiners of Psychologists [465.22], and ethical/legal guidelines of the American Psychological Association. All electronic data will be similarly safeguarded in password-protected files on password-protected computers.

If you choose to complete this interview, you will be audio and/or video recorded. Recordings will be stored securely and only the research team will have access to the recordings for research purposes. With your permission, recordings will be kept for educational training purposes for five years and then erased.

The data resulting from your participation may be used for future research or be made available to other researchers for purposes not detailed within this consent form.

Whom to contact with questions about the study?

Prior, during or after your participation you can contact the researcher **Kevin Stark** at **[512-324-3315]** or send an email to kevinstark@mail.utexas.edu This study has been reviewed and approved by The University of Texas Institutional Review Board and the study number is **[STUDY NUMBER].**

Whom to contact with questions concerning your rights as a research participant?

For questions about your rights or to report dissatisfaction with any part of this study, you can contact, the Institutional Review Board by phone (anonymously if you wish) at (512) 471-8871 or email at orsc@uts.cc.utexas.edu.

Signature

You have been informed about this study's purpose, procedures, possible benefits and risks, and you have received a copy of this form. You have been given the opportunity to ask questions before you sign, and you have been told that you can ask other questions at any time. You voluntarily agree to participate in this study. By signing this form, you are not waiving any of your legal rights. You will be given a copy of this document.

_____

Printed Name

_____ _____

Signature Date

As a representative of this study, I have explained the purpose, procedures, benefits, and the risks involved in this research study.

_____

Print Name of Person obtaining consent

_____ _____

Signature of Investigator Date

Appendix B

Parental Permission for Youth Participation in Research - ADIS:C for DSM-IV

Title: Investigating the Effects of an Added Parent Component to Cognitive Behavior Therapy (CBT) for Youth with Anxiety Disorders

Introduction

The purpose of this form is to provide you (as the parent of a prospective research study participant) with information that may affect your decision as to whether or not to participate in this research study interview. Please read the information below and ask any questions you might have before deciding whether or not you give your permission for your child to take part. The researcher will describe the study interview to you and answer all of your questions. If you decide to let your child be involved in this study, this form will be used to record your permission.

Purpose of the Study

Your child has been asked to complete this interview in order to determine if he or she meets criteria for participation in a research study investigating a new manualized parent component to treatment for youth with anxiety disorders.

What is my child going to be asked to do?

If you allow your child to participate in this study, he/she will be asked to answer questions as part of a diagnostic interview to measure your anxiety symptoms (ADIS:C for DSM-IV), and to rule out exclusionary criteria. This interview should take a maximum of three hours. There will be 60 other children and 60 other parents completing this interview. The interview will be audio or video recorded for research purposes.

What are the risks involved?

Completing this interview may involve risks that are currently unforeseeable. Possible risks associated with this study are discussed below:

- Following the intake interview, your child may experience discomfort surrounding newly gained insight into the severity of his or her anxiety. If this occurs, researchers will model relaxation strategies and distraction techniques, and offer to process or talk through your child's discomfort in person or by phone. If a psychiatric emergency occurred, professional care would be immediately available.

- Possible disclosure or discovery of information about familial, child, or other forms of abuse or neglect is another risk of participating in this study. Any disclosed abuse will be reported to Child and Family Protective Services, 1-800-252-5400, in accordance with Texas State Law.

What are the possible benefits?

- Increased insight into your child's emotional functioning
- Potential admission into this research study

Does my child have to participate?

No, your child's participation is voluntary. He or she may decide not to participate at all or, if your child starts the interview, he or she may stop at any time, thus withdrawing interest in participating in the study. Withdrawal or refusing to participate will not affect the relationship with The University of Texas at Austin or the Texas Child Study Center in any way.

If you would like your child to participate, please sign this form and return it to the study coordinator. You will receive a copy of this form for your records.

By completing this interview, your child and you are not under any obligation to participate in the study. If your child meets criteria for the study, you will be contacted and provided with another consent form with more information about the study.

What are the alternatives to participating?

If you choose not to permit your child to participate, the study coordinators will provide you with information for alternate avenues of support for your family.

Will there be any compensation?

Neither you nor your child will receive any type of payment for participating in this study.

What are my confidentiality or privacy protections when participating?

This study is confidential and every effort will be taken to maintain your privacy and your child's privacy. To protect participant confidentiality, each participant will be assigned a number before beginning the interview. All data collected in the interview will be identified solely with this number. A roster of individual names and their corresponding researcher-assigned numbers will be maintained in a password protected document on a password-protected computer. All paper data will be stored in a locked filing cabinet in a locked office throughout the duration of the study, and for ten years after the minor reaches the age of majority, in keeping with guidelines set forth by the Texas State Board of Examiners of Psychologists [465.22], and ethical/legal guidelines of the American Psychological Association. All electronic data will be similarly safeguarded in password-protected files on password-protected computers.

If you choose to permit your child to complete this interview, he or she will be audio and/or video recorded. Recordings will be stored securely and only the research team will have access to the recordings for research purposes. With your permission, recordings will be kept for educational training purposes for five years and then erased.

The data resulting from your child's participation may be used for future research or be made available to other researchers for purposes not detailed within this consent form.

Whom to contact with questions about the study?

Prior, during, or after your child's participation you can contact the researcher **Kevin Stark** at **[512-324-3315]** or send an email to kevinstark@mail.utexas.edu This study has

been reviewed and approved by The University of Texas Institutional Review Board and the study number is **[STUDY NUMBER].**

Whom to contact with questions concerning your rights as a research participant?

For questions about your rights or to report dissatisfaction with any part of this study, you can contact, the Institutional Review Board by phone (anonymously if you wish) at (512) 471-8871 or email at orsc@uts.cc.utexas.edu.

Signature

You have been informed about this study's purpose, procedures, possible benefits and risks, and you have received a copy of this form. You have been given the opportunity to ask questions before you sign, and you have been told that you can ask other questions at any time. You voluntarily agree to allow your child to participate in this study. By signing this form, you are not waiving any of your legal rights. You will be given a copy of this document.

_____

Printed Name

_____ _____

Signature Date

As a representative of this study, I have explained the purpose, procedures, benefits, and the risks involved in this research study.

_____

Print Name of Person obtaining consent

_____ _____

Signature of Investigator Date

Appendix C

Assent for Participation in Research (ADIS:C Interview Age 7-12)

Title: Investigating the Effects of an Added Parent Component to Cognitive Behavior Therapy (CBT) for Youth with Anxiety Disorders

Introduction
You have been asked to complete an interview about your feelings. This was explained to your parent(s) and she/he/they said that you could do the interview if you want to. We are doing this interview to figure out if you are able to participate in a study about helping youth who feel worried or nervous.

What am I going to be asked to do?
If you agree to participate in the interview, you will be asked to answer questions about your emotions and how you feel at different times. This interview will last for 1 to 3 hours. There will be more than 60 other youth and 60 of their parents that are interviewed for the study. You will be audio/video recorded with your parent's permission.

What are the risks involved?
This study may involve some risks but these risks are unlikely. Possible risks are that you may feel uncomfortable telling the interviewer about yourself. However, if you start to feel upset, you can take a break or stop the interview at any time.

Do I have to participate?
No, participation is voluntary. You should only participate in the interview if you want to. You can even decide you want to do it now, and change your mind later. No one will be upset. If you would like to participate, write your name below and give it to the adult that handed it to you. You will receive a copy of this form so if you want to you can look at it later.

Will I get anything to participate?
You will not get paid for completing the interview.

Who will know about my participation?
This study is private. Your answers may be used for a future study by these researchers or other researchers but no one will know that it is your information.

Signature
Writing your name on this page means that the page was read by or to you and that you agree to do the interview. If you have any questions before, after, or during the interview, ask the person in charge. If you decide to quit, all you have to do is tell the person in charge.

_____ _____

Signature of Participant Date

Appendix D

Assent for Participation in Research (ADIS:C Interview Age 13-17)

Title: Investigating the Effects of an Added Parent Component to Cognitive Behavior Therapy (CBT) for Youth with Anxiety Disorders

Introduction
You have been asked to complete an interview about anxiety. This was explained to your parent(s) or caregiver(s) and she/he/they said that you could do the interview if you want to. This interview is to determine if you are able to participate in a study about helping youth who feel anxious.

What am I going to be asked to do?
If you agree to participate in the interview, you will be asked to answer questions about how you feel in different situations. This interview will last 1 to 3 hours. There will be more than 60 other teens and 60 of their parents that are interviewed. You will be audio/video recorded with your caregiver's permission.

What are the risks involved?
This interview may involve risks that are currently unforeseeable. Possible risks are that you may experience discomfort by telling the interviewer about your anxiety. However, if you start to feel uncomfortable or upset, you can take a break or stop the interview at any time.

Do I have to participate?
No, participation is voluntary. You should only participate in the interview if you want to. You can even decide you want to do it now, and change your mind later. No one will be upset if you decide not to participate. If you would like to participate, sign this form and give it to the investigator that handed it to you. You will receive a copy of this form so if you want to you can look at it later.

Will I get anything to participate?
You will not receive any type of payment for participating.

Who will know about my participation?
This study is private. Your answers may be used for a future study by these researchers or other researchers but no one will know that it is your information.

Signature
Writing your name on this page means that the page was read by or to you and that you agree to be in the interview. If you have any questions before, after, or during the interview, ask the person in charge. If you decide to quit, all you have to do is tell the person in charge.

_____ _____

Signature of Participant Date

Appendix E

Consent for Participation in Research

Title: Investigating the Effects of an Added Parent Component to Cognitive Behavior Therapy (CBT) for Youth with Anxiety Disorders

Introduction

The purpose of this form is to provide you with information that may affect your decision as to whether or not to participate in this research study. Please read the information below and ask any questions you might have before deciding whether or not to take part. The researcher will describe the study to you and answer all of your questions. If you decide to be involved in this study, this form will be used to record your consent.

Purpose of the Study

You have been asked to participate in a research study investigating the addition of a new manualized parent component to treatment for youth with anxiety disorders. The purpose of this study is to evaluate the impact of this parent component in CBT treatment. Along with measuring improvement in your child's emotional functioning, we are interested in evaluating the impact of the treatment on your satisfaction, the quality and characteristics of your relationship with your child, and your own anxiety symptoms.

What will you to be asked to do?

If you agree to participate in this study, you will be asked to:

- Complete baseline measures about your child's and your own emotional functioning
- Attend 12 therapy sessions concurrently with your child; You will meet separately with your own therapist for the first 45 minutes, and together with your child's therapist for the last 15 minutes of each session.
- Complete weekly measures of your child's and your own anxiety symptoms
- Complete post-intervention questionnaires
- Complete post-intervention interviews
- Complete a subset of questionnaires six months after the conclusion of treatment

Total participation in this study is estimated to take a maximum of 16 weeks. There will be approximately 60 other parents participating in this study.

Your participation will be audio/video recorded for transcription purposes. You will have the option to allow the recordings to also be used for educational purposes.

What are the risks involved in this study?

This intervention may involve risks that are currently unforeseeable. Possible risks associated with this study are discussed below:

- During the therapy sessions, <u>you may feel discomfort or distress about watching your son or daughter practice coping in fearful situations</u>. Researchers will begin with situations that are easier for your child and work up to those that are more difficult.

This procedure has been used with thousands of youth on a regular basis and is not an experimental procedure, rather is the gold standard for the treatment of anxiety disorders. In addition, they will teach several coping skills and ensure comprehension before beginning exposure tasks. Choosing to practice will be the decision of your child; your child will not be forced to complete an exposure that is too difficult for him/her.

- After the completion of the intervention, you may feel distress if your child's anxious symptoms have not improved. In this case, you will be referred for continued treatment or other avenues for support. Based on existing research 62 to 72% of the youth participants will no longer be experiencing an anxiety disorder at the end of treatment.

- Possible disclosure or discovery of information about familial, child, or other forms of abuse or neglect is another risk of participating in this study. Any disclosed abuse will be reported to Child and Family Protective Services, 1-800-252-5400, in accordance with Texas State Law.

What are the possible benefits of this study?

In addition to potential improvement in your child's anxiety symptoms, the possible benefits of participation for you are improvement in your own anxiety symptoms. Together this may result in enhanced well-being and improvement in family functioning.

Society could also potentially benefit from clarification of the impact of a parent-component in a CBT intervention for anxious youth above and beyond youth-only CBT.

The potential benefits for you and your child, both short-term and long-term due to participation in the therapy program, far outweigh the potential disadvantages. If your child does not improve through participation in the therapy program, he or she will be offered the opportunity to consult with a psychiatrist in the Texas Child Study Center at no expense to the family. Adding an anti-anxiety medication to the treatment regimen increases the likelihood of success to about 82 to 84%.

Do you have to participate?

No, your participation is voluntary. You may decide not to participate at all or, if you start the study, you and your child may withdraw at any time. Withdrawal or refusing to participate will not affect your relationship with The University of Texas at Austin or the Texas Child Study Center in any way.

If you would like to participate, please sign this form and return it to the study coordinator. You will receive a copy of this form for your records.

What are the alternatives to participating in this research?

Your child has been randomized into the youth CBT + parent component condition. If you do not want to participate, or if you withdraw your participation, your child cannot participate either. If you choose not to participate, the study coordinators will provide you with information for alternate avenues of support for your family.

Will there be any compensation?

Neither you nor your child will receive any type of payment for participating in this study.

What are my confidentiality or privacy protections when participating in this research study?

This study is confidential and every effort will be taken to maintain your privacy. To protect participant confidentiality, each participant will be assigned a number at the outset of the study, and all measures completed by each youth and parent participant will be de-identified in such a way as to use the number in place of the participant or parent name. A roster of individual names and their corresponding researcher-assigned participant numbers will be maintained in a password protected document on a password-protected computer. Raw data and any printed transcriptions will be stored in a locked filing cabinet in a locked office throughout the duration of the study, and for ten years after the minor reaches the age of majority, in keeping with guidelines set forth by the Texas State Board of Examiners of Psychologists [465.22], and ethical/legal guidelines of the American Psychological Association. All other electronic data will be similarly safeguarded in password-protected files on password-protected computers.

If you choose to participate in this study, you will be audio and/or video recorded. Recordings will be stored securely and only the research team will have access to them for transcription and research purposes. With your permission (indicated on a separate form), recordings will be kept for educational training purposes for five years and then erased.

The data resulting from your participation may be used for future research or be made available to other researchers for purposes not detailed within this consent form.

Whom to contact with questions about the study?

Prior, during or after your participation you can contact the researcher **Kevin Stark** at **[512-324-3315].** This study has been reviewed and approved by The University of Texas at Austin Institutional Review Board and the study number is **[STUDY NUMBER].**

Whom to contact with questions concerning your rights as a research participant?

For questions about your rights or to report dissatisfaction with any part of this study, you can contact, the Institutional Review Board by phone (anonymously if you wish) at (512) 471-8871 or email at orsc@uts.cc.utexas.edu.

Signature

You have been informed about this study's purpose, procedures, possible benefits and risks. You have been given the opportunity to ask questions before you sign, and you have been told that you can ask other questions at any time. You voluntarily agree to participate in this study. By signing this form, you are not waiving any of your legal rights. You will be given a copy of this document.

_____
Printed Name

_____ _____
Signature Date

As a representative of this study, I have explained the purpose, procedures, benefits, and the risks involved in this research study.

_____
Print Name of Person obtaining consent

_____ _____
Signature of Investigator Date

Appendix F

Parental Permission for Youth Participation in Research

Title: Investigating the Effects of an Added Parent Component to Cognitive Behavior Therapy for Youth with Anxiety Disorders

Introduction

The purpose of this form is to provide you (as the parent of a prospective research study participant) information that may affect your decision as to whether or not to let your child participate in this research study. The person performing the research will describe the study to you and answer all your questions. Read the information below and ask any questions you might have before deciding whether or not to give your permission for your child to take part. If you decide to let your child be involved in this study, this form will be used to record your permission.

Purpose of the Study

If you agree, your child will be asked to participate in a research study investigating a manualized treatment for youth with anxiety disorders. The purpose of this study is to evaluate the impact of an additional parent component in CBT treatment. In addition to measuring improvement in your child's emotional functioning, we are interested in evaluating the impact of the treatment on parental satisfaction, the quality and characteristics of the parent-child relationship, and any reduction in parent anxiety symptoms.

What is my child going to be asked to do?

If you allow your child to participate in this study, he/she will be asked to

- Complete baseline measures that ask about current emotional functioning
- Attend 12 Cognitive Behavior Therapy (CBT) sessions lasting approx 60 mins
- Complete weekly measure of anxiety symptoms at the beginning of each session
- Complete post-intervention questionnaires
- Complete post-intervention interviews
- Complete a subset of questionnaires six months after the conclusion of treatment

Total participation in this study is estimated to take a maximum of 16 weeks. There will be approximately 60 children and 60 parents participating in this study.

This is a research study and, therefore, not intended to provide a medical or therapeutic diagnosis or treatment. The intervention provided in the course of this study is not necessarily equivalent to the standard method of prevention, diagnosis, or treatment of a health condition.

Your child will be audio/video recorded for transcription purposes. You will have the option to allow the recordings to also be used for educational purposes.

What am I going to be asked to do?

If your child is randomized into the youth-only CBT condition, you will be asked to participate in the manner listed below. If your child is randomized into the youth CBT + parent-component condition, requirements for your participation are further detailed in a separate consent form that will be provided to you next.

- Complete baseline questionnaires about your child's and your own emotional functioning
- Attend two parent-only sessions with your child's therapist at predesignated times during the intervention, each lasting approximately 60 minutes
- Complete brief weekly measures of your child's anxiety symptoms and your own anxiety symptoms at the beginning of each of your child's 12 CBT sessions
- Complete post-intervention questionnaires
- Complete post-intervention interviews
- Complete a subset of questionnaires six months after the conclusion of treatment

What are the risks involved in this study?

This intervention may involve risks to your child that are currently unforeseeable. Possible risks associated with this study are discussed below:

- During the therapy sessions, your child may feel discomfort or distress about having to practice coping in fearful situations. Researchers will begin with situations that are easier for your child and work up to those that are more difficult. This procedure has been used with thousands of children on a regular basis and is not an experimental procedure, rather is the gold standard for the treatment of anxiety disorders. In addition, they will teach several coping skills and ensure comprehension before beginning exposure tasks. Choosing to practice will be the decision of your child; your child will not be forced to do something that is too difficult for him/her.

- After the completion of the intervention, your child may feel distress if his/her anxious symptoms have not improved. Your child will be praised for the progress he/she has made thus far, and will be referred for continued treatment or other avenues for support. Based on existing research 62 to 72% of the participants will no longer be experiencing an anxiety disorder at the end of treatment.

- Possible disclosure or discovery of information about familial, child, or other forms of abuse or neglect is another risk of participating in this study. Any disclosed abuse will be reported to Child and Family Protective Services, 1-800-252-5400, in accordance with Texas State Law.

What are the possible benefits of this study?

The possible benefits of participation are improvement in your child's anxiety symptoms resulting in enhanced well-being and improvement in family functioning.

Society could also potentially benefit from clarification of the impact of a parent-component in a CBT intervention for anxious youth above and beyond youth-only CBT.

The potential benefits for you and your child, both short-term and long-term due to participation in the therapy program, far outweigh the potential disadvantages. If your child does not improve through participation in the therapy program, he or she will be offered the opportunity to consult with a psychiatrist in the Texas Child Study Center at no expense to the family. Adding an anti-anxiety medication to the treatment regimen increases the likelihood of success to about 82 to 84%.

Does my child have to participate?

No, your child's participation in this study is voluntary. Your child may decline to participate or withdraw participation at any time. Withdrawal or refusing to participate will not affect your family's relationship with The University of Texas at Austin or the Texas Child Study Center in any way. You can agree to allow your child to be in the study now and change your mind later without any penalty. If you change your mind, you will be provided with referrals to other avenues of support for your child.

What if my child does not want to participate?

In addition to your permission, your child must agree to participate in the study. If you child does not want to participate they will not be included in the study. If your child initially agrees to be in the study they can change their mind later without any penalty.

If you would like your child to participate, please sign this form and return it to the research coordinator. You will receive a copy of this form for your records.

Will there be any compensation?

Neither you nor your child will receive any type of payment for participating in this study.

What are the confidentiality or privacy protections for my child's participation in this research study?

This study is confidential and every effort will be taken to maintain your child's privacy. To protect participant confidentiality, each participant will be assigned a number at the outset of the study, and all measures completed by each youth and parent participant will be de-identified in such a way as to use the number in place of the participant or parent name. A roster of individual names and their corresponding researcher-assigned participant numbers will be maintained in a password protected document on a password-protected computer. Raw data and any printed transcriptions will be stored in a locked filing cabinet in a locked office throughout the duration of the study, and for ten years after the minor reaches the age of majority, in keeping with guidelines set forth by the Texas State Board of Examiners of Psychologists [465.22], and ethical/legal guidelines of the American Psychological Association. All other electronic data will be similarly safeguarded in password-protected files on password-protected computers.

If you choose to have your child participate in this study, he/she will be audio/video recorded. Recordings will be stored securely and only the research team will have access to them for transcription and research purposes. With your permission (indicated on a separate form), recordings will be kept for educational training purposes for five years and then erased.

The data resulting from your participation may be used for future research or be made available to other researchers for purposes not detailed within this consent form.

Whom to contact with questions about the study?

Prior, during or after your participation you can contact the researcher **Kevin Stark** at **[512-324-3315].** This study has been reviewed and approved by The University of Texas at Austin Institutional Review Board and the study number is **[STUDY NUMBER].**

Whom to contact with questions concerning your rights as a research participant?

For questions about your rights or to report dissatisfaction with any part of this study, you may contact the Institutional Review Board by phone (anonymously if you wish) at (512) 471-8871 or email at orsc@uts.cc.utexas.edu.

Signature

You have been informed about this study's purpose, procedures, possible benefits and risks, and you have received a copy of this form. You have been given the opportunity to ask questions before you sign, and you have been told that you can ask other questions at any time. You voluntarily agree to allow your child to participate in this study. By signing this form, you are not waiving any of your legal rights.

_____

Printed Name of Child

_____ _____

Signature of Parent(s) or Legal Guardian Date

As a representative of this study, I have explained the purpose, procedures, benefits, and the risks involved in this research study.

_____

Print Name of Person obtaining consent

_____ _____

Signature of Investigator Date

Appendix G

Assent for Participation in Research (Age 7-12)

Title: Investigating the Effects of an Added Parent Component to Cognitive Behavior Therapy (CBT) for Youth with Anxiety Disorders

Introduction
You have been asked to be in a research study about helping youth to feel better who feel worried or nervous. This study was explained to your parent(s) and she/he/they said that you could be in it if you want to. We are doing this study to see if including parents in treatment will help youth feel even better than if only the youth is in treatment.

What am I going to be asked to do?
If you agree to be in this study, you will be asked to:

- Do interviews at the beginning and end of the study
- Fill out some surveys at every visit
- Attend treatment sessions that last about an hour

This study will take 12-16 weeks (3-4 months) and there will be about 60 other children and 60 parents who participate. You will be audio/video recorded with your parent's permission.

What are the risks involved in this study?
This study may involve some risks, but these risks are unlikely. Possible risks are that you may feel uncomfortable. However, your therapist will not force you to do anything that you do not want to do.

Do I have to participate?
No, participation is voluntary. You should only be in the study if you want to. You can even decide you want to be in the study now, and change your mind later. No one will be upset. If you would like to participate, sign this form and give it to the adult that handed it to you. You will receive a copy of this form so if you want to you can look at it later.

Will I get anything to participate?
You will not get paid for participating in this study.

Who will know about my participation in this research study?
This study is private. Your answers may be used for a future study by these researchers or other researchers but no one will know that it is your information.

Signature
Writing your name on this page means that the page was read by or to you and that you agree to be in the study. If you have any questions before, after or during the study, ask the person in charge. If you decide to quit the study, all you have to do is tell your parent or the person in charge.

_____ _____

Signature of Participant Date

Appendix H

Assent for Participation in Research (Age 13-17)

Title: Investigating the Effects of an Added Parent Component to Cognitive Behavior Therapy (CBT) for Youth with Anxiety Disorders

Introduction
You have been asked to be in a research study about treatment for anxiety. This study was explained to your parent(s) or caregiver(s) and she/he/they said that you could be in it if you want to. We are doing this study to figure out whether including parents or caregivers in the treatment process for anxiety will have added benefits.

What am I going to be asked to do?
If you agree to be in this study, you will be asked to:

- Participate in some interviews at the beginning and end of the study
- Fill out some surveys at the beginning and end of the study and on a weekly basis
- Participate in 12 weekly treatment sessions that last about an hour

This study will take 12-16 weeks (3-4 months) and there will be about 60 other children and teens and their parents who participate. You will be audio/video recorded with your caregiver's permission.

What are the risks involved in this study?
This intervention may involve risks that are currently unforeseeable. Possible risks associated with this study are that you may experience discomfort. However, your therapist will help you cope with your discomfort and will not force you to do anything that you do not want to do.

Do I have to participate?
No, participation is voluntary. You should only be in the study if you want to. You can even decide you want to be in the study now, and change your mind later. No one will be upset.

If you would like to participate, sign this form and give it to the investigator that handed it to you. You will receive a copy of this form so if you want to you can look at it later.

Will I get anything to participate?
You will not receive any type of payment for participating in this study.

Who will know about my participation in this research study?
This study is private. Your answers may be used for a future study by these researchers or other researchers but no one will know that it is your information.

Signature
Writing your name on this page means that the page was read by or to you and that you agree to be in the study. If you have any questions before, after or during the study, ask the person in charge. If you decide to quit the study, all you have to do is tell the person in charge.

_____ _____

Signature of Participant Date

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