GROUP COGNITIVE BEHAVIORAL THERAPY OVER INDIVIDUAL COGNITIVE BEHAVIORAL THERAPY? A META-ANALYSIS OF EFFECTIVE TREATMENT OF ANXIETY DISORDERS IN MIDDLE CHILDHOOD

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A Thesis
Presented to the Faculty of California State University, San Bernardino

In Partial Fulfillment of the Requirements for the Degree Master of Arts in Child Development

by Emily Alice Edwards September 2015
GROUP COGNITIVE BEHAVIORAL THERAPY OVER INDIVIDUAL

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ABSTRACT

Anxiety is a commonly diagnosed disorder in middle childhood that affects many aspects of the child’s life. Effective treatment is needed so that children are able to experience fewer or no symptoms of anxiety and to manage anxiety. Cognitive behavioral treatment (CBT) is widely used as a treatment for children with anxiety. CBT can either be facilitated in an individual or group format but there are inconsistencies in the literature regarding which modality is most effective. A meta-analysis was conducted to compare the effectiveness of individual CBT (ICBT) and group CBT (GCBT) in treating school-aged children with anxiety disorders. Eligible studies focused on the Coping Cat program for ICBT or GCBT programs such as FRIENDS. Participants from the selected studies were between the ages of 5-12 years and were treated by either ICBT or GCBT. Effect sizes were calculated from post-intervention measures and combined to examine group differences. It was found that ICBT was associated with a very large effect size (1.05) and GCBT (0.54) had a large effect size. This suggests that ICBT is the superior treatment modality as children who received individualized treatment reported a greater reduction or elimination of anxiety symptoms. Individual treatment allows opportunity for the therapist to work with the child and their families whereas in GCBT, there is less time to create treatment plans that are uniquely tailored. A proposed ICBT program is outlined that addresses a richer family component and social skills training.
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DEDICATION

I would like to dedicate this project to all of the children and adolescents who are living with and struggling with anxiety on a daily basis. I greatly empathize with you because I was once a child with big worries over things that were out of my control. Help is out there, never give up.
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CHAPTER ONE
INTRODUCTION

Anxiety is a debilitating mental health concern that affects many aspects of life. Symptoms of worry can develop in childhood such as frequent somatic symptoms, excessive shyness, and school refusal. When these symptoms become debilitating, children suffer many negative consequences. In fact, anxiety disorders are one of the most diagnosed psychological disorders in children (Roblek & Piacentini, 2005). Among childhood anxiety disorders, social anxiety disorder, separation anxiety, and generalized anxiety disorder are most commonly diagnosed (Connolly & Bernstein, American Academy of Child and Adolescent Psychiatry [AACAP], 2007). Prevalence rates from 6 to 20% have been reported (Connolly & Bernstein, AACAP, 2007) and often childhood anxiety disorders develop during middle childhood which has important implications as this developmental period is significantly associated with the emergence of academic self-confidence and growth in social relationships (Steinberg & Morris, 2001). Due to the high prevalence rates of anxiety diagnoses in childhood, it is critical that children receive effective treatment. Individual cognitive behavioral therapy (ICBT) was once the primary method of treatment but in recent years, group cognitive behavioral therapy (GCBT) has gained much attention in research and clinical use. Currently, there is a critical need to examine the effectiveness of different treatment approaches.
Childhood Anxiety Disorders

A number of anxiety disorders are especially common during the childhood years. These diagnoses are briefly reviewed.

Social Anxiety Disorder

Social anxiety disorder is characterized by a severe reluctance to engage in, avoidance of, or escape behaviors in social situations (American Psychiatric Association, 2013, Connolly & Bernstein, AACAP, 2007). The prevalence rate for children with social anxiety disorder (SAD) is about 7% (American Psychiatric Association, 2013). The anxiety symptoms must be persistent, lasting for at least six months, and with no other medical or psychological explanation (American Psychiatric Association, 2013). With regards to gender, there seems to be a slightly higher prevalence rate for males as opposed to females (American Psychiatric Association, 2013). Children with social anxiety worry about feelings of embarrassment, humiliation, rejection, offending others, or being negatively evaluated by others (American Psychiatric Association, 2013). The intense worry must be experienced in interactions with peers, not just adults, to be considered at a clinical level. Anxious behaviors associated with social anxiety disorder include crying, tantrums, freezing, clinging, shrinking, or a failure to speak (American Psychiatric Association, 2013). The anxiety that is experienced tends to dissipate as soon as the child is removed from the social situation (Connolly & Bernstein, AACAP, 2007). Negative self-evaluation appears to be a significant
factor in SAD. For example, in a study examining children with SAD, negative self-evaluations were present regardless of whether children were in a peer supportive or peer non-supportive public speaking setting (Mannassis, Webb, & Albano, 2004).

**Separation Anxiety Disorder**

Separation anxiety disorder is characterized by excessive and developmentally inappropriate levels of distress when the child is separated from caregivers (Connolly & Bernstein, AACAP, 2007). The prevalence rate for separation anxiety (SA) disorder in children is about 4% yet this figure decreases to 1.6% by adolescence (American Psychiatric Association, 2013). For diagnosis, children must exhibit symptoms for at least a six to twelve month period (American Psychiatric Association, 2013). In regards to gender, girls tend to have higher rates of separation anxiety (American Psychiatric Association, 2013). In twin studies, there is a 73% hereditability rate in a community sample of 6 year olds, which demonstrates the genetic influence of the disorder (American Psychiatric Association, 2013). Children with separation anxiety tend to worry over the safety and health of their parents or caregivers, their personal health, and other traumatic events that could lead to separation (e.g., kidnapping, becoming lost, etc.) (American Psychiatric Association, 2013). In a school setting, children with SA may refuse to stay at school during the morning drop off or have an emotional meltdown during parent or caregiver departure (Cunningham & Suldo, 2014). In the home,
these children may have difficulty being alone while the parent or caregiver leaves the room or they may refuse to sleep alone at night (American Psychiatric Association, 2013). Other sleep problems include frequent nightmares and avoidance of sleeping away from the home (e.g., in hotels, at friend’s homes, etc.). Some children experience this disorder due to loss of a loved one or a traumatic event, while others do not have a clear cause (Connolly & Bernstein, 2007).

**Generalized Anxiety Disorder**

Generalized anxiety disorder is characterized by excessive worries about many activities and situations. The prevalence rate of generalized anxiety disorder (GAD) in children is not clear (American Psychiatric Association, 2013). Some research suggests that GAD is not a separate diagnosis, but rather the anxious symptoms are part of a diagnosis of SAD or SA in childhood. Some clinicians prefer to diagnosis GAD in adolescence or adulthood (American Psychiatric Association, 2013). For diagnosis in childhood, GAD symptoms must be persistent and greatly interfere with healthy functioning (American Psychiatric Association, 2013). Generalized anxiety disorder appears to be a female dominated disorder with about 55%-60% of diagnosed cases being female (American Psychiatric Association, 2013). Unlike social anxiety disorder where children worry about social rejection, children with GAD focus their worries over the quality of their social relationships (Connolly & Bernstein, AACAP, 2007). Moreover, children
with GAD will continue to worry about social situations even after they are no longer engaged in it, as opposed to children with social anxiety who worry about a social situation while in the moment (Connolly & Bernstein, AACAP, 2007). In the school age years, children with GAD usually have developmentally inappropriate levels of anxious feelings focused on academics and sporting performance (American Psychiatric Association, 2013). The somatic symptoms that are associated with GAD include: being easily fatigued, restlessness, trouble concentrating, irritability, muscle tension, and problems with sleep (American Psychiatric Association, 2013). Children with GAD may cope with their anxious feelings and worrisome perceptions without overt symptoms and behaviors that are detectable by parents, caregivers, or teachers. These children may battle perfectionism and over-conformance; thus, unnecessarily redoing tasks and assignments until they are satisfied with the final product (American Psychiatric Association, 2013, Connolly & Bernstein, AACAP, 2007). One personality trait that seems to be linked to GAD exclusively is neuroticism and negative affectivity, where the child seems to irrationally associate negative perceptions to many situations and tasks (American Psychiatric Association, 2013). These negative perceptions hinder positive associations with life events (i.e., transitioning to new schools, making new friends, etc.). For children, typical life changes tend to be less enjoyable due to the persistent and obsessive worry surrounding life transitions.
Effects of Anxiety Disorders on School Performance

Success in academics during the school-age years is a significant part of confidence building and self-efficacy. It seems that there is a bi-directional relationship between school performance and psychopathology. Children who do poorly in school seem to have a greater risk for mental health disorders, and children who are diagnosed with a mental health disorder tend to have a greater difficulty with academic achievement (Allison, Nativio, Mitchell, Ren, & Yuhasz, 2014). Children with anxiety tend to be underachieving as compared to children without anxious symptoms. Anxious children tend to have lower GPAs, lower quality relationships with teachers and staff, and demonstrate less self-advocating when class lectures or materials are not understandable (Hughes, Lourea-Waddell, & Kendall, 2008). Struggling with anxiety symptoms can make educational experiences less enjoyable, and anxious children tend to avoid these experiences altogether. Educational experiences such as school performances or recitals, oral presentations, joining clubs or groups, sports, music programs, or attending summer camp can be increase anxiety symptoms and stress levels (Heimberg, 1995). These opportunities typically extend children’s educational experience and when children do not participate there is a lack of potential learning (Heimberg, 1995). Poor school attendance and school refusal are also associated with anxiety disorders in the school age years. In order for children to excel in school, they must be psychologically present and ready to learn. Children with anxiety may not be able to regulate
themselves enough to be psychologically ready for learning, and they may not ask teachers or other school staff for help (Hughes, 2008). As a result, school dropout is a consequence of untreated anxiety. In a study that examined the reasons for leaving school, 49% of participants with a diagnosed anxiety disorder dropped out of school. Of the 49%, 24% of the participants stated that anxiety symptoms were the primary reason for dropping out of school (Van Ameringen, Mancini, & Farvolden, 2003). Adolescents who drop out of high school are less likely to go back to school and earn a GED or high school diploma (Kessler, Foster, Saunders, & Stang, 1995). These individuals are even less likely to earn a degree from a four-year university (Kessler, Foster, Saunders, & Stang, 1995). As it is well documented that earning a college degree is associated with many positive life long outcomes such as earning potential and career satisfaction (Van Ameringen et al., 2003). It is critical that children and adolescents diagnosed with anxiety be treated in a timely manner. Besides the academic implications associated with anxiety during the school age years, there may be an impact of anxiety on peer relations, as well.

Effects of Anxiety on Social Relationships

Anxious children seem to have difficulty with developing and maintaining social relationships with peers. Regardless of the specific anxiety disorder, anxious children seem to demonstrate a deficit in social skills that operates in a cyclical fashion. First, children with anxiety tend to avoid or refuse social interactions with peers. Because of their reluctance to interact,
there is a lack of social skills development necessary for effective social relationships. The lack of skills, in turn, makes it difficult for a child to interact with his/her peers. Ultimately, this can lead to peer interactions becoming aversive experiences and the cycle perpetuates itself (Danzig, et al., 2013; Manassis et al., 2004). In longitudinal studies that examined preschool characteristics as predictors of anxiety disorders in middle childhood, there was a correlation between poor social skills in childcare or preschool settings and later social functioning. It seems that poor social skills in early childhood continue into middle childhood if there is no intervention (Wichstrøm, Belsky, & Berg-Nielsen, 2013; Lecompte, Moss, Cyr, & Pascuzzo, 2014; Hudson & Dodd, 2012; Ashford, Smit, van Lier, Cuijpers, & Koot, 2008). Acquiring social skills is one of the hallmarks of early childhood and when children do not gain the necessary and developmentally appropriate level of social skills, interactions with peers may suffer (Manssis et al., 2004). Social skills seem to have a significant influence on peer acceptance (Crawford & Manassis, 2011), as well. One study examined social skills, peer acceptance, and relationship quality in children with anxiety. The relationship between anxiety symptoms and peer acceptance was mediated by the child’s level of social skills. Anxious children with better social skills tended to report characteristics of high quality relationships with peers (i.e., emotional closeness, self-disclosure), especially for girls in the sample (Greco & Morris, 2005).
With regards to peer group acceptance, peer-neglected and peer-rejected children seem to demonstrate higher levels of social anxiety as compared to the other categories of peer groups (Manassis et al., 2004). Peer-neglected and peer-rejected children may engage in bullying and victimization in school settings (Manassis et al., 2004). Children with anxious symptoms may become targets for bullying as they may exhibit behaviors that reinforce bullying such as crying easily or complying with bully demands (Crawford & Manassis, 2011). Victims of bullying are three times more likely to have a diagnosis of an anxiety disorder as compared to children who are not bullied (Kumpulainen, Rasanen, & Puura, 2001). In a sample of adults with diagnosed social phobia, 92% recall being victimized in childhood (McCabe, Antony, Summerfeldt, Liss, & Swinson, 2003). Peer victimization appears to be a possible outcome of childhood anxiety but peer friendships may help children overcome the negative consequences of bullying.

Although some children with anxiety may struggle with peer acceptance and victimization, quality friendships can be a protective factor. When children have many quality friendships, they are less likely to become victims of bullying (Crawford & Manassis, 2011). It appears that quality peer friendships in middle childhood can also positively influence treatment for anxiety. In a study that examined peer friendship quality and treatment, higher friendship quality was predictive of better treatment outcome (Baker & Hudson, 2013). Likewise, when children reported having at least one close friendship (support,
protection, and sharing of intimate thoughts and emotions), teachers and parents reported less internalizing symptoms and anxious behaviors (Waldrip, Malcom, & Jensen-Campbell, 2008). However, the positive effects of friendships can be diminished by negative characteristics in a social relationship. Greco and Morris (2005) found that negativity in friendships such as a conflict or betrayal hindered the success of treatment for girls with diagnosed social anxiety disorder. Conflict and betrayal seem to be particularly devastating for children who are struggling with an anxiety disorder.

Identification of Anxiety Disorders

In a classroom setting, children with internalizing disorders, such as anxiety, are sometimes difficult to identify. Unlike externalizing behaviors, which are typically disruptive and easier to recognize, internalizing behaviors tend to be subtle (Allison et al., 2014; Cunningham & Suldo, 2014; Mesman & Koot, 2000). Observable anxiety symptoms can include crying, tantrums, refusal or avoidance for social tasks or public speaking activities, irritability, freezing, clinging to caregivers, and somatic symptoms (Cunningham & Suldo, 2014; Danzig et al., 2013). Because teachers are able to compare children and observe in social settings, early identification often starts at school (Mesman & Koot, 2000). Teachers and school staff may have the best advantage to catch internalizing disorders in the early years of elementary school. One study found that teachers were able to correctly identify about 50% of children who had clinical levels of anxiety or depression in a sample of
school-aged children (Cunningham & Suldo, 2014). Generalizing from this statistic, it can be inferred that about half of children with anxiety symptoms go unnoticed. To remedy this issue, universal screening in schools has been shown to be an advantageous way to identify children with anxious symptoms. Universal screening is cost effective, and a practical way for school officials to intervene early (Allison et al., 2014; Cunningham & Suldo, 2014). An efficient way to universally screen children for anxiety or other mental health concerns is by using mental health screeners. These screeners can be administered during yearly, state mandated physical examinations (Allison et al., 2014). Mental health screeners are an efficient way to assess the child’s self-reported mental health status (Allison et al., 2014). For example, the shortened form of the Screen for Child Anxiety Related Emotional Disorders (SCARED) is a five-item self-report that has been established to have valid and reliable psychometric properties and usually takes less than 10 minutes to administer (Allison et al., 2014; Birmaher et al., 1999). Interpretations of scores on the shortened version of the SCARED are comparable to the 41-item long version and it has been demonstrated to be an effective measure of diagnosing anxiety disorders in children (Allison et al., 2014; Birmaher et al., 1999). Effective screening is especially important because when left untreated, anxiety can greatly impact academic functioning and success.
Treatment

With the many serious and persistent symptoms and effects on children’s functioning in the school age years, it is critical that anxious children receive effective treatment. Treatments for anxiety such as modeling and systematic desensitization are helpful for less severe anxious symptoms but they do not adequately treat more severe anxiety symptoms (Roblek & Piacentini, 2005). Treatment needs to address the complexity and individuality of each child’s circumstances. Cognitive behavioral therapy (CBT) is well established as an effective treatment for anxiety in children and is typically flexible enough to account for the uniqueness among children. There are five core components to CBT: psychoeducation, somatic management skills training, cognitive restructuring, exposure methods, and relapse prevention plans (Albano & Kendall, 2002). Traditionally, CBT has been used as a treatment for adult anxiety disorders; however, CBT has been adjusted to fit the developmental needs of adolescents and children (Roblek & Piacentini, 2005). The most widely used CBT program for children is Coping Cat.

**Individual Cognitive Behavioral Therapy: Coping Cat**

Like many other therapy types, CBT has been successful in treating children on an individual basis (ICBT). Kendall and colleagues were the first to develop and empirically test the effectiveness of a manual-based program, Coping Cat, for children and adolescents (Kendall, 1990; Kendall, 1994; Albano & Kendall, 2002). Coping Cat was designed to focus on treating
separation anxiety, generalized anxiety disorder, and social anxiety disorder (Kendall & Hedtke, 2006). Empirical studies showed the program is significantly effective in treating anxiety with 64% of the participants no longer meeting clinical criteria for an anxiety disorder (Roblek & Piacentini, 2005) following participation in the program. These results were maintained at a 2-5 year follow-up (Roblek & Piacentini, 2005). Coping Cat is a 16-session program that is divided into two sections: the first section is training and the second is for practicing the newly acquired skills (Kendall & Hedtke, 2006). Activities that are used in the sessions include: granulated sequence of training tasks and assignments, role play procedures, coping modeling, homework assignments, affective education, awareness of bodily anxious reactions, relaxation techniques and other cognitive-behavioral techniques (Kendall & Hedtke, 2006). Although the Coping Cat program is a standardized, manual-based program, Kendall stresses the importance of flexibility in implementing the program. Adjusting the key principles and activities to accommodate the unique characteristics of each child and their particular situation is a successful strategy among experienced clinicians and therapists (Kendall, Gosch, Furr, & Sood, 2008). There are five key principles of the Coping Cat program: recognizing anxious feelings and the somatic symptoms associated with them, identifying perceptions in anxiety-provoking situations, developing a plan to cope, behavioral exposure, and evaluating performance and self-reinforcement (Albano & Kendall, 2002). The Coping Cat program has
been formatted into a family program as well as a group-based program (Kendall & Hedtke, 2006). Group-based CBT programs have been developed as a way to make therapy more cost-effective and accessible for treating many children.

**Group Cognitive Behavioral Therapy in Schools**

Group CBT has been found to be an effective alternative to individual CBT. Group CBT (GCBT) is a way for therapists to work with children with similar diagnoses and circumstances in small groups. The FRIENDS program is one of the most widely used GCBT programs. Based on Kendall’s Coping Cat program, the FRIENDS program for the treatment of anxiety disorders are empirically validated (Barrett, Farrell, Ollendick, & Dadds, 2006). The FRIENDS programs have been developed for four age groups: Fun FRIENDS (ages 4-7), FRIENDS for Life (ages 8-11), My FRIENDS Youth (ages 12-15), and Adult Resiliency (ages 16-18+) (Friends Program, n.d.). The FRIENDS programs are similar to Coping Cat in that there are multiple sessions, but unlike the traditional Coping Cat program, the FRIENDS programs for children have a parent involvement component. The parent component was added to give parents and caregivers the skills necessary to teach the skills introduced by the program (Barrett et al., 2006). The Friends programs are commonly used within schools with positive results; according to two studies, 64% of children participating in the program no longer meet clinical criteria for an anxiety disorder (Barrett et al., 2006, Mychailyszyn, Brodman, Read, &
Kendall, 2012) following treatment in the program. Using schools as a way to intervene and treat children is a viable way to better serve multiple groups of children because schools are the primary setting in which children struggle with anxiety symptoms (Mychailyszyn et al., 2012). The naturalistic context of schools can be less intimidating to children and families, as well (Mychailyszyn et al., 2012).

**Individual Cognitive Behavioral Treatment (CBT) versus Group Cognitive Behavioral Treatment (GCBT)**

Individual CBT and GCBT have both been shown to be effective treatments for anxiety. Although ICBT and GCBT have yielded similar success rates, there is an issue in regards to the cost effectiveness of each form of treatment. While, ICBT would seem to be the best way for clinicians to specifically tailor a child’s treatment plan (Kendall & Hedtke, 2006), this method can be time-consuming and costly for school districts to implement (Tucker & Oei, 2006). ICBT involves a child working individually with a school psychologist or clinician. Due to the recent budget crisis, one school psychologist is typically responsible for multiple school sites (Tucker & Oei, 2006), which can make it difficult to treat children on an individual basis. Alternatively, treating children in groups seems to be a more cost-effective way to administer CBT.
Present Study

The primary purpose of the present study was to examine the effectiveness of ICBT and GCBT among school-age children diagnosed with an anxiety disorder. Documenting the relative effectiveness of individual versus group treatment has important implications for how intervention is provided to children. A meta-analysis was utilized to document the relative effectiveness of each treatment approach.
CHAPTER TWO

METHOD

Literature Search

To determine what modality of anxiety treatment is most beneficial for school-aged children, a comprehensive literature review was conducted in two phases. First, a literature search was performed using the following phrases: “child anxiety treatment,” “cbt child anxiety,” “coping cat,” “friends for life,” “friends for children,” “group cbt child anxiety,” “child anxiety disorders,” and “cognitive behavioral therapy children anxiety.” Articles were found using Google Scholar and California State University San Bernardino’s (CSUSB) online library website that contains academic databases. The eight databases from the CSUSB online library that were used included: EBSCOhost Academic Search Premier, PsychINFO, ERIC, PsychARTICLES, ScienceDirect, Wiley Online Library, SpringerLink Journals, and Web of Science. In order to narrow the search, only “scholarly, peer reviewed journals” articles published between 2000 and 2014 were retrieved. Additionally, an “ancestral search” was conducted using reference lists of eligible studies through the CSUSB general search database or the Web of Science database (Maggin & Johnson, 2014). Reference lists of relevant articles, review articles, and program manuals (e.g., Coping Cat, FRIENDS) were used to locate other relevant published research. All articles were thoroughly reviewed in order to ensure that they meet the selection criteria.
Selection Criteria

The general selection criterion was concentrated on articles that focused on cognitive behavioral therapies (CBT) for anxiety symptoms and diagnoses in children. More specifically, two specific treatments were targeted: individual CBT or child-focused (CCBT) using the Coping Cat program (Kendall, 1994) and group CBT (GCBT) using the FRIENDS program (Barrett & Turner, 2001) and other evidenced-based group CBT programs. The following eight inclusion criteria were used to select studies that were included in this meta-analysis. First, only studies that have been published in a peer-reviewed journal were used in this study. Second, included studies needed to have participants from Westernized cultures and were published in an English language journal. Third, eligible studies needed to be experimental, quasi-experimental, or longitudinal in design. Single case studies yield significant findings to the field but due to the difficulty of combining these effect sizes with group effect sizes, single case studies were excluded. Fourth, the CBT needs to be implemented in either a child-focused therapy or group format. For child-focused therapy, the therapist or clinician needed to have implemented treatment using the Coping Cat program for children in middle childhood (ages 5-12 years). For the group therapy, studies needed to use the Fun FRIENDS (ages 4-7) or FRIENDS for Life (ages 8-11) programs or other evidenced-based group program for treating anxiety in children. Fifth, eligible studies should have participants that were in the middle childhood (5-12).
Articles that combined school-aged participants with adolescents were excluded unless results from these two age groups are reported separately. Sixth, included studies needed to be conducted in either clinical or school settings by a licensed therapist or a qualified researcher. Although many therapies for children are implemented in home settings, the present study is focused on treatments given in clinical and school contexts. Seventh, studies needed to use a standardized measure of anxiety such as the Multidimensional Anxiety Scale for Children (MASC) (March, Parker, Sullivan, Stallings, & Conners, 1997) or other valid and reliable assessment measure. Eighth, eligible studies needed to report clear, statistical information so that effect sizes could be calculated.

Data Extraction

Information from included studies was added to customized Microsoft Excel spreadsheets as a way to organize and summarize data. Numerous study characteristics and variables that were recorded from each study including: year published, author(s), sample size, country of origin, participant age ranges, participant diagnosis, availability of control group, treatment program used, setting, number of sessions, follow-up study information, and measures of anxiety. Additionally, there were two separate Excel spreadsheets (CCBT and GCBT) used to report overall effect sizes and other comparison effect sizes.
Description of Standardized Post-Intervention Outcomes

There were a number of standardized measures that were used as measurements of anxiety symptoms in children. Examples of standardized measures include the Multidimensional Anxiety Scale for Children (MASC) (March, Parker, Sullivan, Stallings, & Conners, 1997), the Anxiety Disorders Interview Schedule (ADIS) (Silverman, & Nelles, 1988), the Screen for Child Anxiety Related Disorders (SCARED) (Birmaher, 1999), the Revised Children’s Manifest Anxiety Scale (RCMAS) (Reynolds, & Richmond, 1985), the State-Trait Anxiety Inventory for Children (STAIC) (Spielberger & Edwards, 1973), the Social Anxiety Scale for Children-Revised (SASC-R) (La Greca & Stone, 1993), the Global Improvement Scale (GIS) (Zaider et al., 2003), the Children’s Depression Inventory (CDI) (Kovacs, 1984), and the Spence Children’s Anxiety Scale (SCAS) (Spence, 1998). All pre and post-treatment measures from the studies included in this project utilized a self-report paper-and-pencil format in which children responded to items on a Likert rating scale. Administration of standardized measures was reported to take from five to 20 minutes on average. Therapists or researchers computed pre and post intervention scores using the ratings from the Likert scales. The post-intervention standardized scores were used to calculated effect sizes for this study.
**Interpretation of Effect Sizes (ES) in Terms of Treatment Success**

Post-intervention scores from standardized measures were recorded and interpreted on Excel spreadsheets. Moderate to large, large, and very large effect sizes indicated that the CBT treatment was effective in reducing or eliminating anxious symptoms. Small to moderate and no effect or a small effect sizes were interpreted as indicating that the CBT treatment was not effective in reducing or eliminating symptoms of anxiety.

**Meta Analytical Procedure**

The following statistical data collected for all studies: group/variable or pre-test/post-test scores means, standard deviations, and sample sizes. All of these statistical components were needed to compute the Cohen’s D effect size(s) index for the treatments. Some articles reported effect sizes (ES) and for other studies, the effect sizes were calculated. For between-subjects designs with pretest and posttest intervention (or follow-up), the effect sizes were calculated for each group \[\frac{\text{(posttest } M - \text{pretest } M)}{\text{Pooled SD}}\]. Many studies used a variety of assessments and measures as a way to collect data on participant development so Fisher’s z was used to transform multiple effect sizes that were combinable. Fisher’s z was calculated by taking an average of the effect sizes \[\text{Mean } z = \frac{(z1 + z2)}{2}\] (Fisher, 1915, Fisher, 1921). Based on Cohen’s classification, ES of at 0.00 to 0.20 were considered to be no effect to small, 0.21 to 0.33 were considered to be small to moderate effect, 0.34 to 0.50 were considered to be moderate to large, 0.51 to 0.75 were considered to
be a large effect, and 0.76 and beyond were interpreted to be a very large effect size. For each type of treatments (CCBT and GCBT) weighted effect sizes were calculated by first multiplying each ES value by the sample size (n); then those values were summed. This value was then divided by the total n for the entire group in order to establish a weighted effect size. The weighted mean gave the ES of the entire group and it was interpreted using the same criteria as the ES for individual studies.
CHAPTER THREE

RESULTS

A total of 18 studies were selected and coded for this project this resulted in 1,482 participants who received either ICBT or GCBT. Participants were between six and 14 years of age. Individual study overviews and program features are detailed in Tables 1 through Table 4. Six studies were included in the ICBT group and 12 studies were included in the GCBT group. Effect sizes of both groups are presented in Tables 5 and 6. Weighted effect sizes were calculated to provide an accurate measure of effectiveness regardless of sample size. For the ICBT treatment group, six effect sizes were transformed into a weighted ES of 1.05 (refer to Table 5), which is interpreted as a very strong effect (Cohen, 1977). For the GCBT treatment group, 12 effect sizes were transformed into a weighted ES of 0.53 (refer to Table 6), which is interpreted as a strong effect (Cohen, 1977). Both groups (ICBT and GCBT) yielded large to very large effect sizes. Based upon the weighted ES, it appears that ICBT is the superior treatment as compared to GCBT. The larger ES indicates that the children in the ICBT group reported a greater reduction or absence of anxiety symptoms after receiving treatment in an individual format (compared to group treatment).

The studies selected for this study represented multiple countries. In the ICBT group, five studies from the United States and one study from Canada were included. Among the GCBT studies, six originated in the United
States, two studies were from the Netherlands, two studies were from Australia, one study was from Scotland, and one study was from Canada. Within the ICBT group, the total ES was 1.19 for the US-based studies; the study originating in Canada has an ES of 0.55 (refer to Table 7). In the GCBT group, the total weighted ES were listed in order of largest ES to smallest. The country with the largest effect size (0.79) was the Netherlands; this indicates a very large effect size (refer to Table 8) (Cohen, 1977). The country associated with the smallest weighted effect size (0.15) was Canada, this indicated no effect to a small effect (refer to Table 8) (Cohen, 1977).

Due to the treatment program variability among the group CBT studies, it was possible to compare the effect sizes of each type of GCBT program. The GCBT program with the largest ES (0.79) was Coping Koala, which indicates a very large effect (refer to Table 9) (Cohen, 1977). The treatment program with the smallest ES (0.15) was Coping Bear which indicates no effect to a small effect (refer to Table 9) (Cohen, 1977). Overall, as can be seen in Table 9, four of the six programs had a large to very large ES (refer to Table 9) (Cohen, 1977). One program, an author created CBT program, had a moderate to large ES (refer to Table 9) (Cohen, 1977).
Table 1. Overview of Selected Individual Cognitive Behavioral Treatment (ICBT) Studies

<table>
<thead>
<tr>
<th>Year</th>
<th>Author</th>
<th>N</th>
<th>Country</th>
<th>Participant Age Range</th>
<th>Participant Diagnosis</th>
<th>Control Group?</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000</td>
<td>Falannery-Schroeder &amp; Kendal</td>
<td>37</td>
<td>United States</td>
<td>8-14</td>
<td>SAD, SA, GAD</td>
<td>Waitlist (9-Week)</td>
</tr>
<tr>
<td>2005</td>
<td>Falannery-Schroeder &amp; Kendal</td>
<td>30</td>
<td>United States</td>
<td>8-14</td>
<td>SAD, SA, GAD</td>
<td>No</td>
</tr>
<tr>
<td>2002</td>
<td>Manassis et al.</td>
<td>78</td>
<td>Canada</td>
<td>8-12</td>
<td>SAD, SA, GAD, SP, PD</td>
<td>No</td>
</tr>
<tr>
<td>2009</td>
<td>Suveg et al.</td>
<td>161</td>
<td>United States</td>
<td>7-14</td>
<td>SAD, SA, GAD</td>
<td>No</td>
</tr>
<tr>
<td>2006</td>
<td>Wood et al.</td>
<td>40</td>
<td>United States</td>
<td>6-13</td>
<td>SAD, SA, GAD</td>
<td>No</td>
</tr>
<tr>
<td>2009</td>
<td>Wood et al.</td>
<td>35</td>
<td>United States</td>
<td>6-13</td>
<td>SAD, SA, GAD</td>
<td>No</td>
</tr>
</tbody>
</table>

Note. N = sample size, SAD = Social Anxiety Disorder, SA = Separation Anxiety Disorder, GAD = Generalized Anxiety Disorder, SP = Specific Phobia, PD = Panic Disorder.
Table 2. Overview of Selected Group Cognitive Behavioral Treatment (GCBT) Studies

<table>
<thead>
<tr>
<th>Year</th>
<th>Author</th>
<th>N</th>
<th>Country</th>
<th>Participant Age Range</th>
<th>Participant Diagnosis</th>
<th>Control Group?</th>
</tr>
</thead>
<tbody>
<tr>
<td>2001</td>
<td>Barrett &amp; Turner</td>
<td>489</td>
<td>Australia</td>
<td>10-12</td>
<td>High Level of Anxious Symptoms</td>
<td>Yes</td>
</tr>
<tr>
<td>2005</td>
<td>Bernstein et al.</td>
<td>61</td>
<td>United States</td>
<td>7-11</td>
<td>SAD, SA, GAD</td>
<td>Waitlist (6-month)</td>
</tr>
<tr>
<td>2008</td>
<td>Bernstein et al.</td>
<td>61</td>
<td>United States</td>
<td>7-11</td>
<td>SAD, SA, GAD</td>
<td>Waitlist (6-month)</td>
</tr>
<tr>
<td>2000</td>
<td>Falannery-Schroeder &amp; Kendal</td>
<td>37</td>
<td>United States</td>
<td>8-14</td>
<td>SAD, SA, GAD</td>
<td>Waitlist (9-Week)</td>
</tr>
<tr>
<td>2005</td>
<td>Falannery-Schroeder &amp; Kendal</td>
<td>30</td>
<td>United States</td>
<td>8-14</td>
<td>SAD, SA, GAD</td>
<td>No</td>
</tr>
<tr>
<td>2010</td>
<td>Liddle et al.</td>
<td>58</td>
<td>Scotland</td>
<td>9-14</td>
<td>High Level of Anxious Symptoms</td>
<td>Yes</td>
</tr>
<tr>
<td>2002</td>
<td>Manassis et al.</td>
<td>78</td>
<td>Canada</td>
<td>8-12</td>
<td>SAD, SA, GAD, SP, PD</td>
<td>No</td>
</tr>
<tr>
<td>2005</td>
<td>Mifsud &amp; Rapee</td>
<td>91</td>
<td>Australia</td>
<td>8-11</td>
<td>High Level of Anxious Symptoms</td>
<td>Yes</td>
</tr>
<tr>
<td>2002</td>
<td>Muris et al.</td>
<td>30</td>
<td>Netherlands</td>
<td>9-12</td>
<td>SAD, SA, GAD</td>
<td>No</td>
</tr>
<tr>
<td>2009</td>
<td>Muris et al.</td>
<td>45</td>
<td>Netherlands</td>
<td>9-12</td>
<td>SAD, SA, GAD</td>
<td>No</td>
</tr>
<tr>
<td>2001</td>
<td>Shortt et al.</td>
<td>71</td>
<td>United States</td>
<td>6-10</td>
<td>SAD, GAD, SP</td>
<td>Waitlist</td>
</tr>
<tr>
<td>2000</td>
<td>Spence et al.</td>
<td>50</td>
<td>United States</td>
<td>7-14</td>
<td>SOC P+</td>
<td>Waitlist (12-Week)</td>
</tr>
</tbody>
</table>

*Note. N = sample size, SAD = Social Anxiety Disorder, SA = Separation Anxiety Disorder, GAD = Generalized Anxiety Disorder, SP = Specific Phobia, PD = Panic Disorder, SOC P = Social Phobia, + Social Anxiety Disorder is sometimes referred to as Social Phobia.*
Table 3. Individual Cognitive Behavioral Treatment (ICBT) Program Features

<table>
<thead>
<tr>
<th>Year</th>
<th>Author</th>
<th>N</th>
<th>Treatment Program</th>
<th>Setting</th>
<th>Number of Sessions</th>
<th>Follow-up</th>
<th>Measures of Anxiety</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000</td>
<td>Falannery-Schroeder &amp; Kendal</td>
<td>37</td>
<td>Coping Cat</td>
<td>Clinic</td>
<td>18</td>
<td>3-Month</td>
<td>RCMAS STAIC</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2005</td>
<td>Falannery-Schroeder &amp; Kendal</td>
<td>30</td>
<td>Coping Cat</td>
<td>Clinic</td>
<td>18</td>
<td>No</td>
<td>RCMAS STAIC SAS C-R STAIC</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2002</td>
<td>Manassis et al.</td>
<td>78</td>
<td>Coping Cat</td>
<td>Clinic</td>
<td>8-12</td>
<td>No</td>
<td>MASC SASC GIS SAS C-R</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2009</td>
<td>Suveg et al.</td>
<td>161</td>
<td>Coping Cat</td>
<td>University Clinic</td>
<td>16</td>
<td>1 Year</td>
<td>CDI</td>
</tr>
<tr>
<td>2009</td>
<td>Wood et al.</td>
<td>40</td>
<td>Coping Cat</td>
<td>Clinic</td>
<td>12-16</td>
<td>1 Year</td>
<td>ADIS-C MASC</td>
</tr>
<tr>
<td>2009</td>
<td>Wood et al.</td>
<td>35</td>
<td>Coping Cat</td>
<td>Clinic</td>
<td>12-16</td>
<td>No</td>
<td>ADIS-C MASC</td>
</tr>
</tbody>
</table>

*Note.* N = sample size, RCMAS = Revised Children’s Manifest Anxiety Scale, STAIC = State-Trait Anxiety Inventory for Children, SASC-R = Social Anxiety Scale for Children-Revised, ADIS-C = Anxiety Disorders Interview Schedule-Child, MASC = Multidimensional Anxiety Scale for Children, GIS = Global Improvement Scale, CDI = Children’s Depression Inventory
Table 4. Group Cognitive Behavioral Treatment (GCBT) Program Features

<table>
<thead>
<tr>
<th>Year</th>
<th>Author</th>
<th>N</th>
<th>Treatment Program</th>
<th>Setting</th>
<th>Number of Sessions</th>
<th>Follow-up</th>
<th>Target Measures of Anxiety</th>
</tr>
</thead>
<tbody>
<tr>
<td>2001</td>
<td>Barrett &amp; Turner</td>
<td>489</td>
<td>FRIENDS</td>
<td>School</td>
<td>10</td>
<td>No</td>
<td>SCAS RCMAS</td>
</tr>
<tr>
<td>2005</td>
<td>Bernstein et al.</td>
<td>61</td>
<td>FRIENDS</td>
<td>Clinic</td>
<td>9-11</td>
<td>1 &amp; 3 Month</td>
<td>MASC</td>
</tr>
<tr>
<td>2008</td>
<td>Bernstein et al.</td>
<td>61</td>
<td>FRIENDS</td>
<td>Clinic</td>
<td>9-11</td>
<td>No</td>
<td>MASC</td>
</tr>
<tr>
<td>2000</td>
<td>Falannery-Schroederer &amp; Kendal</td>
<td>37</td>
<td>Coping Cat (Group Ver)</td>
<td>Clinic</td>
<td>18</td>
<td>3 Month</td>
<td>RCMAS STAIIC SASC-R</td>
</tr>
<tr>
<td>2005</td>
<td>Falannery-Schroederer &amp; Kendal</td>
<td>30</td>
<td>Coping Cat (Group Ver)</td>
<td>Clinic</td>
<td>18</td>
<td>No</td>
<td>RCMAS STAIIC SASC-R</td>
</tr>
<tr>
<td>2010</td>
<td>Liddle et al.</td>
<td>58</td>
<td>FRIENDS</td>
<td>School</td>
<td>10</td>
<td>No</td>
<td>SCAS</td>
</tr>
<tr>
<td>2002</td>
<td>Manassiss et al.</td>
<td>78</td>
<td>Coping Bear</td>
<td>Clinic</td>
<td>8-12</td>
<td>No</td>
<td>MASC SASC GIS</td>
</tr>
<tr>
<td>2005</td>
<td>Mifsud &amp; Rapee</td>
<td>91</td>
<td>Cool Kids Program</td>
<td>School</td>
<td>8</td>
<td>4 Month</td>
<td>SCAS</td>
</tr>
<tr>
<td>2002</td>
<td>Muris et al.</td>
<td>30</td>
<td>Coping Koala</td>
<td>School</td>
<td>9-12</td>
<td>No</td>
<td>STAIC</td>
</tr>
<tr>
<td>2009</td>
<td>Muris et al.</td>
<td>45</td>
<td>Coping Koala</td>
<td>School</td>
<td>9-12</td>
<td>No</td>
<td>SCARED-R</td>
</tr>
<tr>
<td>2001</td>
<td>Shortt et al.</td>
<td>71</td>
<td>FRIENDS</td>
<td>Clinic</td>
<td>10-12</td>
<td>1 Year</td>
<td>RCMAS</td>
</tr>
<tr>
<td>2000</td>
<td>Spence et al.</td>
<td>50</td>
<td>Author Created CBT</td>
<td>Clinic</td>
<td>12-14</td>
<td>6 &amp; 12 Month</td>
<td>RCMAS</td>
</tr>
</tbody>
</table>

*Note. N = sample size, RCMAS = Revised Children’s Manifest Anxiety Scale, STAIC = State-Trait Anxiety Inventory for Children, SASC-R = Social Anxiety Scale for Children-Revised, ADIS-C = Anxiety Disorders Interview Schedule-Child, MASC = Multidimensional Anxiety Scale for Children, GIS = Global Improvement Scale, SCAS = Spence Children’s Anxiety Scale, SCAS-R = Spence Children’s Anxiety Scale-Revised, SCARED = Screen for Children’s Anxiety Related Emotional Disorder-Revised*
Table 5. Effect Sizes (ES) According to Individual Cognitive Behavioral Treatment (ICBT) Study and Total ES for ICBT Group

<table>
<thead>
<tr>
<th>Year</th>
<th>Author</th>
<th>N</th>
<th>ES</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000</td>
<td>Falannery-Schroededer &amp; Kendal</td>
<td>37</td>
<td>1.75</td>
</tr>
<tr>
<td>2005</td>
<td>Falannery-Schroededer &amp; Kendal</td>
<td>30</td>
<td>0.95</td>
</tr>
<tr>
<td>2002</td>
<td>Manassis et al.</td>
<td>78</td>
<td>0.546</td>
</tr>
<tr>
<td>2009</td>
<td>Suveg et al.</td>
<td>161</td>
<td>1.35</td>
</tr>
<tr>
<td>2006</td>
<td>Wood et al.</td>
<td>40</td>
<td>0.53</td>
</tr>
<tr>
<td>2009</td>
<td>Wood et al.</td>
<td>35</td>
<td>0.8</td>
</tr>
<tr>
<td></td>
<td>Total N &amp; ES</td>
<td>381</td>
<td>1.05</td>
</tr>
</tbody>
</table>

*Note. N = sample size, ES = effect size*
Table 6. Effect Sizes (ES) According to Group Cognitive Behavioral Treatment (GCBT) Study and Total ES for GCBT Group

<table>
<thead>
<tr>
<th>Year</th>
<th>Author</th>
<th>N</th>
<th>ES</th>
</tr>
</thead>
<tbody>
<tr>
<td>2001</td>
<td>Barrett &amp; Turner</td>
<td>489</td>
<td>0.51</td>
</tr>
<tr>
<td>2005</td>
<td>Bernstein et al.</td>
<td>61</td>
<td>0.58</td>
</tr>
<tr>
<td>2008</td>
<td>Bernstein et al.</td>
<td>61</td>
<td>0.34</td>
</tr>
<tr>
<td>2000</td>
<td>Falannery-Schroeder &amp; Kendal</td>
<td>37</td>
<td>0.72</td>
</tr>
<tr>
<td>2005</td>
<td>Falannery-Schroeder &amp; Kendal</td>
<td>30</td>
<td>0.5</td>
</tr>
<tr>
<td>2010</td>
<td>Liddle et al.</td>
<td>58</td>
<td>0.67</td>
</tr>
<tr>
<td>2002</td>
<td>Manassis et al.</td>
<td>78</td>
<td>0.15</td>
</tr>
<tr>
<td>2005</td>
<td>Mifsud &amp; Rapee</td>
<td>91</td>
<td>0.62</td>
</tr>
<tr>
<td>2002</td>
<td>Muris et al.</td>
<td>30</td>
<td>1.1</td>
</tr>
<tr>
<td>2009</td>
<td>Muris et al.</td>
<td>45</td>
<td>0.58</td>
</tr>
<tr>
<td>2001</td>
<td>Shortt et al.</td>
<td>71</td>
<td>0.76</td>
</tr>
<tr>
<td>2000</td>
<td>Spence et al.</td>
<td>50</td>
<td>0.5</td>
</tr>
</tbody>
</table>

Total N & ES 1101 0.54

Note. N = sample size, ES = effect size.

Table 7. Individual Cognitive Behavioral Treatment (ICBT) Effect Sizes (ES) According to Country of Origin

<table>
<thead>
<tr>
<th>Year Range</th>
<th>Country of Origin</th>
<th>Sample Size (N)</th>
<th>Effect Size</th>
<th>ES Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000-2009</td>
<td>United States</td>
<td>5</td>
<td>1.19</td>
<td>No Effect to Small</td>
</tr>
<tr>
<td>2002</td>
<td>Canada</td>
<td>1</td>
<td>0.55</td>
<td>Large</td>
</tr>
</tbody>
</table>

Note. N = sample size, ES = effect size.
Table 8. Group Cognitive Behavioral Treatment (GCBT) Effect Sizes (ES) According to Country of Origin

<table>
<thead>
<tr>
<th>Year Range</th>
<th>Country of Origin</th>
<th>Sample Size (N)</th>
<th>Effect Size</th>
<th>ES Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>2002-2009</td>
<td>Netherlands</td>
<td>2</td>
<td>0.79</td>
<td>Very Large</td>
</tr>
<tr>
<td>2010</td>
<td>Scotland</td>
<td>1</td>
<td>0.67</td>
<td>Large</td>
</tr>
<tr>
<td>2000-2008</td>
<td>United States</td>
<td>6</td>
<td>0.57</td>
<td>Large</td>
</tr>
<tr>
<td>2001-2005</td>
<td>Australia</td>
<td>2</td>
<td>0.52</td>
<td>Large</td>
</tr>
<tr>
<td>2002</td>
<td>Canada</td>
<td>1</td>
<td>0.15</td>
<td>No Effect to Small</td>
</tr>
</tbody>
</table>

*Note. N = sample size, ES = effect size.*

Table 9. Group Cognitive Behavioral Treatment (GCBT) Effect Sizes (ES) According to Program Type

<table>
<thead>
<tr>
<th>Year Range</th>
<th>GCBT Program Type</th>
<th>N</th>
<th>ES</th>
<th>ES Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>2002-2009</td>
<td>Coping Koala</td>
<td>2</td>
<td>0.79</td>
<td>Very Large</td>
</tr>
<tr>
<td>2001-2010</td>
<td>FRIENDS</td>
<td>5</td>
<td>0.54</td>
<td>Large</td>
</tr>
<tr>
<td>2000-2005</td>
<td>Group Coping Cat</td>
<td>2</td>
<td>0.62</td>
<td>Large</td>
</tr>
<tr>
<td>2005</td>
<td>Cool Kids Program</td>
<td>1</td>
<td>0.62</td>
<td>Large</td>
</tr>
<tr>
<td>2000</td>
<td>Author Created CBT</td>
<td>1</td>
<td>0.5</td>
<td>Moderate to Large</td>
</tr>
<tr>
<td>2002</td>
<td>Coping Bear</td>
<td>1</td>
<td>0.15</td>
<td>No Effect to Small</td>
</tr>
</tbody>
</table>

*Note. N = sample size, ES = effect size.*
In the current study, the effectiveness of individual cognitive behavioral therapy (ICBT) and group cognitive behavioral therapy (GCBT) was compared. A total of 18 studies were selected with six studies in the ICBT group and 12 studies in the GCBT group. It seems that both treatments are largely effective in treating school-aged children with anxiety disorders. It appears that ICBT is more effective with an ES of 1.05 as compared to an ES of 0.53 for GCBT. These results add to the current literature that concludes that both ICBT and GCBT are effective but ICBT seems to be more effective in the treatment of anxiety disorders in school-age children. This general trend has been reported in other non-anxiety treatment programs as well such as the treatment of depression and drug and alcohol dependence (Tucker & Oei, 2007). Specifically, it has been noted that individual treatment produces greater change in children and adolescents.

Disadvantages of Group Cognitive Behavioral Treatment (GCBT)

There are disadvantages associated with group CBT that may contribute to the large effect difference between ICBT and GCBT found in this project. Conceptually, ICBT is the treatment approach that has the greatest ability to be uniquely tailored to each child’s individual personality and family dynamic. Alternatively, within a group setting, a therapist is working with a
small group of children (4 -8 clients) (Roblek & Piacentini, 2005). The more children that the therapist is working with, the less likely it is possible to individually design and implement treatment plans that are specific to each child. Another disadvantage of GCBT is that working with groups of children makes developing a good therapist-to-child relationship more challenging (Silverman et al., 1999). Even within a small group, much of the session’s time is spent on implementing the program material and not bonding with each child. In addition, there tends to be a minimum number of children needed for an effective GCBT cohort; thus, a program may be delayed until there are enough children for the treatment group. This sometimes leads to children being on waitlists for weeks or even months before treatment can begin (Liber, et al., 2008). In contrast, with ICBT there is a small duration of time between assessment and treatment, which is advantageous for successful treatment (Liber et al., 2008). Finally, although it may seem that GCBT seems is a financially cost-effective way to treat children with similar diagnoses, this may not be the reality. In a comparative study that examined the financial, social, and costs of the therapist, of GCBT and ICBT, it was found that GCBT is financially cost-effective in regards to the therapist’s ability to treat a group of children at the same time. However, although GCBT is cost effective in the short term, the results of GCBT do not seem to be long lasting, however. It was determined that many children who receive GCBT had positive outcomes or lower anxiety symptoms or were symptom free but these results were not
maintained in subsequent years (Tucker & Oei, 2006). Because the results of GCBT were not maintained, children were referred and treated multiple times. Clearly, this scenario presents greater costs than benefits in the long run.

**Social Issues Associated with Group Cognitive Behavioral Treatment (GCBT)**

In addition to the previous disadvantages noted for GCBT, a therapist utilizing this approach may spend too much time resolving social issues within the group. For example, negative peer modeling and social distractions can interfere with treatment administration (Flannery-Schroeder et al., 2000; Silverman et al., 2008). Tucker and Oei (2006) noted that a client monopolizing the session, small talk during sessions, children arguing or alienating one another, or differential improvement rates between children in the group can hinder success results. Also, children may be less likely to discuss intimate details or struggles within a group format (Tucker & Oei, 2006). The developmental period of middle childhood is when children become aware of social differences between one another and these differences seem to carry much weight in decision-making in social situations (Steinberg & Morris, 2001). School-aged children place importance on being a part of the group and may behave in a way that is socially pleasing as a means to achieve group acceptance. If a child feels that his/her perspective or thoughts will hinder group acceptance, he/she may withhold information, which can negatively impact treatment success. Despite these concerns associated
with GCBT, there does appear to be some level of treatment efficacy associated with this treatment model for anxiety in children.

Advantages of Individual Cognitive Behavioral Treatment (ICBT)

Many of the disadvantages of GCBT are generally not found to be true of ICBT. Within ICBT, the therapist is able to meet with the child and his or her family on an individual basis. Generally, in treatment, it is suggested that the Coping Cat program be used as a guideline with adjustments being made according to the child’s particular needs (Kendall et al., 2008). This flexibility in treatment gives the child a more individualized experience with higher reported effect sizes. Additionally, because of the individual nature of ICBT treatment, the therapist and the child can develop a relationship where the child is comfortable sharing details of his or her anxiety (Liber et al., 2008). As a result, the therapist is able to adequately meet the child’s personal and emotional needs (Tucker & Oei, 2006). For children with insecure attachment styles, the therapist is able to act as a secure base (Warren, et al., 1997). This secure base better supports the child throughout his or her treatment and is associated with more successful treatment (Manasiss et al., 2004). Flannery-Schroeder, et al., (2000) reported that another benefit of ICBT is that a significant number of children in their sample were able to demonstrate better recall of information that was learned as opposed to children in GCBT. It appears that a one-on-one interaction between the therapist and child helps children to encode and recall program materials better than children in GCBT.
In general, it appears that working with children and families on an individual basis gives the therapist the ability to better understand how family dynamics influence the child’s development and maintenance of an anxiety disorder.

Family Influences

Parenting and family dynamics are widely understood to have a great influence on children’s development in general. Twin studies and family research have demonstrated that there is a strong family component in childhood anxiety (Manassis et al., 2004). That is, children who have parents with depression and/or anxiety have a higher risk of developing an anxiety disorder themselves. Although there seems to be a genetic component, there are also parenting behaviors that may facilitate the development of an anxiety disorder (Manassis et al., 2004; Thapar & McGuffin, 1995). For example, parental modeling of anxious behavior and thoughts influence the way that children see the world. Parents with social phobia tend to limit interactions and networking with people outside of the family (e.g., neighbors, relatives, and other community members) (Manassis et al., 2004). This limited exposure to others can hinder a child’s social development and heighten avoidance of social situations. Another potential parental influence is parenting style. Parents who are overprotective of children can give the impression that the world is untrustworthy and to be feared (Manassis et al., 2004). In fact, there seems to be a bidirectional relationship between these parents and anxious children (Hudson & Rapee, 2001). The parent’s controlling behavior tends to
be a reaction to the child’s anxious symptoms and in an attempt to protect the child from stressful situations, the parents may restrict a child’s interactions with others. Unfortunately, this protection heightens children’s anxious aroused states and perceptions (Manassis et al., 2004). With regards to emotional socialization, it appears that there may be less emotional expressiveness in families with a child who has been diagnosed with an anxiety disorder. In a study that compared clinically diagnosed children with anxiety and nonclinical children, mothers and their children were asked to discuss emotionally relevant topics with one another (Suveg, Zeman, Flannery-Schroeder & Cassano, 2005). Mothers with anxious children seemed to speak less frequently, use less positive emotion words, and they discouraged their children’s emotional discussion as compared to mothers of nonclinical children (Suveg, Zeman, Flannery-Schroeder & Cassano, 2005). These findings suggest that there may be less emotional openness in families that have a child that has been diagnosed with an anxiety disorder (Suveg, Zeman, Flannery-Schroeder & Cassano, 2005). A final parental factor that may influence the development of anxiety in children is the attachment style a child exhibits. Childhood anxiety has been found to be associated to insecure attachment styles (Manasiss et al., 2004, Manasiss et al., 1994). It seems that a secure attachment to parents and caregivers acts as a protective factor against developing an anxiety disorder (Manasiss et al., 2004). Due to the many parental factors that have been found to contribute to the development
of anxiety disorders in children, it is crucial to examine the family dynamics during treatment. When treating children individually, the opportunity to explore possible parental influences is more accessible.

Limitations

The results of this study seem to place high importance on individual treatment for children with anxiety but it is not without limitations. One concern is that there were a limited number of studies that were included in this project. Due to a focus on middle childhood, numerous potential studies were excluded from the analysis. Much of the research on child CBT is not focused on middle childhood, but rather other developmental periods such as adolescence or other studies simply group children from a large age range into one cohort. Developmentally, school-aged children differ significantly from adolescents, which is why it is important not to group them with children of other ages. Another limitation is that many studies did not report the necessary statistics to calculate more advanced effect sizes that could potentially be more informative. Some of the statistics that are needed to calculate more specific ES's are correlation coefficients or standard error of measurement (Kromrey & Ferron, 1998, Dunlap, et al., 1996). Due to the time constraints of the present study, the researchers were not contacted in order to obtain the necessary statistics that had not been reported in their published work. Despite these limitations, the results of this project provide evidence for better understanding the utility of individual vs. group CBT.
Future Implications

The results of the current study highlight a number of potential future directions for research. First, the lack of work involving school-aged children should be addressed. More research needs to be conducted to better understand the multiple pathways that lead to the development of an anxiety disorder in middle childhood. Understanding these pathways will better inform practice in the school setting. In addition, practitioners, school counselors, and therapists need more specialized training and education regarding best treatment for youths with anxiety (Liber et al., 2008). Informed practice and highly qualified therapists will yield the best success rates for children and families struggling with anxious symptoms. It is important to note that the average reported success rate is 64% for children in treatment (regardless of treatment modality) (Barrett et al., 2006; Kendall, 1994; Roblek & Piacentini, 2005). This statistic indicates that more than three in ten students still suffer from an anxiety disorder after treatment (Liber et al., 2008). Future research needs to focus on why treatment is not efficacious for more children. One potential explanation for why some children are not successfully treated is that in many real world contexts, such as schools and community clinics, therapists and counselors have minimal training with CBT, which may negatively impact success rates (Sherrill, 2008). Further differences between country of origin and program type were found to result in differences in effect size in this study (e.g., the Netherlands versus Canada or the United States versus Canada).
Cultural and economic factors may account for these differences but more research needs to be conducted to better understand these inconsistencies. On a final note, while this project adds to the literature that indicates the efficiency of CBT in the treatment of anxiety in children, clearly more research needs to be conducted to improve upon current therapeutic practices.

**Proposed Individual Cognitive Behavioral Treatment (CBT) Treatment Program**

Having examined both ICBT and GCBT in terms of effectiveness, ICBT appears to be the superior treatment for school-aged children with anxiety disorders. The following section details an overview of an individual CBT program that is based on the current ICBT therapies but also considers the strong parental and peer components of anxiety maintenance. This treatment plan involves 10 one-hour sessions where the parent(s) attends the first session and meets with the therapist on two other individual sessions that are separate from the child’s. Before the first session begins, the therapist meets with the child and his or her family for an evaluation of anxiety symptoms and to complete an intake interview. At the beginning of each session, the therapist and child review the work from previous sessions. During the first session, the therapist meets with the child and the child’s parents to discuss the overview of the treatment plan. The therapist discusses the identification of anxious feelings and the somatic responses to feelings of anxiety. During the second session, the therapist introduces relaxation techniques and the child is able to practice relaxation techniques with the guidance from the therapist. In the third
session, the therapist helps the child to identify negative thoughts and provides input on how to challenge those thoughts. The fourth session requires the child to think of ways to problem-solve and help manage anxiety in stressful situations. During the fifth session, the child would be encouraged to discuss instances of bullying or instances where the child fears humiliation or ridicule. The therapist would help the child reflect on those instances or fears and help the child problem-solve ways to positively react to bullying. In the sixth session, the discussion would be centered on the developing the skills necessary to build and maintain friendships with peers. In sessions 3-6, the therapist and the child would role-play scenarios so that the child has an opportunity to discuss, experience, and practice skills in a safe environment. In the seventh session, tasks would be focused on mild anxiety-provoking situations in a real world context. In the eighth and ninth sessions, the child would have the opportunity to practice skills in moderate and high anxiety provoking situations. Examples of anxiety-provoking tasks may include ordering food in restaurants or engaging in conversation with a new person. In the final session, the child would learn ways that will help them maintain skills after treatment and parents would also review skills to help them reinforce progress that has been made during treatment.
APPENDIX A

COPING CAT PROGRAM DESCRIPTION
Coping Cat Program Description

The Coping Cat program is an individually based cognitive behavioral treatment (CBT) that was developed by Philip C. Kendall, Ph.D. and Kristina A. Hedtke, M.A. as a treatment for anxiety in children. Coping Cat can be used for children ages 6-12 years and adolescents 13-17 years. According to the third edition of Coping Cat, the program is designed for 16 sessions that is divided into two parts; the first eight sessions are for training while the second eight sessions allow for practice. Sessions are scheduled on a weekly basis for about one hour in duration. During sessions four and nine, parents or guardians are scheduled to participate in the training and practice activities. Some of the activities included in the training part of the sessions include identification of anxious feelings, identification of somatic responses of anxiety, relaxation techniques, learning how to challenge anxious self-talk and developing problem-solving skills to use in anxious situations. During the second half of the sessions, activities involve practicing learned skills where the tasks start at low levels of anxiety-provoking situations and then gradually build to higher levels. The tasks within these sessions include role-playing where the therapist models appropriate response to anxious symptoms, drawing pictures of imagined scenarios, discussion of feelings and somatic symptoms, and trying out skills in real world situations. For example, if a child has anxiety in speaking to new people, the therapist may role-play, ask the child to discuss his or her concerns, and then have the child actually talk to a new person in a restaurant setting. Coping Cat can be facilitated in clinics, schools, or other treatment center.
APPENDIX B

FRIENDS PROGRAM DESCRIPTION
FRIENDS Program Description

The FRIENDS program is a group-based cognitive behavioral treatment that was developed by Paula Barrett Ph.D. as a way to treat children with anxiety in a group format using a positive psychology perspective. The program focuses on the child’s strengths rather than weaknesses. FRIENDS was designed to be implemented in a small group, where four to six children with the same or similar diagnosis of anxiety are able to work together. There are four FRIENDS programs that are designed to treat individuals throughout the lifespan. Fun FRIENDS is designed for children in early childhood, ages four to seven, where FRIENDS for Life is for school-aged children age’s eight to eleven. For adolescents, My FRIENDS Youth was developed for ages 12-15 and for older adolescents and adults; the Adult Resilience for Life was designed (ages 16-18+). The number of sessions and duration can be adapted to meet the needs of the therapist and group; there can be either 5 two-hour sessions or 10 one-hour sessions. The parental component of FRIENDS includes parents attending three 120-minute sessions of the Adult Resilience for Life program. FRIENDS is an acronym for the programs core principles, feelings, relax, I can try, encourage, nurture, don’t forget to be brave, and stay happy; the tasks and activities within the sessions revolve around learning each of these principles. Examples of the tasks include relaxation techniques, discussion of somatic symptoms, recognizing the child’s own feelings and the feelings of others, examining long-term consequences of behaviors, and brainstorming ways to give back to the community. FRIENDS can be facilitated in clinics, schools, or other treatment settings.
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