Effects of Anxiety Treatment Using Coping Cat on Problem Behaviors in the Classroom

Kristen Elise Pearson

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EFFECTS OF ANXIETY TREATMENT USING COPING CAT ON PROBLEM BEHAVIORS IN THE CLASSROOM

A Dissertation
Submitted to the School of Education

Duquesne University

In partial fulfillment of the requirements for the degree of Doctor of Philosophy

By
Kristen Elise Pearson

August 2017
DUQUESNE UNIVERSITY
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Department of Counseling, Psychology, and Special Education

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EFFECTS OF ANXIETY TREATMENT USING COPING CAT ON
PROBLEM BEHAVIORS IN THE CLASSROOM

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ABSTRACT

EFFECTS OF ANXIETY TREATMENT USING COPING CAT ON PROBLEM BEHAVIORS IN THE CLASSROOM

By

Kristen Elise Pearson

August 2017

Children with comorbid anxiety disorders and externalizing problem behaviors and disorders pose an interesting challenge for clinicians. These children are at the greatest risk for the poorest outcomes in several areas of functioning including academics, interpersonal relationships, and emotional regulation. The current single subject research study was implemented to evaluate the effect of an anxiety reduction intervention, Coping Cat, on participants’ anxiety symptoms and behavior problems. The design included a baseline phase, an intervention phase, and a maintenance phase following the implementation of the intervention. Across all three phases, one or more trained research assistants collected behavioral observation data twice per week. Additionally, during both the baseline and maintenance phases, students and teachers completed rating forms, including a broad behavior measure and narrow anxiety and depression measures.
Participants included two eleven-year-old students and one twelve-year-old student; two students were African American, one Caucasian. Each of the three students had at least one anxiety diagnosis and one externalizing diagnosis.

It was hypothesized that the successful treatment of the participants’ anxiety symptoms would reduce externalizing symptoms. Results were consistent with this hypothesis. Across participants, there was an overall decrease in the level of externalizing problem behaviors observed in the classroom during the course of the intervention and following the intervention. It was also hypothesized that the participants would experience a reduction of anxiety symptomatology. These data were somewhat variable, depending on scale and rater.
DEDICATION

This dissertation is dedicated to children whose disabilities are misunderstood and whose outward presentation is only the beginning of the truth, to the clinicians who explore deeper, and to the participants of this study.
ACKNOWLEDGEMENT

To my committee chair, Dr. McCallum – thank you for your persistent kindness and encouragement throughout my time at Duquesne and during the process of conducting this project. Your expertise was instrumental in its completion. I feel honored to have had the opportunity to work with you on several projects over the years and will forever carry your personal and professional influence.

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To my sweet husband, Kyle – thank you for the wine! I’ve uttered those words to you so many times over the past five years. How can I possibly express my gratitude for all that you have done and sacrificed? When you “signed up” for this, you couldn’t have fully known what
all was involved, as I hardly knew myself. There were so many, many late nights and early mornings, so many coffee runs, so many emotional turns in the process, a move across the country! And yet, you smile. You smile that bright, endearing smile and make me laugh every single day. Your relentless love is what motivated this project and what motivates me always. Thank you, my love.
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Chapter 1: Introduction

Introduction

Anxiety disorders are the most prevalent mental health disorder among children and adolescents, with estimates of their prevalence reaching as high as 27% of children (Costello, Egger, & Angold, 2005). Beyond this estimate, many other children suffer at subclinical levels of anxiety, and therefore would not be included in prevalence rates. Of those children diagnosed with anxiety disorders, only an estimated 6% are receiving treatment (Wright & Sulkowski, 2013). Such a discrepancy between diagnosis and treatment is unacceptable given the highly treatable nature of anxiety disorders. Unfortunately, research has indicated a chronic life course for children with anxiety disorders. Children with anxiety disorders are more likely to experience not only the same disorder again in the future, but also other mental health problems, like depression, substance abuse, or other anxiety disorders (Woodward & Fergusson, 2001).

Woodward and Fergusson (2001) further reported that associations between adolescent anxiety disorders and later risk of anxiety disorder, depression, illicit drug dependence, and failure to pursue postsecondary education persisted even after accounting for socio-familial and individual factors.

According to previous research, it is evident that disorders co-occur more often than would be expected based on rates within the population (Caron & Rutter, 1991). While little information is available regarding the nature of the relationship between anxiety disorders and comorbid externalizing disorders, it is known that they are indeed related in some way. Marmorstein (2007) found that externalizing disorders including, Attention Deficit/Hyperactivity Disorder (AD/HD), Oppositional Defiant Disorder (ODD), and Conduct Disorder (CD) are positively related to a range of anxiety disorders. It was further indicated that the magnitude of
these associations tended to be stronger for males than for females and at younger, compared to older, ages (Marmorstein, 2007). Marmorstein (2007) suggests it is a possibility that boys who are anxious may feel societal pressure to hide their anxiety and may do so by engaging in acting-out behavior. In general however, the reason for common comorbidity of these different types of disorders can be attributed to several factors. One reason cited by Marmorstein (2007) is that certain risk factors for anxiety and externalizing disorders overlap. For example, a child living in poverty is considered at risk for either type of disorder. Another explanation may be an overlap in symptomatology. For example, a child with AD/HD may be described as “fidgety”. This may be a characteristic seen in a child experiencing anxiety. Problems with attention are another symptom of both AD/HD and anxiety. A third alternative explanation is that one type of disorder leads to, causes, or predisposes the child to the other type of disorder. Beesdo and colleagues (2009) indicate that a course in which anxiety disorders lead to externalizing disorders may be an important, but often overlooked pathway.

Provided this information and the differing explanations, it is evident that there is a need for further clarification of the nature of the relationship of anxiety with externalizing disorders. Further, given the prominence of such a co-occurrence, it is clear that the two types of disorders should be considered together in assessment and treatment. Perhaps the consideration of the two types of disorders together may lead to better treatment outcomes for some of the most impaired children.

**Significance of the Problem**

While there have been considerable amounts of research conducted in the area of anxiety disorders, the high prevalence and poor prognosis for children with anxiety disorders makes it clear there is still a great need for continued understanding. Anxiety disorders tend to assume a
chronic course, based on findings from clinical adult populations and retrospective studies, in which researchers study participants’ past mental health problems (Beesdo, Knappe, & Pine, 2009). Individuals diagnosed with an anxiety disorder, compared to those without, are at a statistically increased risk to have the same disorder at a later point in time. This is known as “homotypic continuity” (Beesdo et al., 2009). Similarly, follow-back or retrospective studies reveal that those with anxiety disorders in adulthood typically had the same problems earlier in life. It also seems to be the case that there is a considerable degree of fluctuation in the diagnostic status of specific anxiety disorders. Children and adolescents with anxiety disorders typically experience a natural flux of severity and type of symptoms over time.

Beesdo et al. describe the incidence of developing a secondary disorder to anxiety as “heterotypic continuity” (2009). The development of depression is particularly frequent among individuals with anxiety disorders. In examining the relationship between anxiety and depression, it has been determined that anxiety disorders increase the risk for developing a secondary depressive disorder (Beesdo et al., 2009). In addition to depression, substance abuse or dependence is another frequent heterotypic problem among individuals with anxiety disorders. Researchers have suggested that the substance abuse may begin as a means to cope with anxiety symptoms, and overtime dependence occurs. Externalizing disorders also often co-occur with anxiety disorders, including Conduct Disorder (CD), Attention Deficit/ Hyperactivity Disorder (AD/HD), and Oppositional Defiant Disorder (ODD).

With estimations of the prevalence of anxiety disorders in the United States reaching 26.9 million individuals, the associated cost is significant. According to DuPont et al. (1996), direct and indirect costs of anxiety reached $46.6 million in 1990, nearly a third of the total mental health bill for the country in that year. Such a costly problem for a treatable disorder is profound
and substantiates the need for treatment earlier in an individual’s life, better access to treatment, and better understanding of anxiety and its related factors to inform better treatment.

While anxiety disorders are one of the most common mental health disorders in children and adolescents, they often go undetected or untreated (Martin, 2011). One reason for this may be that access to mental health services is often limited for families that reside in areas with few service providers. Additional reasons may be related to transportation, monetary, or logistical barriers. Schools, however, exist in all communities and can be the “entry point” for accessing mental health services in the US (Farmer et al., 2003). Providing mental health services in the schools can reduce disparities in service utilization among high need racial/ethnic minority youth (Cummings, Ponce, & Mays, 2010). Given the aforementioned disparity between children with anxiety disorders and those receiving treatment for their anxiety disorders, treatment in schools has the potential to address this disparity.

**Theoretical Basis**

Cognitive-behavioral approaches for the treatment of anxiety in children are the most often cited and empirically-evaluated approaches (Anthony & Stein, 2009). According to the American Psychological Association Task Force on the Promotion and Dissemination of Psychological Procedures (1995), cognitive-behavioral based treatments are deemed “probably efficacious” for treating children with anxiety. Over forty randomized clinical trials have indicated the effectiveness of treating children with cognitive-behavioral therapy (CBT) (Seligman & Ollendick, 2011). In fact, a culmination of CBT studies indicates that two-thirds of children treated with CBT driven therapy are free of their primary anxiety disorder diagnoses at post-treatment (Seligman & Ollendick, 2011). Cognitive-behavioral theory is the underlying
theory of the Coping Cat program, the treatment program being implemented in the current study (Kendall, 1994).

Aaron Beck developed CBT originally as “cognitive” therapy in the 1960s. Beck’s intent was to focus on current problems and to modify dysfunctional thinking and behaviors. Cognitive-behavioral therapy purports that beliefs and behavior strategies underlie a mental health problem (Beck, 2011). Dysfunctional thinking influences mood and behavior and is common to all psychological disturbances. Once a clinician understands a person’s specific beliefs and patterns of behaviors, methods can be implemented to produce cognitive change in their thinking and belief systems. This results in enduring emotional and behavioral change (Beck, 2011). Children may experience improved mood and more adaptable behaviors. An example of a progression that may occur in therapy is with a child’s thoughts about her performance on an exam. She may feel she “can’t do anything right” upon performing poorly on an exam. After identifying and then altering this automatic thought (based on a core belief that she must “always perform perfectly”), she might more appropriately feel disappointed by the poor grade and not devastated or depressed. She may be motivated to improve her grade, rather than having the desire to give up. This system of identifying, altering, and changing unhelpful thoughts is an important component of CBT-based therapy.

Beck (2011) provides the basic principles of cognitive therapy. Therapies that are truly grounded in CBT will incorporate these basic principles to be efficacious for the treatment of mental health problems, including anxiety. The principles are as follows:

1. CBT is based on an ever-evolving formulation of patients’ problems and an individual conceptualization of each patient in cognitive terms.

2. CBT requires a sound therapeutic alliance.
3. CBT emphasizes collaboration and active participation.
4. CBT is goal oriented and problem focused.
5. CBT initially emphasizes the present.
6. CBT is educative, aims to teach the patient to be her own therapist, and emphasizes relapse prevention.
7. CBT aims to be time limited.
8. CBT sessions are structured.
9. CBT teaches patients to identify, evaluate, and respond to their dysfunctional thoughts and beliefs.
10. CBT uses a variety of techniques to change thinking, mood, and behavior.

An evaluation of how the program being implemented in the current study (Coping Cat) follows or deviates from these CBT principles will be provided in a later section.

Cognitive-behavioral therapy appears to be effective for children with anxiety and comorbid externalizing disorders (Anthony & Stein, 2009). In a study that examined 173 children, all of whom had an anxiety disorder and most of whom (79%) had a comorbid externalizing disorder, CBT-based treatment was equally effective for children with comorbid externalizing disorders as it was for children with singular anxiety disorders (Kendall, Brady, & Verduin, 2001). Both groups (children with and without comorbid disorders) experienced significant reductions in pretreatment diagnoses and anxiety symptoms. While children with comorbid anxiety and externalizing disorders can be effectively treated by use of CBT, the effect of CBT on the child’s externalizing symptoms (as opposed to anxiety symptoms) has yet to be demonstrated (Rapee, 2000).
Coping Cat Literature

Since its development, Coping Cat has demonstrated success for children with anxiety disorders in several randomized clinical trials. Kendall (1994) found that of the 27 subjects aged 9 to 13 who were treated with the 16 sessions of Coping Cat, 66% no longer met the criteria to be diagnosed with an anxiety disorder at post treatment and continued to be within normal limits in anxiety symptomatology at follow-up one year later. In a second randomized clinical trial, Kendall et al. found similar results to the first study (Kendall et al., 1997); completion of the Coping Cat program resulted in participants (aged 9 to 13) falling within non-deviant limits of anxiety symptomatology and again, results were maintained at a one-year follow-up. Results further indicated that neither client age nor comorbid status moderated outcomes. Similar studies were conducted in Australia. Barrett et al. found that of 79 children aged 7 to 14 who were randomly assigned to one of two treatment groups, nearly 70% no longer met the diagnostic criteria for their anxiety disorder, compared to the 26% of the children on the waitlist (Barrett, Dadds, & Rapee, 1996). This provides early evidence for Coping Cat’s effectiveness not only with children in the US, but potentially for children in other countries. Further evidence for cross-cultural effectiveness is provided by studies conducted in Canada, Brazil, Germany, and Taiwan (de Souza et al., 2013; Melfsen et al., 2011; Mendlowitz et al., 1999; Yen et al., 2014).

In addition to the major studies evidencing Coping Cat’s empirical base, several researchers have implemented the program with populations beyond those for whom it was originally intended. Research has demonstrated the program’s effectiveness with children with Autism and for children younger than the intended age range (Ames & Weiss, 2013; Anderson, 2004; McNally Keehn, Lincoln, Brown, & Chavira, 2013; Michael, Payne, & Albright, 2012). Further, Yen et al. (2014) implemented the Coping Cat program with Taiwanese children with
anxiety disorders and examined the impact the program had on improving anxiety symptoms, behavior problems, and parenting stress. The study demonstrated that Coping Cat successfully improved anxiety symptoms in Taiwanese children and anxiety behaviors, as measured by the Child Behavior Checklist (CBCL). However, other problem behaviors, unrelated to anxiety or depression, were not changed at post-treatment. Parenting stress in the child mood and adaptability domains perceived by mothers was reduced. Researchers hypothesize that this was perhaps due to fewer conflicts following the child’s treatment. In this sample of 24 children, reducing anxiety did not reduce externalizing behaviors. This was contrary to the findings Yen et al. (2014) cited as an argument for including such a measure. Van der Sluis et al. (2012) found that following a course of CBT for anxiety, children experienced a reduction in externalizing behavior problems. More research is needed for the clarification of this area of research.

The Problem Statement

Children with comorbid anxiety disorders and externalizing problem behaviors and disorders pose an interesting challenge for clinicians. These children are at the greatest risk for the poorest outcomes and current research has yet to understand the exact relationship of their difficulties. While treatment is available for children with anxiety and also for children with externalizing behavior problems, treatment for the two problems together is more often needed and less often researched. What is likely occurring in place of appropriate treatment for both problems, is the treatment of the more socially unacceptable, more salient and abrasive behavior (the externalizing problem). The internalizing problem (anxiety) sometimes remains undiagnosed and untreated. The examination of a current anxiety reduction program in reducing both anxiety and externalizing problem behaviors is an important place to begin. What must be
clarified is whether reducing anxiety (with a program empirically validated to do so) can have a positive effect on a child’s externalizing problem behavior.

**Research Questions and Hypotheses**

The current study aims to examine whether a manualized treatment for anxiety, Coping Cat, can be effectively implemented and used to treat children with anxiety and comorbid externalizing problems and disorders. In particular, can the use of the Coping Cat program reduce symptoms and behaviors related to anxiety in children with comorbid disorders and what effect does the program have on the comorbid externalizing behaviors and disorders? While several studies have provided suggestions on how to implement Coping Cat with children with varying challenges (i.e., Autism, social skills deficits, behavior problems, etc.), few have quantitatively evaluated the effectiveness of such an endeavor.

*Research Question 1*: What effect does the Coping Cat program have on the externalizing symptoms of students with comorbid anxiety and externalizing problems?

*Hypothesis 1*: Treatment of anxiety using Coping Cat will reduce students’ externalizing symptoms.

*Research Question 2*: Can anxiety be reduced in students with co-occurring anxiety and severe externalizing problem behaviors?

*Hypothesis 2*: Children with co-occurring anxiety and externalizing problems can experience reduced anxiety symptoms following the implementation of the Coping Cat intervention.

*Research Question 3*: Will the child experience an increased perceived ability for coping with symptoms and behaviors, and did the child enjoy participating in the Coping Cat program?

*Hypothesis 3*: Participants will perceive their coping skills to be improved following the Coping Cat intervention and will enjoy participation.
Chapter II: Literature Review

Historical Background

Anxiety in Children & Adolescents

**Prevalence.** Anxiety disorders are the most prevalent type of mental health disorder experienced by children and adolescents, with estimated prevalence rates reaching as high as 20 percent (Mohr & Schneider, 2013). Beyond this estimate, many children suffer from anxiety symptoms at sub-threshold levels, and are not included in prevalence rates. Less than a third of children diagnosed with anxiety disorders are receiving treatment for their symptoms, which is unacceptable given the highly treatable nature of anxiety disorders (Sawyer & Nunez, 2014). Children with anxiety disorders suffer in various ways, including socially, emotionally, behaviorally, and academically. Further, anxiety that goes untreated can lead to worsening anxiety symptoms and can also exacerbate co-occurring mental health problems such as depression (Fox et al., 2012; Mohr & Schneider, 2013). Given the prevalence and impact of these disorders, efforts to treat anxiety disorders should reach a greater number of children.

**Definition and presentation of anxiety disorders.** Although the construct of anxiety tends to have a negative connotation, some degree of anxiety is normal and can actually be helpful. Anxiety can be an adaptive reaction to a stressful situation and is what motivates us to complete tasks and move forward in our lives. For example, anxiety about receiving a poor grade in a course might appropriately motivate a student to study for an exam. However, for some children and adolescents, anxiety becomes excessive and maladaptive (Connolly & Bernstein, 2007). The exam for which the typical student is motivated to study, the overly anxious child may dread, or avoid altogether. Difficulty in controlling excessive anxiety may eventually interfere with the child’s day-to-day living and this persistent interference may require treatment.
This type of anxiety, or *pathological* anxiety, is characterized by the individual’s symptoms. Overall, however, it is a persistent and intense, seemingly uncontrollable worry, which impedes daily functioning and quality of life (Craske et al., 2009).

Children and adolescents with excessive anxiety may not realize that their fears or worries are abnormal (Muris et al., 2010). Typically, overly anxious children will complain of somatic symptoms, like headaches or stomachaches, rather than the persistent worry (Crawley et al., 2014). Also, caretakers, teachers, and peers may misunderstand or misperceive the child’s anxiety symptoms (Ford, 2008). Anxiety symptoms can include avoidance behaviors, like school refusal or task refusal, and sometimes anger outbursts as a result of the child’s frustration with their symptoms. These avoidance behaviors may be perceived as oppositionality, or the anger outbursts as defiance. The parent or caretaker may not understand the true underlying reason for the behaviors. Specific anxiety symptoms and behaviors will be discussed further within the types of anxiety disorders section.

**Development of anxiety.** In terms of biological function, anxiety originated as a protective factor. If danger, or a threat to life, was near and protection from the perceived danger was necessary, anxiety would be experienced. Typical anxiety in early childhood is somewhat related to its evolutionary purpose. Children experience bouts of anxiety about certain fears throughout their development, fears that represent perceived threats to their safety. For example, at about 15 months, children develop anxiety and fear related to separating from their primary caregiver. Children experience distress resulting in tantrums and/or sleep disturbances before, during, and after separation, but by about two years of age, this distress typically resolves. This represents a typical course of most children’s development. Between the ages of 2 and 4, children typically develop fears related to the dark, weather, or particular animals. These fears, as
long as they are not extremely impairing or distressing, are perfectly typical for a child at this age to experience (Connolly & Bernstein, 2007). The stage of cognitive development, including their inability to think logically, prohibits them from realizing their caretaker will return to them and prevents them from realizing nothing bad will happen in the dark or that thunder and lightening will likely not harm them. As their cognitions develop, the fears/anxieties resolve in typically developing children. For the anxiety-disordered child, this may not be the case (Altman, Sommer, & McGoey, 2009).

The first risk phase for the development of symptoms and syndromes of anxiety is during childhood and adolescence (Beesdo et al., 2009). Anxiety may be present as early as infancy and begins as a basic emotion, a brain response to danger. At this point, anxiety is not typically pathological. Instead, it is an adaptive emotion to facilitate the avoidance of danger. It is not until anxiety begins to interfere with functioning that it becomes maladaptive. For example, when a child is engaging in avoidance behaviors because anxiety symptoms have become too frequent and severe, the emotion is no longer functioning appropriately. What is considered “pathological” anxiety in any person is when anxiety is severe and relentless, and results in such behaviors as avoidance. Impairment, though subjective, is when changes are being made to a person’s normal life to accommodate his or her distressing anxiety. In early childhood, the differentiation between normal and pathological anxiety may be difficult to make, because some of the fears and anxieties are a normal part of development. Though these anxieties may be mildly impairing or somewhat interfere with functioning, they typically resolve and do not continue to be distressing to the child (Rosen & Schulkin, 1998). Otherwise, persistent, distressing, and severe anxiety may reach the pathological threshold. It is an important, but potentially difficult, differentiation to make.
**Types of anxiety disorders.** Children may be given a wide variety of diagnoses related to anxiety, depending on their symptomatology. Fear and worry, perceived as perfectly reasonable to the child experiencing the symptoms, often accompany complaints of headaches, stomachaches, oppositionality, anger outbursts, and disobedience (Connolly & Bernstein, 2007). The specific diagnosis is then determined by the constellation of symptoms. Separation Anxiety Disorder is the most frequently diagnosed anxiety disorder among children, with prevalence rates reaching 8 percent (Beesdo et al., 2009). Following in terms of prevalence are Specific and Social Phobias with rates around 7 percent. The least common anxiety disorders include Agoraphobia and Panic Disorder with rates between 2 and 3 percent. The diagnosis, Generalized Anxiety Disorder, falls somewhere in the middle at about 4 percent among children and adolescents. This diagnosis is complicated by a prior diagnosis, Overanxious Disorder, that is not present in the DSM-V (Beesdo et al., 2009). Because of this, exact prevalence is difficult to determine.

Separation Anxiety Disorder (SAD) is the excessive and developmentally inappropriate fear and distress concerning separating from the home or significant attachment figure. The distress can occur before, during, or after separation attempts. Children who have SAD worry excessively about their loved ones’ safety and health when separated, have difficulty sleeping alone, experience nightmares with themes of separation, frequently have somatic complaints, and may exhibit school refusal. Research has identified SAD as a specific risk factor for several adult anxiety disorders, including Panic Disorder, and untreated SAD may continue into adulthood (Kossowsky, Wilhelm, Roth, & Schneider, 2012). Kossowsky et al. (2012) further indicate that children with SAD display a characteristic hyperactive/physiological symptom that is specific to this anxiety disorder and differentiates it from others.
Specific Phobia is an unreasonable or irrational fear related to a specific object or situation, and persistent avoidance of that object or situation. The feared stimulus is actively avoided or painfully endured. Children may express their fear or anxiety behaviorally in the form of tantrums, crying, or clinging to a caretaker (Ollendick et al., 2014). Specific Phobias are categorized into five subtypes: animals, natural environment, blood-injection-injury, situation, and other (which may include choking, loud noises, or costumed characters). Ollendick et al. (2014) state that Specific Phobias may lead to other anxiety, mood, or substance use disorders.

Social Anxiety is another type of anxiety diagnosis a child may receive if the experience involves a persistent fear of one or more social or performance situations. When the person is exposed to unfamiliar people or to possible scrutiny, fear that he or she will act in a way that will be embarrassing and humiliating develops. The person typically recognizes that the fear is unreasonable, and the feared situation is either avoided or endured with significant distress. Children with Social Anxiety may have difficulty answering questions in class, reading aloud, initiating conversation, talking with unfamiliar people, and attending parties or social events (Connolly & Bernstein, 2007).

Generalized Anxiety Disorder, GAD, is an anxiety disorder in which excessive worry exists within several areas of life. Diagnostic criteria include excessive anxiety and worry, occurring more days than not for at least six months, concerning a number of events, a difficulty to control the worry, feeling restless, being easily fatigued, a difficulty concentrating, irritability, muscle tension, and/or sleep disturbance (American Psychiatric Association, 2013). Children with GAD are often perfectionistic, show high reassurance seeking, and may struggle with more internal distress than is evident to people around the child (Connolly & Bernstein, 2007). The worry is not specific to an object or situation and worry is present more often than not.
Finally, Panic Disorder is a diagnosis given when the child or adolescent experiences recurrent and unexpected panic attacks and develops a fear or persistent concern of having additional panic attacks. Symptoms might include heart pounding, sweating, shaking, difficulty breathing, chest pain or pressure, feeling of choking, nausea, chills, or dizziness (American Psychiatric Association, 2013). Recurrent panic attacks and the fear of their occurrence can sometimes develop into Agoraphobia, or the fear of particular settings (Connolly & Bernstein, 2007).

Each of the anxiety disorders described impact the child in all facets of life. Their families and loved ones may suffer; their social involvement may suffer; and their academic and vocational pursuits may suffer. The impact of anxiety is explored in more detail in the following section.

**Impact of Anxiety on School Aged Child**

The impact of pathological anxiety may permeate all aspects of a child’s life, including her emotions and evaluation of herself, her relationships, and her cognitions. It has even been found to affect physical health.

**Relationships.** Anxious children tend to have lower levels of self-perceived social competence, are more likely to expect to be disliked and rejected by unfamiliar peers, and have fewer friends than typical children (Chansky & Kendall, 1997). Also, anxious children tend to worry about and set exceedingly high standards for their competence in and the quality of their peer relationships (Albano, Chorpita & Barlow, 2003). Given the importance of social engagement and peer relationships on a child’s development, this is a potential problem for the social and emotional functioning of anxious children. Friendships during childhood help to develop emotional security and support, and are also protective factors against loneliness and
depression. As children mature, friendships enhance feelings of support, coping skills, intimacy, and emotional disclosure (Alfano, Beidel & Wong, 2011). Problems in this area, unfortunately, may lead to compounded issues in further limiting opportunities for social involvement and eventually, the potential for actual deficits in social skills.

**Academic performance.** Anxiety at maladaptive levels can negatively impact a child’s academic performance. Specific impairments may occur in the cognitive functions of attention and working memory (Eysenck, 2007). Children with anxiety disorders struggle with attention, because in many cases their minds are enveloped by their persistent and intense worry. In the classroom, this may present as a child who is not following directions or is “in their own world,” staring off. Also, a child suffering from anxiety may have a seemingly limited working memory capacity. The child may have difficulty remembering several bits of information and manipulating them in her mind, because of the interfering anxiety. Most often, anxious children perform at comparable levels to non-anxious children, but do so with higher effort and stress (Eysenck, 2007). While there are some real impacts on attention and memory, academic performance may be seemingly unaffected. This is why it is important to pay attention not only to the child’s performance on a task, but also to how much effort was required, when assessing children for anxiety. The anxious child may be working extremely hard at great psychological cost. Other times, anxiety may have a real effect upon a student’s academic performance. Ialongo et al. (1995) found that first graders who reported high levels of anxiety symptoms demonstrated low achievement scores in reading and math in fifth grade.

**Evaluation of self.** Sustained anxiety tends to have an effect on a child’s emotional control, and eventually on the evaluation of herself. Excessive worry, and the potential impact on the child’s academic performance (or perception of academic performance) and peer relations (or
perception of peer relations), may eventually result in a loss of confidence or reduced self-esteem (Connolly & Bernstein, 2007). If the child is continually feeling that she is not adequately conducting herself with peers, she may eventually feel this is a skill she is lacking. Further, if she is noticing her inability to sustain attention, or that she has to work much harder than her non-anxious peers while experiencing much greater psychological pain, she may begin to experience further reductions in her self-esteem. Anxiety is an internalizing disorder, which has internalizing effects. In other words, children may begin to recognize or perceive differences, ruminate, and further internalize the differences, feeling increasingly inferior about their situation (Iancu, Bodner, & Ben-Zion, 2015).

**Physical effects.** Anxiety may also have physical effects on the body. Some physical effects include fatigue, headaches, stomachaches, muscular tics, loss of appetite or overeating, sweating, blushing, heart palpitations, diarrhea, and sleep disturbances. Some of these physical symptoms over time can have even greater impact on one’s health, and are implicated in complicating other health disorders, including heart disease, chronic respiratory disorders, and gastrointestinal conditions (“Anxiety and Physical Illness”, 2008). People with these other health disorders in addition to untreated anxiety have a difficult treatment situation. Physical symptoms tend to be more severe, as well.

**Trajectory for Children with Anxiety**

**Adult/follow-up studies.** Current research indicates a chronic course for anxiety disorders. Children who have an anxiety related disorder are more likely to develop the same disorder again in the future, a phenomenon known as “homotypic continuity” (Beesdo et al., 2009). Further, follow-back studies indicate that people with anxiety disorders as adults frequently had the same problem earlier in life. Beesdo et al. (2009) indicate that children and
adolescents whose anxiety disorder improves or remits may not be completely symptom-free for the remainder of their lives. In one study, only 10% of children and adolescents with specific phobias at baseline had no mental health disorder at a 10-year follow-up, 41% reported the same disorder (homotypic continuity), and 73% were diagnosed with an anxiety or depressive disorder at subsequent assessments. Similar results were found for Specific Phobia, GAD, and PTSD. Unfortunately, research has found that very few anxious children enter adulthood free of mental health concerns. Another example is provided by Woodward and Fergusson (2001), who found significant associations between childhood anxiety disorders and later risks of suffering from anxiety, depression, substance dependence, and even suicidal behavior.

**Comorbidity.** Anxiety disorders are associated with several other mental health disorders in childhood and adolescence, including several major classes of disorders. Mood disorders, disruptive behavior disorders, eating disorders, and substance abuse disorders are among a few. The co-occurrence of anxiety with depression is most common and in fact, is so common that there is emerging research examining anxiety disorders as a normal part in the development of depression in adulthood (Merikangas & Avenevoli, 2002).

In an investigation of pure and co-occurring internalizing and externalizing problems in children between the ages of 2 and 12, researchers found that these children were more likely to (a) engage in risky behaviors, (b) be associated with deviant peers, (c) be rejected by peers, and (d) be asocial with peers at early adolescence (Fanti & Henrich, 2010). Children with co-occurring internalizing and externalizing problems are more likely to have chronic mental illness throughout their lifetimes, more physical health problems, greater functional interference in daily life, and more impaired adaptation across domains such as education and social-support networks. These children are expected to have more relationship problems with peers and are at a
higher risk for engaging in delinquent behaviors. These are the children who are in the greatest need for treatment.

**Comorbid externalizing disorders.** Examining the relationship between anxiety disorders and comorbid externalizing disorders has produced somewhat discrepant research findings (Marmorstein, 2007). The direction of the relationship remains unclear. Do anxiety disorders cause externalizing disorders or do externalizing disorders lead to internalizing (anxiety) disorders? Can the two originate at the same time and co-occur? Lilienfeld (2003) suggests two types of reasons for comorbidity, methodological and substantial. The methodological reasons may include shared diagnostic criteria between two disorders. For example, a child exhibiting symptoms of defiance may be diagnosed with ODD. Defiance can also be seen in a child with an anxiety disorder, however, if the child refuses to participate in an anxiety-producing situation. A substantive reason may be that one disorders causes another. It may be that each case is highly individualized; one child may have developed an externalizing disorder following the onset of an anxiety disorder. Another child may have been diagnosed with ODD when the root of their defiance is actually fear. While the exact nature of the development of children’s comorbid challenges is unclear, what is accepted is that externalizing disorders, including Attention Deficit/Hyperactivity Disorder, Oppositional Defiant Disorder, and Conduct Disorder, are positively related to various anxiety disorders (Marmorstein, 2007).

Children in the juvenile justice system are likely to be diagnosed with a disruptive behavior disorder, as opposed to an internalizing disorder (Kramer & Zimmermann, 2009). However, delinquency and mental health disorders often co-occur in the general adolescent population. One study demonstrated that of 315 adolescents committed and detained, 58% were experiencing anxiety disorders (Vander Stoep et al., 1997). This highlights the problem of
comorbidity between internalizing and externalizing disorders. When a child presents with acting out behaviors, these are the behaviors that will likely be attended to by assigning an externalizing disorder diagnosis or by punishing the child. However, what may be more appropriate in some cases is looking more deeply at what internalizing problems are at play. “Fear and anxiety form one of the major emotions underlying psychopathology related to delinquent behavior in adolescents” (Kramer & Zimmermann, 2009, p. 114). Problematic externalizing behaviors may be a less efficient strategy for relieving anxiety. These behaviors (similar to the compulsions of an obsessive-compulsive disorder) have anxiety-soothing functions and can be an attempt to cope with anxiety symptoms.

A recent study examined internalizing symptoms, measured by the Child Behavior Checklist, and how these are related to the development of externalizing problems. From a longitudinal data set of 1,364 children between the ages of 6 and 15, it was determined that as age increased, internalizing symptoms accounted for a greater degree of externalizing problem variance (Perle et al., 2013). This study suggested that identifying and treating internalizing problems, like anxiety disorders, early could potentially reduce the occurrence of externalizing and risky behaviors later in the child’s life.

A common behavior associated with externalizing disorders is impulsivity. One study aimed to examine impulsivity in children (ages 9 to 13) with depression and anxiety symptoms (Cosi et al., 2011). It was found that impulsivity was related to measures of anxiety, depression, and aggressive behavior. In particular, impulsivity was most related to measures of internalizing symptoms, more so than with aggression. This relationship indicates that it may be important to examine anxiety and depression in children and adolescents engaging in impulsive behaviors. The usual course of treatment for a child with impulsive behaviors is to treat the behaviors;
however, with these findings, it could be more appropriate to examine an underlying internalizing problem. This study sheds light on the difficulty understanding the relationship between internalizing and externalizing problems.

Another study focused on the nature and timing of internalizing and externalizing problem behaviors and in particular, the mediating effect of negative self-concept (Lee & Stone, 2012). From a sample of 2,844 Korean fourth graders followed for four years, findings suggested that internalizing and externalizing problems were reciprocally reinforcing, each leading to increases in the other indirectly through the mediating influence of negative self-concept. It was suggested that negative self-concept exacerbates the development of both internalizing and externalizing problems. Therefore, Lee and Stone (2012) suggest that rather than focus on the direction of the relationship between internalizing and externalizing problems, the focus should be on underlying problems that influence both types of behaviors, like self-concept.

Chase and Eyberg (2008) examined the treatment effects of parent-child interaction therapy (PCIT) on 15 children with comorbid separation anxiety disorders and oppositional defiant disorders and 64 children with oppositional defiant disorder alone. It was found that children with both ODD and SAD showed significant decreases in SAD symptoms at post-treatment. Further, the children exhibited a significant reduction in internalizing and externalizing symptoms targeted in treatment. With current literature largely failing to address the effects of co-existing externalizing and internalizing symptoms on treatment outcome, Chase and Eyberg’s study reinforces a need for more clarification in this area (2008).

Cost of Anxiety

According to the Anxiety and Depression Association of America, anxiety disorders cost the U.S. more than $42 billion a year, almost one-third of the country’s $148 billion total mental
health bill ("The Economic Burden of Anxiety Disorders", 1999). Further, almost $23 billion of those costs are associated with the repeated use of health care services, because people with anxiety disorders tend to seek relief for symptoms that mimic physical illness. In a 1996 study (DuPont et al.), less than one-quarter of the cost associated with anxiety disorders was attributable to direct treatment and more than three-quarters was accounted for by lost or reduced productivity. It is argued that greater availability of effective treatment could substantially reduce the economic burden of these disorders. Because anxiety disorders are extremely expensive for the U.S., developing interventions that are not costly and are effective can help reduce this expense.

In examining the cost of anxiety disorders for schools, it is important to keep in mind the effects of anxiety on children and adolescents. Anxiety disorders may be impacting the child’s academic performance, including willingness to even attend school (a costly problem for many schools; Crawley et al., 2014). It is also important to remember the likelihood of the child developing anxiety disorders and other mental health disorders as adults. Left untreated, the anxiety disorder will be more costly to society in the long run. Treatment in school is potentially an important place to start. In an explorative study examining the cost-effectiveness of school-based screening for child anxiety, it was found that screening and then offering a child and parent focused intervention imposed little cost on the school (Simon et al., 2013).

**Treatment of Anxiety**

Treatment for anxiety disorders is dependent upon the severity and type of anxiety, though most commonly involves some type of psychotherapy and/or psychopharmacology. Psychotherapies demonstrating the most convincing evidence base are typically those with cognitive-behavioral components and occasionally meditative components (Connolly &
Bernstein, 2007). Medical, or psychopharmacological components include anxiolytics, antidepressants and beta-blockers. Many people with anxiety disorders can live normal and fulfilling lives with proper treatment. More information regarding the specifics of the different types of treatment for anxiety disorders will be discussed (Farach et al., 2012).

**Treatment of anxiety in schools.** While anxiety disorders are one of the most common mental health disorders in children and adolescents, they often go undetected or untreated (Martin, 2011). One reason for this may be that access to mental health services may be a challenge for families that reside in areas with few service providers. Further reasons may be related to transportation, monetary, or logistical barriers. Schools, however, exist in all communities and can be the “entry point” for accessing mental health services in the US (Farmer et al., 2003). Providing mental health services in the schools can reduce disparities in service utilization among high need racial/ethnic minority youth (Cummings, Ponce, & Mays, 2010). Given the aforementioned disparity between children with anxiety disorders and those receiving treatment for their anxiety disorders, treatment in school has the potential to address this disparity.

While school can be an important place for the treatment of anxiety disorders, it is important to understand that schools and school personnel will likely encounter time and resource barriers. The Response-to-Intervention (RtI) service delivery framework can help address these barriers (Reynolds & Shaywitz, 2009). The RtI model is cost-effective because it first provides a universal treatment for all children (Tier 1) and then identifies children who are still suffering from or at-risk for developing an anxiety disorder and treats them more specifically (Tier 2). From this more specified group of children, children who are in need of even more specialized treatment are identified and treated (Tier 3). The idea is that intervening from the
beginning and providing children with skills, potentially prevents the development of anxiety disorders or prevents the worsening of anxiety disorders (Froiland, 2011). Also, the most intensive, time-consuming, and expensive treatment is reserved for the children with the most need. This helps to keep costs down. The most expensive case would be the specialized treatment of severe anxiety disorders. The use of RtI can help in fostering students’ mental health, social success, and resilience in school, before a mental health disorder has the potential to develop (Froiland, 2011).

**Theory Relevant to Research Questions/ Hypotheses**

**CBT for anxiety.** Cognitive Behavior Therapy (CBT) is a form of psychotherapy developed originally as “cognitive therapy” by Aaron Beck in the 1960s. Beck developed this form of psychotherapy with intent to focus on current problems and to modify dysfunctional (inaccurate or unhelpful) thinking and behaviors. Treatment, overall, is based on a cognitive formulation that beliefs and behavior strategies characterize a specific disorder (Beck, 2011). Further, treatment is based on first understanding a person’s specific beliefs and patterns of behaviors and then using methods to produce cognitive change (or modification) in his or her thinking or belief system, thus resulting in enduring emotional and behavioral change.

The theory that underlies CBT is simply that dysfunctional thinking influences one’s mood and behavior and is common to all psychological disturbances. Thus, one’s thinking is evaluated and modified and this results in improved mood and more adaptable behaviors. For example, a student who performs poorly on an exam might have an automatic thought that she “can’t do anything well”. This automatic thought has implications for mood (most likely making the student feel sad or angry) and for behavior (perhaps giving up on studying or retreating to bed). A closer examination of this thought may prompt the student to realize that not doing
anything well is an overgeneralization, and in fact the student likely does many things well. Instead of feeling sad or depressed, the student might instead feel disappointed by the grade but motivated to try again, which is a healthier, more adaptive way of functioning. CBT theory purports that working at this deep level of cognition, thoughts about basic self-beliefs, world-beliefs, and beliefs about others, produces lasting improvement in a person’s mood and behavior. Modifying thoughts from “I can’t do anything right” to “I can’t do this specific thing right” is an important progression made in treatment.

For youth and CBT, a particular focus is made on understanding the development of an individual’s behaviors and the accompanying cognitive and perceptual processes (Reinecke, 2003). It is important when treating behavioral and emotional difficulties in youth to pay attention to each of the variables of cognition, including, perceptions, memories, appraisals, attributions, tacit beliefs or schemas, attitudes, goals, standards, values, expectations, and images. Through this understanding, modifications can be made. By examining the child’s problem-solving and coping strategies, insight into the development of certain perceptions or behaviors is provided. In other words, understanding why a child does something is the first step to modifying the behavior. Further, because these cognitions have been reinforced and adaptive for the child so far, it is difficult to only treat the child in one setting (Reinecke, 2003). The home, school, and social contexts may represent different perceptions and different behaviors, requiring differential understanding and treatments.

Children, like adults, also respond to the cognitions of an event, rather than the event itself. This is an important concept to CBT, given that its foundation is on changing faulty patterns of thinking. Cognitive Behavioral Therapy again assumes that cognitions affect emotions and behaviors. Also, the primary purpose of CBT in youth is to determine and
understand the manner in which cognitive, biological, and environmental factors interact over time and result in psychopathology. The way a child thinks about the event in her day-to-day life functions as a template for her perception, processing, interpretation, and ultimately, her emotional and behavioral response. This is why cognition is an important place to start for enacting meaningful behavior change.

Seligman and Ollendick (2011) found that two-thirds of children treated with CBT driven therapy were free of their primary anxiety disorder diagnosis at post-treatment. Common core components of the studies that have shown efficacy for the treatment of anxiety disorders in children and adolescents include the development of a good therapeutic relationship and working alliance, cognitive restructuring, repeated exposure to anxiety provoking situations with reduction of avoidance behavior, and skills training. Seligman and Ollendick (2011) report over 40 randomized clinical trials, which support the use of CBT for the treatment of anxiety disorders in children and adolescents. Due to the extensive research base for utilizing CBT for anxiety disorders and anxiety symptoms in youth, it is considered an evidence-based intervention, meaning it is an ethical and effective intervention for use. Given this extensive evidence, it is suggested that future research move beyond the basic question of whether CBT works. Instead researchers should examine differential effects of developmental level, mediating variables, and other contextual factors.

One program that is used in schools for the treatment of anxiety disorders and symptoms in small groups or individually is called Coping Cat (Kendall, 1994). Coping Cat is a cognitive behavioral treatment that assists school-age children in recognizing anxious feelings and physical reactions to anxiety, clarifying cognition in anxiety provoking situations, developing a plan to help cope with the situation, and evaluating performance and administering self-reinforcement as
appropriate. Approximately 16 published studies have demonstrated the efficacy of the Coping Cat program (National Registry of Evidence-Based Programs and Practices, 2014). More information on Coping Cat is provided in a later section.

**Mindfulness-based treatment for anxiety.** Because anxiety typically involves physical symptoms, gaining control over the physiological symptoms of anxiety can be helpful in treatment (Medelson et al., 2010). Physical symptoms include fast breathing, tense muscles, and feeling light-headed. Strengthening the body’s ability to relax can be a powerful anxiety-reducing approach. Examples of approaches include progressive muscle relaxation, deep breathing, and meditation. Practicing these techniques regularly allows the body to access the skills more readily when necessary. Progressive muscle relaxation involves systematically tensing and releasing different muscle groups in the body. Deep breathing involves taking slow, deep breaths from the diaphragm. Meditation is a form of deep relaxation with a focus on paying attention to only the moment at hand, not the past or the future (Edenfield & Saeed, 2012).

One study cited by the National Association of School Psychologists (NASP) as a promising universal program for the prevention of anxiety disorders in children and adolescents is one that utilizes a mindfulness based intervention with urban youth. This mindfulness intervention included yoga-based physical activity, breathing techniques, and guided mindfulness practices. Results indicated that the intervention was well liked by the students, teachers, and school administration and that it had a positive impact on problematic responses to stress, including rumination, intrusive thoughts, and emotional arousal (Mendelson et al., 2010).

**Medical treatment for anxiety.** Medication in conjunction with some form of psychotherapy is an additional treatment approach. Three types of medications are currently being used for the treatment of anxiety disorders. These include antidepressants, anti-anxiety
drugs, and beta-blockers (“Anxiety and Depression Association of America: Medication”, 2014). Antidepressants, originally developed to treat depression, have also proven efficacious for anxiety disorders. These typically require four to six weeks for the full therapeutic effect to be felt by the individual. There are three main categories of antidepressants: Selective Serotonin Reuptake Inhibitors (SSRIs), Tricyclics, and Monoamine Oxidase Inhibitors (MAOIs). SSRIs alter the level of serotonin in the brain and are the newest form of antidepressants. Examples of this type of drug include Fluoxetine (Prozac), sertraline (Zoloft), escitalopram (Lexapro), paroxetine (Paxil), and citalopram (Celexa). Venlafaxine (Effexor) is closely related to SSRIs, but also alters levels of norepinephrine in the brain. Tricyclics are older than SSRIs and can sometimes have more extreme side effects, including dry mouth, dizziness, drowsiness, and weight gain. Examples include imipramine (Tofranil) and clomipramine (Anafranil). MAOIs are the oldest class of antidepressant medications and include phenelzine (Nardil), tranylcypromine (Parnate), and isocarboxazid (Marplan).

Anti-anxiety drugs also include benzodiazepines and buspirone. Benzodiazepines are typically intended for shorter periods of time due to the need for higher and higher doses to obtain the same effect. They are usually prescribed for panic disorder and have few side effects other than drowsiness. Withdrawal symptoms may be experienced if one stops taking this type of drug suddenly. Examples include clonazepam (Klonopin), lorazepam (Ativan), and alprazolam (Xanax). Buspirone (Buspar) is a newer anti-anxiety medication, but is not effective immediately like the benzodiazepines are. Instead, it must be taken for at least two weeks to achieve an anti-anxiety effect (“Mental Health Medications”, 2008).
Beta-Blockers are used to treat heart conditions, but can also prevent the physical symptoms that sometimes accompany anxiety disorders. They are used on a situational basis (i.e., giving a speech). An example of this type of drug is propranolol (Inderal).

The Food and Drug Administration (FDA) issued a warning in October 2004 that certain antidepressant medications, including SSRIs, may increase suicidal thoughts or behaviors in children and adolescents. However, these medications are still available for the treatment of children and adolescents. Health care providers and families should pay particularly close attention to signs of depression or suicidality in children taking these drugs. Untreated anxiety, as aforementioned, can increase a child’s risk for developing depression, social isolation, substance abuse, and suicide as well, so the rationale for prescribing children antidepressants is that denying a child or adolescent in need of medication can be just as dangerous. Some side effects may accompany the use of drugs for the treatment of anxiety disorders. Monitoring these side effects with the child and her doctor is important.

Some children experience anxiety symptoms, but do not meet the criteria for an anxiety disorder, so these children would likely not obtain medication. Providing children with coping skills for dealing with anxiety is helpful for all children, because everyone experiences excessive anxiety at some point in their lives. Children experiencing mild anxiety or intermittent anxiety, or in other words anxiety below the threshold for an anxiety disorder diagnosis, may benefit from learning skills that they could implement when necessary.

**Coping Cat**

The Coping Cat program is an evidence-based treatment for children with anxiety disorders, and more specifically, for children with generalized anxiety disorder, social phobia, and separation anxiety disorder for children between the ages of 7 and 13. Now in its third
edition, Kendall and Hedtke (2006) developed a 16-session treatment course that is outlined within a therapist manual. The therapist manual is accompanied by the second edition of the Coping Cat Workbook, which includes activities for children to reinforce skills learned throughout the program (Kendall & Hedtke, 2006). The program is divided into two main components. The first eight sessions are considered the training segment and the second eight sessions are the practice or implementation of what was learned. Each session begins with a brief overview and rationale for the session, then is followed by the specific steps for treatment, and ends with a section called “Tips from the Trenches”, in which therapists who have implemented the program provide novice clinicians tips for each session.

The theoretical approach for Coping Cat as well as the formal name for the therapist manual is “Cognitive-Behavioral Therapy for Anxious Children”. Integrated throughout the program are behavioral approaches, including exposure tasks, relaxation training, role play activities, and practice and reward, as well as an emphasis on cognitive approaches for more appropriate processing of anxiety provoking information. A third emphasis is placed on social forces, including the child’s peers and families, as a means for emotional understanding and management. The three components together provide a rational treatment for the anxiety-disordered child. It is rational in that it attempts to improve each of the symptomatic areas of anxiety: cognitions, behaviors, and physiology.

The program makes use of several general strategies throughout the 16 sessions. These include: graduated sequence of training tasks and assignments, role-play procedures, coping modeling, and homework assignments. The homework assignments are called “Show-That-I-Can” or “STIC” tasks. Also included are the following: affective education, awareness of bodily reactions when anxious, relaxation training, identification and modification of anxious self-talk,
contingent rewards, and the practice of newly acquired skills in increasingly anxiety provoking situations both imaginal and in-vivo. The treatment ends with the design and completion of a “child-developed” commercial, in which the child speaks about learning to cope with anxiety.

In addition to the components aforementioned, Kendall and Hedtke (2006) provide two opportunities for parental or guardian involvement. Sessions 4 and 9 are included as means to assist parents in understanding their child’s particular challenges and ways that the parent can help their child cope.

Within the first half of the program, or the training half, the child is introduced to four main concepts in the form of an acronym: FEAR (Kendall & Hedtke, 2006). This four-step plan for coping with anxiety begins by teaching the child about bodily reactions to emotions and eventually to use her physical reactions as a cue to the presence of anxiety. This step represents the “F” in the “FEAR” acronym and stands for “Feeling Frightened?” The second step, E, stands for Expecting Bad things to happen? This step teaches the child to recognize and modify anxious self-talk. The third concept and step, A, stands for Attitudes and Actions that can help. This is when the child is taught to modify their anxious self-talk into coping self-talk. Finally, the R-step stands for Results and Rewards. The child uses self-rating and reward even for partial success.

The second half of treatment is provided for the implementation of the FEAR plan in increasingly anxiety-provoking situations. The situations are adjusted for the child’s particular fears and anxieties, but always begin with imaginal, low stress experiences. Situations become increasingly stressful for the child and she is encouraged to implement her fear plan with the nearby assistance of the therapist. As previously mentioned, treatment concludes with the child creating a “commercial” to demonstrate her experience of learning to cope with anxiety.

Kendall and Hedtke (2006) make special note of the idea of “Flexibility within Fidelity”.
While what has been provided in the therapist manual is an organized and structured description of information and activities, the authors urge clinicians that clinical skills and flexibility are necessary to individualize the program to the child’s specific needs in order to maximize gains. Within the manual, authors cite an article “Breathing Life into a Manual”, which purports that therapy benefits from therapist sensitivity to comorbid conditions, developmental level, familial and environmental stressors, socioeconomic status, and school and home functioning (Kendall et al., 1999). New to the third edition of the Coping Cat manual are “FLEX” call-outs. These are indicated areas throughout the manual where the therapist is encouraged to be flexible in her presentation of content and even in the choosing of activities. While suggestions for content and activities are made, these “FLEX” areas provide opportunities for the therapist to tailor treatment to the child’s specific needs, as well as to the variables listed above (i.e., developmental level, etc.).

**Current Empirical Literature Relevant to Research Questions/Hypotheses**

Since its development, Coping Cat has demonstrated success for children with anxiety disorders in several randomized clinical trials. Kendall (1994) found that of the 27 subjects aged 9 to 13 who were treated with the 16 sessions of Coping Cat, 66% no longer carried anxiety diagnoses at post treatment and continued to be within normal limits of anxiety symptomatology at follow-up one year later. In a second randomized clinical trial, Kendall et al. found similar results to the first study (Kendall et al., 1997). Completion of the Coping Cat program placed participants (aged 9 to 13) within normal limits of anxiety symptomatology and again, results were maintained at a one-year follow-up. Results further indicated that neither client age nor comorbid status moderated outcomes. Barrett et al. found that of 79 children aged 7 to 14 who were randomly assigned to one of two treatment groups, nearly 70% no longer met the diagnostic
criteria for their anxiety disorder, compared to the 26% of the children on the waitlist (Barrett, Dadds, & Rapee, 1996). Further evidence for cross-cultural effectiveness can be provided by studies conducted in Canada, Brazil, Germany, and Taiwan (de Souza et al., 2013; Melfsen et al., 2011; Mendlowitz et al., 1999; Yen et al., 2014).

In addition to its implementation and proven effectiveness for children of various cultures, the Coping Cat program has also been studied with special populations of children. The idea that Coping Cat can be used for children beyond what is stated in its manual (children with generalized anxiety disorder, social phobia, and separation anxiety disorder) parallels Kendall’s idea of flexibility within fidelity. While many clinicians feel that manualized treatments detract from the individual client’s needs, there has been a persistent push for the use of such treatments in the field (Hamilton, Kendall, Gosch, Furr, & Sood, 2008). As with any treatment, the importance of utilizing a child-centered, individualized approach remains when using manual-based treatment (Hamilton et al., 2008). Several studies have demonstrated such flexibility when using the Coping Cat program. Coping Cat has been effectively implemented with a 9-year-old boy with Autism Spectrum Disorder and verbal impairment (Ames & Weiss, 2013). In a randomized controlled trial, 58% of children with high functioning Autism Spectrum Disorders and clinically significant anxiety no longer met criteria for their primary anxiety diagnoses at post-treatment compared to 100% of the children in the waitlist condition (McNally Keehn, Lincoln, Brown, & Chavira, 2013).

Researchers have attempted other adaptations of the Coping Cat program regarding the suggested age range. The program is intended for use with children between the ages of 7 and 13. These age limits are set because children younger than 7 years may have difficulty understanding the cognitive portions of the program and children older than 13 may find the
program “immature”. However, when using the program flexibly, Coping Cat can be adapted for a child of a younger developmental level. Two six year old children were successfully treated using the Coping Cat program (Anderson, 2004; Michael, Payne, & Albright, 2012). Anderson (2004) implemented Coping Cat with a child diagnosed with generalized anxiety disorder; his symptoms included, an inability to engage in age-appropriate social activities, eat in public places, and separate from his parents. At three months following the treatment sessions, the participant was reengaged with peers and could successfully separate from his parents. Michael and colleagues (2012) measured reductions in generalized anxiety disorder symptoms three and seven years following treatment.

Provided the high rates of comorbidity among children with anxiety, treatment of anxiety will often necessitate the treatment of another disorder or challenge (Hudson, Krain, & Kendall, 2001). For this reason, several studies have explored whether the Coping Cat program can be effectively implemented for children with comorbid disorders. Hudson et al. (2001) provided several case examples and suggestions for how Coping Cat could be flexibly adapted for children with comorbid Attention Deficit/Hyperactivity Disorder (AD/HD), depression, selective mutism, and physical and developmental disabilities. Examples of suggestions include shorter sessions for the child with AD/HD and identifying depressive self-talk in addition to anxious self-talk in the child with comorbid depression. Similarly, Grover et al. (2006) provide specific modifications of the Coping Cat program for children with varying anxiety disorders and comorbid disorders, including AD/HD and depression. While it is important to adhere to the manual and the standard components of the program, tailoring the specific activities for the idiographic needs of the child is also necessary. Beidas et al. also provide suggestions for adapting Coping Cat for children with common comorbidities, including social skills deficits,
inattentive symptoms, and depressive symptoms (Beidas, Benjamin, Puleo, Edmunds, & Kendall, 2010). The main idea being considered is whether a manual based treatment can be adapted for children beyond what it was originally prescribed for and still be considered “adherence” to the manual. So long as the underlying principle of the treatment is not being ignored, the method in which the principle is implemented should not matter (Beidas et al., 2010).

**Summary**

The current study will implement a program that is known to reduce anxiety symptomatology with children who are experiencing comorbid anxiety and externalizing problems. Such a study allows researchers to better understand the effect that the potential reduction of anxiety symptoms has on the externalizing problems. With literature unclear on the exact relationship between the two types of disorders, a study of this type may shed light on the issue. If externalizing symptoms are improved with the implementation of a program intended to reduce anxiety symptoms, this may imply a relationship between the two types of disorders. Further, for children with the most prevalent and disabling types of disorders, finding treatment that improves multiple types of symptoms is a great use of resources for clinicians.
Chapter III: Methods

Methodology

Participants

Classroom teachers, therapists, and/or social workers at an approved private school and partial hospitalization program in Pittsburgh, Pennsylvania referred participants for the current study. Students were referred based on their need for intervention in areas related to anxiety and externalizing problem behaviors. Three children were included in the study. All children were enrolled in their current placement as a means to meet their extensive social, emotional, and behavioral needs within a therapeutic context. All children who participated in the study had clinical diagnoses of an anxiety disorder, as well as an externalizing disorder. The participants’ diagnoses were determined following an evaluation conducted by the student’s treatment team, including a psychiatrist and social worker. Each participant is more specifically described below.

Student A, pseudonym Avery, was an African American, 12-year-old male diagnosed with Attention-Deficit/Hyperactivity Disorder – Combined Presentation (AD/HD-C) and Social Anxiety Disorder. His primary externalizing behaviors of concern were verbal aggression (yelling, using profane, insulting, and sexualized language), physical aggression (against peers and adults), refusal to follow directives, and elopement from his designated area. Student B, pseudonym Benjamin, was a Hispanic, 11-year-old male diagnosed with Attention-Deficit/Hyperactivity Disorder, Combined Presentation (AD/HD-C), Conduct Disorder, Child Onset Type (CD), Generalized Anxiety Disorder (GAD), and Unspecified Episodic Mood Disorder. His primary behaviors of concern included verbal aggression (yelling, using profane, insulting, or threatening language), physical aggression (against peers and adults), engaging in “horseplay” (putting hands on peers), engaging in property destruction, and elopement from his
designated area. Student C, pseudonym Carlos, was an African American, 11-year-old male diagnosed with Attention-Deficit/Hyperactivity Disorder, Combined Presentation (AD/HD-C) and Generalized Anxiety Disorder (GAD). His primary externalizing behaviors of concern included verbal aggression (yelling, using profane, insulting, or threatening language), engaging in horseplay (putting hands on peers), physical aggression, engaging in property damage, engaging in inappropriate sexual behaviors, refusing to follow directives, refusal to complete assignments, and elopement from his designated area. Each student was followed by a psychiatrist for medication management. Each was prescribed a stimulant for the treatment of symptoms related to AD/HD. Also, Avery was being exposed to trials of antianxiety medications throughout the study.

**Setting**

The current study took place within a private school/partial hospitalization program located in an urban area of Pennsylvania. Students between the ages of five and 21 were provided academic instruction in therapeutic classrooms with a low staff to student ratio of approximately one staff member to four students. Students also had access to a treatment team, including a psychiatrist, social worker, and school psychologist. All teachers were special education certified teachers. The school followed a sanctuary-based model due to a large number of the students enrolled having a history of trauma.

Because there was an expectation of therapeutic services, the students’ schedules were adaptable to the schedule required for participation in the current study, which was approximately one hour per week for eight weeks. Together with the treatment team and the student, an appropriate time was chosen for each student. Teachers were encouraged to choose a time that the student would not mind missing. Due to the nature of the students’ challenges, if
there was an academic activity that the student enjoyed, participation in the Coping Cat program during that time was to be avoided. Rather, students were taken during activities that were non-preferred. Therefore, Avery, who did not enjoy gym, was pulled during that time. Both Benjamin and Carlos were pulled early in the morning while their peers were arriving to school and eating breakfast, a generally unstructured time that may have contributed to these two participants’ levels of anxiety.

**Intervention: Coping Cat**

The Coping Cat program includes the following strategies: a graduated sequence of training tasks and assignments, role-play procedures, modeling, affective education, awareness of bodily reactions when anxious, relaxation training, identification and modification of anxious self-talk, contingent rewards, and the practice of newly acquired skills in increasingly anxiety provoking situations both imaginal and in-vivo. The treatment ends with the design and completion of a “child-developed” commercial, in which the child speaks about learning to cope with anxiety. In addition to these components, two opportunities for parental or guardian involvement are provided as a means to assist parents in understanding their child’s particular challenges and ways that the parent can help their child cope. Sessions are “manualized”, meaning that each session has a step-by-step procedure for implementation.

Within the first half of the program, or the training half, the child is introduced to four main concepts in the form of the FEAR acronym. This four-step plan for coping with anxiety begins by teaching the child about bodily reactions to emotions and eventually to use her physical reactions as a cue to the presence of anxiety. This step represents the “F” in the “FEAR” acronym and stands for “Feeling Frightened?” The second step, E, stands for Expecting Bad things to happen? This step teaches the child to recognize and modify anxious self-talk. The third
concept and step, A, stands for Attitudes and Actions that can help. This is when the child is taught to modify her anxious self-talk into coping self-talk. Finally, the R-step stands for Results and Rewards. The child uses self-rating and reward even for partial success.

The second half of treatment is provided for the implementation of the FEAR plan in increasingly anxiety-provoking situations. The situations are adjusted for the child’s particular fears and anxieties, but always begin with imaginal, low stress experiences. Situations become increasingly stressful for the child and she is encouraged to implement her FEAR plan with the nearby assistance of the therapist. As previously mentioned, treatment concludes with the child creating a “commercial” to demonstrate her experience of learning to cope with anxiety.

The Coping Cat intervention was implemented with the student one-on-one for approximately one hour a week for eight weeks. Sessions occurred in the afternoon in an on-campus conference room. In-vivo sessions varied by participant. For example, one session for Avery occurred in the gym as part of an in-vivo exposure session.

**Measures**

Behavioral observations were conducted twice a week for each student. Data was collected prior, during, and following implementation of the Coping Cat program. Behavioral data consisted of behavioral infractions observed during a 15-minute period on a partial interval time sampling basis (60 – 15 second intervals). Behavioral infractions, or the target behaviors were operationally defined as: “disruptive behaviors” involving peers and/or staff including the following: yelling, using profane, insulting, or threatening language (including verbalizations of a physically threatening nature), becoming involved in other students’ arguments, engaging in horseplay (putting hands on peers), successful or unsuccessful attempts to use physical force in a potentially harmful/ dangerous fashion, engaging in property damage, engaging in inappropriate
sexual behaviors, refusing to follow directives, refusing work, or elopement from his designated area. If any instance of one of these behaviors occurred during any part of a 15 second interval, that interval was marked as an occurrence of the operational behavior, even if the behavior did not last for the entire interval. These observations took place on Monday and Wednesday mornings between approximately 9:00AM and 10:00AM. During this time, students were typically in reading instruction. This time was identified as a difficult behavioral time for all participants. In other words, the students exhibited the most behavioral infractions during this early morning time frame.

The Behavior Assessment Scale for Children, Second Edition (BASC-2) is a set of rating scales, which includes a Parent Rating Scale (PRS), Teacher Rating Scale (TRS), and a Self-Report of Personality (SRP). Examined together, the rating scales provide a comprehensive understanding of the child’s behaviors and emotions in four general areas of functioning, including internalizing problems, externalizing problems, behavioral symptoms, and adaptive skills. The BASC-2 has moderate to good reliability and validity (Reynolds & Kamphaus, 2004). The scales and composites are noted to have high internal consistency, yielding coefficient alpha reliabilities of approximately .90 for the composite range and .80 for individual scales across all forms (teacher, parent, and self-report). Test-retest reliability yielded average correlations of approximately .80 for composite scores and between .70 and .80 for individual scales. Interrater reliability for composite scores ranged from .57 to .74 and for individual scales ranged from .53 to .65. Further, construct validity of the BASC-2 is supported by the results of factor analyses and structural equation analyses.

The Revised Children’s Manifest Anxiety Scales (RCMAS) is a self-report measure consisting of 49 yes/no items, which result in a Total Anxiety Scale, as well as four subscales:
Psychological Anxiety, Worry, Social Anxiety, and Defensiveness. Reliability coefficients for
the scale’s various scores range between .69 and .89, with the total score being the most reliable
(Muris et al., 2002).

The Children’s Depression Inventory, Second Edition (CDI-2) is a self-report and parent
report assessment of symptoms related to depression. Good internal consistency has been found
for the CDI. Several studies have obtained results indicating high reliability. For example, Masip
et al. (2010) found reliability coefficients ranging from .82 to .85. Test-retest reliability was
determined to be .81. Further, both construct and discriminant validity has been well established
(Kovacs, 2011).

Interobserver agreement was obtained during 20% of the direct observation sessions. A
second observer was provided the operational definition of the student’s problem behavior, as
well as training on the specific partial interval recording method. Interobserver agreement is
calculated by taking the number of agreements between the independent observers and dividing
by the number of agreements plus disagreements. This coefficient is then multiplied by 100 to
compute the percentage of agreement. This is done for each of the 15 interobserver agreement
sessions and then a mean was calculated using the 15 coefficients.

Treatment acceptability was measured via a brief rating scale provided at the end of the
intervention phase. Students were asked about whether the perceived the program as helping
them to understand anxiety and coping. They were also asked about whether they would
recommend the program to a friend. The acceptability form is included in Appendix B.

Research Design

A single subject, A-B design with a maintenance phase was implemented to evaluate the
effect of the Coping Cat intervention on the participants’ externalizing problem behaviors. The
The Coping Cat anxiety reduction program served as the independent variable of the current study. Treatment integrity was measured via a checklist for 25% of the treatment sessions. A secondary researcher observed implementation materials from the intervention and checked the necessary steps that were implemented. The checklist utilized can be located in Appendix A.

The primary dependent variable being utilized was the direct observation of the student’s most salient externalizing problem behaviors. Direct behavior observation of the child two times per week throughout the study was implemented. Specific methods of observation were tailored to the child’s specific problem behavior. Secondary dependent variables include the additional rating scales aforementioned prior to and following the implementation of the Coping Cat intervention. The acceptability form (Appendix B) was implemented following the intervention phase of the study.

Procedures

Prior to the implementation of the intervention, rating scales were used to gather pre-treatment information about the child’s behaviors and symptoms. Also, several sessions of direct behavior observations were implemented as a means to determine the child’s baseline behavioral functioning.

The Coping Cat intervention was implemented over 8 sessions. Students were required to participate in therapy for approximately one hour per week throughout the study implementation. Parental/guardian involvement was requested for two sessions during the implementation of the
Coping Cat program. Parents/guardians were also responsible for completing questionnaires about their child’s symptoms and behaviors. Implementation of the Coping Cat program began when consent for participation was received. Throughout the implementation, direct behavioral observations were implemented to track each student’s operationally defined externalizing problem behavior.

Following the implementation of the intervention, data were again derived from the various rating scales. Possible maintenance of treatment gains were measured for two weeks following the conclusion of treatment via direct behavioral observations of the same behavior being followed throughout treatment.

**Hypotheses and Data Analysis**

- Externalizing behaviors will decrease with the implementation of the manualized anxiety reduction program, Coping Cat. A downward trend of observed externalizing problem behaviors will be analyzed following the implementation of Coping Cat. Further demonstrations of experimental control (effect of the Coping Cat program on externalizing behaviors) will be observed with each participant’s downward trend of data following the implementation of the program.

- Anxiety symptoms will decrease following the implementation of the Coping Cat program. A before and after statistical comparison of each participants’ anxiety symptoms will be used to determine the effect of the program on children’s anxiety with comorbid externalizing problems.

- Students will enjoy participating in the program and will perceive their ability for coping as improved following the implementation of the Coping Cat program. A post-measure each participants’ perceived ability will be used.
Visual analysis of the direct behavioral observation data on each child before, during, and after the implementation of the Coping Cat program. Behavioral performance across the three phases was studied to determine the effect of the intervention. Analysis of significant changes in the questionnaire data was conducted with t-tests to determine the effect of the intervention. Differences between the parent, teacher, and child perception of changes were noted.
Chapter IV: Results

Single Subject Visual Analysis of Data

Brief explanation of data and analysis

Results of the current study were analyzed via visual analysis of behavior and rating scale data. As previously discussed, behavioral data was collected prior, during, and following implementation of the Coping Cat program. Behavioral data consisted of behavioral infractions observed during a 15-minute period on a partial interval time sampling basis (60, 15 second intervals). Behavioral infractions, or the target behaviors were operationally defined as: “disruptive behaviors” involving peers and/or staff including the following: yelling, using profane, insulting, or threatening language (including verbalizations of a physically threatening nature), becoming involved in other students’ arguments, engaging in horseplay (putting hands on peers), successful or unsuccessful attempts to use physical force in a potentially harmful/dangerous fashion, engaging in property damage, engaging in inappropriate sexual behaviors, refusing to follow directives, refusing work, or elopement from his designated area.

Additional data being analyzed included the pre-intervention and post-interventions rating scales, which are the following: the Behavior Assessment Scale for Children, Second Edition (BASC-2), the Revised Children Manifest Anxiety Scale, Second Edition (RCMAS-2), and the Children’s Depression Inventory, Second Edition (CDI-2). Several paired-samples t-tests were conducted to compare the pre-intervention rating scale results to the post-intervention rating scale results.

Interobserver agreement was calculated during 20% of the direct observation sessions, or 15 of the 72 total observations. A second observer was provided the operational definition of each student’s problem behavior, as well as training on the specific recording method.
Interobserver agreement is calculated by taking the number of agreements between the independent observers and dividing by the number of agreements plus disagreements. This coefficient is then multiplied by 100 to compute the percentage of agreement. This is done for each of the 15 interobserver agreement sessions and then a mean was calculated using the 15 coefficients. For the current study, interobserver agreement was a mean of 92%. Also, treatment integrity was measured via a checklist for 25% of the treatment sessions. A secondary researcher observed implementation materials from the intervention and checked the necessary steps that were implemented. Treatment was implemented with 100% integrity.

The participants A, B, and C were given the following pseudonyms: Avery, Benjamin, and Carlos.

**Research Question 1**

Research Question 1: What effect does the Coping Cat program have on the externalizing symptoms of students with comorbid anxiety and externalizing problems?

Hypothesis 1: Treatment of anxiety using Coping Cat will reduce students’ externalizing symptoms.

To assess this research question, data for each participant was visually analyzed during each phase of the experiment implementation. The mean number of behavioral infractions for each student is presented in Table 1. Figures 1, 2, and 3 represent the results of the observation data for Avery, Benjamin, and Carlos.

**Avery. Baseline.** Avery’s mean number of intervals with behavioral infractions during the baseline phase was 13. On average, during a 15-minute observation period, Avery exhibited 13 intervals with behavioral infractions. Behavioral data was collected twice a week for two
weeks during the baseline phase, and though variable, the linear trend line analysis suggested an overall increasing trend of behavioral infractions during the baseline phase.

**Intervention.** Avery’s mean number of intervals with behavioral infractions during the intervention phase was 5.94. On average, during a 15-minute observation period, Avery exhibited 5.94 intervals with behavioral infractions. Behavioral data was collected twice a week for 8 weeks during the intervention phase. A decreasing trend was noted throughout the intervention phase, with some variability throughout and a spike returning to baseline levels during week 7.

**Maintenance.** Avery’s mean number of intervals with behavioral infractions during the maintenance phase was 3.25. On average, during a 15-minute observation period, Avery exhibited 3.25 intervals with behavioral infractions. Behavioral data was collected twice a week for 2 weeks during the maintenance phase. Linear trend line analysis revealed an increasing trend during the maintenance phase, which stabilized at the end at approximately 5 intervals with behavioral infractions for the last two observation periods.

**Benjamin. Baseline.** Benjamin’s mean number of intervals with behavioral infractions during the baseline phase was 11. On average, during a 15-minute observation period, Benjamin exhibited 11 intervals with behavioral infractions. Behavioral data was collected twice a week for two weeks during the baseline phase. Results of the linear trend line analysis indicated a decreasing trend. The student’s intervals with infractions appear to peak at week two and average 9 to 10 intervals with infractions during baseline.

**Intervention.** Benjamin’s mean number of intervals containing behavioral infractions during the intervention phase was 3.13. On average, during a 15-minute observation period, Benjamin exhibited 3.13 intervals with behavioral infractions. Behavioral data was collected
twice a week for 8 weeks during the intervention phase. Analysis of the trend line indicated an overall decreasing trend of behavioral infractions, with peaks of intervals with infractions during weeks 3 and 5. Beginning at Session 6, Benjamin exhibited zero behavioral infractions.

**Maintenance.** Benjamin’s mean number of intervals with behavioral infractions during the maintenance phase was 0. During a 15-minute behavior observation twice a week for two weeks, Benjamin exhibited zero behavioral infractions.

**Carlos: Baseline.** Carlos’ mean number of intervals containing behavioral infractions during the baseline phase was 11.75. On average, during a 15-minute observation period, Carlos exhibited 11.75 intervals with behavioral infractions. Behavioral data was collected twice per week for two weeks during the baseline phase. Results of the linear trend line analysis indicated an overall increasing trend of intervals containing behavioral infractions, with a slight dip in the data trend during the third observation session.

**Intervention.** Carlos’ mean number of intervals with behavioral infractions during the intervention phase was 6. On average, during a 15-minute behavior observation, Carlos exhibited 6 intervals with behavioral infractions. Behavioral data was collected twice a week for 8 weeks during the intervention phase. Results, though variable, represented an overall decreasing trend.

**Maintenance.** Carlos’ mean number of intervals with behavioral infractions during the maintenance phase was 3.5. During a 15-minute behavior observation twice a week for two weeks, Carlos exhibited 3.5 intervals with behavior infractions. Results represent a slight decreasing trend, with the second observation of the maintenance phase approaching the pre-intervention, or baseline phase, average. However, the three other observation periods reflect between zero and three intervals containing behavioral infractions.
Table 1

Mean Number of Intervals Containing Behavioral Infractions Across Phases

<table>
<thead>
<tr>
<th>Phase</th>
<th>Baseline</th>
<th>Intervention</th>
<th>Maintenance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Participant A</td>
<td>13</td>
<td>5.94</td>
<td>3.25</td>
</tr>
<tr>
<td>Participant B</td>
<td>11</td>
<td>3.13</td>
<td>0</td>
</tr>
<tr>
<td>Participant C</td>
<td>11.75</td>
<td>6</td>
<td>3.5</td>
</tr>
</tbody>
</table>

Research Question 2

Research Question 2: Can anxiety be reduced in students with co-occurring anxiety and severe externalizing problem behaviors?

Hypothesis 2: Children with co-occurring anxiety and externalizing problems can experience reduced anxiety symptoms following the implementation of the Coping Cat intervention.

To assess this research question, rating scales were administered at pre- and post-intervention. The following were included: the Behavior Assessment Scale for Children, Second Edition (BASC-2) Self-Report and Teacher-Report Scale, the Revised Children Manifest Anxiety Scale, Second Edition (RCMAS-2), and the Children’s Depression Inventory, Second Edition (CDI-2) Self-Report Measure and Teacher-Report Measure. The t-score results are presented for each of the rating scales in Tables 2, 3, 4, 5, and 6. Asterisks after a score denotes an elevated score or a score of clinical significance. Several paired-samples t-tests were conducted to compare the pre-intervention rating scale results to the post-intervention rating scale results. These results are presented for each of the rating scales in Tables 7, 8, 9, 10, and 11. Asterisks after the names of a scale denote significant changes from pre to post intervention.

Please note that all student ratings on the Defensiveness scale from the Self-Report BASC-2 were elevated, for Benjamin and Carlos at both pre- and post-measure and for Avery at post-measure only. The Defensiveness scale indicates that a child may be responding in a
positively skewed manner. Possible explanations and implications for these results will be further discussed within Chapter V.

**Avery.** Avery endorsed items resulting in scores that fell within the Average range on all BASC-2, Self-Report Internalizing Scales at both pre- and post-intervention. According to the BASC-2 teacher report, Avery experienced an At-Risk level of Anxiety at both pre- and post-measure. Further, the Internalizing Problems composite was noted to increase from an At-Risk range t-score to a Clinically Significant range t-score, as per the teacher report (pre-intervention BASC-2 TRS Internalizing Problem t-score = 63, post-intervention = 70). Avery responded in a similar fashion to items on the CDI-2 and RCMAS-2, in which all scores fell within the Average range for anxiety and other symptoms. However, each scale measured by the RCMAS-2 decreased from pre- to post-measure, including the following: Physical, Worry, Social, and Total. Also, as per the CDI-2 teacher report, Avery’s symptoms of depression decreased from an Elevated score at pre-intervention to an Average score at post-intervention.

**Benjamin.** Benjamin endorsed items resulting in Average scores on the BASC-2 in the areas of Anxiety and Social Stress at both pre- and post-measures. However, the overall scores, though in the Average range, decreased in the areas of Anxiety and Social Stress, from pre to post intervention. His teacher endorsed items resulting in an At-Risk elevation on the Anxiety scale at pre-intervention and within the Average range at post-intervention on the BASC-2. Similar findings were derived from the CDI-2 rating scales, with overall decreases in the Total score on the self-report measure. The teacher CDI-2 resulted in Average but slightly increasing scores from pre- to post-intervention measures.

**Carlos.** Carlos also endorsed items resulting in Average scores on the BASC-2 at both pre- and post-intervention; however, a decrease on the Anxiety scale was noted from pre- to
post-intervention. His teacher noted no change on any of the rating scales. On the RCMAS-2, although scores remained within the High Average range, Carlos did endorse slight improvement in three of the areas measured by the rating scale, including Worry, Social, and Total Anxiety.

**T-Score Tables**

**Table 2**

*Internalizing Scales of the Behavior Assessment Scale for Children, Second Edition (BASC-2), Self-Report Adolescent (Avery) and Child (Benjamin and Carlos) T-scores*

<table>
<thead>
<tr>
<th>Scale/Composite</th>
<th>Avery</th>
<th>Benjamin</th>
<th>Carlos</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pre</td>
<td>Post</td>
<td>Pre</td>
</tr>
<tr>
<td>Anxiety</td>
<td>36</td>
<td>34</td>
<td>61*</td>
</tr>
<tr>
<td>Social Stress</td>
<td>41</td>
<td>39</td>
<td>50</td>
</tr>
<tr>
<td>Depression</td>
<td>40</td>
<td>40</td>
<td>46</td>
</tr>
<tr>
<td>Internalizing Problems</td>
<td>37</td>
<td>36</td>
<td>53</td>
</tr>
</tbody>
</table>

*Elevated or Clinically Significant Score

**Table 3**

*Internalizing Scales of the Behavior Assessment for Children, Second Edition (BASC-2), Teacher Report Adolescent (Avery) and Child (Benjamin and Carlos) T-scores*

<table>
<thead>
<tr>
<th>Scale/Composite</th>
<th>Avery</th>
<th>Benjamin</th>
<th>Carlos</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pre</td>
<td>Post</td>
<td>Pre</td>
</tr>
<tr>
<td>Anxiety</td>
<td>61*</td>
<td>65*</td>
<td>60*</td>
</tr>
<tr>
<td>Depression</td>
<td>78*</td>
<td>85*</td>
<td>57</td>
</tr>
<tr>
<td>Somatization</td>
<td>43</td>
<td>48</td>
<td>55</td>
</tr>
<tr>
<td>Internalizing Problems</td>
<td>63*</td>
<td>70*</td>
<td>59</td>
</tr>
</tbody>
</table>

*Elevated or Clinically Significant Score

**Table 4**

*Revised Children’s Manifest Anxiety Scale, Second Edition (RCMAS-2) Self-Report Measure T-scores*

<table>
<thead>
<tr>
<th>Scale/Composite</th>
<th>Avery</th>
<th>Benjamin</th>
<th>Carlos</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pre</td>
<td>Post</td>
<td>Pre</td>
</tr>
<tr>
<td>Physical</td>
<td>40</td>
<td>36</td>
<td>54*</td>
</tr>
<tr>
<td>Worry</td>
<td>38</td>
<td>32</td>
<td>54*</td>
</tr>
<tr>
<td>Social</td>
<td>47*</td>
<td>44*</td>
<td>53*</td>
</tr>
<tr>
<td>Total Anxiety</td>
<td>40</td>
<td>35</td>
<td>54*</td>
</tr>
<tr>
<td>Defensiveness</td>
<td>35</td>
<td>46*</td>
<td>42*</td>
</tr>
</tbody>
</table>

*Elevated or Clinically Significant Score
Table 5

*Children’s Depression Inventory, Second Edition (CDI-2) Self-Report T-scores*

<table>
<thead>
<tr>
<th>Scale/Composite</th>
<th>Avery Pre</th>
<th>Avery Post</th>
<th>Benjamin Pre</th>
<th>Benjamin Post</th>
<th>Carlos Pre</th>
<th>Carlos Post</th>
</tr>
</thead>
<tbody>
<tr>
<td>Neg. Mood/Physical</td>
<td>50</td>
<td>42</td>
<td>78*</td>
<td>66*</td>
<td>66*</td>
<td>50</td>
</tr>
<tr>
<td>Negative Self-Esteem</td>
<td>44</td>
<td>44</td>
<td>49</td>
<td>44</td>
<td>49</td>
<td>55*</td>
</tr>
<tr>
<td>Ineffectiveness</td>
<td>46</td>
<td>46</td>
<td>50</td>
<td>42</td>
<td>54*</td>
<td>54*</td>
</tr>
<tr>
<td>Interpersonal Problems</td>
<td>42</td>
<td>51*</td>
<td>51*</td>
<td>51*</td>
<td>51*</td>
<td>67*</td>
</tr>
<tr>
<td>Emotional Problems</td>
<td>47</td>
<td>42</td>
<td>69*</td>
<td>58*</td>
<td>61*</td>
<td>53*</td>
</tr>
<tr>
<td>Functional Problems</td>
<td>45</td>
<td>48</td>
<td>51*</td>
<td>45</td>
<td>54*</td>
<td>54*</td>
</tr>
<tr>
<td>Total</td>
<td>46</td>
<td>44</td>
<td>61*</td>
<td>52*</td>
<td>58*</td>
<td>57*</td>
</tr>
</tbody>
</table>

*Elevated or Clinically Significant Score

Table 6

*Children’s Depression Inventory, Second Edition (CDI-2) Teacher Report T-scores*

<table>
<thead>
<tr>
<th>Scale/Composite</th>
<th>Avery Pre</th>
<th>Avery Post</th>
<th>Benjamin Pre</th>
<th>Benjamin Post</th>
<th>Carlos Pre</th>
<th>Carlos Post</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emotional Problems</td>
<td>66*</td>
<td>62*</td>
<td>47</td>
<td>44</td>
<td>53*</td>
<td>59*</td>
</tr>
<tr>
<td>Functional Problems</td>
<td>67*</td>
<td>50</td>
<td>44</td>
<td>40</td>
<td>54*</td>
<td>57*</td>
</tr>
<tr>
<td>Total</td>
<td>68*</td>
<td>56*</td>
<td>44</td>
<td>40</td>
<td>54*</td>
<td>48</td>
</tr>
</tbody>
</table>

*Elevated or Clinically Significant Score

Several paired-samples t-tests were conducted to compare the pre-intervention rating scale results to the post-intervention rating scale results. The analysis revealed no significant differences from pre- to post-measure on any of the BASC-2 Internalizing Scales for both Self-Report and Teacher-Report scales. There was a significant decrease from pre- to post- measure on the RCMAS-2, specifically regarding the Worry scale. This decrease was large in effect size, as calculated using Cohens’ D (d = 0.94). Additionally, significant differences were revealed between pre- and post-measure on two of the Self-Report CDI-2 scales, the Negative Mood and Self-Esteem scale and the Emotional Problems composite. Both differences were found to be large in effect size (Negative Mood and Self-Esteem d = 0.91; Emotional Problems d = 0.81). No significant changes were found on the Teacher-Report CDI-2 scales.
## T-Test Results

### Table 7

**Descriptive Statistics and T-test Results for Behavior Assessment Scale for Children-2 Self-Report Internalizing Scales**

<table>
<thead>
<tr>
<th>Scale</th>
<th>Pre-</th>
<th>Post-</th>
<th>95% CI for Mean Difference</th>
<th>t</th>
<th>df</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>SD</td>
<td>M</td>
<td>SD</td>
<td>n</td>
<td></td>
</tr>
<tr>
<td>Anxiety</td>
<td>50.3</td>
<td>12.9</td>
<td>40.0</td>
<td>5.2</td>
<td>3</td>
<td>-9.6, 30.3</td>
</tr>
<tr>
<td>Social Stress</td>
<td>46.0</td>
<td>4.6</td>
<td>41.7</td>
<td>2.3</td>
<td>3</td>
<td>-1.9, 10.6</td>
</tr>
<tr>
<td>Depression</td>
<td>45.0</td>
<td>4.58</td>
<td>42.3</td>
<td>2.1</td>
<td>3</td>
<td>-4.9, 10.3</td>
</tr>
<tr>
<td>Internalizing</td>
<td>47.0</td>
<td>8.7</td>
<td>41.0</td>
<td>4.4</td>
<td>3</td>
<td>-4.8, 16.8</td>
</tr>
</tbody>
</table>

### Table 8

**Descriptive Statistics and T-test Results for Behavior Assessment Scale for Children-2 Teacher-Report Internalizing Scales**

<table>
<thead>
<tr>
<th>Scale</th>
<th>Pre-</th>
<th>Post-</th>
<th>95% CI for Mean Difference</th>
<th>t</th>
<th>df</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>SD</td>
<td>M</td>
<td>SD</td>
<td>n</td>
<td></td>
</tr>
<tr>
<td>Anxiety</td>
<td>61.7</td>
<td>2.1</td>
<td>60.7</td>
<td>6.7</td>
<td>3</td>
<td>-12.8, 14.8</td>
</tr>
<tr>
<td>Depression</td>
<td>65.7</td>
<td>11.0</td>
<td>64.0</td>
<td>20.1</td>
<td>3</td>
<td>-22.2, 25.5</td>
</tr>
<tr>
<td>Somatization</td>
<td>52.3</td>
<td>8.3</td>
<td>52.7</td>
<td>5.7</td>
<td>3</td>
<td>-11.5, 10.9</td>
</tr>
<tr>
<td>Internalizing</td>
<td>62.3</td>
<td>3.1</td>
<td>61.7</td>
<td>10.4</td>
<td>3</td>
<td>-19.3, 20.6</td>
</tr>
</tbody>
</table>

### Table 9

**Descriptive Statistics and t-test Results for Revised Children’s Manifest Anxiety Scale-2**

<table>
<thead>
<tr>
<th>Scale</th>
<th>Pre-</th>
<th>Post-</th>
<th>95% CI for Mean Difference</th>
<th>t</th>
<th>df</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>SD</td>
<td>M</td>
<td>SD</td>
<td>n</td>
<td></td>
</tr>
<tr>
<td>Physical</td>
<td>45.7</td>
<td>7.4</td>
<td>44.3</td>
<td>9.1</td>
<td>3</td>
<td>-4.4, 7.1</td>
</tr>
<tr>
<td>Worry*</td>
<td>48.7</td>
<td>9.2</td>
<td>40.7</td>
<td>7.8</td>
<td>3</td>
<td>1.4, 14.6</td>
</tr>
<tr>
<td>Social</td>
<td>49.0</td>
<td>3.5</td>
<td>41.3</td>
<td>2.3</td>
<td>3</td>
<td>-4.8, 20.2</td>
</tr>
<tr>
<td>Total Anxiety</td>
<td>47.3</td>
<td>7.0</td>
<td>40.7</td>
<td>4.9</td>
<td>3</td>
<td>-0.5, 12.8</td>
</tr>
</tbody>
</table>

* p < .05.
Table 10

Descriptive Statistics and t-test Results for Children’s Depression Inventory-2 Self-Report

<table>
<thead>
<tr>
<th>Scale</th>
<th>Pre-</th>
<th>Post-</th>
<th>95% CI for Mean Difference</th>
<th>t</th>
<th>df</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>SD</td>
<td>M</td>
<td>SD</td>
<td>n</td>
<td></td>
</tr>
<tr>
<td>Mood/Phys.*</td>
<td>64.7</td>
<td>14.0</td>
<td>52.7</td>
<td>12.2</td>
<td>3</td>
<td>2.1, 21.9</td>
</tr>
<tr>
<td>Neg. S-E**</td>
<td>47.3</td>
<td>2.9</td>
<td>47.7</td>
<td>6.4</td>
<td>3</td>
<td>-14.0, 13.3</td>
</tr>
<tr>
<td>Ineffective</td>
<td>50.0</td>
<td>4.0</td>
<td>47.3</td>
<td>6.1</td>
<td>3</td>
<td>-8.8, 14.1</td>
</tr>
<tr>
<td>Interpersonal</td>
<td>48.0</td>
<td>5.2</td>
<td>56.3</td>
<td>9.2</td>
<td>3</td>
<td>-28.3, 11.6</td>
</tr>
<tr>
<td>Emotional*</td>
<td>59.0</td>
<td>11.1</td>
<td>51.0</td>
<td>8.2</td>
<td>3</td>
<td>0.4, 17.6</td>
</tr>
<tr>
<td>Functional</td>
<td>50.0</td>
<td>4.6</td>
<td>49.0</td>
<td>4.6</td>
<td>3</td>
<td>-10.4, 12.4</td>
</tr>
<tr>
<td>Total</td>
<td>55.0</td>
<td>7.9</td>
<td>51.0</td>
<td>6.6</td>
<td>3</td>
<td>-6.8, 14.8</td>
</tr>
</tbody>
</table>

* p < .05.
** Negative Self-Esteem

Table 11

Descriptive Statistics and t-test Results for Children’s Depression Inventory-2 Teacher-Report

<table>
<thead>
<tr>
<th>Scale</th>
<th>Pre-</th>
<th>Post-</th>
<th>95% CI for Mean Difference</th>
<th>t</th>
<th>df</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>SD</td>
<td>M</td>
<td>SD</td>
<td>n</td>
<td></td>
</tr>
<tr>
<td>Emotional Prob.</td>
<td>55.3</td>
<td>9.7</td>
<td>55.0</td>
<td>9.6</td>
<td>3</td>
<td>-13.3, 14.0</td>
</tr>
<tr>
<td>Functional Prob.</td>
<td>55.0</td>
<td>11.5</td>
<td>49.0</td>
<td>8.5</td>
<td>3</td>
<td>-19.2, 31.2</td>
</tr>
<tr>
<td>Total</td>
<td>55.3</td>
<td>12.1</td>
<td>51.3</td>
<td>9.9</td>
<td>3</td>
<td>-15.9, 23.9</td>
</tr>
</tbody>
</table>

Research Question 3

Research Question 3: Will the child experience an increased perceived ability for coping with symptoms and behaviors, and did the child enjoy participating in the Coping Cat program?

Hypothesis 3: Participants will perceive their coping skills to be improved following the Coping Cat intervention and will enjoy participation.

All students agreed that the program helped them to understand anxiety and coping. All participants also agreed that they would recommend the program to a friend. Results of the acceptability form are included in Table 12.
Table 12

*Percentage of Students who Endorsed Items from the Acceptability Form*

<table>
<thead>
<tr>
<th>Acceptability Form Item</th>
<th>Percentage of Students</th>
</tr>
</thead>
<tbody>
<tr>
<td>Do you feel that you are better able to cope with symptoms of anxiety after completing the Coping Cat program?</td>
<td>100%</td>
</tr>
<tr>
<td>Do you feel the Coping Cat program has helped improve your behavior in the classroom?</td>
<td>67%</td>
</tr>
<tr>
<td>Did you enjoy your participation in the Coping Cat program?</td>
<td>100%</td>
</tr>
<tr>
<td>Would you recommend the Coping Cat program to a friend who may be struggling with anxiety?</td>
<td>100%</td>
</tr>
</tbody>
</table>
Figure 1: Number of intervals with behavioral infractions across baseline, intervention, and maintenance phases for Avery.
Figure 2: Number of intervals with behavioral infractions across baseline, intervention, and maintenance phases for Benjamin.
Figure 3: Number of intervals with behavioral infractions across baseline, intervention, and maintenance phases for Carlos.
Summary of Results

The current study examined the effects of an empirically validated anxiety reduction program on students with comorbid anxiety and externalizing problems. Specifically, the study focused primarily on the effect the program had on the children’s externalizing problem behaviors. The first research question considered the effect of the Coping Cat program on externalizing symptoms of students with comorbid anxiety and externalizing problems. It was hypothesized that the successful treatment of the participants’ anxiety symptoms would reduce externalizing symptoms. Results were consistent with this hypothesis. Across participants, there was an overall decrease in the level of externalizing problem behaviors observed in the classroom during the course of the intervention and following the intervention.

Behavioral infractions or “disruptive behaviors” involving peers and/or staff included the following: yelling, using profane, insulting, or threatening language (including verbalizations of a physically threatening nature), standing up or positioning body in a threatening manner (fists clenched, body leaned towards another), successful or unsuccessful attempts to use physical force in a potentially harmful/dangerous fashion, throwing objects, refusing to follow directives, or refusing work. All three participants were engaging in approximately 10 or more behavioral infractions during the baseline phase. Two of the three participants, Avery and Carlos, exhibited increasing trends of behavioral infractions during the baseline phase. Benjamin’s baseline data remained relatively stable. Overall, the level of behaviors for all participants was high and clinically significant across baseline. These students were selected for the study because of the debilitating difficulty with behavior exhibited in the classroom setting.
During the intervention phase and continuing into the maintenance phase, all three participants engaged in the problem behaviors less frequently. Visual analysis revealed decreasing trends of externalizing behavior for all three participants. Due to the variable nature of Avery’s behavior, the decreasing slope of his data was slight. However, the number of intervals with behavioral infractions during the second half of the intervention phase and the maintenance phase were noted to be at about 50% of the baseline phase. More specifically, Avery exhibited on average 13 intervals with behavioral infractions during baseline, approximately 6 intervals with behavioral infractions during intervention, and 3 intervals with behavioral infractions during maintenance. Both Benjamin and Carlos displayed steeper decreasing slopes of behavioral infractions observed in the classroom. Benjamin displayed on average approximately 11 intervals with behavioral infractions during baseline, approximately 3 during intervention, and 0 during maintenance. Carlos exhibited an average of 12 intervals with infractions during intervention, 6 during intervention, and 4 during maintenance.

The second research question examined whether the anxiety symptoms of the participants, who had co-occurring anxiety and behavioral disorders could be reduced following the implementation of the Coping Cat program. It was hypothesized that the participants would experience a reduction of anxiety symptomatology. This hypothesis was measured with pre and post rating scale measures. Results were somewhat variable. Results of the Behavior Assessment Scale for Children, Second Edition, Adolescent, for Avery revealed little change from pre to post measure in both the self-report and teacher measures. In fact, the Internalizing Problems composite was noted to increase from an At-Risk range t-score to a Clinically Significant range t-score, as per the teacher report (pre-intervention BASC-2 TRS Internalizing Problem t-score = 63, post-intervention = 70). Results for Benjamin and Carlos were slightly more promising. As
per the self-report BASC-2 Child results, Benjamin and Carlos endorsed items resulting in reductions of the Anxiety scale (Benjamin: pre-intervention Anxiety t-score = 61, post-intervention = 43; Carlos: pre-intervention Anxiety t-score = 54, post-intervention = 43). BASC-2 teacher report results revealed a reduction on the Anxiety scale for Benjamin, but stable scores for Carlos.

A second rating scale used in this analysis was the Revised Children’s Manifest Anxiety Scale (RCMAS). All three raters endorsed items resulting in reductions in the Total Anxiety composite t-score of the RCMAS from pre-intervention to post-intervention. It should be noted that all of the raters’ Defensiveness scales were elevated. The Defensiveness scale indicates that a child may be responding in a positively skewed manner. This will be further discussed within the Limitation section. Nevertheless, Avery’s scores were within the Average range during both pre- and post-measures, but reduced overall. Benjamin’s score reduced from an Elevated score to a High Average score. And Carlos’ scores remained in the High Average range, but reduced from pre- to post-measure.

The third rating scale used in this analysis was the Children’s Depression Inventory, Second Edition (CDI-2) for self-report and teacher ratings. The Total Depression Self-Report composite revealed the most significant change for Benjamin (Benjamin Total t-score pre-intervention = 61, post-intervention = 52). Avery and Carlos endorsed items resulting in Average scores on the Total composite both pre- and post-intervention. Little change was noted. The teacher ratings revealed a significant change for Avery only (Avery Total t-score pre-intervention = 68, post-intervention = 56). All scores for Benjamin and Carlos fell within the Average range.
Finally, the third research question examined whether the participants perceived an improvement in the ability to access and use coping skills for anxiety symptoms and behaviors, as well as the social acceptability of the program. It was hypothesized that the children would enjoy the program and would endorse a perception of improved coping skills. The data supported this hypothesis. All raters agreed that the program helped them to understand anxiety and coping. All participants also agreed that they would recommend the program to a friend.

**Conclusions**

Numerous studies have highlighted anxiety disorders as one of the most common psychiatric disorders experienced by children and adolescents and as one of the more common to co-occur with externalizing problems (Yoo, Brown, & Luthar, 2009). Marmorstein’s (2007) findings supported the hypothesis that anxiety and externalizing disorders are positively associated. With these conclusions, however, the problem remains regarding how clinicians should approach the treatment of these youth. It was suggested that without evidence to the contrary, direct treatment of both disorders, either simultaneously or sequentially, would be important (Marmorstein, 2007). The students in the current study had co-occurring disorders and were successfully treated with an empirically validated anxiety reduction program, while participating in universal positive behavior support programs within the classroom setting. Therefore, the current study provides a possible solution to the problem set forth by Marmorstein (2007) about appropriate methods for treating this particular population of children.

The current results reveal initial support for the use of an empirically-validated anxiety reduction program for children manifesting co-occurring anxiety and externalizing behavioral disorders. Results demonstrated behavioral change for each participant following the implementation of the Coping Cat program. Pre- and post-measures revealed reductions in
anxiety for two of the three participants. All children reported feelings of improved coping ability and would recommend the program to a friend.

In general, the goal for the treatment of psychiatric disorders is to have the greatest impact, or the greatest reduction of symptoms, while using the available resources in the most efficient manner. This may be even more important for clinicians working with insurance companies that place limitations on time spent with a client. Additionally, despite resources, it remains vital for clinicians to approach problems with empirically-validated treatments. One solution to meeting the needs of both problems would be to have single evidence-based treatments that address a multitude of related problems. For example, an evidence-based treatment that both reduces anxiety and externalizing behaviors would have great value. Beidas et al. (2004) suggest that well-constructed treatment manuals can enhance clinician skill and effectiveness rather than detract from it, but flexible implementation of empirically-supported treatments allows for clinicians to implement the treatment while also accounting for individual differences in client presentation. To take this a step further, strategically chosen evidence-based treatments for disorders that commonly co-occur, like anxiety and externalizing problems, may be an important consideration. Again, with limited resources, this provides clinicians with a starting point for treatment.

In terms of the Coping Cat program in particular, previous research suggested that although more support is needed, with appropriate idiographic adaptations, comorbid diagnoses do not reduce the effectiveness of the treatment (Hudson, Krain, & Kendall, 2001). The current study provides initial support for this hypothesis. The Coping Cat program was successful in reducing externalizing behaviors for all three participants, while reducing anxiety symptomatology in two of the three participants, despite co-occurring externalizing disorders.
When considering the relationship between anxiety and externalizing disorders, Kramer and Zimmermann (2009) purported that externalizing behaviors may have anxiety-soothing functions and represent a first attempt at coping with anxiety. While the current study does not examine the nature of the interplay of internalizing and externalizing disorders, it may help to generate awareness. An important first step is that clinicians must avoid the assumption that externalizing children are not anxious. Early identification and adequate treatment for adolescents with mental disorders in juvenile courts and incarcerating institutions are beneficial in preventing recidivism and negative outcomes (Kramer & Zimmermann, 2009). The children in the current study were in a partial hospitalization program as a more restrictive placement after having problems in their home schools that prevented the educational functioning of themselves and their peers. Perhaps the treatment of what might have been considered an “underlying” problem, or maladaptive coping, will help with their success in their current program and in less restrictive educational programs.

Finally, Yen et al. (2013) found that the Coping Cat program did not significantly improve the externalizing behavioral problems of their participants, which is inconsistent with the current findings. While the current study was performed on a rather small scale with some limitations present, these findings at least highlight the need for continued research in this area. The limitations and recommendations for future research are examined next.

**Limitations**

While initial findings support the use of an evidence-based anxiety reduction program for children with co-occurring anxiety and externalizing problems and disorders, some limitations exist within the current study. Beginning with those limitations inherent within the single subject A-B research design, the sample was small and certain additional design components that could
have strengthened the design could not be added for various reasons. For example, due to the learning nature of the Coping Cat program, a withdrawal design was not a good option because the results of the intervention are intended to remain after the treatment has been withdrawn. Also, due to time and staffing limitations, it was not possible to conduct a true multiple baseline design. The implementation of the intervention had to begin as soon as consent was obtained. Students at this particular placement are known to change placements frequently. Therefore, in an effort to reduce or prevent attrition, data was collected as soon as possible. Additionally, parent involvement was known to be particularly low, which made obtaining consent rather difficult and time consuming, so there was no guarantee that the study would include enough students for a true multiple baseline study.

Also inherent within an A-B design, is its limited experimental control. There were also threats to the interval validity of the study, including the length of the implementation of the intervention. The treatment of anxiety involves the modification of a child’s thoughts and behaviors, a process that is necessarily time consuming. However, in the interest of a research study, lengthy interventions may introduce extraneous variables, including those such as maturation and history effects. According to Richards, Taylor, and Ramasamy (2014), maturation is the natural development of an individual that occurs over time, and history effects are seen and/or unforeseen events that arise throughout the duration of a lengthy study. For example, data collection began in late fall/early winter and did not end until spring. Also, one participant, Carlos, was hospitalized for a brief time during the implementation of the study due to escalating behavior at home. Additionally, all participants were taking stimulants for symptoms related to Attention-Deficit/Hyperactivity Disorder. The dose of this medication was adjusted for one participant, Benjamin, on one occasion. Avery’s psychiatrist was implementing
trials of antianxiety medication throughout the duration of the study. Again, these were variables that could not have been prevented or changed, but may have had an impact on the results of the current study.

The setting in which the current study took place may also have an impact on the generalizability of the results. The study took place in an approved private school and partial hospitalization program designed for students with significant behavioral challenges. In addition to participating in the current study, the participants received services from a psychiatrist and social worker. Also, all students participated in a universal positive behavior support program, in which points were earned throughout the day and points were then exchanged for rewards. All teachers in this setting were special education teachers. Therefore, the children in this study were in a unique setting that allowed for the implementation of the Coping Cat program; however, it may have introduced these confounding variables (i.e., simultaneous psychiatric and social work services, participation in a school-wide positive behavior support program, etc.).

It was previously noted that each of the participants’ Defensiveness scales from the Self-Report BASC-2 were elevated, for Benjamin and Carlos at both pre- and post-measure and for Avery at post-measure only. The Defensiveness scale indicates that a child may be responding in a positively skewed manner, or as described by the authors of the assessment, the students may be “faking good” (Reynolds and Kamphaus, 2006). A student may be “faking good” for a number of reasons. The student may have low insight into her symptoms and thus, be unaware of the extent of the impact. Alternatively, the student may knowingly downplay the severity of her symptoms and behaviors, due to embarrassment or other motivations, like the belief that she can return to her typical school once she is “better”. In general, this is a limitation with self-report measures. Self-report measures assume that a child is willing and able to report her symptoms
and behaviors (Finch and Politano, 1994). Nevertheless, self-report measures are quick and inexpensive to administer, and when corroborated with additional evaluative measures, are currently an acceptable form of measurement within the field of psychology (Kendall & Suveg, 2006).

**Recommendations for Future Research**

The current study attempted to address the question of how to appropriately treat children with co-occurring anxiety and externalizing problems and disorders and whether a specific empirically validated anxiety-reduction program may be helpful. Future research is necessary to further contribute to the literature base in this area. The current research was implemented using a single subject A-B research design. Replicating the current study with more participants and using a true multiple baseline across participants design would help to expand the study’s experimental control.

Marmorstein (2007) examined the relationship of specific anxiety disorders with specific externalizing disorders. More research is needed to clarify these findings. Replicating the current study on a large-scale experimental basis would be interesting to examine trends and relationships amongst disorders. The current study also grouped all externalizing and problem behaviors into one variable for ease of data collection. However, future researchers may consider examining specific behaviors (i.e., physical aggression vs. verbal aggression). Perhaps the reduction of anxiety has a greater impact on one more than another type of externalizing behavior. These modifications could have important implications for the course of treatment chosen for these particular children.
Research into Practice

The current study highlights the effectiveness of implementing an empirically-validated anxiety-reduction program for students with co-occurring anxiety and externalizing disorders for the reduction of behavioral problems. The study took place in a partial hospitalization program where it was appropriate and feasible to pull a student for weekly therapy sessions. Typical schools must become more conducive to offering these types of services for children’s mental health needs. One aim of this study is to highlight the co-occurrence of underlying anxiety and externalizing behavior problems. Children with these problems do not only exist in partial hospitals or residential programs, they exist everyday in our general and special education classrooms. Perhaps changing the manner in which we think about, assess, and treat the problems these students endure could have an impact on the future of their educational functioning.
References


doi:10.1016/j.comppsych.2014.11.018


doi:10.1016/j.janxdis.2006.06.004


https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2807642/

http://doi.org/10.1007/s10802-010-9476-0


Appendix A

Treatment Integrity Checklist

Participant Number: ______

Session Number: ______

Review session materials and ensure evidence of the following:

1. Introduction of the session material to the child, list of main concepts and goals
   YES/NO

2. Show-That-I-Can task materials for current session, if applicable
   YES/NO

3. Activities Menu tasks completed
   YES/NO

4. Assignment of STIC task for following session, if applicable
   YES/NO
Appendix B

Participant Acceptability Form

1. Do you feel that you are better able to cope with symptoms of anxiety after completing the Coping Cat program?

Circle one: YES/NO

Comments: __________________________________________________________

____________________________________________________________________

2. Do you feel the Coping Cat program has helped improve your behavior in the classroom?

Circle one: YES/NO

Comments: __________________________________________________________

____________________________________________________________________

3. Did you enjoy your participation in the Coping Cat program?

Circle one: YES/NO

Comments: __________________________________________________________

____________________________________________________________________

4. Would you recommend the Coping Cat program to a friend who may be struggling with anxiety?

Circle one: YES/NO