A Young Child's Anxiety and Math Performance: Enhancing Cognitive Behavioral Intervention with Conjoint Behavioral Consultation

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A YOUNG CHILD’S ANXIETY AND MATH PERFORMANCE: ENHANCING COGNITIVE BEHAVIORAL INTERVENTION WITH CONJOINT BEHAVIORAL CONSULTATION

A Dissertation

Presented to

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Doctor of Philosophy

by

Kirsten L. Brown

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Advisor: Gloria Miller, Ph.D.
Abstract

Partnering with families, school personnel, and community resources is an important step to supporting the child and family, especially when children might suffer from debilitating anxiety concerns. However, little research examines the impact of anxiety on math performance for young children participating in school-based interventions enhanced by family components. The following research questions were addressed in the study: 1a) Will a young child with elevated levels of anxiety show a decrease in anxiety symptoms with a Cognitive Behavioral framework intervention program for children? 1b) Will anxiety be reduced with the addition of a Conjoint Behavioral Consultation with the family and teacher? 2a) Will a young child show an increase in math performance after participation in a Cognitive Behavioral framework intervention program for children? 2b) Will math performance be increased with the addition of a Conjoint Behavioral Consultation with the family and teacher?

A single-subject staggered baseline across situations intervention study addressed whether the Coping Cat, an evidenced-based child-focused intervention now widely used in schools and clinics to treat childhood anxiety, combined with family and school consultation will decrease elevated anxiety levels and improve math performance in an elementary-aged student. The objective was to support mental health development and math performance with an eight-year-old, female elementary student through a
collaborative effort of stakeholders in the student’s life. Baseline data was collected with repeated measures of anxiety and math performance, and was compared to two intervention phases: first, a child-focused intervention and second, a family and school consultation. The study tested the theory that the Cognitive Behavioral intervention and Conjoint Behavioral Consultation intervention will influence, positively, the anxiety levels and math performance for an elementary-aged student.

Results indicate that the child participant with elevated levels of anxiety showed a reduction in symptoms with the introduction of a Cognitive Behavioral framework intervention when compared to her baseline data. The participant showed further reduction in symptoms across the school and home settings with the implementation of Conjoint Behavioral Consultation when compared to baseline and the first intervention phase. Math performance began to increase with the introduction of the Cognitive Behavioral intervention, and continued to improve with the implementation of the Conjoint Behavioral Consultation. Findings suggest that consultation should begin immediately when an intervention is implemented in order to enhance outcomes.
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Chapter One: Introduction

The overall purpose of the study is discussed as it relates to issues surrounding childhood anxiety. Initially, the characteristics and prevalence of childhood anxiety as well as its impact on general development and specifically school progress and academic success is reviewed. The importance of school-based early intervention is stressed to improve school outcomes. Finally, the need for parent participation in school-based early intervention is founded. The purpose of the current study and the research questions are provided, followed by definitions of the key terms that the researcher will use.

Anxiety in Children

Mental health issues, such as anxiety, can come up for anyone in one’s life but is increasing in frequency and prevalence in childhood (Huberty, 2008). It appears that adults notice behaviors or low academic performance that their children exhibit, but they may not always realize the anxieties that sometimes underlie or are associated with behavior or learning problems. Sometimes parents and educators simply need strategies to help them guide their children, and sometimes more professional help may be necessary depending on the context. In either case, partnering with families, appropriate school personnel, and community resources is an important step to supporting the child and family. Through the mutual understanding and consistency of intervention implementation among team members across settings, children can be optimally supported in coping with their anxiety. However, there is little research that examines the
effects of anxiety on academic performance in young children in early elementary school, and little that measures the influence of various intervention practices used with young children with anxiety.

**How is childhood anxiety defined?**

Adults typically struggle to identify children with anxiety because it is associated with internal feelings that are not easily observable; therefore, children with anxiety are often unnoticed within group settings. Typical signs of childhood anxiety may include school refusal, extreme shyness, and psychosomatic complaints such as headaches or stomachaches (Foxman, 2004; Peacock & Collett, 2010). Academic performance can also be impeded by anxiety and lead to excessive absences, incomplete or missed assignments, and withdrawal from class participation and social interaction (Foxman, 2004; Peacock & Collett, 2010). Children with anxiety can display a range of behaviors from withdrawal and avoidance of social interaction to fidgety and irritable behavior. For these reasons, it is important to consider the family and child history, the context of the behaviors, and the temperament of the child in determining the issue that needs to be addressed (Christophersen & Mortweet, 2005; Foxman, 2004). Untreated symptoms for anxiety during the seminal years can result in problems that persist into adulthood, affecting personal and occupational functioning so early intervention and prevention is key (Dekker, Ferdinand, van Lang, Bongers, van der Ende, & Verhulst, 2007).

Anxiety is related to fear and stress, and research shows that anxiety can be positive; the fear response associated with anxiety warns individuals to get out of danger when confronted with a life-threatening situation. In these instances, our body reacts with the fight-or-flight response for the purpose of self-preservation. In our body, we feel our
muscles tense, heart rate increases and breathing intensifies to help provide extra oxygen, vision and hearing become focused and acute, and posture positions itself for protection (Foxman, 2004). Through this process, we feel increasingly more prepared to defend and protect ourselves from danger. The fight-or-flight response is the body’s natural, automatic response to danger, and is not easily stopped once the process begins.

Fear is an appropriate response to a genuine life-threatening danger. The brain, namely the locus ceruleus, reacts quickly in order to increase chances of survival instead of taking the time to evaluate the situation. The locus ceruleus does not make the distinction between possible and actual threat. Although anxiety is related to fear and stress, the key feature of anxiety is the *perception* of a life-threatening danger. With consideration to developmental stages, children perceive such dangers as anything that threatens emotional security and physical dependency (Foxman, 2004).

Anxiety can develop after the experience of a traumatic event; initially, a fear reaction will occur, but persistent worry can follow. When the fight-or-flight reactions occur often due to frequent stressful events, they can become chronic and lead to conditioned responses that involve difficulty concentrating, memory impairment, physical psychosomatic complaints, fatigue, anxiety, and difficulty relaxing (Blaustein & Kinniburgh, 2010; Dawson & Guare, 2010; Foxman, 2004; Stallard, 2002). Additionally, individuals with excessive anxiety generally feel an overwhelming and irrational sense of dread, fear, and nervousness.

**Anxiety as a Medical Diagnosis.**

Generally, the major way anxiety is diagnosed is through the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-V; APA, 2013). This new
edition details several criteria required for a diagnosis of Generalized Anxiety Disorder. Overall, a diagnosis of Generalized Anxiety Disorder is met when an individual exhibits excessive worry that is difficult to control for more days than not for a period of at least 6 months, as well as symptoms such as irritability, difficulty concentrating, difficulty sleeping, muscle tension, fatigue, and restlessness (APA, 2013). For verbatim criteria, the interested reader is referred to Appendix A.

Children who exhibit these symptoms usually present as nervous or tense and their worries generally concern performance or competence in school work or sporting events (APA, 2013; King & Ollendick, 1989). Additionally, children with anxiety may be concerned with being evaluated, require excessive comfort or reassurance about their performance, and will redo their work due to perfectionist qualities and dissatisfaction with their performance (APA, 2013; King & Ollendick, 1989). Finally, the DSM V (2013) notes that children with disordered anxiety might worry about catastrophic events, such as earthquakes and war. Overall, when anxiety impairs an individual’s everyday functioning at school, work, or with personal and social situations, then the anxiety can be disordered (APA, 2013; Christophersen & Mortweet, 2005; Foxman, 2004; Peacock & Collett, 2010).

Due to the recent publication of the DSM-V, current research on childhood anxiety with the updated criteria is scarce. Previous studies have followed criteria from the DSM-III, DSM-IV, and DSM-IV-TR. Until the mid-1990s, it was believed that children and adults experience different types of anxiety and these types were listed separately in previous editions of the DSM. For example, Separation Anxiety Disorder
had been listed as a childhood disorder and Panic Disorder had been listed as an adult
disorder. In 1994, the American Psychiatric Association revised the concept of anxiety
and adults and children under one set of criteria (APA, 2013; Foxman, 2004). This major
shift introduced the idea of a continuum of anxiety disorders from childhood to
adulthood, which recognizes that children can react similarly (physically and
emotionally) to stress as adults and that adult anxiety has its roots in childhood (Foxman,
2004). Though special education teams in schools are not required to use the DSM
criteria, the DSM is used for insurance reimbursement and communication among mental
health providers so it is useful for schools to familiarize themselves with the criteria.

Anxiety as an Educational Diagnosis.

In schools, anxiety is not viewed as a separate disorder; rather, it is defined by
special education teams who use educational diagnosis criteria for an Emotional
Disturbance (ED) outlined in the Individuals with Disabilities Education Act (IDEA;
2004). The IDEA defines an emotional disturbance as a condition that, over a long period
of time and to a marked degree, adversely affects a child’s educational performance
(IDEA, 2004). It also rules out differences best attributed by culture or language. One or
more of the following characteristics must be present to meet eligibility:

“A) An inability to learn that cannot be explained by intellectual, sensory,
or health factors; B) An inability to build or maintain satisfactory
interpersonal relationships with peers and teachers; C) Inappropriate types
of behavior or feelings under normal circumstances; D) A general
pervasive mood of unhappiness or depression; and E) A tendency to
develop physical symptoms or fears associated with personal or school
problems. Emotional disturbance includes schizophrenia. The term does
not apply to children who are socially maladjusted unless it is determined
that they have an emotional disturbance under paragraph (c) (4) (i) of this
section (20 U.S.C. 1401 (3); 34 C.F.R. part 300 subpart A 300.8 (c) (4)
(i)).” (Individuals with Disabilities Education Act, 2004, Section 300.8).
Eligibility for an Emotional Disturbance qualifies children for special education services. Similar to classification within the DSM system, classification within a special education category requires a ‘yes’ or ‘no’ decision regarding the presence of symptoms.

**Prevalence of Anxiety**

Typical anxiety is often difficult to differentiate from excessive anxiety, as it is not always manifested in disruptive behaviors but internally (Whitcomb & Merrell, 2013). The paradoxical challenge in detecting anxiety is despite the fact that anxiety disorders are among the most common in childhood and occur in 10-20% of children and youth (Huberty, 2008). In a national survey, Merikangas, He, Burstein, Swanson, Avenevoli, Cui, Benjet, Georgiades, and Swendsen (in press) found that 25.1 percent of adolescents aged 13-18 reported symptoms that qualify for an anxiety disorder and 5.9 percent reported symptoms that qualify for a “severe” disorder.

A separate national survey of adolescents, conducted by the National Institute of Mental Health, found that 8 percent of adolescents aged 13-18 have an anxiety disorder; more alarmingly, these symptoms reportedly emerge around age 6 (NIMH, 2008). According to the NIMH survey, only 18 percent of the adolescents received mental health treatment for their disorder. A similar national survey of adults, conducted by the National Institute of Mental Health, found that 18.1% of adults have an anxiety disorder (NIMH, 2005). This demonstrates an increase of anxiety disorders from childhood to adulthood. Further, girls are twice as likely as boys to develop an anxiety over their lifespan (APA, 2013; Huberty, 2008); however, by adulthood, women are 60% more likely to have an anxiety disorder than men (NIMH, 2005).
Summary.

In summary, childhood anxiety has only recently been acknowledged outside of Separation Anxiety Disorder and further defined for educational systems. Current research and statistics demonstrate nearly a quarter of children and adolescents meet criteria for an anxiety disorder at a given time. When consistent, quality early intervention is neglected during this seminal period, anxiety in these individuals worsens. As one of the key distinctions of the disorder, anxiety impacts a child’s ability to function within the school setting. Yet, little research examines the effects of anxiety on academic performance in children in elementary school, and little that measures the influence of various intervention practices used with young children with anxiety.

Anxiety and Its Impact on School Performance

General issues.

Internalizing disorders, such as anxiety, create a distraction for the brain that channels these resources to preoccupation with the thoughts and behavior associated with the anxiety (Barlow, 2002; Craske, 1999; Huberty, 2008). Oftentimes, individuals experiencing chronic or repeated stressors react based on emotional reactions rather than acting proactively and problem solving. Higher-level cognitive skills are impacted, which include controlling impulsive behaviors, transitioning smoothly from one thought or activity to another and demonstrating adaptability when needed, regulating emotional responses, beginning tasks in a timely manner and tracking time management, holding information in one’s mind while carrying out multiple step directions, planning and setting goals, organizing thoughts and ideas as well as materials and personal space, self-monitoring tasks, and sustaining attention to tasks (Dawson & Guare, 2010). In
individuals without chronic anxiety, these skills become less needed in everyday tasks and are reserved for more challenging tasks that require specific thought, planning, and attention.

For a child, these more challenging tasks include attending to new academic concepts during the school day (Posner & Rothbert, 2007). When this occurs regularly, children can fall behind in the curriculum when compared to their peers. As difficulty with performance persists, a child may experience continued anxiety about doing well, which further interferes with concentration and ability to regulate goal-directed behavior (Zhou, 2007; Zimmerman, 1998). Consequently, an anxious child might avoid difficult tasks or withdraw from tasks perceived to lead to failure, which leads to decreased motivation and effort with class work (Huberty, 2008; Zhou, 2007).

**Achievement.**

If anxiety can adversely affect higher-level thinking skills, then anxiety certainly impacts academic performance over time. Research demonstrates that anxiety greatly impacts emotional regulation, which has been shown to affect achievement. Studies that examine emotional regulation in young children have found that those with strong emotional regulation abilities have more advanced school readiness skills than their peers who struggle with emotional regulation (Eisenberg, Valiente, & Eggum, 2010). McClelland (2010) conducted a national survey of first grade children, which found that those with strong self-regulation skills scored 11 points higher on a reading test and 7 points higher on a vocabulary test. More impressively, McClelland found that these children scored 15 points higher on a standardized math test than those with weaker self-regulation skills. Ablard and Lipschultz (1998) also found that emotional regulation skills
lead to higher achievement in mathematics, while other researchers have found that adolescents with strong self-regulation skills rate higher on teacher-rated academic competence, grade point average, and achievement scores on standardized tests (Gumora & Arsenio, 2002; Kurdek & Sinclair, 2000).

Summary.

In summary, internalizing disorders, such as anxiety, greatly impact a child’s ability to self-regulate and develop higher level thinking skills. Without these skills, children struggle to maintain attention and remember information learned during the school day. Additionally, their anxiety can become pervasive enough to affect emotional regulation, which greatly impacts achievement particularly in math. In order to provide children a means for developing coping skills to reduce anxiety, further investigation of school-based interventions that are enhanced by family components are needed that assess the impact of anxiety on academic performance.

Evidence-Based Treatment of Anxiety

When considering work with young children, it is imperative to elicit the support and collaboration of their existing support network. A child’s support network involves their family and their school or community environment. Preventative and intervention strategies for anxiety can be addressed in schools with school staff partnering with families and community agencies to provide comprehensive awareness and services.

According to the National Assembly on School-Based Health Care, approximately 20% of youth need mental health intervention; some estimates range as high as 38% (www.nasbhc.org). Hoagwood and Johnson (2003) found that when children do receive mental health services, it is most likely to occur in public schools, not in the specialty
mental health sector. Doll and Cummings (2008), in the *National Association of School Psychologists Best Practices V*, states that “developmental research since the 1970s demonstrated that mental health and psychological wellness are not ancillary to school success but are integral to it,” and that “schools cannot be successful unless their students are developmentally, socially, and emotionally competent” (p. 1333). Thus, mental health issues, such as anxiety, are important for schools to address.

Anxiety most often stems from the interplay of environmental factors, the biological temperament or personality of the child, and the onset of a stressful event, so the collaboration of home, school, and community systems is especially pertinent to the treatment of anxiety (Foxman, 2004). Evidence suggests that best outcomes in controlling anxiety occur with Cognitive-Behavioral Therapy and family or team member participation (Christophersen & Mortweet, 2005; Foxman, 2004; Peacock & Collett, 2010). Cognitive-Behavioral Therapy is a ‘talk therapy’ that encourages children to try new ways of thinking and acting by reframing their negative thoughts into positive, empowering self-talk, which encourages children to respond to a stressful situation with more confidence. Management of anxiety is provided through guidance and teaching new coping skills, such as relaxation techniques or breathing exercises. With young children, Cognitive Behavioral Therapy can be incorporated within play therapy, as children naturally process experiences within play (Landreth, 2001). In some cases, therapy in conjunction with medication is most effective (Christophersen & Mortweet, 2005; Foxman, 2004).
Family School Partnering to support children’s mental health.

Research also demonstrates that the best outcomes occur when all of the ecological systems surrounding a child and family partner to address the anxiety, particularly when they foster connections with the surrounding community (Blaustein & Kinniburgh, 2010; Sheridan, Taylor, & Woods, 2008). Thus, with children in school for the majority of the day, it is a responsibility of all school staff to encourage two-way communication, mutual understanding, and shared problem-solving efforts with families and outside professionals (Lines, Miller, & Arthur-Stanley, 2010). The support team should include the participation of the school mental health team, family, teacher, and outside service providers who collaborate to provide further evaluation and potential intervention in order to increase academic or emotional competency.

Families also play a large role in supporting children academically and emotionally. There is extensive research demonstrating the importance and effectiveness of parent involvement in their child’s academic and emotional learning (Christenson, 2004; Epstein, 1995; Lines, Miller, & Arthur-Stanley, 2010; Spoth, Randall, & Shin, 2008). When families communicate with school staff, children are provided consistency with expectations and increased engagement in academic learning. Little research examines an anxiety treatment that involves parent involvement. There is also limited research on whether parent involvement enhances academic performance while decreasing anxiety symptoms. Future research requires investigation of an evidence-based anxiety treatment paired with a family school partnering model in order to address academic and emotional aspects of children.
One evidence-based family involvement or partnering model is Conjoint Behavioral Consultation (CBC; Sheridan & Kratochwill, 1992; Sheridan, 2013). Conjoint Behavioral Consultation involves the collaboration of the school psychologist, teachers, and parents to act simultaneously as consultees in order to develop and monitor treatment plans for issues affecting children (Sheridan & Kratochwill, 1992; Sheridan, 2013). The goals of CBC are to identify and address the needs of the child, and develop strong partnerships among all parties throughout the process (Clarke, Burt, Sheridan, Schnoes, & Ellis, 2005). There are four stages of CBC: problem identification, problem analysis, treatment implementation, and treatment evaluation (Sheridan et al., 1996; Sheridan, 2013). Conjoint Behavioral Consultation can be used with an array of concerns, from academic to social-emotional. It can also involve a mix of stakeholders, which can include any school staff, extended relatives, or community members who work closely with the child.

**Summary and Study Purpose**

Partnering with families, school personnel, and community resources is an important step to supporting the child and family, especially when children might suffer from debilitating anxiety concerns. Through the mutual understanding and consistency of intervention implementation among team members across settings, children can be optimally supported in coping with their anxiety. However, little research examines the impact of anxiety on academic performance for young children participating in school-based interventions enhanced by family components. In light of budget cuts to school mental health services and staff, it is imperative that these stakeholders remain in schools to help coordinate school-based mental health services and support students.
To address the gaps in the literature, this single-subject study addresses whether an evidenced-based child-focused intervention, now widely used in schools and clinics to treat childhood anxiety, combined with family and school consultation will decrease elevated anxiety levels and improve academic performance in an elementary-aged student. The objective is to support mental health development and academic performance with an elementary student through a collaborative effort of stakeholders in the student’s life. An intra-subject comparison with staggered baseline across situations intervention design was used (Robinson & Foster, 1979). A single-subject, or intra-subject more specifically, design is preferable to other designs because of the difficulty in finding a homogeneous group with this population (Gliner, Morgan, & Leech, 2009).

Baseline data was collected with repeated measures of anxiety and academic performance, and was compared to two intervention phases: first, a child-focused intervention and second, a family and school consultation. The study tested the theory that the Cognitive Behavioral intervention and consultation intervention will influence, positively, the anxiety levels and academic performance for an elementary-aged student.

**Research Questions**

1a. Will a young child with elevated levels of anxiety show a decrease in anxiety symptoms with a Cognitive Behavioral framework intervention program for children?

b. Will anxiety be reduced with the addition of a Conjoint Behavioral Consultation with the family and teacher?
2a. Will a young child with elevated levels of anxiety show an increase in math performance after participation in a Cognitive Behavioral framework intervention program for children?

b. Will math performance be increased with the addition of a Conjoint Behavioral Consultation with the family and teacher?

The hypotheses were that a child with elevated levels of anxiety will show a reduction in symptoms with the introduction of a Cognitive Behavioral framework intervention when compared to their baseline data. The child with heightened anxiety will show a further reduction in symptoms across the school and home settings with the implementation of Conjoint Behavioral Consultation when compared to baseline and the first intervention phase. Academic performance will begin to increase with the introduction of the Cognitive Behavioral intervention, and will continue to improve with the implementation of the Conjoint Behavioral Consultation.

**Definition of Key Terms**

The key terms to be used throughout this chapter are defined next.

**Academic Performance:** How well a child does in academic subject areas in school. For the present study, academic performance is measured by math abilities demonstrated on a curriculum-based measure. Early math skills are consistently predictive of a child’s long term academic success (Duncan, 2011).
**Anxiety:** Anxiety is defined here as “a state of apprehension or worry about a danger or threat that might occur” (Foxman, 2004, p. 9). When anxiety disrupts work, school, or sleep it can interfere with relationships and life, which can lead to health concerns (APA, 2013; Foxman, 2004).

**Cognitive-Behavioral Therapy (CBT):** A form of therapy, developed by Albert Ellis and Aaron Beck in the 1970s, based on the idea that our thoughts cause our feelings and behavior (Friedberg & McClure, 2002; Stallard, 2002). The goal of CBT is to change thinking and behavior patterns that create and reinforce anxiety (Foxman, 2004). Cognitive-Behavioral Therapy is considered the most effective approach for treating anxiety with approximately an 80% success rate (APA, 2013; Foxman, 2004). For the present study, the Coping Cat, which is based on CBT, is used.

**Conjoint-Behavioral Consultation (CBC):** Within the context of School Psychology, a partnership model of service delivery wherein parents or other primary caregivers, educators, and service providers work collaboratively and engage in problem solving to meet a child's developmental needs, address concerns, and achieve success by promoting the competencies of all parties (Sheridan, Kratochwill & Bergan, 1996). The consultation method has 4 phases with defined steps within each phase: 1) Pre-consultation phase; 2) Needs Identification phase; 3) Needs Analysis phase; and 4) Plan Evaluation phase.

**Curriculum-Based Measurement (CBM):** A criterion-referenced measure that is repeated over time to monitor the progress in the academic area for which the child is referred. A Mathematics curriculum-based measure is used for the present study.
Another form of CBM that can be used is a Goal Attainment Scale (GAS). A GAS is designed to allow an individual to provide a rating based on perceptions of a desired behavior; in the present study, the GAS will measure perceptions of anxiety (Coffee & Ray-Subramanian, 2009).
Chapter Two: Literature Review

This chapter further reviews the literature on anxiety and academic performance, and the interrelationships among these variables. Many studies measured other factors beyond anxiety and academic performance; however, a review of such topics is beyond the scope of this literature review. First, an introduction is made regarding how anxiety has been defined in the research and how it is measured in young children. Next, the impact of anxiety on academic performance is discussed. When an individual struggles with regulating their emotions and controlling their thoughts, it hinders access to the curriculum or academic content. To provide a clear understanding of academic performance, it is then specifically defined based on the current research. Early interventions used to decrease anxiety in young children are reviewed next. After this, the focus turns to the importance of parental consultation as part of intervention for treatment of anxiety. Studies are reviewed that employed a Conjoint Behavioral Consultation approach to improve other treatment outcomes. The success of this approach and its components are reviewed.

How is anxiety in young children defined in the research?

Anxiety is generally defined within the domains of cognitive, physiological, emotional, and behavioral functioning. Cognitively, anxiety negatively affects one’s thoughts and can lead to irrational expectations and fears (Arkin & Rucks, 2007). Preoccupation of one’s fears disrupts and divides attention from important tasks, which
leads to inefficiency (often seen in test or social anxiety). Physiologically, anxiety also increases cardiac reactivity as well as sending blood flow to the muscles, sweating, and trembling (Arkin & Rucks, 2007). Researchers also have identified two behavioral systems: the behavioral approach system (BAS) which recognizes events that lead to pleasurable emotions and the behavioral inhibition system (BIS) which is associated with events that are interpreted as unpleasurable (Arkin & Rucks, 2007). Further, anxiety is characterized in terms of its state or trait features. With state anxiety, one can experience unpleasant emotions based on negative self-talk while trait anxiety involves a stable, personality trait or biological predisposition, that tends to interpret anxiety as threatening (Arkin & Rucks, 2007).

Historically, the research has defined childhood anxiety through the criterion listed and described in the DSM. Researchers using the DSM as a guide have studied the prevalence of anxiety symptoms in young children and found that it is common for children to report subclinical symptoms of anxiety, which means that symptoms associated with an anxiety are present but full criteria is not met (Bell-Dolan, Last, & Strauss, 1990; Benjamin, Costello, & Warren, 1990; Kashani & Orvaschel, 1990). Bell-Dolan et al. (1990) studied the occurrence of anxiety symptoms in 62 children and adolescents with a semi-structured psychiatric interview. The researchers found that the most frequently endorsed anxiety symptoms were over concern about competence, excessive need for reassurance, fear of the dark or fear of harm to an attachment figure, and psychosomatic complaints (Bell-Dolan et al., 1990). Younger children were more likely to endorse symptoms of separation anxiety than older children. Bernstein,
Borchardt, and Perwien (1990) also found in their review of the literature that when children do meet criteria for childhood anxiety disorders, they typically include separation anxiety disorder, overanxious disorder, and specific phobias.

**Measures of anxiety in young children.**

Various assessments have been employed to measure the intensity and frequency of childhood anxiety. Methods used to measure anxiety in young children have remained fairly consistent over the last few decades. Important areas to emphasize in assessing childhood anxiety include the onset, development, and context of anxiety symptoms, as well as the frequency and intensity of symptoms (Bernstein et al., 1990; King & Ollendick, 1989). Information about the child’s developmental history, including medical, school, and social history, and family psychiatric history are also important information to gather and factors to consider. With this in mind, it is necessary to obtain information through various assessment modalities, including structured and unstructured interviews, clinician rating scales, self-report measures, and stakeholder (caregivers, teachers) report measures (Bernstein et al., 1990). Clinicians can also assess symptoms of anxiety with behavioral observation notes or rating scales. Oftentimes, clinicians are able to directly observe anxiety symptoms during assessment administration during which the child experiences anxiety related to performance or competence in cognitive, academic, or social-emotional tasks. These observations provide valuable in-vivo data about the child’s emotions and thoughts surrounding the task, as well as any coping skills (or lack thereof) that the child employs (McConaughy & Ritter, 2008).
Given that internalizing symptoms, such as anxiety, are subjective, it is also helpful to gain report measures from the child’s perspective. Self-report measures provide specific insight into the nature of and extent to which an individual child feels and understands their anxiety, which helps guide treatment. For very young children and for those with low emotional insight, it is especially helpful to also elicit the perspective of the parent. However, because parents, especially mothers, can overreport anxiety symptoms in their children (Frick, Silverthorn, & Evans, 1994) and because younger children may not be able to sufficiently report their symptoms, other sources of data can be collected from teachers. Teacher report rating scales and interviews can provide further detailed information about the child’s anxiety symptoms in another setting other than the home. Since children spend much of their weekday in school, a teacher can provide a wealth of knowledge about the child’s day-to-day functioning.

Children’s behavior can vary depending on the setting and perspectives from stakeholders can vary, so it is important to obtain multiple sources of information in order to assess the child’s functioning across settings (McConaughy & Ritter, 2008). All of these methods taken together can provide information regarding the form of anxiety, the most appropriate treatment method, and the child’s treatment trajectory.

**The Impact of Anxiety on Academic Performance**

Researchers have been curious about children’s anxiety and worries since the 1940s during which studies were conducted that simply asked children about their biggest worries and found school issues topping their list (Pintner & Lev, 1940). Although educators generally agree that anxiety can interfere with a child’s school functioning, few
research studies have addressed this issue. Fewer studies have addressed this issue in young children, as most research has focused on older children, adolescents, and young adults in college. These studies have been conducted to examine the relationship between levels and types of anxiety and perceived or actual levels of overall academic performance in young children.

Strauss, Frame, and Forehand (1987) identified 48 children among 325 second grade through fifth grade children attending elementary school. The study compared the 48 students on a norm referenced rating scale by forming two groups: 24 children who were rated by their teachers as anxious and 24 children who were rated by their teachers as not anxious. Teachers also provided perceptions of academic performance by rating each of the 48 children on a 5-point Likert scale. The scale ranged from excellent to poor, with lower scores representing excellence in academic performance. Findings indicate that teachers perceived a statistically significant deficit in academic performance among anxious children than in children without anxiety.

Additionally, Mychailyszyn, Mendez, and Kendall (2010) conducted a comparison study that examined school functioning in 160 children aged 7 to 14 who met the diagnostic criteria for at least one anxiety disorder and 67 similarly aged children who did not have a clinical diagnosis for anxiety. Measures for anxiety that were used include norm referenced rating scales that were completed by the children, their parents, and their teachers. Academic performance was measured on a 5-point Likert scale that ranged from far below grade level to far above grade level, with higher scores representing better teacher ratings. Overall, Mychailyszyn et al. (2010) found that children with a diagnosis
of anxiety performed lower academically as rated by teachers than children without anxiety disorders.

Many children experience undiagnosed anxiety and many have comorbid disorders. These studies help support the argument that social-emotional functioning can truly impact learning in the classroom. Test anxiety appears to dominate the anxiety research conducted within the school context. Though test anxiety is narrowly focused, it could be an early indicator for children who might possess a more pervasive anxiety disorder (Mychailyszyn et al., 2010). Beidel and Turner (1988) found that 60% of children who identified with test anxiety also met diagnostic criteria for a DSM-III anxiety disorder. Within the area of test anxiety, Turner, Beidel, Hughes, and Turner (1993) conducted a study of 168 third through sixth grade children in a primarily urban and lower socioeconomic community school. Ninety-five percent of the school enrollment was African American. The students completed three norm referenced rating scales for behavioral symptoms including anxiety, and teachers completed a norm referenced measure of social functioning. Finally, academic achievement level was measured using scores on the standardized California Test of Basic Skills (CTBS). Turner et al. (1993) determined that test anxiety among African American children led to significantly lower academic achievement than their non-anxious classmates.

Though several studies have demonstrated anxiety, particularly test anxiety, in children third through sixth grade, Miller, Barrett, Hampe, and Noble (1972) found that the anxiety initially develops at age six, can decrease during middle elementary school years, and then resurfaces with greater intensity at age 11. Muris and Meesters (2002)
conducted a cross-sectional study that examined the correlations of scores on a self-report norm referenced measure of anxiety and norm referenced teacher reports of school functioning for 13 teachers and 317 children aged 10 to 12 in The Netherlands. They found that high symptoms of anxiety were correlated with, or accompanied by, struggles in school functioning. This study supports the notion that older elementary school-aged children exhibit anxiety that affects school functioning, but if these children are identified earlier their symptoms could remit more quickly.

Summary.

These studies all point to the need for early school-based interventions to help students develop awareness of their emotions and build coping skills that decrease their anxiety. Identifying anxiety symptoms early and providing children with the tools to handle their anxiety can lead to greater self-efficacy and school success in the long term.

Academic Performance Defined in the Research

In order to better understand exactly how anxiety impacts academic performance, it is necessary to define academic performance and discuss how it is measured in the research. Report card grades are often used as a measure of academic performance; however, this system of measurement is due to the subjective and ratings are not valuable across different systems and schools (Topor, Keane, Shelton, & Calkins, 2010). Norm referenced rating scales are other measures that can assess a child’s academic work progress. On these rating scales, teachers rate their students according to their accuracy of academic work as well as other areas such as organization, concentration, and perfectionist qualities (Huberty, 2004).
According to the National Dissemination Center for Children with Disabilities (2013), the Department of Education defines academic achievement as a child’s performance in academic areas (e.g., reading or language arts, math, science, and history). Academic performance is typically measured through standardized achievement tests, teacher rating scales of academic performance, and grades on report cards. Standardized achievement tests are the most objective measure of academic content that children learn through direct instruction (Howell, Hosp, & Kurns, 2008; Sattler, 2001). These tests can be standardized according to nationwide, statewide, or local norms and can assess students’ curricular knowledge via longer tests administered over the course of several days or via short probes administered within a few minutes.

**Interventions Used to Reduce Anxiety in Young Children**

Most of the abovementioned research has focused on measuring affective factors and comparing them to outcome measures of academic performance; however, there is literature that has demonstrated the use of interventions and their impact on outcome measures of anxiety and academic performance. The most widely researched interventions used to treat anxiety involve Cognitive Behavioral Therapy (CBT). The goal of CBT is to change the thinking and behavior that create and reinforce the anxiety (Foxman, 2004).

**Cognitive-Behavioral Therapy.**

Hirshfeld-Becker, Masek, Henin (2010) sought to study anxiety in young children, as this population is generally underrepresented in studies of CBT and childhood anxiety. The researchers examined a manualized CBT intervention loosely
based on the Coping Cat (Kendall et al., 1992) and its effectiveness on treating anxiety in 57 children aged 4-7 years. Twenty-nine children were in the intervention group and 28 children were in the control group. Results indicate that 69% of children in the intervention group were rated as much improved on the primary outcome measure as compared to the control group (Hirshfeld, Masek, Henin (2010). However, researchers caution that further studies must examine CBT interventions with this population age in order to confirm their findings.

As noted, Cognitive Behavioral Therapy interventions have existed for adults but, until recently, have been largely nonexistent for children. Even more recently, researchers have developed specific CBT interventions for children. One such research-based program is the Coping Cat curriculum (Kendall, 1994). The Coping Cat involves a scripted CBT based curricula that is implemented in a group format within a clinic or school setting (King & Ollendick, 1989). The program incorporates psychoeducation with practice role-plays and in vivo exposure tasks. It begins with psychoeducation about emotions and building awareness of escalating feelings in one’s body, followed by the recognition of thoughts and the role they play in one’s attitudes and actions. With practice of role-plays, in vivo exposure tasks, and homework, children eventually internalize the skills.

Coping Cat.

Creators of the Coping Cat curriculum have conducted three randomized clinical trials using a multiple baseline design to study the effects of CBT interventions for children with anxiety disorders and associated symptoms. Each study intervention takes
place over the course of an 18-week period on average. The first study examined the
efficacy of the Coping Cat for 47 children with anxiety disorders, aged 9 to 13, who were
recruited from various community resources (Kendall, 1994). Results indicated that
children who received the Coping Cat treatment showed a significant decrease in anxiety
symptoms from pre- to post-treatment results on norm referenced self-report, parent
report, and behavioral observation measures when compared to the wait-list control group
(Kendall, 1994). Sixty-four percent of treated children no longer met criteria for an
anxiety disorder. These results persisted on long-term follow-up ranging from 2 to 5
years on self-report and parent report measures.

The second randomized clinical trial was similar to the first; Kendall et al. (1997)
examined 94 children aged 9 to 13 years old and used norm referenced self-report, parent
report, and behavioral observation measures of anxiety. In this study, 50% of children no
longer met criteria for an anxiety disorder following completion of the Coping Cat
treatment. The remainder of the children showed significant reductions in symptoms. A
follow-up study after seven years found that 90% of the children treated in the 1997 study
showed long-term maintenance of treatment gains (Kendall, Safford, Flannery-Schroeder,

Finally, a third randomized clinical study compared the individual treatment with
the Coping Cat to two family based adaptations – a family Coping Cat treatment and a
family-based education/support/attention active control, both of which included exposure
tasks with the child and parent present (Kendall, Hudson, Gosch, Flannery-Schroeder, &
Suveg, 2008). The researchers recruited 161 children, aged 7 to 14, who had anxiety
disorders. Self-report, parent report, and teacher report norm referenced rating scales were used to assess anxiety symptoms. Results indicated that, although each condition resulted in treatment gains, the individual Coping Cat and family Coping Cat led to significantly decreased anxiety symptoms in contrast to the educational control group. Teacher reports further demonstrated greater effectiveness of individual Coping Cat treatment (when compared to the family-based treatments). These three studies did show promising outcomes associated with the Coping Cat program in reducing anxiety in young children. However, all of these studies focused solely on anxiety symptoms and did not evaluate other areas of functioning such as academic performance.

A case study conducted by Michael, Payne, and Albright (2012) examined the Coping Cat with an individual 6-year-old client with Generalized Anxiety Disorder (GAD) within a clinic setting. The researchers adapted the Coping Cat worksheets to accommodate the boy’s reading level as a beginning reader. The Behavior Assessment System for Children, 2nd Edition was administered to the boy’s parents at pre- and post-intervention as a measure of anxiety. Treatment consisted of 10 sessions over a 4-month period. Results indicated that the Coping Cat intervention led to a reduction of anxiety symptoms following treatment, and at 3-year and 7-year follow-up. This study also focused solely on reduction of anxiety symptoms.

A recent study conducted by Crawley, Kendall, Benjamin, Brodman, Beidas, Podell, and Mauro (2013) tested the feasibility and preliminary outcomes for a brief cognitive-behavioral therapy (BCBT) adapted from the 16-week Coping Cat program used to treat childhood anxiety. The BCBT consisted of 8 therapy sessions, which
included six 1-hour sessions and two 1.5 hour sessions for a total treatment time of 9 hours (Crawley et al., 2013). The study had two phases: first, the researchers developed a therapist manual and a child client workbook for the BCBT; second, the researchers implemented the treatment in order to test the feasibility of a brief therapy and the treatment outcomes. The researchers recruited 26 children, aged 6 to 13, who had diagnoses of Separation Anxiety Disorder, Generalized Anxiety Disorder, or Social Phobia. Self-report, parent report, and therapist report norm referenced rating scales were used to assess anxiety symptoms as well as satisfaction with the BCBT. Results indicated that the BCBT was rated “mostly satisfied” or “very satisfied” by participants, deemed feasible by therapists, and yielded a significant reduction in anxiety from baseline to posttreatment as well as to 2-month follow-up and 1-year follow-up. Although these results are promising, replication studies are needed. Further, this study solely focused on anxiety and did not measure effects on academic performance.

Several studies also have been conducted to compare an individual versus group Coping Cat intervention. Flannery-Schroeder and Kendall (2000) followed up their initial studies with a randomized clinical trial with 37 8 to 14-year old children with anxiety who were randomly assigned to an individual Coping Cat treatment, a group format Coping Cat treatment, or a waitlist control. Norm referenced self-report, parent report, and teacher report measures, as well as diagnostic status were used to evaluate anxiety symptoms and treatment outcomes. Results indicated a significant decrease of self-reported symptoms after individual Coping Cat treatment. Other dependent measures and overall changes in diagnostic status demonstrated efficacy for both the individual and
group formats of the Coping Cat. However, this study focused solely on anxiety symptoms and did not assess other areas of functioning such as academic performance.

Muris, Mayer, Bartelds, Tierney, and Bogie (2001) conducted an intervention study in The Netherlands with 36 children (aged 8 to 13) who had diagnoses of generalized anxiety disorder, separation anxiety disorder, and social phobia. Children were randomly assigned to either an individual or group adaptation of the Coping Cat curriculum, the Coping Koala. This intervention consisted of four sessions that introduced anxiety management followed by eight sessions that allowed children to practice the coping skills in real situations. Children received two sessions a week, which totaled 6-weeks of participation in the intervention. Measures of anxiety based on norm referenced rating scales at baseline (during initial screening), pre-treatment (1 week before CBT intervention), and post-treatment (1 week after CBT intervention) revealed that anxiety symptoms decreased from pre-treatment to post-treatment, and that individual versus group treatment were equally effective. This study provides evidence of effectiveness for an adaptation of the Coping Cat program that can be used in schools to treat anxiety. However, this study also focused solely on anxiety symptoms and did not measure other areas of functioning.

Another study that examined the Coping Cat intervention in a group format involved 22 children (aged 8 to 14 years) with comorbid anxiety and Autism Spectrum Disorder (ASD). Keehn, Lincoln, Brown, and Chavira (2012) randomly assigned children to either a Coping Cat program group or a waitlist control group. Anxiety was measured based on norm referenced self-report and parent report rating scales. Those who received
the Coping Cat group intervention showed significant decreases in anxiety symptoms than the waitlist group. The researchers further explain the adaptations made to best accommodate the needs of the children with ASD. Modifications to the Coping Cat program included the following additions:

“bolstering the parent-training component, lengthening session duration, utilizing additional visual supports, adjusting language to be more concrete, incorporating children’s interests into treatment, providing sensory and motor accommodations, emphasizing behavioral over cognitive aspects of the treatment, and tailoring reinforcement to meet individual needs” (Keehn, Lincoln, Brown, & Chavira, 2012, p. 65).

In summary, prior studies examining the Coping Cat intervention show encouraging differences from pre- to post-intervention, with anxiety decreasing after completion of the intervention. Unfortunately, academic performance has not been assessed in most cases. Additionally, most of the prior research focuses on direct work with children, and few studies have included any collaboration with families and school personnel. Thus, further research is needed that examines the impact of this program on academic performance and to determine if even greater gains can be obtained if the intervention includes collaboration with families and educators.

Family-School Enhancements of School-Based Interventions

Christenson (2004) has argued for the essential opportunities to apply Bronfenbrenner’s systems-ecological principals in the practice of school psychology, and remain positive and persistent when working with families. Certainly, working directly with a child leads to some level of positive growth simply due to the positive relationship that is formed between clinician and child (Landreth, 2001); however, a child’s parents are his or her first teachers and models. Without parent support and collaboration, there is
less reinforcement or carryover of skill acquisition. Furthermore, parents know their child best and can offer positive ways to reinforce intervention based on their child’s interests and strengths. When a child has academic difficulties or mental concerns, such as anxiety, greater support strategies are needed across settings. For these reasons, it is imperative that families be included as equal partners in supporting their child’s overall functioning across settings.

In recent years, family-school partnering has gained strength in recognition due to the model’s positive effects in improving academic performance and behavioral or social-emotional development (Epstein, 2002). Federal legislation now mandates the requirement of family involvement in their child’s educational planning. No Child Left Behind (NCLB; 2004) specifies that parents collaborate as full partners through participation in two-way communication regarding their child’s academic learning. The Reauthorization of the Individuals with Disabilities Education Act (2004) that focuses on services for students with 13 designated special education categories also requires that parents be involved in their child’s education.

Research indicates that when parents are involved in education and mental health treatment while collaborating with teachers, children show greater improvements in school success. Keith, Keith, Troutman, Bickley, Trivette, and Singh (1993) examined data from a nationally representative sample of 21,814 eight-graders and their parents participating in the National Education Longitudinal Study. Data were analyzed using latent variable structural equations analyses in order to examine the effects of parent involvement on academic achievement (Keith et al., 1993). Questionnaires were used to
measure demographic information, parent involvement details, and homework time while grades and scores on standardized tests were used to measure achievement. The researchers found that children who had highly involved parents had higher achievement across academic areas, which was moderated by increased homework completion (Keith et al., 1993). Furthermore, the relationship between parent involvement and academic achievement was found to be independent from family background effects. This indicates that families across diverse backgrounds can positively influence their child’s academic and social-emotional success (Colton & Sheridan, 1998).

Carlson and Christenson (2005) reviewed over 100 evidenced-based parent and family interventions implemented in or coordinated with schools. The interventions were classified within the following six domains: parent education, parent involvement, parent consultation, school-family collaboration/partnership, family systems therapy and parent training, and early childhood. The review showed that among the most effective program components were “home-school collaborative interventions that emphasized dialogue about educational programming and two-way communication/monitoring of children’s school performance,” which led to enhanced outcomes (Carlson & Christenson, 2005, p. 526).

**Conjoint Behavioral Consultation (CBC).**

A collaborative home-school problem-solving model that is believed to bring the greatest benefits is Conjoint Behavioral Consultation (Sheridan & Kratochwill, 1992). Conjoint Behavioral Consultation involves the collaboration of the school psychologist, teachers, and parents to act simultaneously as consultees in order to develop and monitor
Treatment plans for issues affecting children (Sheridan & Kratochwill, 1992). The goals of CBC are to identify and address the needs of the child, and develop strong partnerships among all parties throughout the process (Clarke, Burt, Sheridan, Schnoes, & Ellis, 2005). There are four stages of CBC: problem identification, problem analysis, treatment implementation, and treatment evaluation (Sheridan et al., 1996). Conjoint Behavioral Consultation can be used with an array of concerns, from academic to social-emotional. It can also involve a mix of stakeholders, which can include any school staff, extended relatives, or community members who work closely with the child.

Freer and Watson (1999) conducted a study based on a convenience sample of 111 parents and 61 teachers from one local elementary school and one local high school. Participants were asked for their preference of three different forms of consultation: teacher and school psychologist consultation; parent and school psychologist consultation; and teacher, parent, and school psychologist consultation (or CBC). Demographic information and preferences of consultation models were measured via questionnaires and rating scales. Results indicate that CBC, which involves all of the key stakeholders, was the preferred method for supporting academic, behavioral, and social-emotional concerns (Freer & Watson, 1999). These results complement Sheridan and Steck’s (1995) study that demonstrated school psychologists’ preference in CBC as opposed to teacher-only consultation, parent-only consultation, or direct services. These studies support the utility and user-friendly approach of CBC in monitoring a child’s progress across social-emotional, behavioral, and academic functioning.
Colton and Sheridan (1998) have further demonstrated the utility of CBC through their study of a social skills training group for boys with Attention Deficit/Hyperactivity Disorder enhanced by collaboration with parents and teachers through CBC. The study included three elementary school boys (aged 8 to 9 years), and their mothers and teachers. A multiple probe design was used. The researchers used norm referenced rating scales to measure factors associated with attention problems and social problems. Although the researchers randomly selected the participants from a pool of children with AD/HD and each received the same behavioral intervention, individualization occurred “as parents and teachers jointly identified primary social problems and co-constructed specific intervention tactics” (p. 6). Data was collected at baseline, treatment (lasting for 15 consecutive school days), and follow-up (1-week follow-up and 3-week follow-up). Though this study had moderate improvements in social skills following the social skills group and strong treatment integrity (CBC integrity 98% and social skills intervention integrity 100%), mothers and teachers reported that they liked the CBC model, would participate again, and would recommend this consultation model to others. A future research suggestion includes CBC paired with other interventions, such as with an anxiety intervention like the Coping Cat. Additional measures could be added to include standardized assessments of academic performance.

**Other parent education models.**

Numerous researchers have studied other forms of parent involvement that are more educative in nature. Spoth, Randall, and Shin (2008) examined the development of family skills training, and demonstrated the importance of ecological principals of parent
skill development, child skill development, school-wide Positive Behavioral Intervention Supports (PBIS), and establishing expectations for academic performance and pro-social behavior. Barrett, Dadds, and Rapee (1996) examined anxiety pre- and post-treatment and compared three treatment groups; CBT-only group, CBT and family conditions group, and control waitlist group. The family conditions in this study involved training parents to: praise courageous behavior and extinguish anxiety through verbal praise, privileges, and tangible rewards; deal with their anxiety responses and model problem-solving; and communicate effectively to problem-solve (Barrett et al., 1996; Barrett, 1998; Barrett, 2000). Both the CBT-only and CBT with family conditions showed significant effects with a decrease of anxiety symptoms at follow-up. One study endorsed the book *Keys to Parenting Your Anxious Child* as a method to engage parents in the treatment of their child’s anxiety. According to Manassis (2004), the book describes simple strategies that parents can employ at home to immoderate moderate levels of anxiety. However, when children display severe levels of anxiety, a CBT referral is recommended (Manassis, 2004).

Though family collaboration is widely believed to positively influence a child’s social-emotional and academic success, no one has specifically studied the CBC model with measures of anxiety and academic performance to determine if initial baseline levels change after treatment. Given the utility of CBC and the Coping Cat curriculum for school psychologists, research is also needed to examine if the Coping Cat curriculum can be enhanced when accompanied by Conjoint Family Partnering Consultation.
Summary and Conclusions

Current childhood anxiety research indicates that researchers have elicited teacher perspectives in the general areas of school functioning based on rating scales or clinical interviews; however, no one has conducted a study that examines the effect of childhood anxiety on standardized measures of specific academic content. Parents or caregivers have also not been interviewed about their child’s school performance in these studies, yet families can provide valuable insight into a child’s academic strengths and struggles. Furthermore, research demonstrates anxiety in older elementary school children, adolescents, and young adults but fails to examine early elementary school-aged children. Early intervention has been shown to best support outcomes for children across a variety of skill and ability domains.

Cognitive-Behavioral Therapy has been empirically supported for the treatment of anxiety. However, there has yet to be a study that has paired an individual CBT intervention, such as the Coping Cat intervention, with Conjoint Behavioral Consultation for treatment of anxious early elementary school children. In light of this, the purpose of this study is to determine whether anxiety affects a child’s performance on a standardized measure of academic performance, and whether concurrent treatment in the Coping Cat and participation in Conjoint Behavioral Consultation will decrease anxiety symptoms and increase academic performance.

To date, there have not been studies that utilize the Coping Cat curriculum and Conjoint Behavioral Consultation which examine anxiety and academic performance as outcome measures across the clinic, home, and school settings. As such, it is imperative
that this area be examined. In order to do this, the researcher will use a single-subject
design. A single-subject design allows the participants to act as their own control, as a
baseline is collected, repeated measures are administered throughout the treatment
intervention, and post-test measures are collected following the treatment intervention.
This is preferred over a group treatment intervention because it is difficult to find a
homogenous population of children. Due to varying policies across school districts and
schools, collecting data across multiple child participants has additional challenges;
therefore, this study follows a multiple baseline across the clinic, home, and school
settings with one child participant.

The following chapter discusses the methods used for this study, which seeks to
fill the gap in the literature in regards to highlighting the practical utility of the Coping
Cat program for school personnel.
Chapter Three: Method

The method section describes the overall study design and the participant recruitment for the study. Explanation of the overall data collection process, the instruments and validity of the data collection measures also are provided, as well as the interventions used. Finally, the data analysis procedures used to address the proposed research questions concludes the chapter.

Design

The study employed an intra-subject staggered baseline across settings for one subject design, which involved repeated collection and analysis of multiple data points (Robinson & Foster, 1979). This traditional single-subjects design employed a baseline, a treatment phase, and an additional treatment phase (A-B\textsubscript{1}-B\textsubscript{2}). Changes from baseline were computed across each phase (Gliner, Morgan, & Leech, 2009; Robinson & Foster, 1979). The following Figure 1 provides a visual example of the multiple baseline design across settings.
A multiple baseline design is advantageous because it is better at controlling threats to internal validity than a withdrawal, or A-B-A design (Zhan & Ottenbacher, 2001). The second phase, or intervention phase, prevents carry-over effects that are common in A-B-A designs (Zhan & Ottenbacher, 2001). As interventions cannot typically be removed or undone within clinical setting treatments due to ethical reasons and such carry-over effects, the multiple baseline design is ideal. Multiple baseline designs are widely used in clinical settings in order to examine complex interventions (Zhan & Ottenbacher, 2001). Clinicians typically provide strategies and guidance to client problems in a sequential order and evaluate problems across settings (for example,
a child’s home, school, and extracurricular activities), which make the multiple baseline design a natural fit for mental health practitioners.

In a multiple baseline across settings design, the intervention is applied to the first setting when a stable baseline has been maintained. This first intervention then serves as the baseline for the second intervention. For the present study, baseline was collected until stability was demonstrated, an intervention was conducted that measured home behaviors related to anxiety and math performance, and a second intervention was conducted that measured anxiety and math performance at school. As the first intervention acts as the baseline for the second intervention, researchers ideally wait for stability in the measures before beginning a second intervention; however, this is not easily achieved (Engel & Schutt, 2007; Zhan & Ottenbacher, 2001). For the current study, Intervention Phase 1 used a brief, manualized Coping Cat intervention. Once the intervention was complete, the Conjoint Behavioral Consultation Intervention Phase 2 began in order to help maintain and further substantiate the growth in reducing anxiety and increasing math performance across settings.

**Participants**

A convenience sample from a clinic setting was used to recruit a child who was aged 7-10 and who was diagnosed with high anxiety. The child participant completed a psychological or neuropsychological evaluation at the clinic where the researcher works, which involved a structured method to assess a child. The process included direct assessment with the child (cognitive, language, academic, sustained and shifting attention, and social-emotional rating scales and projective tests); observational data of
the child; parent and teacher rating scales; and parent and teacher interviews. The participant had received a diagnosis of Generalized Anxiety Disorder or Other Specified Anxiety Disorder, With Insufficient Symptoms.

**Inclusion criteria.**

For the current study, a participant was selected based on the following criteria: Diagnostic Status, Age, IQ, and Commitment. The criteria here are reviewed earlier in the literature review. Table 1, on page 43, summarizes the criteria.

**Diagnostic status.** The general definition of anxiety includes some common features of the different anxiety diagnoses detailed in the DSM-V but many are specific subsets of anxiety that do not meet the full criteria for generalized anxiety. The intervention selected for the present study supports treatment for children with Generalized Anxiety Disorder (GAD), Social Phobia (SP), and/or Separation Anxiety Disorder (SAD; Beidas, Benjamin, Puleo, Edmunds, & Kendall, 2010). Further, as GAD is more widely diagnosed in the clinic setting, a participant with a diagnosis of GAD was used.

**Age.** The participant was chosen based on being within the age range for which the Coping Cat intervention was developed, which was for children age 7-13. The literature indicates that children develop emerging anxiety symptoms at age 6 (NIMH, 2013) and clinical trials have included participants from 7-14 (Keehn, Lincoln, Brown, & Chavira, 2012; Kendall, Hudson, Gosch, Flannery-Schroeder, & Suveg, 2008; Muris, Mayer, Bartleds, Tierney, & Bogie, 2001). Thus, age range 7-10 was used for recruitment for the current study and child 8-years-old was selected.
**IQ score.** According to the Cognitive Behavioral intervention literature, it is recommended that the child have an IQ of at least 80 so that they can sufficiently understand the cognitive section of the treatment intervention (Beidas, Benjamin, Puleo, Edmunds, & Kendall, 2010). Suveg, Furr, and Kendall (2006) demonstrated flexible treatment that was applied in a behavioral modality with a child whose IQ was below 80. The Coping Cat intervention was developed for children ages 7-13; however, as age is a proxy for developmental level, it is important to evaluate the child’s developmental level prior to beginning the intervention (Beidas, Benjamin, Puleo, Edmunds, & Kendall, 2010). For the purposes of recruitment for the current study, an IQ score cut off of ≥ 80 was used. The child selected earned a General Ability Index score of 126 and was enrolled in a Gifted and Talented program at her school.

**Commitment.** Time commitment and the willingness to return for intervention sessions were additional inclusion criteria, as the study required a weekly session, ranging from one hour to an hour and a half, from a family and teacher. Other similar studies have conducted their Cognitive-Behavioral interventions within a similar time frame (Kendall, 1994: time frame was 18 sessions; Kendall, Hudson, Gosch, Flannery-Schroeder, & Suveg, 2008: time frame was 18 sessions; Muris, Mayer, Bartleds, Tierney, & Bogie, 2001: time frame was 12 sessions; and Michael, Payne, & Albright, 2012: time frame was 10 sessions). The present study involved a minimum of 12 total after-school sessions for baseline data and treatment.
Table 1 Summary of Inclusion and Exclusion Criteria

<table>
<thead>
<tr>
<th>Inclusion Criteria</th>
<th>Exclusion Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age: 8 years old</td>
<td>Families unable to make time commitment</td>
</tr>
<tr>
<td>Diagnosis: Generalized Anxiety Disorder</td>
<td>English Language Learners</td>
</tr>
<tr>
<td>NO</td>
<td></td>
</tr>
<tr>
<td>IQ ≥ 80</td>
<td>Autism Spectrum Disorder; Specific Learning Disorder With Impairments in Mathematics or Reading</td>
</tr>
<tr>
<td>FSIQ=123; GAI=126</td>
<td>NO</td>
</tr>
<tr>
<td>VCI=114; PRI=129; WMI=116; PSI=106</td>
<td></td>
</tr>
<tr>
<td>WJ Broad Reading=126; Broad Written Lang=118; Broad Math=103; Math Calc Skills=88 (Calc=90; Math Fluency=85), App Probs=115; Academic Fluency=129</td>
<td>Intellectual Disability</td>
</tr>
<tr>
<td>NO</td>
<td></td>
</tr>
<tr>
<td>Commitment to attend sessions with the child in clinic and 3 sessions with the child’s teacher</td>
<td>Traumatic Brain Injury</td>
</tr>
<tr>
<td>A compliant teacher</td>
<td>Recent trauma or major illness</td>
</tr>
<tr>
<td>NO</td>
<td></td>
</tr>
<tr>
<td>Average Adaptive Scales on BASC-2 Anxiety Scales T-scores&gt;60</td>
<td></td>
</tr>
<tr>
<td>BASC-2 (Mom-T=80; Teacher-T=76; Self-T=65)</td>
<td></td>
</tr>
<tr>
<td>RCMAS-2 Total T=67</td>
<td></td>
</tr>
</tbody>
</table>

**Sampling procedures.**

Before beginning participant recruitment, approval was gained by the University of Denver Institutional Review Board. Once approved, a child at the clinic was identified based on the aforementioned inclusion criteria. The child participant was an 8-year-old third grade female attending the Gifted and Talented programming at her public elementary school. Informed consent was obtained from the legal guardian and assent was obtained from the child participant, in addition to the mandatory disclosure statement used at the clinic, indicating their knowledge and understanding of participation in the
study. Because it is within the typical treatment practices to collaborate with client teachers and other support services, the child’s teacher was invited to the Conjoint Behavioral Consultation meeting. Informed consent to participate was obtained from the teacher as well. A small incentive (i.e., a Starbucks gift card) was offered to the teacher for completion of study components.

**Instruments**

Several instruments were used to measure the dependent variables of anxiety and academic performance. As part of the clinic evaluation process, children were tested in order to learn more about their cognitive, academic, and processing abilities, as well as emotional distress. Specific measures used to determine a diagnosis of anxiety as well as to determine specific concerns in academic areas. These outcome measures are reviewed further below.

**Diagnostic instruments for anxiety.**

Two norm-referenced measures were used to guide possible diagnosis for anxiety. The Behavior Assessment System for Children, Second Edition and Revised Children’s Manifest Anxiety Scale, Second Edition are described. Scores from both measures are described with an explanation of the cut off score used to determine eligibility for a diagnosis of anxiety. Psychometric properties are then described related to reliability and validity.

**Behavior Assessment System for Children, Second Edition (BASC-2).** The Behavior Assessment System for Children, Second Edition (Reynolds & Kamphaus, 2004) is a multidimensional system of questionnaires that measures a child’s social and
emotional functioning. The assessment forms may be administered by a trained professional to individuals from 6 years of age through 21 years of age for the BASC-2 Parent Rating Form. Each rater provides responses based on the perception of Never, Sometimes, Often, or Almost Always observing the provided behaviors in the child. The BASC-2 Parent Rating Form provides results related to Externalizing Problems, Internalizing Problems, and Adaptive Skills, while the BASC-2 Teacher Rating Form provides results for these same scales including the School Problems Composite. The Internalizing Problems Composite, specifically, includes results for the Anxiety Scale.

One strength of the BASC-2 is that it includes separate scales for Anxiety and Depression, while other questionnaires combine the two internalizing behaviors. Gladman and Lancaster (2003) suggest that since depression is thought to be more prevalent in children, many other questionnaires will calculate a high internalizing disorder scale but it is not clear as to whether the child demonstrates high anxiety or depression. Furthermore, the BASC-2 provides validity checks based on the rater’s item responses. The validity checks provide information that allows the examiner to know whether the rater provided excessively negative responses, extremely positive responses, or patterned or inconsistent responses (Gladman & Lancaster, 2003). Raw scores are converted to T-scores. T-scores that range from 60-69 are considered elevated or in the At-Risk range, while scores of 70 and above denote Clinically Significant symptoms. Each descriptive category is useful for diagnosis of an anxiety disorder; therefore, T-scores of 60 or higher were used as cut off scores for the current study. Rating scales were obtained from the parent(s), teacher, and the child participant.
Across the BASC-2 Parent Rating Form, BASC-2 Teacher Rating Form, and BASC-2 Self Report of Personality, internal consistency coefficients are high (0.80s to 0.90s). Test-retest reliability across rating forms is lower. Validity measures include scale divergent and convergent inter-correlations, covariance structure analysis and principal axis analysis, and concurrent validity. Additionally, the BASC-2 has correlated high with the Child Behavior Checklist and Teacher Report Form (Gladman & Lancaster, 2003).

**Revised Children’s Manifest Anxiety Scale, Second Edition (RCMAS-2).** The Revised Children’s Manifest Anxiety Scale, Second Edition (Reynolds & Richmond, 2008) is designed to measure the severity and type of anxiety in children and adolescents ages 6-19 years. The RCMAS-2 also offers screening and symptoms monitoring throughout a child’s educational experience. A child’s perceptions of school avoidance, academic stress, test anxiety, peer or family conflicts, and drug problems are measured on this questionnaire. The RCMAS-2 is a self-report assessment that includes items written at a second grade reading level. For younger children or children with reading or attention problems, an audio CD is available. The full form includes 49 items that require a yes or no answer, and completion typically takes 10 to 15 minutes. The RCMAS-2 provides a score for the Total Anxiety (TOT), which is comprised of the sum of the following subscales: Physiological Anxiety (PHY), Worry (WO), and Social Anxiety (SOC). The second edition also provides results for the Inconsistent Responding Index (INC) and for Defensiveness (DEF). These scales are not correlated with specific anxiety disorders. Similar to the BASC-2, scores for the RCMAS-2 are expressed as $T$-scores. $T$-scores that range from 60-69 are considered elevated or in the *At-Risk* range, while scores
of 70 and above denote Clinically Significant symptoms. Each descriptive category is useful for diagnosis of an anxiety disorder; therefore, $T$-scores of 60 or higher were used as cut off scores for the current study.

Coefficient alpha’s are as follows: 0.92 for Total Anxiety, 0.86 for Worry, 0.75 for Physiological Anxiety, 0.80 for Social Anxiety, and 0.79 for Defensiveness. Test retest-reliability estimate for the Total Anxiety Scale is 0.76. Content and construct validity has also been established for the RCMAS-2 with the State-Trait Anxiety Inventory for Children, the Conner’s Rating Scale, the Children’s Depression Inventory, and the Children’s Measure of Obsessive-Compulsive Symptoms (Reynolds & Livingston, 2008; Reynolds & Richmond, 2008).

**Academic performance instruments.**

Evidence-based assessments are used to determine strengths and weaknesses within academic content areas. The Woodcock Johnson Test of Achievement, Third Edition, Normative Update was used in this study to assess overall academic ability. Scores are described with an explanation of the cut off score used to determine eligibility for this intervention. Psychometric properties are described related to reliability and validity.

**Woodcock Johnson Tests of Achievement, Third Edition, Normative Update.**

The Woodcock Johnson Tests of Achievement, Third Edition, Normative Update (WJ-III, ACH, NU) is a standardized assessment developed to assesses academic areas within the domains of Mathematics, Reading, and Written Expression. It can be administered to individuals ages 2-90+. Scores are reported as Standard Scores, which
have a mean of 100 and a standard deviation of 15. In order to determine eligibility based on weakness of math skills, a discrepancy analysis was used; this involved a comparison of the child’s scores between the Mathematics, Reading, and Written Expression cluster. A discrepancy of 1 ½ standard deviations or more between the Mathematics cluster and the other clusters was used as a basis for intervention. Age norms and grade norms from K.0 to University Graduate Students are available. To be compatible with school districts standards of measurement and with curriculum-based measure norms, grade norms were used in the present study.

Reliability and validity have been measured in the WJ-III, ACH, NU. Of the 22 tests on the WJ-III, ACH, NU, twenty have test reliability of 0.80 or higher and nine have median test reliability of 0.90 or higher (Schrank, McGrew, & Woodcock, 2001). Construct validity was developed using the g+ nine broad-factor model derived from Cattell-Horn-Carroll theory. The Brief Intellectual Ability score had correlations ranging from 0.60 to 0.70 with the Wechsler tests (Schrank, McGrew, & Woodcock, 2001). The typical range of correlations for achievement clusters that do not share common tests is 0.50 to 0.70 (Schrank, McGrew, & Woodcock, 2001).

**Goal Attainment Scale for Anxiety**

A Goal Attainment Scale (GAS) is a criterion-referenced instrument that guides individualized goal setting and evaluates outcomes for an individual, a group, or a larger system (Coffee & Ray-Subramanian, 2009; Sheridan et al., 2001). A GAS offers greater sensitivity and specificity of behaviors that a researcher seeks to measure than
standardized behavioral rating scales offer (Coffee & Ray-Subramanian, 2009). Goal attainment scores are reported as $T$-scores and signify a child’s overall progress toward attaining the predetermined goal. Psychometric properties are mixed in the reviews of GASs. Studies that have used a 5-point scale have reported interrater reliability indices between $r = .87$ (Kaplan & Smith, 1977) and $r = .93$ (Cardillo & Smith, 1994), while Cytrynbaum et al. (1979) found interrater reliabilities between $r = .51$ and $r = .95$. However, Kiresuk and Sherman (1968) reported intraclass correlation coefficients between ICC = .59 to ICC = .65 (Coffee & Ray-Subramanian, 2009). Donnelly and Carswell (2002) have reported “low to moderate” concurrent validity (p. 88). One reason why GASs have mixed reviews is due to the vagueness, overlapping of, or gaps between the levels. Coffee and Ray-Subramanian (2009) note that one way to avoid to vague descriptions for each rating on the scale is to use SMART goals that are specific, measurable, attainable, realistic, and timely.

A Goal Attainment Scale was developed and used to assess parents’ and children’s perceptions of attainment of goals to decrease anxiety (see Appendix B for GAS for Anxiety used in the current study). For the current study, the researcher and the child’s parent discussed specific and measurable indicators for each rating in order to prevent confusion and vagueness. Following each weekly session, the parent and child participant reported the degree to which he or she believed decreasing anxiety goals were met using a scale of -2 (anxiety became significantly worse) to +2 (goal completely met) (Sheridan et al., 2001). Therefore, the GAS further represents an average frequency of anxiety symptoms (or lack of) on a weekly basis (Sheridan & Krotochwill, 2007).
**Curriculum-Based Measure**

Jim Wright’s Intervention Central was the source for the Curriculum-Based Measure (see Appendix C for Sample CBM Math Probe Examiner Worksheet and Appendix D for Sample CBM Math Probe Student Worksheet). A mixed-skill CBM math computation probe was collaboratively selected based on scores on the Math Fluency test of the WJ-III, ACH, NU and parent’s report of their child’s academic performance in math. The mixed-skill math computation problems were randomly generated each week to include double-digit addition and subtraction, with and without regrouping.

Due to enrollment in Gifted and Talented programming, the child participant’s performance was compared to herself over time as she acted as a control. In single-subject designs, the participant often acts as their own control as the repeated baseline measurements establish a pattern of scores that will hopefully be changed by intervention (Engel & Schutt, 2007). Therefore, the intervention phases are compared to the baseline performance in order to determine progress. Through this method, the researcher is able to discount threats to internal validity of the design (Engel & Schutt, 2007). A CBM was administered at the end of each intervention session as a repeated measure to monitor progress of math performance through the length of the study. To ensure that positive outcomes were not largely due to practice effects on the CBM, a new math worksheet was generated each week with new math problems (Shinn & Shinn, 2010). To also ensure the reliability and interchangeability of the math probes, however, the double-digit addition and subtraction with and without regrouping was generated each week.
Interventions

Based on the reviewed literature, the present study utilized a Cognitive Behavioral intervention followed by a Conjoint Behavioral Consultation intervention to decrease anxiety and increase academic performance.

Coping Cat curriculum.

The Coping Cat curriculum was developed as a 16-week program for the treatment of anxiety disorders in children aged 7-13, who meet criteria for Generalized Anxiety Disorder, Social Phobia, and/or Separation Anxiety Disorder (Beidas, Benjamin, Puleo, Edmunds, & Kendall, 2010; Kendall & Hedtke, 2006). The first 8 lessons are geared to psychoeducation; specifically, the child is taught how to identify cues for anxiety and learn coping skills to manage the anxiety. The second 8 lessons are behavioral in nature, as the child has the opportunity to practice coping skills through facing his or her fears with a graded hierarchy of role-play activities. Components of the Coping Cat curriculum include emotion education, modeling, in-vivo exposure tasks, contingency management, problem solving, and self-evaluation. Additionally, the Coping Cat program uses a mnemonic device, the FEAR plan, to help children remember the learned steps and is described below:

“The “F” (Feeling Frightened?) step focuses on somatic reactions to anxiety, the “E” (Expecting Bad Things to Happen?) step helps youth identify anxious cognitions, the “A” (Attitudes and Actions that Can Help) step provides coping skills for the youth to implement (e.g., coping thoughts, problem-solving, relaxation, belly breathing), and the “R” (Results and Rewards) step allows youth to rate their performance and effort and be rewarded for facing their fears” (Beidas, Benjamin, Puleo, Edmunds, & Kendall, 2010, p. 2).
Current research indicates that a brief 6-8 session Coping Cat is effective in long-term treatment of childhood anxiety (King, Tonge, Turner, Heyne, Pritchard, Rollings, Young, Myerson, Ollendick, 1998; King et al., 1999). For the present study, the researcher combined lessons so that two to four lessons were completed each time the researcher and child participant met; thus, totaling 5 Coping Cat sessions through the length of the study (sessions 4-8 in Figure 2 on page 54). Each session length was an hour and a half in time. The researcher worked individually with the participant to teach the steps to identify, regulate, and cope with their anxiety through the Coping Cat curriculum. A list of the activities associated with each of the Coping Cat lessons is detailed below Podell, Mychailyszyn, Edmunds, Puleo, & Kendall (2010) and a sample of lesson activities is included in Appendix E.
Table 2 Overview of Coping Cat Lessons

<table>
<thead>
<tr>
<th>Session</th>
<th>Purpose of Session</th>
<th>Session</th>
<th>Purpose of Session</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Build rapport; Provide orientation and overview of the program; Encourage the child's participation and verbalization during sessions; Introduce tasks and rewards; Play a “Personal Fix” game; Have some fun!</td>
<td>5</td>
<td>Introduce relaxation training; Review recognition of somatic cues. Make and decorate a relaxation tape. Let child show skills to a parent.</td>
</tr>
<tr>
<td>3</td>
<td>Review distinguishing anxious feelings from other feelings; Learn more about somatic responses to anxiety; Identify individual somatic responses to anxiety.</td>
<td>7</td>
<td>Review anxious self-talk and reinforce changing anxious self-talk into coping self-talk. Introduce cognitive strategies to manage anxiety. Introduce problem solving and the “A” step of the FEAR plan—Actions and attitudes that can help.</td>
</tr>
<tr>
<td>4 (Parent session)</td>
<td>Provide information about treatment to the parent(s); Give parents opportunity to discuss concerns; Learn more about the situations in which the child becomes anxious; Provide ways in which parents may be involved.</td>
<td>8</td>
<td>Introduce self-evaluation and reward. Introduces “R” step of the FEAR plan—Results and rewards. Review FEAR plan and make a wallet-sized card with the FEAR acronym.</td>
</tr>
<tr>
<td>9 (Parent Session)</td>
<td>Explain second half of treatment. Acknowledge that this portion of treatment may provoke greater anxiety. Encourage parents to discuss concerns.</td>
<td>13</td>
<td>Practice skills for coping with anxiety in in-vivo situations that produce moderate levels of anxiety.</td>
</tr>
<tr>
<td>10</td>
<td>Practice the 4-step coping (FEAR) plan under low-anxiety-provoking conditions, both imaginary and in vivo.</td>
<td>14</td>
<td>Practice skills for coping with anxiety in imaginary and in vivo situations that produce high anxiety. Begin planning “commercial.”</td>
</tr>
<tr>
<td>11</td>
<td>Continue practicing skills for coping with anxiety in low-level imaginary and in vivo situations.</td>
<td>15</td>
<td>Practice skills for coping with anxiety in real situations that produce high levels of anxiety. Continue planning “commercial.”</td>
</tr>
<tr>
<td>12</td>
<td>Practice skills for coping with anxiety in imaginary and in vivo scenarios that provoke moderate anxiety.</td>
<td>16</td>
<td>Continue practicing skills for coping with anxiety in in-vivo situations that produce high levels of anxiety. Review and summarize the program. Make plans with parents to help the child maintain and generalize newly acquired skills. Bring closure to the therapeutic relationship. Tape the “commercial.” Award the certificate.</td>
</tr>
</tbody>
</table>

Conjoint Behavioral Consultation.

Conjoint Behavioral Consultation is a partnership model that involves the collaboration of parents or primary caregivers, educators, and other service providers. These stakeholders meet to discuss “a child’s developmental needs, address concerns, and achieve success by promoting the competencies of all parties” (Sheridan, Clarke, Marti, Burt, & Rohik, 2005, p. 2; Sheridan, Kratochwill, & Bergan, 1996). The model is unique in that it creates an opportunity for families and schools to work collaboratively around the common interest of supporting the child. The CBC model also builds upon and promotes strengths of the team members. There are four stages to the CBC process,
which were followed in the present study: 1) Needs Identification; 2) Needs Analysis; 3) Plan Development; and 4) Plan Evaluation. The four stages were implemented through planned face-to-face meeting times and weekly communication through home-school notes, such as e-mails, phone calls, or a notebook, which helped school staff and families monitor and evaluate progress. Typically, 3-4 meetings are held during which the stages of the consultation are implemented. In Figure 3, on page 56, sessions 9-12 of the present study are shown. A model of Conjoint Behavioral Consultation is illustrated below in Figure 2.

Figure 2 Overview of Conjoint Behavioral Consultation (Swearer, Eagle, Miller, & Sheridan, 2001)
Procedures

The following sections detail the procedural components of the baseline phase and two intervention phases, as well as how fidelity was measured for each intervention program.

Data collection.

The present study was completed within a 12-week period, as depicted in Figure 3 below. Baseline was collected during the first three weeks through the initial interview, evaluation days, and the feedback session. Intervention Phase 1 child-focused Coping Cat intervention was completed during weeks 4 through 8 in the clinic. Finally, Intervention Phase 2 Conjoint Behavioral Consultation was completed during weeks 9 through 11, which involved partnering with the child’s mother, teacher, and the researcher. In order to obtain the child’s complete assent and ensure her comfort with the collaboration between the researcher and teacher, this was briefly discussed at the beginning of the study. During week 8, the researcher revisited this conversation with the child and essentially explained, “You’ve been doing a wonderful job with noticing when you’re feeling nervous or worried and using coping skills to feel better. We’ve talked about [insert specific coping skills useful for the child, such as deep breathing and progressive muscle relaxation] that you’ve used here and at home. I’ve noticed how much calmer you appear after such practice. I’d really like to help this carry over into schoolwork. How do you feel about the idea of me working with your teacher to figure out how to incorporate your coping skills at school?” Due to the established rapport and relationship, the child expressed that she liked the idea of her therapist (the researcher) working with her
teacher. Obtaining the child’s assent regarding the consultation strengthened the interventions and strategies employed during this phase. Week 12 consisted of a wrap up session with the family.

Figure 3 Visual Model for Intra-subject Staggered Baseline Across Situations Design of Anxiety Intervention & Consultation Outcomes on Measures of Anxiety and Academic Performance

- **Baseline**
  - Week 1: Initial Interview Anxiety GAS rating, Math CBM
  - Week 2: Two evaluation days - BASC-2; RCMAS-2; WJ-III, ACH, NU; Anxiety GAS; Math CBM
  - Week 3: Feedback session Anxiety GAS, Math CBM

- **Intervention Phase 1: Progress measured by CBM in clinic, GAS in clinic & home**
  - Week 4: Coping Cat session 1 & 2
  - Week 5: Coping Cat session 3 & 4
  - Week 6: Coping Cat session 5, 6, 7, 8
  - Week 7: Coping Cat session 9, 10, 11, 12
  - Week 8: Coping Cat session 13, 14, 15, 16
    - **CBC Pre-Consultation Interview with Teacher & Child**

- **Intervention Phase 2: Progress measured by CBM & GAS at home**
  - Week 9: CBC Needs Identification Meeting
  - Week 10: CBC Needs Analysis Interview
  - Week 11: CBC Treatment Evaluation

- **Week 12: Wrap Up Meeting with child and family**

Data Analysis of GAS Anxiety ratings and Math CBM – visual analysis; mean shift, OLS regression, Percentage of Nonoverlapping Data, comparison of data averages of each phase.
Baseline was collected on measures of anxiety and mathematics performance in each setting, followed by data collection of each measure during the Cognitive Behavioral Intervention phase and then the Conjoint Behavioral Consultation phase. As part of the psychological evaluation process, the family received and completed a Revised Child’s Manifest Anxiety Scale, 2nd Edition (RCMAS-2) for the student to complete and two copies of the Behavior Assessment Scale for Children, 2nd Edition (BASC-2) Parent Report for the parents, which aided in determining current or baseline anxiety levels. RCMAS-2 and BASC-2 rating scales were returned to the researcher on the first testing day. Clinic anxiety baseline, as measured by the Goal Attainment Scale (GAS), was collected from both the child and parent during the initial interview, testing days, and the feedback session at the clinic. The GAS was also given to the family in order to collect weekly anxiety perceptions of anxiety at home throughout the study. During the Cognitive Behavioral Intervention phase, ratings on the GAS were obtained from both the child and parent in the clinic regarding their perceptions about anxiety over the course of the week at home. Once the Conjoint Behavioral Consultation phase began, the GAS ratings were collected from the parent and child at home.

Academic performance was measured in two ways: as a diagnostic and baseline measure on the WJ-III, ACH, NU and as a weekly repeated measure on a math computation CBM. The WJ-III, ACH, NU was administered during one of the days of testing in order to determine initial academic performance. The CBM repeated measure was administered at the end of the each Cognitive Behavioral Intervention session in the clinic during the first intervention phase. The teacher administered the CBM at school
once the consultation phase began in week 9. This was preferred over continued administration in the clinic in order to ensure generalization of coping skills during math tasks. The appropriate starting level for the CBM was determined based on performance on the Math Fluency test of the WJ-III, ACH, NU and based on background information obtained during the parent initial interview. Figure 3, below, provides a visual model for the data collection and data analysis steps for the present study.

Fidelity.

In order to replicate the interventions as they were intended, fidelity checks were completed throughout the study for each intervention phase.

*Intervention Phase 1 Coping Cat.* The authors of the Coping Cat program offer “flexibility within fidelity,” meaning that the treatment manual should be used as a framework for treatment delivery, but clinical skills and judgment are essential to the Coping Cat’s implementation (Abramowitz, 2006; Beidas, Benjamin, Puleo, Edmunds, & Kendall, 2010; Kendall, Gosch, Furr, & Sood, 2008). The American Psychological Association recommends that individualized needs and concerns be taken into account when implementing manualized treatments (APA, 2005; Beidas et al., 2010).

To ensure fidelity of the Coping Cat program, the researcher met with the participant once a week for a period of 5-weeks. The researcher followed the 5-week program using a checklist that lists the Coping Cat activities required for each session and reviews of previous studies as a guide (See Appendix F). Additionally, the researcher’s supervisor randomly selected a session to record with an audio recorder in order to listen and confirm adherence to the Coping Cat session as outlined in the manual. The
researcher’s supervisor has been clinically trained and possesses clinical experience with CBT, which are the prerequisite best practices for being eligible for supervising the Coping Cat (Mychailyszyn et al., 2011; Wright & Sulkowski, 2013).

**Intervention Phase 2 Conjoint Behavioral Consultation.** To ensure fidelity of the CBC intervention, the researcher scheduled meetings with the child’s stakeholders (at least one parent and the teacher) at the beginning of the present study. Confirmation telephone calls were provided of the scheduled meetings as the dates drew near in order to guarantee attendance. Further, the specific forms required for the CBC were used so that the format of the consultation model was closely adhered (See Appendices G-J for CBC Interview Forms).

**Analysis and Interpretation**

For the data analysis, the participant was identified by a five digit initial code to protect confidentiality. The database included the participant’s initials, the participant’s grade in school, the $T$-scores on the BASC-2 and RCMAS-2 rating scales, the Standard Scores on the WJ-III, ACH, NU, and the scores of the repeated measure curriculum-based measure and repeated measure Anxiety Goal Attainment Scale. Baseline data was collected from the initial consultation, the two evaluation days, and the feedback session. Once stability of the baseline data was assessed, the interventions were completed.

Once data had been collected, a visual inspection was conducted in order to ensure that all data was present and there were no typos. Since this study involved one participant and the researcher worked closely with the mother and the teacher by incorporating a consultation model as a requirement of participation, it was expected that
all necessary data would be gathered. Statistical software and Microsoft Excel was utilized to examine and analyze the data utilizing four methodologies: visual analysis, mean shift, Percentage of Nonoverlapping Data (PND), and Ordinary Least Squares Regression (OLS regression).

**Visual analysis.**

Visual analysis is the process of looking at the graph of data points and determining whether the intervention(s) changed the participant’s anxiety and math performance from their baseline (Engel & Schutt, 2007). Visual inspection of the graph is advantageous because it is well suited to examine individualized treatment outcomes for a single subject (Engel & Schutt, 2007; Zhan & Ottenbecher, 2001). It is also easy and inexpensive to use in clinical practice, and widely recognized or understood by practitioners (Zhan & Ottenbacher, 2001).

**Mean shift.**

The mean provides a level or magnitude of the anxiety symptoms from the baseline to each intervention phase (Engel & Schutt, 2007). This was calculated by averaging the points in each phase to then compare the results from baseline to Intervention Phase 1 to Intervention Phase 2, as well as from baseline to both intervention phases. Phase scores are summarized by drawing a line at the mean for each phase. The summary line for the baseline is then compared to the summary line for each intervention phase in order to make interpretations about the participant’s anxiety and math performance. The mean shift procedure is advantageous because it can be used for non-linear trends and with a small number of data points (Zhan & Ottenbacher, 2001).
**Percentage of nonoverlapping data (PND).**

The percentage of nonoverlapping data is a non-parametric statistic that involves calculation of the non-overlap between the baseline and subsequent intervention phases (Wendt, 2009). With this method of analysis, the median is used rather than the mean. This allows for comparison of data that is not normally distributed and it is not easily skewed by outliers (Wendt, 2009). To calculate the PND, the highest data point in baseline is used to determine the percentage of data points during each intervention phase that exceeds that point (Wendt, 2009). Scruggs, Mastropieri, Cook, and Escobar (1986) offer easy interpretation with a PND scale, which reflects the range of percentages from unreliable treatment PND < 50%, questionable effectiveness PND 50% - 70%, fairly effective PND 70% - 90%, and highly effective PND > 90%.

There are limitations to using PND. First, as it is a nonparametric statistic, it requires its own interpretation guidelines and it is not an effect size as in parametric statistics (Wendt, 2009). It also only uses one data point to aid in calculation, which can be unreliable. This methodology also lacks sensitivity and does not detect slope changes (Wendt, 2009).

**Ordinary least squares regression (OLS regression).**

A slope analysis, otherwise known as Ordinary Least Squares or Linear Regression, was also run on Microsoft’s Excel to compare the slope of the repeated CBM data from baseline throughout Intervention Phase 1 and Intervention Phase 2. Ordinary least squares regression is a statistical technique that uses sample data to estimate the population, or true, relationship between two variables (Hoyt, 2003). In other words, it
attempts to describe the relationship between two variables with a line called the best fit line. Ordinary least squares regression calculated a regression line that summarizes the scores in the baseline and another regression line that summarizes the other two intervention phases (Engel & Schutt, 2007). In multiple baseline OLS regression, a baseline regression line is extended into the intervention phases in order to provide a comparison from baseline to the intervention phases (Engel & Schutt, 2007).

The advantage of using OLS regression is that it is easy to compute; however, it requires at least eight to ten data points to determine an accurate celeration line (Zhan & Ottenbacher, 2001). Another potential problem with OLS regression involves the dependency on estimations and should be considered cautiously. These estimations offer restricted interpretation of the model and cannot be assumed that the relationship continues outside of the sample (Engel & Schutt, 2007). Further, an assumption of OLS regression is that changes in performance are linear across treatment phases (Zhan & Ottenbacher, 2001). Given the variability of the Goal Attainment Scale data, the analyses described above will be calculated for Research Question 1 and the OLS regression will support analyses for the linear math CBM data for Research Question 2.

In the next chapter, the final results will be analyzed and interpreted to answer the research questions of whether the Coping Cat program decreased anxiety symptoms and increased academic performance, and whether the Conjoint Partnering Consultation intervention further decreased anxiety symptoms and increased academic performance based on measures of anxiety and academic performance. Comparisons of the change from baseline to each treatment phase were completed with the parent GAS measure and
child GAS measure of anxiety to address the first research question. Similar comparisons were made on the results of the child’s academic performance on the Math CBM to address the second research question.

**Research Questions**

1a. Will a young child with elevated levels of anxiety show a decrease in anxiety symptoms with a Cognitive Behavioral framework intervention program for children?

b. Will anxiety be reduced with the addition of a Conjoint Behavioral Consultation with the family and teacher?

2a. Will a young child with elevated levels of anxiety show an increase in math performance after participation in a Cognitive Behavioral framework intervention program for children?

b. Will math performance be increased with the addition of a Conjoint Behavioral Consultation with the family and teacher?
Chapter Four: Results

This chapter presents the results of the research study described in the previous chapter. The research methodology used in the study was the staggered baseline across settings design, which provides evidence of an intervention’s effect if the behavior is stable before its introduction. It was hypothesized that a child’s anxiety would decrease and math performance would increase with the completion of a Cognitive Behavioral Therapy intervention, and that positive outcomes might be further substantiated with the completion of Conjoint Behavioral Consultation intervention. A number of research questions were addressed by this study as described in the previous chapters. The results of these analyses, including visual analysis, mean comparisons between phases, ordinary least squares regression (OLS), and percentage of nonoverlapping data (PND), are described in this chapter as well.

Statistics and Data Analysis

Data was measured across three settings for the current study. First, baseline was collected in the clinic for the child’s Anxiety Goal Attainment Scale, the Parent Anxiety Goal Attainment Scale, and the Math Fluency Curriculum-Based Measure. Four measurement points were collected over the course of three weeks. Following baseline, the Intervention Phase 1 Coping Cat Program began in the clinic, which collected five measurement points over the course of five weeks. During Intervention Phase 1, the
Parent Anxiety GAS was collected as baseline for the Intervention Phase 2 Conjoint Behavioral Consultation. Intervention Phase 2 included four data points over three weeks.

Figure 4: Staggered Baseline and Intervention Phases for Home and School Settings
Baseline data.

Baseline data for the repeated measures were collected over four data points for the first three weeks of the study in the clinic. Data were collected before intervention began, and occurred during the initial consultation, the two assessment days, and during the feedback session (Engel & Schutt, 2007). During the baseline phase, repeated measures are collected until a pattern emerges and the researcher can be certain that the performance of the participant is relatively stable; that is, the participant’s performance would remain unchanged without intervention. Engel and Schutt (2007) recommend visually inspecting the measurements to determine if they fall within a stable line, or “a line that is relatively flat, with little variability in the scores so that the scores fall within a narrow band” (p. 209). Results for the baseline repeated measures indicate stability across measures of the Child Anxiety Goal Attainment Scale (Figure 5), the Parent Anxiety Goal Attainment Scale (Figure 6), and the Math Fluency Curriculum-Based Measure (Figure 7).

Figure 5 Clinic Baseline for the Child’s Anxiety Goal Attainment Scale Ratings
Research question 1.

Analyses were conducted in order to answer research questions 1a: Will a young child with elevated levels of anxiety show a decrease in anxiety symptoms with a Cognitive Behavioral framework intervention program for children? Research question
1b. Will anxiety be reduced with the addition of a Conjoint Behavioral Consultation with the family and teacher? Figure 8, below, shows the measurement data for the child and parent Anxiety GAS ratings.

**Visual analysis.** The first analysis involved a visual inspection of the graph for each the child and parent Anxiety GAS ratings.

**Child GAS ratings.** During the baseline phase, the child rated herself largely at a -2. Out of the four data points collected, the child participant rated herself at a -1 for one session and at a -2 the remaining sessions. When compared to the final intervention phase, the child appears to have made great gains in reducing her anxiety. All data points for the GAS ratings fall with at least a rating of 0, without ratings dipping into the negative ratings. Specifically, she rated herself with a 0, +1, and +1. This appears relatively stable and suggests that the combined Coping Cat and consultation programs helped to reduce her overall anxiety.

However, a comparison of the first intervention phase and the second intervention phase yields interesting results. Ratings of 0, +2, +1, and +1 were obtained during the first intervention phase, which is slightly higher than when compared to the second intervention phase. Upon further analysis of the qualitative information collected during the Anxiety GAS ratings, the child participant had Spring Break during the week she rated herself at a +2 and discussed feeling happier and relaxed because she did not have to worry about school work. It would be expected that had she not have had Spring Break during the first intervention phase, she would have continued to rate herself at a 0 or +1.
Parent GAS ratings. Visual inspection of the Anxiety GAS ratings for the parent was compared from baseline to the end of the study and from the first to the second intervention phases. At baseline, the parent rated her daughter at a -2, -1, -1, and -1, indicating that she observed anxiety in her daughter. By the end of the study, the parent observed a great reduction of anxiety symptoms present in her daughter, as indicated by her GAS ratings of +2, +1, and +1.

When comparing the first and second intervention phases, however, it is evident that the parent’s perceptions of her daughter’s anxiety significantly changed from one phase to the second. During Intervention Phase 1, the parent rated her daughter at a -1, -1, 0, +1. As the first intervention phase involved the child-focused Coping Cat program, it is possible that the parent did not perceive a change in anxiety symptoms until the consultation phase began. Anxiety is an internalizing disorder, which makes it difficult to monitor its symptoms. Though the child might have felt the effects of the Coping Cat program, as discussed above, it is possible that those around her continued to observe symptoms of anxiety as the child learned and applied self-soothing strategies in therapy. Once Intervention Phase 2 began, the parent’s ratings moved from negative or neutral ratings to all positive ratings, suggesting that the parent perceived a reduction in her daughter’s overall anxiety.

Child-parent comparison GAS ratings. During the Baseline Phase, the child participant rated herself more negatively on the Anxiety GAS ratings than her mother rated her, which indicates that she was anxious and perhaps felt the effects of her anxiety more than her mother would feel or notice the anxiety. As previously discussed, anxiety
is an internalizing disorder, though it manifests sometimes behaviorally in children; thus, the participant’s mother might not always be aware of her child’s anxiety (Foxman, 2004). At the beginning of Intervention Phase 1, the child rated herself more positively than her mother did. This shows that once therapy began, the child started to feel more supported as she learned coping and problem solving skills.

Once Intervention Phase 2 consultation began, the child participant rated herself a neutral 0 while the mother rated her daughter as a +2. As discussed above, this indicates that the mother, as she also stated to the researcher, felt supported and satisfied with the collaboration between the researcher and her daughter’s teacher. The child, on the other hand, reported that she enjoyed the extra support from the researcher and teacher in order to help her practice her preferred coping skills prior to and during math class.

**Mean comparison.** Another analytic method includes comparison of the mean shift from baseline to the intervention phases. The mean provides a level of the anxiety symptoms from the baseline to each intervention phase (Engel & Schutt, 2007).

**Child mean comparisons.** During the baseline phase, the child’s mean ratings on the Anxiety GAS were -1.75 and increased to 0.4 in the Intervention Phase 1. There was only a slight increase in the mean to 0.667 in the Intervention Phase 2; however, it is important to note that the child rated herself a +2 during the Spring Break, which fell in the Intervention Phase 1. During the remaining sessions across Intervention Phase 1 or Intervention Phase 2, the child rated herself either a 0 or +1. Mean lines for the phases can be seen in Figure 8.
Parent mean comparisons. During the baseline phase, the parent’s Anxiety GAS mean rating was a -1.25, and continued to increase to -0.4 in Intervention Phase 1 and 1.33 in Intervention Phase 2. This indicates that the child’s mother observed fewer anxiety symptoms in her daughter through the Coping Cat program (when compared to baseline) and she observed a further reduction in anxiety symptoms through the consultation phase (when compared to the previous two phases). There is a significant difference from baseline to Intervention Phase 2 mean ratings, which indicates that the child’s mother perceived a greater reduction in her child’s anxiety during the consultation phase. Mean lines for the phases can be seen in Figure 9.
**Percentage of nonoverlapping data (PND).** To calculate the PND, the highest data point in baseline is used to determine the percentage of data points during each intervention phase that exceeds that point (Wendt, 2009). Scruggs, Mastropieri, Cook, and Escobar (1986) offer easy interpretation with a PND scale, which reflects the range of percentages from unreliable treatment < 50%, questionable effectiveness 50% - 70%, fairly effective 70% - 90%, and highly effective > 90%.

**Child Anxiety GAS ratings.** The highest child GAS rating in the baseline phase was a -1. As baseline was relatively stable with data points falling within the -2 to -1 point range, this analysis was deemed appropriate for the current study. When compared to Intervention Phase 1, four out of five of the anxiety GAS ratings are above a score of -1. The child participant demonstrated a perceived reduction of anxiety, with ratings above a score of -1 for 80% of the data points. According to Scruggs et al. (1986), the Coping Cat program is a fairly effective treatment for reducing anxiety for a young child.
Furthermore, 100% of the anxiety GAS ratings in Intervention Phase 2 fall above a rating of -1, indicating that the Conjoint Behavioral Consultation is a highly effective treatment in aiding the reduction of anxiety according to Scruggs et al.’s (2009) criteria. The child participant continued to rate herself positively, with scores above -1 for three data points.

A comparison of baseline to both intervention phases combined indicates that the Coping Cat and Conjoint Behavioral Consultation interventions provide fair effectiveness in reducing anxiety. Eighty-seven percent, or seven out of eight, of the child’s anxiety GAS ratings fall above -1 across the intervention phases. A graphical depiction of the data is found in Figure 10 below.

Figure 10 Percentage of Nonoverlapping Data for Child Goal Attainment Scale Ratings

![Graph of Child Anxiety Goal Attainment Scale Ratings]

*Parent Anxiety GAS ratings.* The highest parent GAS rating in the baseline phase was a -1. As baseline was relatively stable with data points falling within the -2 to -1 point range, this analysis was deemed appropriate for the current study. When compared to Intervention Phase 1, only two out of five of the anxiety GAS ratings are above a score
of -1. Results indicate that the parent did not perceived a strong reduction of anxiety, with ratings above a score of -1 for 40% of the data points. According to Scruggs et al. (1986), the Coping Cat program reflects unreliable treatment for treating childhood from a parent’s perspective.

Interestingly, 100% of the anxiety GAS ratings in Intervention Phase 2 fall above a rating of -1, indicating that the parent perceived the Conjoint Behavioral Consultation as a highly effective treatment in aiding the reduction of her child’s anxiety according to Scruggs et al.’s (2009) criteria. The parent continued to rate her child positively, with scores above -1 for three data points.

A comparison of baseline to both intervention phases combined indicates that the Coping Cat and Conjoint Behavioral Consultation interventions provide questionable effectiveness in reducing anxiety. Sixty-two percent, or five out of eight, of the parent’s anxiety GAS ratings fall above -1 across the intervention phases. Results indicate that the parent observed a greater reduction in her child’s anxiety once the consultation began. A graphical depiction of the data is found in Figure 11.
Research question 1 conclusion. The answer to the first research questions is that the visual analysis, mean shift, and PND analyses seem to demonstrate an improvement or reduction of anxiety symptoms; in other words, ‘yes,’ a child with elevated anxiety will show a decrease in symptoms with the CBT intervention and a further reduction of symptoms with the addition of consultation.

Research question 2.

Additional analyses were conducted in order to answer research questions 2a: Will a young child with elevated levels of anxiety show an increase in math performance after participation in a Cognitive Behavioral framework intervention program for young children?; 2b. Will math performance be increased with the addition of a Conjoint Behavioral Consultation with the family and teacher? Figure 12, below, shows measurement data for the math CBM.

Visual analysis. Visual analysis of the CBM data indicates an increasing trend with regard to the child’s math performance based on digits correct per two minutes. As it
takes additional concentration and application of coping skills to feel calmer prior to the Math CBM, it was expected that results of this performance would be slower to observe. The child’s performance on the math CBM began to improve within the first intervention phase. However, once the math CBM was transferred to the teacher to administer at school, the child’s performance dropped slightly before continuing the upward trend. This indicates that she perhaps experienced a performance drop due to change in environment. The clinic therapy room is the ideal testing room because it is a distraction-free, quiet space. A classroom has many distractions, including noise from other students and surrounding classrooms. Another hypothesis in the slight decrease in performance is due to the relationship the child has with her teacher versus the researcher. Further analysis of the math CBM and the Anxiety GAS rating also shows that the child rated herself lower for that week when compared to the remaining weeks in the consultation phase. This could simply mean that the child was having a regular or satisfactory week as opposed a strong week.

Mean comparison. Another analysis includes the mean level change from baseline to the end of the study as well as from Intervention Phase 1 to Intervention Phase 2. The child’s mean performance at baseline was 9.5 and increased to 15.2 in Intervention Phase 1 and 22.33 in Intervention Phase 2. There is a large mean increase from baseline to Intervention Phase 2 and a moderate increase when intervention phases are compared. These results indicate that the child’s math performance increased during the Coping Cat program when compared to her baseline. Further, her math performance continued to
increase during the consultation phase to show greater improvement, as shown in Figure 12 below.

Figure 12 Baseline and Intervention Phases Math Curriculum Based Measure for Child with Mean Lines Added for Each Phase

![Math CBM Fluency Graph](image)

**Ordinary least squares regression.** Trend lines were added to the graphed data using Microsoft Excel’s trend line function. The baseline trend line was extended through the intervention phases to provide a comparison of the baseline to the two intervention phases. The baseline trend depicts a nearly flat trend line. A visual inspection of the trend in baseline and each intervention phase depicted in Figure 13, below, indicates that there was an increase from the child’s baseline math performance when compared to the other intervention phases. That is, when the child-focused Coping Cat program began, the child’s math performance increased. There was an additional significant increase in math performance when the consultation phase began. This finding indicates that the mean difference between the phases may be attributed to decreased anxiety in the intervention phases than in the baseline phase.
Figure 13 Trend Lines for Baseline and Intervention Phases for Math Curriculum Based Measure

**Percentage of nonoverlapping data (PND).** To calculate the PND, the highest data point in baseline is used to determine the percentage of data points during each intervention phase that exceeds that point (Wendt, 2009). Scruggs, Mastropieri, Cook, and Escobar (1986) offer easy interpretation with a PND scale, which reflects the range of percentages from unreliable treatment PND < 50%, questionable effectiveness PND 50% - 70%, fairly effective PND 70% - 90%, and highly effective PND > 90%.

The highest math CBM data point in the baseline phase was a score of 10 digits correct per two minutes. As baseline was relatively stable with data points falling within the 9-10 point range, this analysis was deemed appropriate for the current study. When compared to Intervention Phase 1, 100% of the earned scores on the math CBM are above a score of 10. The child participant demonstrated an increase of earned scores on the math CBM, with results above a score of 10 for five data points. According to
Scruggs et al. (1986), the Coping Cat program is a highly effective treatment that impacts math performance on a math CBM.

Furthermore, 100% of the earned scores in Intervention Phase 2 also fall above a score of 10, indicating that the Conjoint Behavioral Consultation is a highly effective treatment in aiding math performance according to Scruggs et al.’s (2009) criteria. The child participant continued to increase her scores on the math CBM, with scores above 10 for three data points. A graphical depiction of the data is found in Figure 14 below.

As noted in the previous chapter, the PND analysis does not account for small changes in the data. However, when used in conjunction with other data analysis methodologies, it provides further support for the effectiveness of the Coping Cat and Conjoint Behavioral Consultation interventions on improving math performance.

Figure 14 Percentage of Nonoverlapping Data for Math Curriculum Based Measure

<table>
<thead>
<tr>
<th>Session</th>
<th>Digits Correct Per Minute</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Highest point=10</td>
</tr>
<tr>
<td>2</td>
<td>5/5=100%</td>
</tr>
<tr>
<td>3</td>
<td>3/3=100%</td>
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<td>11</td>
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<tr>
<td>12</td>
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</tbody>
</table>

Research question 2 conclusion. The answer to the second research questions is that the visual analysis, mean shift analysis, OLS regression, and PND demonstrate a significant improvement in math performance; in other words, ‘yes,’ a child will show
increased math performance after the CBT intervention and a significant increase in math performance following consultation.

**Adverse Events and Side Effects**

Due to the nature of the single-subject design, data collection was carefully controlled. As discussed previously, one adverse effect of the data occurred during the Coping Cat Intervention Phase 1. The child participant had rated herself a +2, indicating that she was ‘really happy and not nervous.’ Though this is a wonderful rating that is the goal of the intervention treatment for this child’s anxiety, this was the only instance in which she rated herself a +2 and it occurred during her Spring Break week. The remaining weeks of the study, the child rated herself either a neutral 0, indicating that she felt ‘calm and fine,’ or she rated herself a +1, indicating that she felt ‘happy, not nervous.’ Though these are positive ratings nonetheless, it appears that this child reserved the +2 rating for rare, special occasions when she was feeling particularly stress-free and happy. This rating occurring during Spring Break also strongly points to the amount of stress this child feels during school.

Another adverse effect occurred when the child began completing the math CBM in school, which led to a slight drop in her math performance at the beginning of the consultation Intervention Phase 2. This could have been due to a number of factors; however, the two factors important to clinical practice are examined. First, a testing environment in which the child examinee and researcher examiner are present is quite different from a teacher administering a brief math fluency measure, even if the classroom is quiet. Though steps were taken to ensure a quiet environment in which the
child could concentrate, there could have been adverse effects of testing in the classroom. Second, the relationship the child has with the researcher versus the teacher could have impacted her performance on the initial math CBM during the consultation phase. Though children are often trusting of their teachers in the primary grades, the therapeutic relationship is typically closer in nature (Winnicott, 1964; Greenspan 2003) and could have an impact on the child’s general anxiety during the math CBM.

The following chapter summarizes the results within the literature.
Chapter Five: Discussion

The research conducted for this dissertation examined the effects of a Cognitive-Behavioral Therapy intervention (Coping Cat program) enhanced by Conjoint Behavioral Consultation between a parent, teacher, and school psychologist on anxiety and math performance. This chapter presents a brief summary of results described within the context of the related literature on CBT treatments and consultation. Implications for practice, including clinical and school settings, and implications for research are described. Finally, the study limitations and contributions to the field are explored.

Anxiety and math performance in young children

A single subject intervention study was conducted in order to examine the impact of a brief child-focused Cognitive-Behavioral Therapy enhanced by family-school consultation on measures of anxiety and math performance.

Cognitive Behavioral treatment of childhood anxiety.

A literature review revealed that while many researchers examined anxiety in children, fewer studies assessed specific intervention designed to reduce anxiety in young children. Furthermore, even fewer studies measured the effectiveness of a brief intervention for reducing anxiety. The study intended to examine whether or not a young child demonstrated decreased symptoms of anxiety based on a brief Cognitive Behavioral intervention as measured by self-report Goal Attainment Scale ratings. This answered the research question 1a: Will a young child with elevated levels of anxiety show a decrease
in anxiety symptoms with a Cognitive Behavioral framework intervention program for children?

The answer to this research question was that there was a reduction in anxiety symptoms following a brief CBT intervention in a young child with anxiety. Several analyses reveal that there was an adequate decrease in anxiety. Visual analysis and mean shift showed an increase in positive ratings on the child’s Goal Attainment Scale for anxiety, indicating that the child reported fewer symptoms of anxiety. Finally, analysis of Percentage of Nonoverlapping Data demonstrated that 80% of the child’s Anxiety Goal Attainment Scale ratings fell above a score of -1, which indicates highly effective treatment according to Scruggs et al. (1986). It is important to note that Spring Break fell in the middle of the Intervention Phase 1, during which the child rated herself at a +2 (the highest on the scale). For the remaining intervention data collection days, the child rated herself at a neutral 0 or a +1. It is hypothesized that the child would have rated herself at a neutral 0 or +1 across all intervention weeks had Spring Break not occurred. That said, the school break provided important information on factors that exacerbate the child’s anxiety and further supported the use of Conjoint Behavioral Consultation.

Additional qualitative information was collected through the parent’s Goal Attainment Scale measure that further supports the quantitative outcomes. During week 5 of the study (session 2 of the Coping Cat), the participant’s mother reported that her daughter calmed her self by taking deep breaths instead of having a tantrum about homework (which was a usual occurrence). Following week 6 of the study (session 3 of the Coping Cat), the mother reported that her daughter was requesting the progressive
muscle relaxation script before bed rather than having a tantrum, which previously occurred a few times a week.

The importance of this data is in support of brief interventions for supporting children with anxiety. Previous literature largely examines the full length Coping Cat program, which is 16 weeks in length, with statistically significant results of decreasing a child’s anxiety on post-test and follow up measures (Kendall, 1994; Kendall, Safford, Flannery-Schroeder, & Webb, 2004; Michael, Payne, & Albright, 2012). Few researchers have investigated brief versions of the Coping Cat or other empirically supported anxiety treatments. The previous literature on brief versions of the Coping Cat is comparable to the findings of this study. Crawley et al. (2013) tested the outcomes for a brief version of the Coping Cat, which consisted of 8 therapy sessions that included six 1-hour sessions and two 1.5 hour sessions for a total treatment time of 9 hours. Researchers recruited 26 children, aged 6 to 13, who had diagnoses of anxiety. Results indicated that child participants experienced a significant decrease in anxiety from baseline to posttreatment as well as at 2-month and 1-year follow up (Crawley et al., 2013). The current study adds to the growing body of research examining briefer modalities to treat anxiety.

Using Conjoint Behavioral Consultation to enhance anxiety treatment. The study also sought to uncover whether or not a young child with anxiety will show enhanced improvement of anxiety symptoms based on her mother’s Goal Attainment Scale ratings measuring anxiety symptoms at home. This answered the research question 1b: Will anxiety be reduced with the addition of a Conjoint Behavioral Consultation with the family and teacher?
The answer to this research question was that there was a greater reduction in anxiety symptoms following a Conjoint Behavioral Consultation involving the child, her mother, and her teacher. Several analyses reveal that there was a significant decrease in anxiety. Visual analysis and mean shift showed an increase in positive ratings on the mother’s Goal Attainment Scale for anxiety, indicating that the mother observed fewer symptoms of anxiety. Finally, analysis of Percentage of Nonoverlapping Data demonstrated that 100% of the mother’s Anxiety Goal Attainment Scale ratings fell above a score of -1, which indicates highly effective treatment according to Scruggs et al. (1986). It is important to note that the mother reported lower Goal Attainment Scale ratings through the brief CBT intervention until the consultation began at which times ratings were higher. This suggests that the mother perhaps felt more supported and perceived a greater change in her daughter’s anxiety level. In fact, the mother reported enjoying the collaborative approach with the teacher in order to integrate the strategies across settings and provide her daughter stronger support.

Additional qualitative data collected on the parent’s Goal Attainment Scale and interview discussions with the teacher indicated that self-initiation of deep breathing and progressive muscle relaxation continued at home. In school, the child was provided with a special location to which she could retreat to calm her self. The child’s teacher reported that the child used this space several times a week.

The important contribution of this data to the literature is with regard to measuring the clinically meaningful decrease in anxiety observed across settings utilizing the Conjoint Behavioral Consultation approach. Many researchers have involved parents
in their child’s treatment, but through a psychoeducational approach. The fundamental difference with the CBC is the problem-solving approach it utilizes. Wilkinson (2006) explains that “parents and teachers work cooperatively to identify and operationally define a problem, analyze behavioral data and develop a treatment plan, implement an intervention across settings, and conjointly evaluate the success of the treatment” (p. 225). This conjoint, problem-solving approach celebrates each stakeholder’s strengths and areas of expertise, which is significantly different from psychoeducational approaches that assume the professional as the expert. This is in stark contrast to the psychoeducational, which does not collaborate on setting goals, implementing the intervention, and evaluating the approach.

In the current study, though the child reported a decrease in anxiety upon beginning the Coping Cat program, the mother’s reported improvement in her daughter’s anxiety could have been due to perceptions of treatment credibility and expectancy for change, or an active role in the intervention through the Conjoint Behavioral Consultation (McNally Keehn, Lincoln, Brown, & Chavira, 2012). The findings of the current study are commensurate with similar interventions that utilized Conjoint Behavioral Consultation. Colton and Sheridan (1998) recruited three elementary school boys, aged 8 to 9, and their mothers and teachers to participate in a social skills group and Conjoint Behavioral Consultation. Their results demonstrated moderate improvements in social skills and strong perceptions of treatment credibility from the mothers and teachers. The research from the current study supports preliminary pairing of an empirically supported brief anxiety treatment and CBC, and adds to the CBC literature.
Cognitive Behavioral intervention for math performance.

Related to academic performance, the study intended to assess whether or not a young child being treated with a brief child-focused CBT for anxiety will show an improvement in math based on scores on a Curriculum Based Measure in Math Fluency. This answered the research question 2a: Will a young child with elevated levels of anxiety show an increase in mathematics performance after participation in a Cognitive Behavioral framework intervention program for children?

The answer to this research question was that there was an improvement in math performance during a brief CBT intervention in a young child with anxiety. Several analyses reveal that there was an adequate decrease in anxiety. Visual analysis, mean shift, and Ordinary Least Squares regression showed an increase in digits correct per two minutes on a Curriculum Based Measure for math fluency, simultaneous to the child’s reported decrease of anxiety symptoms. Percentage of Nonoverlapping Data demonstrated that 100% of the child’s math CBM fell above a score of 10, indicating that a brief Coping Cat is a highly effective treatment for anxiety that can affect math performance. These results and observation of the participant suggest that anxiety has an impact on math performance that leads to difficulty with concentration. Though steps were taken to ensure avoidance of practice effects related to learning the specific math problems, it appears that the repeated measure offered a desensitization task that could have aided in lessening the child’s anxiety. Genetic factors surrounding math anxiety accounts for 40% of the variation while the anxiety largely evolves from poor previous experiences with math (Wang, Hart, Kovas, Lukowski, Soden, Thompson, Plomin,
McLoughlin, Bartlett, Lyons, & Petrill, 2014). Given the premise of the CBT-infused Coping Cat, situations were role-played in session to provide desensitization and alleviate anxiety during in-vivo exercises. When the anxiety was alleviated or remediated, the participant was able to calmly process, problem-solve, and concentrate on the math problems.

Qualitative observations taken of the child during the math CBM further support these results. The child initially appeared very anxious during the math CBM, as evidenced by her heavy breathing and sighing, fidgeting, rocking back and forth, leg shaking, and verbal complaints, “I hate math! I’m good at it, but I hate it!” As the Coping Cat progressed and she utilized either deep breathing, progressive muscle relaxation, noise cancellation headphones, or flipping through a Garfield book, the child’s demeanor calmed when presented with a math CBM. She presented with slow, controlled breathing, a lack of leg shaking or full body rocking, increased attention and focus, and a lack of verbal complaints.

This finding is significant to the existing body of literature. Academic performance is best assessed by objective measures; however, the existing literature that examines childhood anxiety and its impact in academic content areas use norm referenced rating scales that measure ones perceptions of academic performance (Muris & Meesters, 2002; Mychailyszyn, Mendez, & Kendall, 2010; Strauss, Frame, & Forehand, 1987). One study sought to determine how test anxiety might affect academic performance through the use of norm referenced rating scales measuring anxiety, while academic achievement was measured using scores on the standardized California Test of
Basic Skills (Turner, Beidel, Hughes, & Turner 1993). Results indicated that children with test anxiety led to significantly lower academic achievement than their non-anxious classmates. While the existing literature is promising with regard to unearthing the impact of childhood anxiety on academic performance, the current study contributes to the need for utilizing more objective methods (such as CBM) for measuring an academic content area.

**Using Conjoint Behavioral Consultation to support math.** Finally, the current study sought to evaluate whether or not a young child will show a greater improvement in math performance after the addition of a Conjoint Behavioral Consultation approach. This answered the research question 2b: Will mathematics performance be increased with the addition of a Conjoint Behavioral Consultation with the family and teacher?

The answer to this research question was that there was further improvement in math performance during Conjoint Behavioral Consultation after a Cognitive Behavioral individual approach for a young child with anxiety. Several analyses reveal that there was an increase in math performance. Visual analysis, mean shift, and Ordinary Least Squares regression showed a significant increase in digits correct per two minutes on a Curriculum Based Measure for math fluency, simultaneous with the child’s reported and mother’s observed decrease of anxiety symptoms. Percentage of Nonoverlapping Data demonstrated that 100% of the child’s math CBM rose above a score of 10, indicating that Conjoint Behavioral Consultation is a highly effective treatment that can impact math performance. Qualitatively, the child’s teacher reported that there had been an increase of work completion (homework and schoolwork) since the start of the
consultation approach. The child’s mother also expressed that homework was less of a struggle to complete, especially math homework.

This result provides a valuable contribution to the literature. Ecological systems theory has long been a cornerstone of school psychology and many researchers have argued for the partnering of families and schools as well as for consultation methods like Conjoint Behavioral Consultation (Carlson & Christenson, 2005; Christenson, 2004; Colton & Sheridan, 1998; Epstein, 2002; Keith et al., 1993; Lines, Miller, & Arthur-Stanley, 2010; Sheridan & Kratochwill, 1992). Keith et al. (1993) found that the relationship between parent involvement and academic achievement is independent from family background effects, which indicates that families across diverse backgrounds can positively influence their child’s academic and social-emotional success (Colton & Sheridan, 1998). As previously discussed, Conjoint Behavioral Consultation differs from a simple discussion with a parent or a psychoeducative approach. A discussion with a parent or psychoeducative approach typically involves a teacher or other school professional acting within an expert role regarding support strategies. Conversely, the consultation approach uses a problem-solving method that includes the family, teacher, and school psychologist as equal partners or contributors to intervention development and implementation. Carlson and Christenson (2005) found that the most effective program components were “home-school collaborative interventions that emphasized dialogue about educational programming and two-way communication/monitoring of children’s school performance,” which led to enhanced outcomes (p. 526). By pairing the Coping Cat and Conjoint Behavioral Consultation – two empirically supported interventions –
children can be optimally supported to build the coping skills necessary to manage their anxiety so that they can focus on their schoolwork.

**Implications for Practice**

This study has several implications for practice within clinic and school settings. Further examination will be offered regarding the appropriateness of the interventions as well as the ease of delivery within each setting.

**Implications for clinic-based practitioners.**

An important component of the current study is the brief Coping Cat intervention, which required fewer sessions and made it feasible for the family to attend sessions consistently. Typically, the Coping Cat program is 16-sessions in length while the brief Coping Cat can range from five to eight sessions. A comparison of the two versions demonstrates that a briefer Coping Cat program reduces the cost of treatment, transportation, and overall time and effort (Crawley et al., 2013). Typically in longer therapy, cost of treatment, transportation, and time are important factors that often lead to attrition (Gliner, Morgan, Leech, 2009). Assuming that the child does not present with other clinical concerns, this would mean that clinicians are able to serve more clients once the child is terminated from the brief Coping Cat. However, the brief Coping Cat could pose as a detractor for many families as well. Insurance reimburses a ‘medical hour,’ which typically lasts for approximately 50 minutes. As the brief Coping Cat in this study employed a session lasting for an hour and half, this session would not be covered under insurance. The researcher’s participant was able to use an overpayment credit from a Neuropsychological Evaluation to pay for her sessions. Some families will have the
ability to self-pay for the additional session time, but this will severely restrict the sample from which one could recruit.

Finally, clinicians could experience time and cost constraints. The interventions used in the current study required time for managing fidelity, treatment planning that tailored the consultation to the child, and correspondence with the parent and teacher. The time spent on these activities is often not reimbursed by insurance companies, but is critical to the successful treatment of the child (Michael et al., 2012). To achieve continuity of care, clinicians might be required to put forth extra effort to collaborate and consult with families and school staff.

Results of the study indicate that this intervention would be adaptable to clinic settings; however, recruitment would be restricted due to specific inclusion and exclusion criteria (see Limitations discussed below). Clinical trials of the Coping Cat have demonstrated its utility on a variety of clinical diagnoses, such as Attention Deficit/Hyperactivity Disorder, Depression, Autism Spectrum Disorder, different anxiety disorders, and life stressors might warrant an Adjustment Disorder (Kendall, 1994). Conjoint Behavioral Consultation has also been deemed appropriate for a wide range of social-emotional, behavioral, and academic concerns (Sheridan & Kratochwill, 2008). Nonetheless, oftentimes when families enlist the help of a private clinic for psychological services, there are typically co-morbid and systemic concerns surrounding the child and his or her family that creates a complex treatment plan (Kroncke, 2014). The complexity of the clinical profile could make it difficult to complete Coping Cat lessons because other issues may arise throughout the duration of therapy. Conversely, with the
distraction-free environment of the clinic setting (quiet office setting and individual therapy modality), fidelity of the Coping Cat lessons can be easily followed.

Schools and private clinics usually operate as separate entities; therefore, when a child sees a private therapist, there is typically little contact or collaboration with the school staff. Without collaboration and communication regarding goals and intervention strategies, generalization of skills is difficult to accomplish. The consultation model employed in the current study emphasizes the importance of bridging the gap between providers in order to provide consistency and generalize skills across settings (Crawley et al., 2013). Results from this study indicate that when the family, school, and service providers partner to create interventions and consistently implement them across settings, the child’s anxiety was reduced and her math performance increased; however, this is difficult to accomplish with clinicians who are confined by insurance reimbursement policies. Most insurance companies do not provide coverage for school-based services, such as observations, consultation, or IEP attendance. This leads to out-of-pocket costs if families pursue collaboration from the private clinician with the school.

**Implications for school-based practitioners.**

Given required enrollment and attendance, schools are in a favorable position to provide such preventative and early intervention strategies. All children have access to schools, regardless of family socioeconomic status and income, insurance, or legal resident status (Sulkowski, Joyce, Storch, 2012). According to Sulkowski, Joyce, and Storch (2012), schools are the most common entry points and service providers of mental health services for children. As clinicians trained to provide psychological services within
an educational environment, school psychologists are in a unique position to support students who struggle with symptoms of anxiety. By providing brief Cognitive Behavioral intervention to young students and consultation with stakeholders, school psychologists can help turn it around before it becomes a larger concern in the higher grades.

There are three factors to consider with regard to treatment within schools: first, the interventions used in the current study would fall under the Targeted Tier 2 level in a Response to Intervention framework. A Tier 2 intervention targets approximately 5-10% of the school population who have been identified as at-risk youth and needing support for social skills or academic skills (Sulkowski, Joyce, & Storch, 2012). When discussing a student’s performance within a Tier 2 Response to Intervention framework, such as at a Student Success Team meeting, it is important to consider the child’s mood in relation to their academic performance. As discussed in the introduction chapter, the culture of treatment within schools dictates that concerns must interfere with a student’s academic performance in order to be addressed by the school team. Second, with a brief Coping Cat program, school psychologists can provide support to students over a fewer number of sessions, which means that students lose less academic time or “specials” periods (Crawley, et al., 2013). Third, skills learned during the Coping Cat lessons are more easily generalized since the school psychologist and teacher can facilitate skill development within the natural school environment (Crawley et al., 2013). 1). As it takes consistent practice over time to integrate coping skills within a child’s daily life, the school setting would provide the opportunity for this consistency.
The most important practical implication born from this study is the necessity to use Conjoint Behavioral Consultation from the start of the intervention in order to obtain the best outcomes. Although there were positive results during the Coping Cat only intervention phase in which anxiety symptoms decreased and math performance increased, there were more significant and clinically meaningful outcomes once the Conjoint Behavioral Consultation was implemented. This study shows preliminary results pointing to the absolute necessity for school psychologists to intervene with children and consult with teachers, families, and outside providers regarding mental health and academic performance concerns. It will be imperative for future school staff to incorporate a family-school partnering consultation method, such as CBC, in order to expedite student outcomes.

Given the difficulty of recognizing an internalizing disorder like anxiety, it is important to have stakeholders on the same page in order to help monitor the child’s symptoms (Foxman, 2004). Schools may provide an easier approach to monitoring the symptoms because of easy access and duration of time spent with the child. In a clinic, the practitioner only sees the child for an hour a week, making it more difficult to recognize and monitor the symptoms. Therefore, it is best to involve all relevant adults with regard to treating a child’s anxiety.

Schools are busy institutions, which can lead to difficulty with implementing an intervention with fidelity. Across his research publications, Kendall (1994), has endorsed and advocated for his development of a manualized anxiety treatment that offers “fidelity with flexibility,” the Coping Cat. Mychailyszyn et al. (2011) has successfully adapted the
Coping Cat within a school setting with positive outcomes for decreasing anxiety. With this in mind, the Coping Cat can be completed in an adaptable way to meet the needs and circumstances of the child. Beidas and Kendall (2010) suggest shortening the length of the individual therapy session in order to accommodate the school schedule and to schedule several sessions a week. Crawley et al. (2013) advocates for implementing a brief Coping Cat version of 8 sessions within a school setting, though further research is still needed.

The difficulty in generalizing this intervention across schools is the different methods used to identify children with anxiety within a school setting (Sulkowski, Joyce, & Storch, 2012). Although Response to Intervention, or Multi-Tiered Systems of Support, have long been researched and endorsed for its contributions in systematic service delivery, districts across the country are still at various stages of implementation and sometimes adapt it to their needs. Because of this, the school psychologist role varies from assessment administrator to consultant, collaborator, and intervention implementer.

Time constraints in service delivery offer yet another factor to consider with implementation (Sulkowski, Joyce, & Storch, 2012). School psychologists are not bound by insurance reimbursements as are clinical psychologists, but time is a commodity in the school setting. In a school building that often has hundreds to thousands of students present, crises and situations that require immediate attention are inevitable. Fortunately, schools offer built-in flexibility in re-scheduling sessions as children attend school five days a week.
Limitations

Despite the clinically meaningful contribution that this study makes to the current literature on effective treatments of anxiety and their impact on math performance for young children, a number of limitations warrant discussion.

Study design.

First, as with all single case designs, generalization is limited by the small number of participants. Because the researcher worked in a clinic setting, it was difficult to find more children who fit the criteria for the study. The nature of clinic settings limits potential research participants because of access due to financial reasons and availability, as well as clientele (Wright & Sulkowski, 2013). Specifically, there are a limited number of insurance companies that are accepted through the clinic. Families who self-pay for services must fall within a certain socioeconomic bracket in order to be able to afford the self-pay rates.

The current single-subject study did not provide a standardized comparison to other children. The child participant in this study was enrolled in a Gifted and Talented program, but had significant gaps in math performance due to anxiety surrounding the subject. Because of this, it was difficult to compare her math CBM fluency performance against school, state, or national norms. Though using the child participant as her own control prevented threats to internal validity (Zhan & Ottenbacher, 2001), the lack of comparison to other children in her age or grade bracket prevents generalizability. Future research should include a standardized comparison in order to provide stronger justification for specific intervention.
Sample.

Exclusion and inclusion criteria impart additional concerns regarding generalizability. For the current study, families who were unable to make the weekly session time commitment and children who were English Language Learners, experienced a recent trauma or major illness, had a Traumatic Brain Injury, and/or had a diagnosis of Autism Spectrum Disorder, Specific Learning Disorder with Impairments in Mathematics or Reading were not eligible to participate. The inclusion criteria included a child between the ages of 7 and 10; an Intelligence Quotient above a Standard Score of 80; Average scores on the Behavior Assessment System for Children, Second Edition and the Revised Children’s Manifest Anxiety Scale, Second Edition; availability and time commitment; and a complaint teacher. This exclusion and inclusion criteria restricts the number of eligible participants, making recruitment difficult and generalizability less likely (Gliner, Morgan, & Leech, 2009). Additionally, although it is a general neuropsychology clinic for children and adults, the local reputation is that it diagnoses and treats autism. The stated exclusion and inclusion criteria in conjunction with the clientele that were referred to the clinic led to particular difficulty with finding an appropriate participant.

Gender should also be considered and cross-researched in future studies that combine the Coping Cat program and Conjoint Behavioral Consultation. Though research indicates that females are more likely to be identified with anxiety than males, the genders experience similar frequencies of anxiety in childhood when examined more closely (Michael et al., 2012). Gender has not been shown to make a difference for
successful partnering through Conjoint Behavioral Consultation nor for clinical trials of the Coping Cat; however, it is considered best practice to verify results across genders (Lewinsohn et al., 1998). Gender could impact how well the child conveys enjoyment and interest to the Coping Cat intervention, which impacts adherence. In the current study, the child participant reported that her favorite pet was a cat and she expressed delight for the various Coping Cat stories and activities. The fact that the child loved cats certainly enhanced the effectiveness of the Coping Cat intervention, though steps could be taken for other children less interested in cats. In Michael et al.’s (2012) research with utilizing the Coping Cat with a 6-year-old male, activities in the Coping Cat manual were adapted to fit the boy’s interest in Batman. Though the intervention was moderately successful in each of these studies, additional research should replicate the combination of Coping Cat and Conjoint Behavioral Consultation across both genders.

Finally, the particular child participant and her teacher were perhaps unique participants. The child had been identified for her school’s Gifted and Talented programming and she possessed strong verbal and nonverbal problem solving abilities, which allowed for ease of understanding and following the Coping Cat concepts. She also connected with the material due to her enjoyment in cats, and this led to increased efficacy of activity completion and coping skill practice. Additional replication studies should recruit students with average abilities in order to further assess the utility of a brief Coping Cat intervention.

Her teacher also possessed unique qualities, as Gifted and Talented teachers might be considered more enthusiastic and with higher expectations for their students. The
teacher also reported that his mother is a Special Education teacher and he had previously consulted with her for advice on how to support this child in school. This demonstrates a greater awareness of the child’s needs, an openness to learn new ideas that could help this child, and a willingness to collaborate with other professionals. It would be interesting to replicate the study with teachers who teach a typical, average class in order to further evaluate the utility of the Conjoint Behavioral Consultation.

Measurement.

Using the Key Math, Third Edition or other standardized assessments to measure math performance would have contributed more objective data about the child’s performance. The Key Math, Third Edition is a test that measures a child’s understanding and application of math skills and concepts. Connelly (2007) created two forms, Form A and Form B, in order to allow practitioners the ability to administer a pre- and post-test measure of math performance. Though the present study did not have a group of participants to compare in a pre- and post-test fashion, it would have provided clinically meaningful information about the child’s math abilities at baseline and following the interventions. Future studies would benefit from utilizing such pre- and post-test measures.

Another question that the current study did not address is with regard to overall academic performance including work completion. Since emotional regulation has been studied extensively in very young children (specifically in preschoolers), researchers have found that math performance is most greatly impacted when young children are unable to regulate their emotions effectively (Ablard & Lipschultz, 1998; McClelland,
Furthermore, internalizing and externalizing behaviors alike have also been shown to affect executive functioning, which are utilized extensively throughout the school day (Barlow, 2002; Craske, 1999; Mattison & Mayes, 2012). Implications for future research in which executive functions are measured are further discussed in the conclusion.

**Procedural.**

An additional limitation is that the researcher could only meet with the child once a week. Due to time constraints because of family commitments and end of the school year fatigue, the family was unable to attend more than one session per week. Therefore, Coping Cat sessions were held once a week over the course of five weeks for an hour and a half each session. As multiple therapy sessions a week are typically reserved for significant clinical populations, such as those diagnosed with Bipolar Disorder or including features of psychosis or personality impairments, a once a week session in the clinic was deemed appropriate (Sharf, 2004). That said, many children benefit from additional support, encouragement, and reminders to practice coping skills within a naturalistic setting (Kendall, 1994; Landreth, 2001). In a school setting, a school psychologist has better access to students and could meet twice a week. As parents and teachers are familiar with attending parent-teacher conferences at school, consultation could begin immediately with all the child’s stakeholders.

A final procedural limitation involves the use of a brief version of the Coping Cat program, as a brief version might not work effectively for all children. Though part of the purpose of the study was to demonstrate the usefulness and effectiveness of a brief version of the Coping Cat (due to implications for school-based practices), not every
child will benefit from such an accelerated program. The child participant in the current study earned a Verbal Comprehension Index Standard Score of 114 on the Wechsler Intelligence Scale for Children, Fourth Edition, indicating that she would not require repetition of concepts due to her High Average verbal abilities. She was also enrolled in a high achieving status in school through enrollment in Gifted and Talented class. It will be important for future researchers and practitioners to consider a child’s verbal abilities in addition to their overall cognitive abilities for recruitment to a brief Coping Cat program.

**Conclusions for the Future**

Several ideas are explored pertaining to future research ideas and practitioner utility, which stem from the limitations of the study. Future researchers could replicate the current study. Single-subject designs have the advantage of easy adaptation and naturally conforming to practice so that the individual’s unique experience is recognized (Engel & Schutt, 2007). With clear controls and only one participant, researchers can establish a cause and effect relationship between the treatment and the behavior (Walker, Shippen, Alberto, Houchins, & Cihak, 2005). Replicating the study could provide similar results, which could strengthen the outcomes of the current study.

Researchers could also recruit a greater number of children (males and females), families, and teachers in order to obtain a larger sample size. Although the current study provides promising results for reducing anxiety and preliminary results for increasing math performance, a study that measures the responses of only one participant is not generalizable. Recruiting a larger sample of participants will allow for greater inferences of the results. Further, the children should participate in the intervention within the school
setting. This would allow for easier access to child and teacher participants and stronger cohesiveness of communication regarding the intervention.

Another implication for future research that impacts generalizability involves the use of standardized measures and norm comparisons. Measures for math performance based on standardized tests, in addition to benchmarking and progress monitoring data, that compares the participant to standardized norms would provide a global measure of math performance rather than a comparison of her own performance over time. These norms could include local, state, or national norms. Additionally, a gap analysis of the participant’s performance from baseline to expected performance should also be calculated to aid in the data analysis.

Future researchers might consider a larger-scale study that includes intervention comparison groups, such as a control waitlist group, a Coping Cat only group, and a Coping Cat plus Conjoint Behavioral Consultation group, in order to compare the effectiveness of the interventions. Specifically, the study could examine math performance or overall academic performance in young children who either (a) do not exhibit clinically significant levels of anxiety, or (b) exhibit clinically significant levels of anxiety. Furthermore, young children who exhibit clinically significant levels of anxiety can be examined utilizing two different interventions of either (a) Coping Cat only, or (b) Coping Cat enhanced by Conjoint Behavioral Consultation. In order to measure maintenance of coping skills, long-term follow up of outcomes should be measured and assessed as well.
Additional research combining Coping Cat and Conjoint Behavioral Consultation could include measures for executive functioning in order to assess how anxiety impacts these areas in young children. Then, researchers should examine whether there are improvements to executive function once anxiety decreases. Although executive function skills are required for completing daily tasks, these skills have been more widely studied with children displaying problematic behaviors. Executive functioning has been studied more extensively in children with Obsessive-Compulsive Disorder or Attention Deficit/Hyperactivity Disorder, with a specific emphasis on working memory and attention (Barkley, 1997; Doyle et al., 2005; Mayes, Calhoun, & Crowell, 1998; Martinussen, Hayden, Hogg-Johnson & Tannock, 2005; Zorcec & Pop-Jordanova, 2011). The related research suggests and demonstrates that these executive function processes impact academic performance in children across ages (Mattison & Mayes, 2012). Additionally, when a child becomes repeatedly stressed, sometimes the ability to access executive function skills becomes difficult. Internalizing disorders, such as anxiety, creates a distraction for the brain that channels these resources to preoccupation with the thoughts and behavior associated with the anxiety rather than the academic task at hand (Barlow, 2002; Craske, 1999). When this occurs regularly, students can fall behind in the curriculum when compared to their peers. The current literature focuses on this phenomenon with older students, typically in middle or high school, with very little research on young students in this area.
Uses for practitioners.

The current study demonstrates meaningful utility of this combined approach for practitioners. Both interventions used in the study have shown significant effectiveness in studies that employ only one of those interventions. Preliminary results indicate that initiating the consultation from the beginning should have a stronger impact on reducing anxiety and increasing math performance for a child. This finding is important for practitioners to recognize. With the combination of a Cognitive Behavioral Coping Cat intervention and Conjoint Behavioral Consultation – two research-based intervention approaches – practitioners are expected to find stronger outcomes than if the interventions were implemented independently. As best practice dictates that a child’s stakeholders should partner across settings, the combined use of these interventions are especially relevant to clinical and school-based practice (Lines, Miller, & Arthur-Stanley, 2010).

Another promising practice that is suggested for mental health and school-based practitioners is the new way anxiety was measured that could help when measuring anxiety across settings. As mental health concerns span across settings, it is important for practitioners to use a repeated measure that specifically elicits a parent’s and child’s perceptions of anxiety based on their observations of symptoms at home and school. Future practitioners could ask the teacher for additional weekly ratings on a Goal Attainment Scale in order to obtain additional school data. In order to create objective rating scales that can aid in developing replicable interventions, SMART goals (specific, measurable, attainable, realistic, and timely goals) should be used when developing Goal
Attainment Scales. Practitioners should also gather more frequent data in order to more effectively monitor progress overtime, which also will allow for quicker adjustments as needed. By encouraging parent, teacher, and student participants to use GAS measures, more optimal support can be provided across settings.

Finally, the study uniquely examines the impact of anxiety on math performance in an elementary aged child. By using Goal Attainment Scale ratings in conjunction with math CBM, practitioners can further examine how anxiety affects overall academic or a specific academic content area. Given that children are in school for most of the day, mental health issues greatly impact their academic work. The current study evaluated a child’s anxiety and the impact on her math performance by analyzing quantitative data as well as qualitative observations and reports from the teacher and mother. It is imperative that school psychologists combine individual supports with consultative practices to improve student outcomes in academic and social-emotional domains.
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Merikangas, K.R., He, J.P., Burstein, M., Swanson, S.A., Avenevoli, S., Cui, L., Benjet,


facilitate home-school partnerships. Presentation from Center for Research on Children, Youth, Families & Schools, Nebraska.


Appendix A – Generalized Anxiety Disorder Criteria

The Generalized Anxiety Disorder criterion is as follows:

“A) Excessive anxiety and worry (apprehensive expectations), occurring more days than not for at least 6 months, about a number of events or activities (such as work or school performance); B) The individual finds it difficult to control the worry; C) The anxiety and worry are associated with three (or more) of the following six symptoms (with at least some symptoms having been present for more days than not for the past 6 months) – Only one item is required in children – 1) Restlessness or feeling keyed up or on edge; 2) Being easily fatigued; 3) Difficulty concentrating or mind going blank; 4) Irritability; 5) Muscle tension; and 6) Sleep disturbance (difficulty falling or staying asleep, or restless, unsatisfying sleep); D) The anxiety, worry, or physical symptoms cause clinically significant distress or impairment in social, occupational, or other important areas of functioning; E) The disturbance is not attributable to the physiological effects of a substance (e.g., a drug of abuse, a medication) or another medical condition (e.g., hyperthyroidism); F) The disturbance is better explained by another mental disorder (e.g., anxiety or worry about having panic attacks in panic disorder, negative evaluation in social anxiety disorder [social phobia], contamination or other obsessions in obsessive-compulsive disorder, separation from attachment figures in separation anxiety disorder, reminders of traumatic events in posttraumatic stress disorder, gaining weight in anorexia nervosa, physical complaints in somatic symptom disorder, perceived appearance flaws in body dysmorphic disorder, having a serious illness in illness anxiety disorder, or the content of delusional beliefs in schizophrenia or delusional disorder).”

(American Psychiatric Association, 2013, p. 222)
Appendix B – Goal Attainment Scale for Anxiety

Anxiety Goal Attainment Scale for Children

Please think about your week from the last time we met to today. How would you rate your anxiety (worries, fears), overall, during that time?

| -2 = Much greater negative change (very nervous, scared, mad, sad, disappointed) |
| -1 = Some negative change (a little nervous, scared, mad, sad, or disappointed) |
| 0 = No change (calm, relaxed, fine) |
| +1 = Some positive change (happy, having a good day) |
| +2 = Much greater positive change (excited, having a great day) |

What is the reason for your rating?

Did anything happen since our last session that might have affected how you feel and do in school?
Appendix C – Anxiety Goal Attainment Scale for Parents

Anxiety Goal Attainment Scale for Parents

Please consider your child’s anxiety since our last session and provide a rating based on an average level of anxiety.

-2 = Much greater negative change (very nervous, scared, mad, sad, disappointed)
-1 = Some negative change (a little nervous, scared, mad, sad, or disappointed)
0 = No change (calm, relaxed, fine)
+1 = Some positive change (happy, having a good day)
+2 = Much greater positive change (excited, having a great day)

Please answer the following questions:

1. What is the reason for your rating?

2. Have there been any recent events or changes that you would like to share that might have affected your child since our last session?
### Appendix D – Examiner worksheet for Math CBM

**Curriculum-Based Assessment Mathematics**  
**Single-Skill Computation Probe: Examiner Copy**

**ADDITION: Two 1-digit numbers: Sums to 10**

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Appendix E – Student worksheet for Math CBM

Curriculum-Based Assessment Mathematics
Single-Skill Computation Probe: Student Copy

Student: _______________________________  Date: __________________________

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Appendix F – Coping Cat Sample Session Activities

Session 1:

Personal Facts Game – rapport building with therapist

Play a fun game

Introduction to feelings and thoughts

Learn about STIC tasks
Appendix G – Coping Cat Intervention Checklist

**Baseline Phase** (four data points over 3 weeks):

Week 1: Pre-session GAS anxiety ratings, Math CBM at Initial Interview

Week 2: Two evaluation days – BASC-2; RCMAS-2; WJ-III, ACH, NU; Anxiety GAS; Math CBM

Week 3: Feedback session – GAS anxiety ratings; Math CBM

**Intervention Phase 1:** (1 ½ hours each session; five data points over 5 weeks)

Week 4
- Review of intervention
- Discuss when to meet with teacher & parent for consultation
- Mandatory Disclosure, Informed Consent, and Assent review and signatures
- Begin session 1 & 2 of Coping Cat
  - Coping Cat manual
  - Wrap up with STIC for next week
  - GAS anxiety rating
  - CBM Math Computation probe

Week 5
- Schedule meetings with teacher & parents for consultation
- Session 3 & 4 of Coping Cat – meet with parents during second half of session
  - Continue with Coping Cat manual
  - Wrap up with STIC for next week
  - GAS anxiety rating
  - CBM Math Computation probe

Week 6
- Session 5, 6, 7, 8 of Coping Cat
  - Continue with Coping Cat manual
  - Wrap up with STIC for next week
  - GAS anxiety rating
  - CBM Math Computation probe

Week 7
- Session 9, 10, 11, 12 of Coping Cat
  - Continue with Coping Cat manual – meet with parents during second half of session
  - Wrap up with STIC for next week
o GAS anxiety rating
o CBM Math Computation probe

Week 8
• Session 13, 14, 15, 16 of Coping Cat
  o Continue with Coping Cat manual
  o Wrap up with STIC for next week
  o GAS anxiety rating
  o CBM Math Computation probe
• Complete CBC Pre-Consultation Interview with child and teacher
• Confirm CBC session days and times

**Intervention Phase 2:** (three data points over 3 weeks)

Week 9 CBC Needs Identification Meeting; GAS anxiety ratings, Math CBM

Week 10 CBC Needs Analysis Interview; GAS anxiety ratings, Math CBM

Week 11 CBC Treatment Evaluation; GAS anxiety ratings, Math CBM

**Final Wrap Up** (final data collection session)

Week 12 Wrap Up Meeting with child and family, Recommendations for Future
GAS anxiety ratings, Math CBM
Appendix H – Conjoint Behavioral Consultation Pre-consultation Interview

PRECONSULTATION INTERVIEW
AND WORKSHEET © Susan M. Sheridan, Ph.D.

Teacher’s Name: ___________________________ Date: ________________

Parent’s Name: ___________________________ Child’s Name: __________

School: ___________________________ Grade: ________________

Special Education Classification: ___________ Known Diagnosis: ______

The goals of the preconsultation interview are to:

-- Begin to develop positive working relationship with consultees.

-- Explain CBC process and procedures to consultees and obtain informed consent.

-- Obtain demographic information about the client and consultees that is relevant to beginning the case and conducting preliminary observations.

-- Gather preliminary information about the difficulties that the child is experiencing by gathering information from both sources simultaneously or independently.*

-- Determine a time to conduct observations of the environment, including the client, others, classroom, instructional and disciplinary procedures, etc.

-- Schedule the CNII.

*It is strongly recommended that this information be gathered in person, with all participants present. This will provide an opportunity to establish rapport and begin establishing a trusting, supportive relationship with parents and teachers, which is one of the most important objectives at this early stage.
Preconsultation Interview and Worksheet

Introduction to Conjoint Behavioral Consultation

I’d like to start by telling you a little about Conjoint Behavioral Consultation and what to expect. Generally, consultation involves teachers, parents, and a consultant putting their heads together to figure out how to best help a particular child. To do this we use a structured problem solving approach. This approach requires about 3 or 4 meetings lasting between 45 and 90 minutes each. It is important that each participant be present at each meeting, including parents, teachers, and anyone else who knows the child well and can help develop and implement a plan. In this way we all share in the plan and maximize the chances that the child can be successful.

During the first meeting we spend time deciding what the main concern is, and then we make plans to watch more closely so that we can better understand it. Often there will be several concerns that could be addressed, but we will need to focus in on one to get started and make the process more manageable. If you agree, we’d also like an observer to come in and observe the child to provide more information to us. After we have had a chance to observe the primary concerns for about a week, we have a second meeting which focuses on discussing what we have observed until think we have a good understanding of the problem and what might be causing it. At our second meeting we also create a plan to help the child. This plan is developed collaboratively with input from all involved because all participants have important information and ideas to share. Then, we put the plan into place. The third interview is a chance for us to get together to decide how the plan is working and make any changes. All the way through the process it will be important for all of us to carefully monitor and keep track of how things are going so that we can be sure that progress is being made. As you can see this process requires somewhat of a time commitment and we won’t be creating a plan until the second meeting.

Does this sound like something that would be helpful? If so, there is an informed consent form that needs to be signed. The form reviews information that I just shared, as well as ensures that all information will be completely confidential and that your participation is voluntary. Please take a few moments to read the form, ask questions, and sign if everything is agreeable.
Strengths

Let’s start off by discussing some of the child’s strengths. What are some of the child’s strengths?

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Concerns

What are the general concerns you have for “child’s name”:

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Prereferral Procedures

What has been tried previously to address your concerns? What was the outcome?

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General Observations

I’d like to schedule a time to come in before our first meeting and have an opportunity to observe in the classroom and other appropriate settings. This will help me get a good sense for the concerns that you have expressed. Does this sound O.K. to you? When would be a good time to do that?

Settings:________________________________________

Date(s):__________________________ Time(s):__________________________
Schedule PII

I’d also like to schedule the first interview. The first one will be an opportunity to get together and talk about specific concerns. Let’s decide on a few good times now. Is there anyone who is not here who should be involved in the interviews (e.g., other teachers, counselors, care providers)? If so, I’ll call you to confirm a time after I talk to him/her/them.

Date(s): ________________  Time(s): ________________

Additional Questions

Before we leave or hang up, do you have any questions for me?
Appendix I – Conjoint Behavioral Consultation Needs Identification Interview

Conjoint Needs Identification Interview (CNII)

Child’s Name: _______________________________ Date: __________

Parent’s Name: _______________________________ Age: __________

Teacher's Name: _______________________________ Grade: __________

School: _______________________________________

Consultant’s Name: _______________________________

Consultant Note: The goals of the CNII are to:

Behavioral goals:

  o Jointly identify and define child’s priorities in behavioral terms.
  o Jointly establish a procedure to collect baseline data across setting.

Relationship building goals:

  o Identify strengths of the child, family, and school.
  o Establish joint responsibility in goal setting and decision making.
  o Establish/improve working relationships between parents and teacher, and between the consultant and consultees.
  o Validate shared goals of supporting the child.
  o Increase communication and knowledge regarding the child, goals, concerns, and culture of family and school.

Consultant and Case Goals for Interview:

_______________________________________________________________________________
_______________________________________________________________________________
_______________________________________________________________________________
_______________________________________________________________________________
_______________________________________________________________________________

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Conjoint Needs Identification Interview (CNII)

**SOCIAL OPENING**

Establish a friendly supportive atmosphere (e.g., position of the chairs, nonverbal communication); demonstrate interest for the consultee (e.g., ask about past events)

Notes:

**OPEN UP DIALOGUE**

Establish the attitude that everyone’s information is vital; use inclusive language; emphasize the expertise of everyone involved; discuss the importance and roles of each participant (i.e., provide information, collect/set-up assessment and observations); discuss steps of the meeting

Notes:

**DISCUSS CHILD, FAMILY, AND TEACHER STRENGTHS**

Discuss things that are going well; discuss likes and dislikes; establish importance of building upon strengths of all when addressing priorities

Notes:

Home | School
---|---

132
DISCUSS GOALS AND DESIRES
Discuss goals, aspirations, and desires for the child in the short and long term; emphasize importance of consultees’ identified goals and sharing of information regarding developmental appropriateness of expectations

Notes:

| Home | School |

SELECT NEEDS
Discuss what might get in the way of the goals and desires; explore general concerns

Notes:

| Home | School |

SUMMARIZE/Validate Goals and Needs. Begin building a bridge for shared goals and cross-setting similarities.
SELECT/DEFINE THE PRIORITY
Discuss importance of selecting one priority; select a priority based on goals and desires; define the priority in concrete, observable terms

Notes:

| Home | School |

SUMMARIZE/Validate the definition of the priority
SELECT A FOCUS/SETTING
Discuss importance of focus; answer where and when the priority behavior occurs in specific terms; select a focus or a place to start

Notes:

| Home | School |
WHAT WORKS/WHAT DOESN’T?

Discuss what has already been tried; point out strengths from what has already worked to be used later in coming up with a plan; emphasize strengths of consultees

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COLLECT INFORMATION

Discuss the rationale for collecting information; select a specific time, place and procedure; provide consultees with charts to record information; discuss rationale of watching what happens before and after the priority behavior, as well as specific patterns that occur; establish times for consultant to observe

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What will be observed?

Where will observation occur?

How will it be recorded?

When will observation begin?
Provide parents and teachers with data collection forms

SUMMARIZE/Validate Data Collection Procedures

MEET AGAIN

Discuss steps of the next meeting, establish time and place to meet

CLOSING

Summarize what was accomplished at the meeting, emphasizing consultees’ expertise, strengths, and how this information will help the child to be successful; exchange phone numbers and e-mail addresses; let parents and teachers know they are free to contact you with questions and concerns and remind them you will check in to see how information gathering is going

Notes:
Appendix J – Conjoint Behavioral Consultation Needs Analysis Interview

Conjoint Needs Analysis Interview (CNAI)

Child’s Name: _______________________________  Date: ____________
Parent’s Name: _______________________________  Age: ____________
Teacher’s Name: _______________________________  Grade: ____________
School: ______________________________________
Consultant’s Name: ____________________________

Consultant Note: The goals of the CNAI are to:

Behavioral goals:

- Evaluate information collected across home and school.
- Collaboratively develop developmentally appropriate goals for priority behavior across home and school.
- Discuss what is happening before and after the priority behavior, as well as specific patterns that occur, during the focused time/setting.
- Collaboratively develop a plan built upon strengths and competencies to address the priority behavior across home and school.
- Reaffirm information collection procedures.

Relationship building goals:

- Use inclusive language to strengthen partnerships between home and school
- Encourage and validate sharing of parents’ and teachers’ perspectives of the priority behavior
- Foster an environment that facilitates “give-and-take” communication across settings.
- Promote collaborative decision-making and shared responsibility for plan development.

Consultant and Case Goals for Interview:

_________________________________________________________________________________
_________________________________________________________________________________
_________________________________________________________________________________
_________________________________________________________________________________
_________________________________________________________________________________

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Conjoint Needs Analysis Interview (CNAI)

SOCIAL OPENING

Establish a friendly supportive atmosphere (e.g., position of the chairs, nonverbal communication); demonstrate interest for the consultee (e.g., ask about past events)

Notes:

OPEN UP DIALOGUE

Re-emphasize the attitude that everyone’s input is vital; continue to use inclusive language; discuss steps of the meeting

Notes:

DISCUSS INFORMATION COLLECTED/SET GOALS

Restate the definition of the priority; discuss information collected; set jointly determined, developmentally appropriate goals based on information collected

Notes:

Home | School

SUMMARIZE information collected and connect to goals set
**WHAT’S HAPPENING?**
Discuss what is happening before and after the priority behavior, as well as specific patterns that occur, during the focused time/setting; emphasize this information will help to understand why this behavior is happening and how changes can be made

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**After**

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**Other Patterns**

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WHY IS IT HAPPENING?
Summarize information gathered, as well as what’s happening during the focused time/setting (organize and summarize relevant information such as attention that is given, key people that affect the occurrence of the priority behavior, skills needed to perform the desired behavior); discuss reasons why the priority behavior is happening

Notes:

WHAT TO DO?
Select a focus for change based on why the priority behavior is happening; restate child, teacher and family strengths; jointly develop a plan across home and school, building on these strengths; write down a summary of steps of the plan for parents and teachers; provide an opportunity for parents and teachers to ask questions; model plan procedures if necessary

Notes:

Home | School
**Summarize plan; Provide parents and teachers with Plan Worksheet**

**COLLECT INFORMATION**

Re-emphasize the rationale for collecting information; select a specific time, place and procedure; provide parents and teachers with charts to record information.

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<td>When will observation begin?</td>
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**SUMMARIZE/Validate Data Collection Procedures**

*Provide parents and teachers with data collection form*

**MEET AGAIN**

Discuss steps of the next meeting; establish time and place to meet.

**CLOSING**

Summarize what was accomplished at the meeting, emphasizing consultees’ expertise, strengths, and how this information will help the child to be successful; let consultees know they are free to contact you with questions and concerns and remind them you will communicate frequently to see how the plan is going.

| Notes: |
Appendix K – Conjoint Behavioral Consultation Plan Evaluation Interview

Conjoint Plan Evaluation Interview (CPEI)

Child’s Name: ________________________________  Date: __________

Parent’s Name: ______________________________  Age: __________

Teacher’s Name: ______________________________  Grade: __________

School: ________________________________________

Consultant’s Name: ____________________________

Consultant Note: The goals of the CPEI are to:

Behavioral goals:

- Determine if the goals for the priority behavior have been met.
- Evaluate what worked and what didn’t.
- Discuss continuation or termination of plan.
- Schedule additional interview if necessary, or terminate consultation.

Relationship building goals:

- Continue to promote open communication and collaborative decision-making across the home and school settings
- Reinforce joint efforts in addressing needs
- Discuss caregivers’ and teachers’ perceptions of the plan and process
- Reinforce caregivers’ and teachers’ strengths and competencies for addressing future needs for the child
- Establish means for caregivers and teachers to continue to partner in the future

Consultant and Case Goals for Interview:

_________________________________________________________________________________
_________________________________________________________________________________
_________________________________________________________________________________
_________________________________________________________________________________

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Conjoint Plan Evaluation Interview (CPEI)

SOCIAL OPENING
Establish a friendly supportive atmosphere (e.g., position of the chairs, nonverbal communication); demonstrate interest for the consultee (e.g., ask about past events)

Notes:

OPEN UP DIALOGUE
Re-emphasize the attitude that everyone’s input is vital; continue to use inclusive language; discuss steps of the meeting

Notes:

HOW DID IT WORK/WHAT HAPPENED?
Restate the plan and the goals; discuss how the plan worked and if the goals were met; decide where to go from here (e.g., modify plan, set a new goal, use plan in another setting, end consultation)

Notes:

Home | School
CHANGE PLAN
Discuss what worked and what didn’t, emphasizing strengths of the plan; it may be necessary to re-evaluate what is happening before and after, as well as specific patterns, and why the priority behavior is occurring; refer to previous interview forms

Notes:

CONTINUE THE PLAN
Discuss how to continue positive changes over time; discuss continuing the plan (e.g., other times and settings) OR gradually removing the plan

Notes:
DISCUSS NEED FOR FUTURE MEETING
Discuss if a formal meeting is necessary; discuss informal methods (e.g., e-mail, phone calls, home school notes), emphasizing the value of continued communication; discuss plan for follow-up and provide caregivers and teachers with extra plan worksheets and data collection forms

Notes:

WHAT WORKED/WHAT DIDN’T
Summarize the plan and the partnership building process, emphasizing collaborative decision making, strengths, expertise, and home school communication; discuss what caregivers and teachers thought about why the behavior changed, as well as what worked and what didn’t with the plan and the process; discuss how you might use similar ideas to address future needs, emphasizing specific plans to address priorities, as well as the collaborative decision-making process; discuss if caregivers and teachers were satisfied with the results

Notes:

END CONSULTATION
Discuss ways to keep in touch with the consultant and with each other