EXECUTIVE FUNCTION, SELF-EFFICACY, AND SCHOOL ENGAGEMENT AMONG YOUTH IN CLINICAL TREATMENT FOR ANXIETY AND OBSESSIVE-COMPULSIVE DISORDER

By

Rachel Ogle

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ABSTRACT

EXECUTIVE FUNCTION, SELF-EFFICACY, AND SCHOOL ENGAGEMENT AMONG YOUTH IN CLINICAL TREATMENT FOR ANXIETY AND OBSESSIVE-COMPULSIVE DISORDER

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The purpose of this study was to examine the relation between mental health and school functioning among school-aged youth. This study examined changes in anxiety or Obsessive-Compulsive Disorder (OCD) among children and adolescents, following cognitive-behavioral therapy (CBT) in clinical settings, and how this related to changes in their executive functioning, self-efficacy, and school engagement. This research was conducted with children and adolescents diagnosed with anxiety disorders or OCD, who received modular CBT treatment as usual, and their parents. Using a modified pre- and post-treatment design, participants completed quantitative measures of anxiety or OCD, metacognitive awareness, executive function, self-efficacy, and school engagement. A subsample of participants also completed follow-up surveys in the midst of the COVID-19 pandemic in the United States, as well as phone interviews. Findings showed that youth experienced reductions in symptomology after a course of CBT, with differing parent and child perspectives regarding initial symptom levels and changes in symptoms. Results also showed that, overall, participants experienced improvements in some aspects of executive function (e.g., emotion regulation). Participants also experienced improvements in self-efficacy and school engagement, alongside their reductions in anxiety or OCD symptoms. Implications of these findings for parents, educators, and future research are discussed.

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CHAPTER 1:

INTRODUCTION

Anxiety disorders and Obsessive-Compulsive Disorder (OCD) are among the most common mental health concerns faced by children and adolescents. The lifetime prevalence of anxiety disorders ranges from 15% to 20% (Beesdo et al., 2009; Kessler et al., 2012), and one-third of youth will meet criteria for an anxiety disorder by age 18 (Chorpita, 2007; Merikangas et al., 2010). OCD affects 1 to 3% of youth (Zohar, 1999), with approximately one half of adults with OCD developing the disorder during childhood or adolescence (Rasmussen & Eisen, 1990).

While anxiety is a common emotion that all youth experience, anxiety becomes problematic when it is disproportionately high and causes distress or impairment in daily life (Higa-McMillan et al., 2014). Anxiety symptoms span cognitive (e.g., worry, cognitive distortions), affective (e.g., over-sensitivity, negative emotionality), and behavioral domains (e.g., irritability, task avoidance; Higa-McMillan et al., 2014). OCD shares similar symptoms to anxiety. In fact, OCD was considered a type of anxiety disorder until the most recent revision of the Diagnostic and Statistical Manual of Mental Disorders (5th ed; *DSM-5*; American Psychiatric Association [APA], 2013). OCD is characterized by unwanted, intrusive obsessions (i.e., thoughts or mental images) and compulsions (i.e., repetitive behaviors or mental acts) that are performed in an attempt to reduce anxiety experienced from the obsessions (Coluccia et al., 2017).

Anxiety disorders and OCD have deleterious effects on youth's current and long-term outcomes across a variety of areas, such as social and familial functioning and life satisfaction (Piacentini et al., 2003; Swan & Kendall, 2016). OCD is considered to be one of the most disabling medical disorders (McNamara et al., 2014). Of further concern, if left untreated,

anxiety and OCD can worsen over time (Albano et al., 2003). A meta-analysis examining outcomes of childhood OCD found that approximately 40% of pediatric OCD persists into adulthood (Stewart et al., 2004).

The existing body of work exploring anxiety disorders and OCD among clinical populations has largely focused on treatment effectiveness (Southam-Gerow et al., 2003). Limited clinical research has explored the connections between anxiety, OCD, and functioning in areas beyond mental health that are also important for well-being, such as executive functioning, self-efficacy, and school engagement (Nail et al., 2015; Visu-Petra et al., 2011).

Executive functioning (EF) encompasses a broad range of skills that are considered foundational for learning (Diamond, 2013). EF is an umbrella term for processes that are required for purposeful, goal-directed behavior (Anderson, 2002; Jacobson et al., 2011). Research has consistently shown that EF is critical for academic and social functioning (Aronen et al., 2005; Best et al., 2011). Complex EF skills are associated with academic skills, including problem-solving and reading comprehension (Best et al., 2011). Additionally, teachers report more academic and behavioral difficulties for students with low EF skills, such as working memory deficits (Aronen et al., 2005).

The associations between anxiety, OCD, and EF is supported by theory and previous research. Attentional control theory (ACT) proposes that executive attention control is impaired by high anxiety (Eysenck et al., 2007). According to ACT, an individual's cognitive functioning is impaired due to allocation of their attentional resources to threat-related stimuli, such as worrisome thoughts. This theory also posits that the relation between anxiety and EF is bidirectional; the impairment of cognitive resources maintains anxiety, and anxiety affects cognition. For example, impairment of attentional control reflects an underlying difficulty among

anxious individuals to stop worrying, and to instead, think about less threatening information (Stefanopoulou et al., 2014). Moreover, anxiety can impair EF functioning, which in turn can affect students' ability to concentrate, attend during class, and ultimately perform in school (Aronen et al., 2005). ACT has also been cited in OCD research as a pertinent theoretical framework, supporting the connecting between OCD and EF deficits (McNamara et al., 2014).

Previous research has established an association between anxiety, OCD, and EF. There is research to suggest that anxiety is related to specific EF skills, such as working memory (Hadwin et al., 2005) and attentional control (Stefanopoulou et al., 2014). However, the majority of previous studies examining the relation between anxiety and EF have been conducted with adults. In a review of 34 studies examining anxiety and EF spanning three decades, only five of these studies were conducted with children and adolescents (Visu-Petra et al., 2006). Similarly, the relation between OCD and EF has been studied substantially more frequently in adult populations, compared to pediatric OCD (McNamara et al., 2004). OCD researchers have noted discrepancies in results across adult and youth studies, demonstrating the necessity of additional research with youth populations (McNamara et al., 2004).

Although research is limited, recent preliminary studies have demonstrated support for the relation between both anxiety and OCD, and impaired EF, among youth. With a small clinical sample, Reinholdt-Dunne et al. (2015) assessed attentional control of clinically anxious children before and after Cognitive-Behavioral Therapy (CBT). Results indicated that prior to treatment, anxious children showed significantly poorer attentional control compared to their non-anxious counterparts; post-treatment, no significant differences across groups were found. In a treatment study, McNamara and colleagues (2004) evaluated the relations between OCD symptom severity and EFs among a sample of children. Findings showed that greater impairment

across multiple domains of EFs were associated with increased OCD symptom severity (McNamara et al., 2004). Given the limited research conducted with youth, research is needed to further explore the relation between anxiety disorders and EF among this population and the potential benefits of treatment that extend beyond mental health.

In addition to EF, research has shown that motivational constructs, such as self-efficacy, are related to both school success and anxiety. According to Bandura (1982), self-efficacy is defined as perceived "…judgments of how well one can execute courses of action required to deal with prospective situations" (p. 122). Self-efficacy is an important motivational belief for school success (Linnenbrink & Pintrich, 2002). Large scale studies have found that self-efficacy is a powerful predictor of students' academic outcomes (Multon et al., 1991). Research shows that self-efficacy is related to persistence on tasks, effort, use of cognitive strategies, and academic achievement (Bandura, 1997; Pintrich & Schunk, 2002). From a theoretical perspective, Bandura, Masten, and others have posited that high self-efficacy may prevent or ameliorate psychopathology, while low self-efficacy could maintain or worsen psychopathology (Bandura, 1977, Masten et al., 1990). When individuals perceive themselves as unable to handle challenging situations or reach goals, their anxiety may increase. In contrast, high self-efficacy could serve as a protective factor, decreasing the likelihood of the development of a psychological disorder.

Of the extant research, studies have shown that low levels of domain-specific self-efficacy (i.e., emotional, social, and academic self-efficacy) are associated with generalized anxiety symptoms (Muris, 2002), social anxiety (Matsuo & Arai, 1998), and test anxiety (Yue, 1996). Among a sample of adolescents, Muris (2002) found that symptoms of anxiety and depression accounted for a significant portion of the variance in total self-efficacy. However, this

study did not include adolescents with clinical levels of anxiety, and limited research has examined self-efficacy among clinically anxious youth. Updated research is needed to further evaluate the proposed relationship between self-efficacy and anxiety, particularly among youth with clinical levels of anxiety.

School engagement is also important to school success and is related to anxiety. School engagement refers to the level of involvement, attachment, and commitment to academic and social activities at school (Li, 2011). School engagement is multifaceted, consisting of behavioral, emotional, and cognitive components (Fredricks et al., 2004). Research has consistently established the importance of school engagement for children and adolescents, demonstrating that high levels of school engagement are beneficial for children's self-esteem, academic success, and overall well-being (Henry et al., 2011; Suldo et al., 2006; Wang & Peck, 2013).

While prior research has established the relation between school engagement and academic success, limited research has examined the relations between anxiety, OCD, and school engagement. Although minimal research has examined the relation between trait anxiety and school engagement, there is some support for the associations between these constructs. A recent study found that among middle school students, high levels of anxiety were associated with lower school engagement (Wilcox et al., 2016). Additionally, there is some research that has examined the effects of OCD symptoms and severity on academic functioning; however, measures used did not specifically assess school engagement. For example, Piacentini et al. (2003) found that among a large sample of children and adolescents, 47% of parents and 44% of children reported significant OCD-related problems in school and academic functioning.

Given preliminary evidence supporting the association between anxiety, OCD, and school engagement, it is important for further research to examine the conditions under which these constructs are related. Current interventions designed to increase students' school engagement often focus on checking on student attendance, collaborating with parents, and increasing students' social supports at school (Appleton et al., 2008; Stormshak et al., 2010). Understanding the strength of the association between these mental health disorders and school engagement can help identify relevant intervention targets. In other words, it is possible that interventions designed to address school engagement would benefit from targeting mental health concerns, such as anxiety.

Given the detrimental effects of anxiety on youth's functioning across a variety of domains, treatment is recommended and necessary when anxiety reaches clinical levels. One evidence-based treatment for anxiety is Cognitive-Behavioral Therapy (CBT), which is typically an individual therapy, conducted using manualized protocols or a modular framework. Essentially, CBT aims to adapt the client's maladaptive thoughts and behaviors, using an action-oriented and short-term therapeutic approach (Macklem, 2011). Common components of CBT treatment include psychoeducation, symptom hierarchy development, cognitive restructuring, skill training, relaxation training, and exposures (Macklem, 2011). There is substantial research supporting CBT as an effective therapy for treating anxiety and OCD among children and adolescents (Cartwright-Hatton et al., 2004; Reynolds et al., 2012).

With the current state of the research, the relations between anxiety disorders, OCD, cognitive and motivational processes important for youth's school success are not well understood. Although some studies have examined the effect of anxiety disorders on academic success, this research has focused narrowly on performance outcomes such as grades and

standardized test scores (Nail et al., 2015; Swan & Kendall, 2016; Wood, 2006). Similarly, OCD research has typically focused on school functioning, occupational functioning, or quality of life more broadly (Piacentini et al., 2003). Examining outcomes that may be more directly affected by anxiety disorders and OCD such as EF, self-efficacy, and school engagement, can provide insight into the cognitive, affective, and behavioral correlates of anxiety, and how anxiety can influence a child's school experiences. Additionally, the majority of research that has examined anxiety in relation to EF, self-efficacy, and school engagement has assessed these associations with anxiety symptoms as static (Dragan et al., 2012; Geronimi et al., 2016; Muris, 2002). In other words, there is currently a lack of understanding of how changes in anxiety symptoms, resulting from treatment, may be related to changes in youth's cognitive and motivational processes.

Furthermore, it is important to consider the lack of generalizability of studies that have examined the intersection between anxiety, OCD, and cognitive and motivational processes. For example, the majority of studies that have examined anxiety and EF, and OCD and EF, have been conducted with adults. Given developmental distinctions across mental health disorders among children compared to adults, it cannot be assumed that the relations between anxiety, OCD, and higher-order cognitive processes are the same across the lifespan. In addition, much of the research on this topic has been conducted with non-clinical samples. Research with normative samples often uses thresholds for anxiety or OCD symptoms that do not reach clinical levels, which could influence how these disorders intersect with cognitive and motivational processes. Finally, studies involving qualitative components to the research have typically been limited to case studies. Understanding the lived experiences of youth and families can provide valuable insight into the relation among anxiety, OCD, and school functioning.

Theoretical Framework

The theoretical framework used in the current study is attentional control theory (ACT; Eysenck et al., 2007). ACT was developed from an earlier theory of processing efficiency, developed by Eysenck and Calvo (1992). According to ACT, anxiety impairs the efficiency of the top-down system, meaning that bottom-up attentional selection mechanisms overpower top-down control (Waszczuk et al., 2015). Simply put, anxiety negatively affects aspects of cognitive functioning, such as attentional control, working memory, shifting, and inhibition (Eysenck et al., 2007). Theoretically, cognitive functioning is impaired due to allocation of attentional resources to threat-related stimuli, whether this is internal (e.g., worrisome thoughts) or external (e.g., threating, task-irrelevant distractors). Additionally, anxiety-related thoughts consume working memory resources, which in turn disrupts performance on other tasks (Cheie et al., 2017; Eysenck et al., 2007).

ACT assumes that anxiety impairs processing efficiency, more so than performance effectiveness (Eysenck et al., 2007). Processing efficiency refers to the effort or resources used during task performance and its relation to performance effectiveness, whereas performance effectiveness is described as the quality of task performance (Eysenck et al., 2007). In experimental studies, performance effectiveness is often measured by response accuracy on tasks. In school settings, performance effectiveness would be the quality or accuracy of students' work production, whereas efficiency refers to the amount of effort that students need to produce in order to maintain performance effectiveness. In support of this theory, research has demonstrated that children with anxiety do, in fact, selectively attend to threats in the environment (Bar-Haim et al., 2007; Nail et al., 2015; Waszczuk et al., 2015). There is also

research evidence to suggest that anxious individuals are less likely than non-anxious individuals to process all of the available information when performing cognitive tasks (MacLeod, 1996).

ACT was well suited as the theoretical framework for this study because it provides an explanation for how anxiety and OCD could negatively affect EF, self-efficacy, and school engagement. According to ACT, anxiety can reduce the availability of cognitive resources and limit executive functioning. Additionally, ACT can explain the relation between anxiety and self-efficacy because it is a belief about oneself that is cognitive in nature (Bandura, 1997). According to ACT, anxious individuals focus their attention on threatening and emotionally-charged stimuli, more so than non-threatening cues. Anxious individuals may be more likely to focus their attention on times when they faced challenging or novel situations and did not succeed. This attention towards failure may, in turn, be related to lower self-efficacy. A similar process might occur for the relation between anxiety and school engagement. With cognitive resources devoted to worrying and other distractors in the environment, students may have more difficulty attending in the classroom and participating during class. Though ACT was originally developed as a theory to explain how anxiety is related to cognitive processing, this theory also provides support for the relation between anxiety, OCD, self-efficacy, and school engagement.

Study Purpose

The primary purpose of this research was to examine the intersection between anxiety, OCD, cognition, and motivation. The current study used a modified pre- and post-treatment design to evaluate how changes in anxiety or OCD among children and adolescents, following modular CBT in a clinical setting, were related to changes in their cognitive and motivational processes. Specifically, changes in youth's anxiety and OCD symptoms were assessed, in relation to changes in their EF, domain-specific self-efficacy, and school engagement. A

qualitative component was also used in order to hear directly from youth and their families about the child's anxiety or OCD, and how their symptoms affected their school experiences.

Of note, data collection for this study occurred during the onset of the COVID-19 pandemic in the United States in March 2020. In recognition that the study was being conducted in a context of national and global uncertainty, and that the pandemic could affect anxiety and OCD, the research focus was broadened to take this into account. Thus, an additional purpose of this study was to explore the effect of the pandemic on youth's anxiety and OCD symptoms.

As previously noted, outcomes that matter for school success and that are more proximal to mental health, including cognitive and motivational processes, were assessed in this study rather than factors more distal to anxiety and OCD (e.g., academic achievement). Nevertheless, this study has implications for youth's school success and adds to the literature that has previously only explored the associations between anxiety and standardized test scores. Given increasing recognition of the importance of schools in addressing mental health needs, results of this study have the potential to demonstrate the value of mental health interventions to improve children and adolescent's learning and functioning in schools. Findings from this study will also add to the literature on clinical treatment, given that the majority of clinical treatment research has examined manualized interventions for anxiety and OCD rather than modular treatment. Moreover, treatment research has primarily been limited to effectiveness studies that assess outcomes such as changes in clinical diagnosis and symptomology. This study adds to research with clinical populations by examining whether treatment for anxiety is accompanied by changes in EF, self-efficacy, and school engagement. Finally, the majority of previous research with this population have typically been quantitative studies or individual case studies. Qualitative

information can shed light on the unique experiences of youth with anxiety or OCD by providing rich and contextualized descriptions of their lived experiences.

Research Questions

The current study examined the following research questions (RQs):

1. How does anxiety/OCD change over the course of psychological treatment?
2. How do perceptions of anxiety/OCD symptoms compare between parents and their children?
3. How does executive functioning change over the course of psychological treatment?
4. How does self-efficacy change over the course of psychological treatment?
5. How does school engagement change over the course of psychological treatment?
6. What is the level and pattern of anxiety/OCD symptoms among children, in the midst of a national emergency, the COVID-19 pandemic?
7. Do levels of anxiety/OCD and executive functioning, self-efficacy, and school engagement show similar patterns over the course of psychological treatment?

CHAPTER 2:

LITERATURE REVIEW

This section reviews the literature on anxiety and OCD in childhood and adolescence, examining symptoms, diagnoses, comorbidity, etiology, effects of anxiety and OCD, parent and child perceptions, and cultural considerations. Additionally, the literature on CBT for the treatment of anxiety disorders and OCD in children and adolescents is presented. Differences between manualized and modular CBT interventions are discussed, as well as the efficacy of these treatment modalities. Following this discussion, literature on the relation between anxiety, OCD, EF, self-efficacy, and school engagement is presented.

Anxiety and OCD

Anxiety and fear are common emotions that all children experience and are a necessary part of development (Higa-McMillan et al., 2014). Anxiety has been defined as "the product of a multi-complex response system, involving affective, behavioral, physiological, and cognitive components" (Weems & Silverman, 2013, p. 515). Simply stated, anxiety is the brain's response to danger (Beesdo et al., 2009). Anxiety is also often conceptualized as the anticipation of future threat, characterized by a perception of uncertainty of potentially aversive events or situations (APA, 2013; Barlow, 2004). In most cases, feelings of anxiety or fear are adaptive, brief, and dissipate relatively quickly (Beesdo et al., 2009). However, anxiety becomes problematic when it is disproportionately high, relative to situational context or the child's developmental level, and when it causes distress or impairment in daily life and functioning (Beesdo et al., 2009; Ellis & Hudson, 2010; Higa-McMillan et al., 2014). Furthermore, it is important to distinguish between state anxiety and trait anxiety. State anxiety is shown in specific situations, such as taking a test,

while trait anxiety is a persistent and pervasive anxiety that is shown in a variety of settings (Huberty, 2012).

Symptoms

Anxiety. Symptoms of anxiety are manifested in cognitive, behavioral, and physiological ways (Huberty, 2012). The primary cognitive characteristic of anxiety is worry, a cognitive process involved in the anticipation of future danger (Friedberg & McClure, 2015; Huberty, 2012). Additional cognitive symptoms may include cognitive distortions, over-sensitivity, intolerance of uncertainty, negative emotionality, and problems with attention and concentration (Huberty, 2012). A few examples of behavioral symptoms of anxiety include avoidance, restlessness, and irritability (Huberty, 2012). In particular, avoidance is often considered a "hallmark" of anxious symptoms (Friedberg & McClure, 2015, p. 267). Particularly for young children, additional behavioral symptoms may include nail biting, thumb sucking, and hypervigilance (Friedberg & McClure, 2015). Finally, physiological reactions are also central to anxiety, with some of the most common being rapid heart rate, perspiration, headaches, stomachaches, muscle tension, and sleeping problems (Huberty, 2012).

Worry. Worry, a primary component of anxiety disorders, is a fairly common phenomenon among children and adolescents (Ellis & Hudson, 2010; Henker et al., 1995). One study found that among a sample of school-aged children, almost 70% of participants reported experiencing worry (Muris et al., 2002). Worry has been conceptualized as a form of avoidance (Borkovec & Inz, 1990), problem-solving (Davey, 1994), and as a coping activity (Wells, 1995). While all individuals experience worries, those with anxiety disorders rate worries as more uncontrollable and difficult to cope with (Wells, 1995). In fact, worry is the central defining feature of Generalized Anxiety Disorder, and is also a feature of other anxiety disorders,

particularly Separation Anxiety Disorder and Social Anxiety Disorder (Ellis & Hudson, 2010; Fialko et al., 2012). Essentially, worry consists of long chains of negative thoughts (Wells, 1995). The content of worries varies but are typically related to everyday and real-life events, such as relationships and school (Wells, 1995; Wells & Papageorgiou, 1998). The temporal nature of worries can range from past, to current, to future (Wells, 1995). While worry is related to anxiety or fear, worry can occur in the absence of actual threat or danger (Muris et al., 2002).

Within the past several decades, researchers began developing models of worry among adults to better understand how uncontrollable worrying is maintained. Distinct cognitive processes shown to maintain worry include cognitive avoidance, negative problem orientation, and intolerance of uncertainty, among others (Dugas et al., 1998; Wells, 1995). More recently, researchers have begun to examine the applicability of the cognitive model of worry in children and adolescents (Fialko et al., 2012). Fialko and colleagues (2012) found that for adolescents, cognitive avoidance, positive beliefs about worry, and intolerance of uncertainty contribute to the frequency of adolescent worries (Fialko et al., 2012). Importantly, these cognitive beliefs are present among children as young as 7 years old but are less influential on maintaining worry (Fialko et al., 2012). In other words, the influence of such cognitive beliefs on worry and anxiety increases with age (Fialko et al., 2012).

Avoidance. While the primary cognitive symptom of anxiety is worry, the most pervasive behavioral symptom of anxiety is experiential avoidance. Avoidance plays a role in the development and maintenance of anxiety, in accordance with conditioning theory and cognitive theories (Rudaz et al., 2017). The purpose of experiential avoidance is to reduce the effect of aversive internal experiences, such as anxiety (Eifert et al., 2009). From a behavioral perspective, anxiety is maintained because avoidance of a conditioned stimulus prevents extinction from

occurring (Mowrer, 1939). Additionally, experiential avoidance allows an individual to experience temporary, relief, which negatively reinforces avoidant behavior (Eifert et al., 2009). From a cognitive perspective, avoidance does not allow an individual to gather disconfirming evidence, which in turn maintains anxiety (Rudaz et al., 2017). For example, a child who refuses to go to school does not have the opportunity to learn that the anticipatory fear that they experience is greater than the actual fear response. Beyond theory, research has shown that avoidance behavior does, in fact, contribute to the development and maintenance of anxiety (Panayiotou et al., 2014; Rudaz et al., 2017).

OCD. The characteristic symptoms of OCD are obsessions and compulsions. Obsessions are defined as repetitive, unwanted, and persistent thoughts, images, or urges that typically cause distress or anxiety (APA, 2013). Compulsions, sometimes referred to as habits or rituals, are repetitive behaviors or mental acts that the individual feels driven to perform (APA, 2013). Individuals with OCD report engaging in compulsions to alleviate anxiety or feelings of disgust, discomfort, incompleteness, or the sense that something does not feel right (Piacentini et al., 2006). Compulsions are not typically connected to obsessions in a realistic way (e.g., walking up and down the stairs repeatedly to ensure no harm comes to a family member). The majority of individuals with OCD experience the presence of both obsessions and compulsions (APA, 2013).

There are important distinctions in symptomatology for pediatric OCD compared to adult-onset. For one, the pattern of OCD symptoms in children is more variable than the pattern of symptoms in adults (APA, 2013; Mataix-Cols et al., 2002). Additionally, symptoms of OCD among children are usually present with limited insight, whereas this is not always the case in older adolescents and adults. “Insight” refers to the degree of accuracy of beliefs that underlie OCD symptoms. Clinicians can diagnose individuals with OCD as having good or fair insight,

poor insight, or absent insight/delusional beliefs (APA, 2013). Symptoms are also usually hidden, and poorly articulated, among children (Albanna et al., 2017). In contrast, older adolescents and adults are more likely to have good or fair insight into their OCD symptoms.

An important consideration is that OCD is a heterogeneous disorder, meaning that specific symptoms and the experience of the individual can differ dramatically from person to person. Though OCD is heterogeneous, some symptoms are more commonly seen among youth with OCD than others (Piacentini et al., 2006). The most common obsessions for children with OCD include fears of harm or other negative outcomes to self and others, and concerns with germs, contamination, and illness (Piacentini et al., 2006). The most commonly seen compulsions include excessive washing, cleaning, and checking (Piacentini et al., 2006).

Anxiety Diagnoses

Children can be diagnosed with any of seven types of anxiety disorders: Specific Phobia, Separation Anxiety Disorder, Social Anxiety Disorder, Selective Mutism, Panic Disorder, Agoraphobia, and Generalized Anxiety Disorder (APA, 2013). Separation Anxiety is the only anxiety diagnosis unique to children; adults can be diagnosed with any of the other six diagnoses. For all of these disorders, the prominent feature is anxious emotion, expressed through cognitive, physiological, and behavioral reactions (Higa-McMillan et al., 2014). The primary distinguishing factor between these anxiety disorders is the focus of the anxiety (Higa-McMillan et al., 2014). Lifetime prevalence and age of onset also varies across anxiety diagnoses.

Specific Phobia. Specific phobia refers to a fear of an object or situation that is disproportionate in comparison to the actual posed threat (APA, 2013; Higa-McMillan et al., 2014). Twelve-month and lifetime prevalence estimates for specific phobias in youth range from 4% to 19%, making it among the most common anxiety disorders (Essau et al., 2000; Kessler et

al., 2012; Kim et al., 2010). Most cases of specific phobias emerge before the age of 12 years (Beesdo et al., 2009). Specific phobias are classified into five major types, including: animal, natural environment (e.g., storms), situational (e.g., enclosed spaces), blood-injection-injury (e.g., seeing blood) and other (e.g., choking, costumed characters; APA, 2013). Animal and environmental types of specific phobias are most common, according to studies conducted in clinical and community settings (Milne et al., 1995; Silverman et al., 1999).

Separation Anxiety Disorder. Separation anxiety disorder (SAD) is characterized by excessive anxiety and fear related to separation from caregivers or home (APA, 2013; Higa-McMillan et al., 2014). Prevalence of SAD ranges from 1 to 8% (Costello et al., 2003; Kessler et al., 2012). SAD has the earliest age of onset among all of the anxiety disorders and is the most common type of anxiety disorder in children ages 11 and younger (Beesdo et al., 2009; Cartwright-Hatton et al., 2005). Given the nature of the disorder, separation anxiety decreases in prevalence through childhood into adolescence, unlike other types of anxiety disorders, which increase in prevalence (Costello et al., 2003; Higa-McMillan et al., 2014). There most common symptoms of SAD include distress upon separation from caregivers, reluctance to sleep separated from caregivers, and reluctance to be alone (Allen et al., 2010).

Social Anxiety Disorder. Social anxiety disorder (SOC), sometimes referred to as social phobia, is one of the most common anxiety disorders (Hofmann & Barlow, 2004). Twelve-month and lifetime prevalence estimates for SOC range from approximately 7% in adolescence to 9% across the lifespan (Beesdo et al., 2009; Kessler et al., 2012; Merikangas et al., 2010). Onset of social anxiety is typically in late childhood or early adolescence (Beesdo et al., 2009). Social anxiety is distinguished from other anxiety disorders by individuals' marked fear or anxiety about social situations, in which the individual will possibly face scrutiny from others (APA,

2013). The types of social situations that evoke fear differ depending on the individual. Individuals with SAD may exclusively experience performance fears (e.g., public speaking), while others might feel anxious in any social situation, ranging from attending a party to having a one-on-one conversation (APA, 2013).

Selective Mutism. Selective mutism (SM) is marked by the consistent failure to speak in specific social situations, despite the occurrence of regular speech in other situations, such as at home (APA, 2013). SM is a relatively rare disorder, with prevalence rates ranging between 0.03% and 1% (APA, 2013). Due to the rarity of SM, and the fact that it has not been the focus of research until recently, prevalence rates have been difficult to establish and can vary (Viana et al., 2008). While children with SM may also have a communication disorder, this is not the reason for the child's failure to speak (Higa-McMillan et al., 2014). SM has an early age of onset, which ranges from 2.7 to 4.1 years (Cunningham et al., 2004).

Panic Disorder. Panic disorder (PD) is diagnosed when an individual experiences recurrent, unexpected panic attacks (APA, 2013). Individuals with PD may also be concerned about having additional panic attacks, or the consequences of panic attacks (APA, 2013). Panic attacks are an abrupt surge of intense fear or discomfort, with symptoms such as accelerated heart rate, shaking, shortness of breath, and dizziness, among others (APA, 2013). Twelve-month prevalence rates among adolescents have been reported as 1.9% (Kessler et al., 2012), while lifetime prevalence rates are slightly higher at 2.3% (Merikangas et al., 2010). First onset of panic disorder typically occurs in adolescence (Beesdo et al., 2009). Among children and adolescents, somatic symptoms of panic disorder are reported more frequently than cognitive symptoms (e.g., fear of dying from panic attacks), although both may be present (Doerfler et al., 2007; Higa-McMillan et al., 2014).

Agoraphobia. Agoraphobia is diagnosed when an individual experiences fear or anxiety about two or more of the following five situations: 1) using public transportation, 2) being in open spaces, 3) being in enclosed places, 4) standing in line or being in a crowd, or 5) being outside of the home alone (APA, 2013). The fear of these situations is that escape would be difficult, or help might not be available if the individual were to experience a panic attack (APA, 2013). Among adolescents and adults, the twelve-month prevalence for agoraphobia is approximately 1.7% (APA, 2013; Kessler et al., 2012). Similar to panic disorder, age of onset of agoraphobia is often not until adolescence (Beesdo et al., 2009). Limited studies have examined the prevalence of agoraphobia among children, in part, due to its rare occurrence. A large population-based study of British children and adolescents found that agoraphobia was not present among children younger than age 10 years, and the total prevalence among the sample (ages 5 to 15 years) was less than 1% (Ford et al., 2003).

Generalized Anxiety Disorder. The primary feature of Generalized Anxiety Disorder (GAD) is extreme, uncontrollable worry about a wide variety of events or activities (APA, 2013). Prevalence estimates of GAD among children and adolescents vary widely, ranging from 0.2 to 11% among community samples (Cartwright-Hatton et al., 2006). The typical age of onset for GAD in children is ages 10 to 13 years (APA, 2013). For children and adolescents with GAD, most commonly reported worries include school performance, natural disasters, being bullied by peers, or being physically attacked (Weems et al., 2000). In addition to uncontrollable worry, common symptoms among youth with GAD include negative self-image, need for reassurance, irritability, and intolerance of uncertainty (Fialko et al., 2012; Masi et al., 2004).

Comorbidity

Comorbidity is common in the clinical presentation of anxiety disorders and OCD. According to clinical and epidemiological studies, youth are diagnosed with multiple anxiety disorders in approximately 75% of cases (Brady & Kendall, 1992; Masi et al., 2004; Seligman & Ollendick, 2011). Similarly, for children with OCD, comorbid mental health disorders are present in up to 75% of youth with this disorder (Geller et al., 2000, 2001). Seligman and Ollendick (2011) refer to comorbidity as "the rule rather than the exception in the clinical presentation of anxiety disorders" (p. 2). For some anxiety disorders, there are higher comorbidities with particular types of anxiety. For example, SM is highly comorbid with SOC, with estimates around 65% (Kristensen, 2000; Higa-McMillan et al., 2014). Studies have shown that school refusal is comorbid with separation anxiety, ranging from 38% to 57% of cases (Last & Strauss, 1990; Borchardt et al., 1994).

Anxiety disorders are also comorbid with other types of mental health diagnoses, including mood, externalizing, and communication disorders. With regard to mood disorders, GAD shows relatively high comorbidity with depression (Masi et al., 2004). In a sample of children and adolescents with GAD, depressive disorder was the most frequent comorbidity, present in 56% of the sample (Masi et al., 2004). Additionally, there is research to suggest that approximately 25% to 30% of youth with an anxiety diagnosis also have, or will later have, an externalizing disorder (Russo & Beidel, 1994; Seligman & Ollendick, 2011). Other fairly common comorbid disorders include communication and elimination disorders, particularly among children with SM (Kristensen, 2000).

Etiology

Anxiety. The etiology and maintenance of childhood anxiety can be conceptualized from a developmental psychopathology model. From this perspective, development is viewed as a series of qualitative reorganizations within and among systems (Cicchetti & Cohen, 1995). One important principle of this theory is equifinality, which in this context, states that anxiety is a result of multiple causal influences (Ollendick & Hirshfeld-Becker, 2002). Research shows that the causes of anxiety are complex, including genetic, biological, social, and family factors, and often interact with one another (Gregory & Eley, 2011). Another central principle of developmental psychopathology is multifinality, which states that varied outcomes can result from the same common starting points (Ollendick & Hirshfeld-Becker, 2002). In simple terms, any one risk factor could result in a variety of outcomes, not just anxiety. There are a wide range of specific factors that contribute to the development of anxiety disorders in children, including: genetic factors, neurobiological factors, child temperament, emotion-regulation skills, cognitive biases, parental responses to emotional expression, and level of exposure to feared stimuli in the environment (Vasey & Dadds, 2001).

OCD. The development of OCD is likely a result of multiple causes, including genetic, neurobiological, temperamental, environmental, and physiological factors (APA, 2013). There is convergent evidence to suggest a neurobiological basis for OCD that has resulted in the frontal-striatal-thalamic model in adults and children (Piacentini et al., 2014; Saxena et al., 2001). Studies have found that individuals with OCD demonstrate abnormal activation in these areas of the brain during tasks and at rest, in comparison to individuals without OCD (Piacentini et al., 2014). While there are strong biological and neurobiological bases for the development of OCD, environmental factors also influence the etiology and maintenance of the disorder. Family

accommodation, for example, has been shown to both maintain OCD symptoms and hinder individuals' response to treatment (Piacentini et al., 2014; Peris et al., 2012). Additionally, studies have found that children, adolescents, and adults with OCD report stressful or traumatic life events before the onset of OCD (Gothelf et al., 2004).

Effects of Anxiety and OCD

The effects of anxiety and OCD in childhood are persistent, widespread, and debilitating. Research has consistently found that children diagnosed with anxiety disorders or OCD are at higher risk for other psychopathology and resulting problems (Bittner et al., 2007; Brückl et al., 2007; Lack et al., 2009; Woodward & Fergusson, 2001). For example, anxiety disorders in childhood are associated with SOC, GAD, panic attacks, and ADHD in adolescence (Bittner et al., 2007). OCD in childhood is also associated with later psychological difficulties, such as ADHD, depressive disorders, and other anxiety disorders (Geller et al., 1996; Lewin, Park, & Storch, 2013). Woodward and Fergusson (2001) conducted a 21-year longitudinal study, in which they examined long-term outcomes of adolescents with anxiety disorders. Findings showed that anxiety disorders in adolescence were significantly associated with risk for anxiety disorders in adulthood, as well as depression, substance dependence, and suicidal behaviors (Woodward & Fergusson, 2001).

In addition to psychopathology, anxiety disorders and OCD are associated with, and predict, a variety of adverse life outcomes (Duchesne et al., 2008; Woodward & Fergusson, 2001). In their longitudinal study, Woodward and Fergusson (2001) found that the number of anxiety disorders was significantly associated with educational underachievement and early parenthood (Woodward & Fergusson, 2001). Duchesne and colleagues (2008) conducted a 15-year longitudinal study, following trajectories of anxiety in a community sample of elementary-

school children and the predictive value of anxiety on high school non-completion. Results of this study demonstrated that children fell into 4 trajectories: low anxiety, moderate anxiety, high anxiety that decreased from kindergarten to 6th grade, and chronic anxiety, where anxiety remained at a higher level (Duchesne et al., 2008). Importantly, results showed that these trajectories differentially predicted the likelihood of children receiving a high school diploma by age 20 years (Duchesne et al., 2008). The proportion of children in the high and chronic anxiety groups who did not receive a high school diploma was significantly higher than those in the low and moderate anxiety groups (Duchesne et al., 2008).

OCD in childhood is associated with significant disruption in functioning across a variety of domains, including social, familial, and academic functioning (Huppert et al., 2009; Piacentini et al., 2003), as well as overall quality of life (Lack et al., 2009). Piacentini et al. (2003) asked youth and families to report functional impairments related to OCD. The primary OCD-related problems reported by participants included concentrating on schoolwork and doing homework (Piacentini et al., 2003). Lack and colleagues (2009) examined quality of life in a sample of youth with OCD, assessing children and parent perceptions of physical, emotional, social, and school functioning. Overall, results showed "…a significant and all-encompassing negative effect of OCD symptoms on quality of life" (Lack et al., 2009, p. 939).

Comparing Anxiety and OCD

Given that OCD was considered a type of anxiety disorder in the DSM-IV, and was moved to its own section of "OCD and Related Disorders" with the emergence of the DSM-V, there are many similarities between the disorders. OCD and anxiety disorders are highly comorbid. Specifically, OCD shares many similar features to GAD; both disorders feature obsessional doubts and ruminations, which are typically experienced as excessive and

uncontrollable (Lewin & Piacentini, 2010). Rumination has been defined as involving "passive, repetitive dwelling on one's distress, as well as its causes and consequences" (Armstrong et al., 2011, p. 756). In addition to obsessional doubts and ruminations, OCD and GAD also share intolerance of uncertainty and increased attention to threat (Kim et al., 2018). Additionally, avoidant behaviors and repetitive requests for reassurance are present in both anxiety disorders and OCD. A key distinction between these symptoms is that the recurrent thoughts, or worries, that occur for individuals with GAD are typically real-life concerns, whereas in OCD, the content can be odd or irrational (APA, 2013). Additionally, individuals with GAD report experiencing more perseverative worry when compared to individuals with OCD, and individuals with OCD report experiencing more obsessional thoughts compared to those with GAD (Brown et al., 1993).

Parent and Child Perceptions of Anxiety and OCD

Research has consistently found that different informant (children, parents, teachers) ratings of emotional and behavioral problems are often discrepant (Achenbach et al., 1987; De Los Reyes & Kazdin, 2005). Studies have also found differences in informant discrepancies based on type of disorder, with internalizing problems, such as anxiety, often having more discrepant ratings than externalizing problems (Duhig et al., 2000). In fact, studies conducted over the past few decades have typically found low to moderate levels of agreement when parents and children are asked to report children's anxiety (Choudhury et al., 2003; Comer & Kendall, 2004; Krain & Kendall, 2000). Research has found that children report more anxiety symptoms, and a greater severity of symptoms, than their parents (Bird et al., 1992). Correlations between measures of anxiety symptoms between parents and children range from 0.15 to 0.35 (Choudhury et al., 2003). Researchers have hypothesized that disagreement may occur because

children and adolescents may hide their anxiety or OCD symptoms from parents, resulting in underestimates in parent reports of children's symptoms (Rapoport et al., 2000; Storch et al., 2015)

Studies examining parent/child agreement of OCD symptoms have typically found moderate to high agreement across parents and children (Lack et al., 2009; Storch et al., 2015; Rapoport et al., 2000), in contrast to studies examining youth's anxiety symptoms. However, unlike anxiety research, these studies have often focused on children's quality of life given the effect of OCD, rather than discrepancies in OCD symptoms or severity. For example, Storch and colleagues (2015) examined parent/child agreement on the Child Obsessive Compulsive Impact Scale (COIS), a measure assessing the effect of OCD on youth's functioning. Storch and colleagues (2015) found that overall, the magnitude of ratings for the total score on the COIS was similar across parents and children. Storch et al. (2015) also found that OCD symptom severity moderated parent/child agreement on the COIS. Children who had higher OCD symptom severity had moderate to high agreement with parents on the COIS, while agreement was poorer for children with lower OCD symptom severity.

Cultural Considerations

It is important to consider the prevalence of anxiety disorders and OCD across cultures, and the role of culture in the conceptualization of these psychiatric disorders and expression of symptomology. Epidemiological studies have typically found that ethnic minority groups have lower prevalence rates of SOC, GAD, and PD, in comparison to White Americans (Asnaani et al., 2010; Grant et al., 2005a, 2005b). Using a database of three, national epidemiological studies, Asnaani et al. (2010) examined differences in the lifetime prevalence rates of anxiety disorders across ethnic and racial minority groups. Results showed that White Americans

endorsed symptoms of SOC, GAD, and PD more frequently than Asian Americans, African Americans, and Hispanics (Asnaani et al., 2010). Asian Americans endorsed symptoms of the three anxiety disorders less frequently than all other ethnic and racial groups (Asnaani et al., 2010). Lower prevalence rates of anxiety disorders among ethnic and racial minority groups could occur for a variety of reasons, such as anxiety criteria not capturing culturally specific expressions of anxiety, or differences in adherence to individualistic or collectivistic values (Asnaani et al., 2010; Heinrichs et al., 2006).

Research has shown that there are culturally specific expressions of anxiety, which may not be captured by the DSM-5 criteria (Asnaani et al., 2010; Hofmann & Hinton, 2014). Some cultures have beliefs about the human body that can affect how anxiety is expressed. For example, according to traditional Chinese culture, anxiety is often expressed in physical symptoms, due to the belief that anxiety is attributable to organ dysfunction (e.g., "weak kidney," *shen xu;* Hofmann & Hinton, 2014*).* Individuals who adhere to this belief are more likely to be sensitive to cardiac symptoms of anxiety, such as racing heart, dizziness, and blurry vision (Hoffman & Hinton, 2014). Broader, contextual factors and social norms (e.g., differences between collectivistic and individualistic societal values) can also affect how individuals experience anxiety. An example of a culture-specific syndrome is *Taijin kyofusho* (TKS), an expression of social anxiety in Japanese and Korean cultures (Hoffman & Hinton, 2014). Individuals affected by TKS are concerned about behaving or presenting themselves in a way that will offend or embarrass the other person (Hoffman & Hinton, 2014). Clearly, culture can influence the expression of anxiety symptoms, which has implications for the method of classification and treatment of disorders.

Additional factors, such as prejudice, discrimination, and level of acculturation, can also affect the prevalence and expression of anxiety disorders among minority individuals. Research has shown that racial discrimination is associated with psychological disorders, including panic disorder with agoraphobia (Chou et al., 2012). Acculturative stress is also related to mental health outcomes, although the focus of this research has been with depression, rather than anxiety (Hwang & Ting, 2008).

Epidemiological studies suggest that the prevalence of OCD is consistent across cultures (Horwath & Weissman, 2000). There is also similarity across cultures in regards to comorbidity of OCD, gender distribution, and age distribution (APA, 2013). Additionally, researchers have found that the themes of OCD symptoms (i.e., symmetry obsessions; aggressive, sexual, or religious obsessions; checking compulsions) occur worldwide (APA, 2013; Leckman et al., 2010). Piacentini et al. (2014) concluded that "core features of OCD are mostly independent of culture" (p. 434). While core features of OCD appear to be universal, cultural norms and ideas are certainly reflected in the content of OCD symptoms. For example, religious beliefs could influence the type of obsessions experienced by the individual.

Metacognition

Flavell (1979) first introduced the construct of metacognition, defining it as "knowledge and cognition about cognitive phenomena" (p. 906). Metacognition has also been described simply as "cognition about cognition," and alternatively as, "the process of 'thinking about thinking,' knowing about 'what we know' and 'what we don't know,' and the ability to control our own thoughts" (Irak & Tosun, 2008, p. 1316). Metacognition is a multifaceted, conscious process, in which an individual is consciously aware of mental state, monitoring, and control processes (Efklides, 2008; Koriat, 2007).

While metacognition originally developed in developmental and cognitive psychology, it has been introduced as a basis for understanding and treating psychological dysfunction. Wells and Matthews (1994, 1996) proposed a metacognitive theory of psychological dysfunction for adults. This theory proposes that metacognition is an important factor in the development and maintenance of psychological disorders (Wells & Matthews, 1994, 1996). More specifically, maladaptive metacognitions contribute to the maintenance of cognitive-attentional syndrome (CAS), referring to a style of cognitive processing, attention focusing, and coping behaviors (Wells & Matthews, 1994, 1996). Essentially, CAS is a nonspecific style of thinking that is applicable to a variety of psychological disorders (Wells, 2007). Wells also developed a metacognitive model of GAD, proposing that worry in GAD is maintained by metacognitive beliefs about the positive and negative aspects of worry (Wells, 1995, 2007). For example, positive beliefs about worry refer to the usefulness or problem-solving nature of worrying, such as "Worrying helps me cope" or "I will be more prepared if I worry" (Ellis & Hudson, 2010; Wells, 1995). In other words, metacognition is thought to maintain anxiety by influencing individuals' style of thinking (Normann et al., 2016). Since its development, the metacognitive model has been expanded to apply not only to GAD, but also to other types of anxiety and mood disorders (Ellis & Hudson, 2010). Wells (1997) also described the metacognitive model of OCD, which indicates that negative metacognitive beliefs about the meaning and power or thoughts contribute to the maintenance of OCD symptoms.

Research has supported this theory of metacognition and psychological dysfunction, finding that maladaptive metacognition is associated with anxiety symptoms (Wells & Carter, 2001). Much of this research has been conducted with adults, using convenience sampling and correlational designs. Studies conducted with undergraduate students have consistently found

significant associations between metacognition and anxiety (Dragan et al., 2012; Spada et al., 2006, 2010). These studies are limited by their methodology and can only conclude that metacognition is associated with state anxiety (Dragan et al., 2012; Spada et al., 2010) and test anxiety (Spada et al., 2006). Irak and Tosun (2008) examined the relations between metacognition, state and trait anxiety, and OCD symptoms with a large sample of undergraduate students in Turkey (N = 850). Results showed significant associations between metacognition and all outcome variables, including state anxiety (Irak & Tosun, 2008). Additional research has examined beliefs about worry, and the relations between beliefs about worry and anxiety disorders. While individuals with GAD and those without a psychological disorder hold similar positive beliefs about worry, adults with GAD endorse beliefs that their worries are uncontrollable and report a greater need to control their worries (Cartwright-Hatton & Wells, 1997; Wells & Papageorgiou, 1998).

In recent years, researchers have begun to examine the relations between anxiety, OCD, and metacognition in children and adolescents. A review by Ellis and Hudson (2010) applied Wells' metacognitive model of GAD for adults to youth. An important consideration is whether young children have the cognitive capacity for metacognition. Research suggests that while young children are capable about forming beliefs about their thoughts, this capacity for self-reflection increases with maturation and development, becoming more nuanced as children get older (Ellis & Hudson, 2010). Extant research demonstrates that there is an association between higher anxiety and maladaptive metacognition in youth (Cartwright-Hatton et al., 2004; Ellis & Hudson, 2010). For example, Cartwright-Hatton et al. (2004) found that adolescents' beliefs about worry were associated with anxiety. Of further importance, adolescents reported the same range of metacognitive beliefs as noted in adult populations, lending support to the applicability

of the metacognitive model for adolescents (Cartwright-Hatton et al., 2004). Research has also shown that youth's positive beliefs about worry, including its usefulness, is correlated with worry level (Laugesen et al., 2003).

In addition to the associations between anxiety and metacognition, other research, albeit limited, has shown that anxiety treatment leads to improvements in metacognition about anxiety (Hoyer et al., 2009; McEvoy et al., 2009). McEvoy and colleagues (2009) conducted a group CBT treatment for social anxiety, finding significant reductions from pre- to post-treatment in maladaptive metacognition, with the exception of positive beliefs. Consistent with McEvoy et al.'s (2009) findings, Hoyer and colleagues (2009) similarly found that exposures and relaxation led to significant decreases in negative metacognitive appraisals of worrying.

While some studies have included metacognition as an outcome variable, the majority of treatment efficacy research for anxiety has typically not included metacognition as an outcome of interest. Randomized controlled trials (RCTs) often limit outcomes to anxiety symptomology and severity (Reynolds et al., 2012; Walkup et al., 2008). In fact, some efficacy research for treatments that specifically target metacognition, such as Metacognitive Therapy, have surprisingly not included a direct outcome measure of metacognition (Wells & King, 2006). In sum, research that examines treatment for anxiety and subsequent changes in metacognition is limited. Researchers have noted the importance of further research examining metacognition among children younger than 12 years old (Ellis & Hudson, 2010), for which research is currently limited. Clearly, additional research is needed to understand the role of metacognition in anxiety among youth.

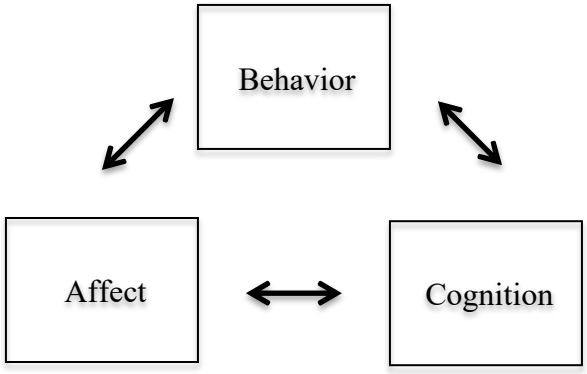
Cognitive-Behavioral Therapy

There are a variety of treatment approaches that are used to treat anxiety and OCD. CBT is one treatment that is commonly used to treat these disorders. CBT is a model of therapy that integrates cognitive theory and behavioral theory (Early & Grady, 2017). Cognitive theory argues that individuals make sense of the world through their prior knowledge, understandings, and experiences. Individuals construct their experiences through their unique lenses, which can result in maladaptive thoughts or cognitive distortions (Beck, 2005). The primary explanatory concept of behavioral theory is that behavior is contingent on antecedents and reinforcements, referring to stimuli that precede or follow the behavior (Early & Grady, 2017).

CBT originated out of these distinct paradigms of cognitive theory and behavioral theory. CBT is a multidirectional model, which posits that affect, cognition, and behavior influence one another in a reciprocal fashion (Tolin, 2016). CBT is often depicted as a triangle (see Figure 1), giving equal weight and consideration to these three interconnected domains (Early & Grady, 2017; Tolin, 2016). This model argues that anxiety, and psychopathology more broadly, is maintained through any of the pathways within the model (Tolin, 2016).

Figure 1:

CBT Triangle



CBT is distinctive from other theoretical orientations and psychotherapies in several ways. For one, CBT is focused on the client's current functioning and presenting problem. In other words, the treatment focus for youth with anxiety is on understanding and addressing the factors that are maintaining the child's anxiety symptoms, rather than assessing the etiology of the child's anxiety disorder (Seligman & Ollendick, 2011; Southam-Gerow & Kendall, 2000). Additionally, CBT is a time limited treatment approach and is not designed as long-term therapy. Treatment typically occurs for 12 to 20 weekly sessions, dependent on a variety factors such as severity of the disorder, motivation, and treatment compliance. Furthermore, CBT is a skills-building approach. Clinicians operating from a CBT approach are directive, and sessions often look didactic (Seligman & Ollendick, 2011). CBT therapists have been described as active participants and collaborative consultants in treatment (Southam-Gerow & Kendall, 2000). Additionally, a key component of CBT is homework, which allows clients to practice implementing the skills learned during sessions (Seligman & Ollendick, 2011).

Efficacy

Anxiety. There is substantial research support for CBT as an effective treatment for youth with anxiety disorders (Bodden et al., 2008; Cartwright-Hatton et al., 2004; Higa-McMillan et al., 2016; Macklem, 2011; Reynolds et al., 2012; Seligman & Ollendick, 2011; Walkup et al., 2008). Cartwright-Hatton and colleagues (2004) conducted a systematic review of 10 RCTs with children and adolescents ranging in ages from 6 to 18 years old, concluding that CBT is an effective intervention for youth with anxiety. Calculating a pooled odds ratio across studies, Cartwright-Hatton et al. (2004) found that children receiving CBT were 3 times as likely to recover (i.e., no anxiety diagnosis) as children in a waitlist recovery group. Since this review, additional RCTs have been conducted with positive results (Walkup et al., 2008). In an RCT

with over 400 clinically anxious youth, ranging from ages 7 to 17 years old, Walkup and colleagues (2008) found that CBT significantly reduced anxiety severity. Results also showed that a combination of CBT and medication had a superior response rate to CBT alone and medication alone.

Recent meta-analyses by Reynolds and colleagues (2012) and Higa-McMillan and colleagues (2016) have further established the efficacy of CBT as treatment for anxiety. Reynolds and colleagues (2012) examined the effects of CBT for anxiety among children and adolescents, as the only active psychological therapy and in comparison to other types of psychological therapies. Findings showed that CBT was effective for treating anxiety when compared to a passive or active control group (Reynolds et al., 2012). Results from this meta-analysis also indicated that CBT designed to treat a specific disorder, such as specific phobia, has larger effect sizes than treatment targeting generic anxiety disorders (Reynolds et al., 2012). Higa-McMillan et al. (2016) conducted an updated review of anxiety treatment studies for children and adolescents, including 111 studies in their review. The authors concluded that CBT and exposure-based therapy are the most well-established treatments for child and adolescent anxiety, given large effect sizes and durability of effects (i.e., post-treatment effects lasting for a minimum of one year; Higa-McMillan et al., 2016). Additional statistics have indicated that as many of 70% of children with anxiety who complete CBT no longer meet diagnostic criteria for an anxiety disorder (Tolin, 2006). CBT for youth anxiety disorders is also effective even with comorbidity (Ollendick et al., 2008; Seligman & Ollendick, 2011), which is important to consider given the prevalence of comorbidity with anxiety.

Limited treatment outcome research has assessed the efficacy of CBT for ethnic minority children and adolescents with anxiety disorders. Huey and Polo (2008) reviewed research on

evidence-based treatments for ethnic minority youth, finding that CBT for Hispanic/Latino and African American youth met criteria for possibly efficacious treatment. However, treatment research included in this review examined group, not individual, CBT (Huey & Polo, 2008). Additional treatment considerations are that ethnic minorities, particularly African Americans, are less likely to seek treatment and more likely to drop out of treatment prematurely (Bein et al., 2000; Wierzbicki & Pekarik, 1993).

OCD. CBT involving exposure with response prevention (ERP), with or without medication management (SSRIs), is considered the first line of treatment for children and adolescents with OCD (Geller & March, 2012). Studies, including RCTs, have found that CBT/ERP is an effective treatment for youth with OCD (Franklin et al., 2011; March et al., 2004; Strauss et al., 2018). The Pediatric OCD Treatment Study (2004) assessed the efficacy of CBT alone, sertraline alone, combined CBT and sertraline, or pill placebo in a randomized controlled trial of youth with a primary diagnosis of OCD (March et al., 2004). After 12 weeks of CBT, 39% (CBT group) to 54% (CBT + SSRI group) of youth experienced a reduction in OCD symptoms to a subclinical level, while only 21% of youth in the sertraline alone group, and 4% of the placebo group, experienced clinical remission. A follow up study (Pediatric OCD Treatment Study II) examined the effects of adding CBT to medication among youth in treatment for OCD (Franklin et al., 2011). Results showed that medication management plus CBT was most effective; 68% of youth in this group were considered treatment responders (Frankin et al., 2011). Although remission rates following a course of CBT are lower among youth with OCD than youth with anxiety, studies comparing CBT to other psychotherapy treatments for youth with OCD have found that CBT is the superior treatment.

Modular CBT

CBT is conducted using a manualized or modular approach. More than 500 protocols have been developed to treat youth with internalizing disorders. There are common components across these many protocols, such as psychoeducation, symptom hierarchy development, cognitive restructuring, relaxation training, and exposure, among others (Macklem, 2011). Given the multifaceted nature of anxiety, using a combination of treatment strategies has been shown to be most effective when treating children and adolescents with anxiety disorders (Southam-Gerow & Kendall, 2000). There are benefits to manualized CBT approaches, such as higher rates of systematic delivery, and more accurate implementation of treatment components (Kendall et al., 1997). However, a proportion of children who receive manualized CBT treatment do not respond with systematic improvement (Kendall et al., 1997). For example, an evaluation of a widely-used manualized CBT intervention, Coping Cat, found that almost half of children still received their initial anxiety diagnosis at post-treatment evaluation (Kendall et al., 1997).

While manualized CBT interventions have traditionally been the treatment of choice, researchers and clinicians have begun to explore modular CBT interventions as an alternative treatment approach. In contrast to manualized CBT interventions, modular approaches are highly individualized, meaning they are tailored to the needs and presenting problems of each particular child (Chorpita et al., 2004). In a review, Ollendick (2000) found that among children who did not respond to manualized CBT, one half to two thirds showed gains post-treatment after a more individualized treatment was implemented. Additionally, a single-case design study using modular CBT indicated that among 7 cases of children with different anxiety disorders, all children were free of any anxiety diagnosis at post-treatment, and all but one case remained diagnosis-free at 6-month follow-up (Chorpita et al., 2004). A more recent study by Chorpita et

al. (2013) compared modular and manualized treatments for childhood anxiety, finding that youth who received modular treatment improved at a faster rate compared to youth who received standard manualized treatment. Thus, there is both a rationale and evidence to support the use of modular CBT treatment for children and adolescents with anxiety.

Executive Functioning (EF)

There is general consensus in the literature that EF is a multidimensional, complex construct, and is broadly a process "…used to effortfully guide behavior toward a goal, especially in nonroutine situations" (Banich, 2009, p. 89). EF has been conceptualized as a combination of higher order, top-down cognitive processes, which are primarily enacted by the prefrontal areas of the frontal lobe (Diamond, 2013; Naglieri & Goldstein, 2013). Beyond the agreement that EF is complex, there are a variety of models and theories with different views of the components and subprocesses of EF. Among some researchers, there is agreement that there are three core EFs: inhibition, working memory (WM), and cognitive flexibility (Lehto et al., 2003; Miyake et al., 2000). These three core EFs have been established as distinct yet related skills with adult samples (Miyake et al., 2000), and with children (Lehto et al., 2003). Inhibition, WM, and cognitive flexibility encompass a variety of other skills, such as initiation, attention, and self-monitoring (Diamond, 2013; Miyake et al., 2000). These core EFs are also the foundation for higher order EFs, including reasoning, problem solving, and planning (Diamond, 2013).

Despite lack of clarity in regard to a consistent definition of EF, researchers agree that EF skills are critical for adaptive and self-directed behavior (Banich, 2009; Jurado & Rosselli, 2007). For example, EF skills enable individuals to adapt to novel situations, inhibit inappropriate behaviors, and create and enact plans (Jurado & Rosselli, 2007). Research has

consistently demonstrated the importance of EF skills for functioning and outcomes, such as academic performance in childhood (Aronen et al., 2005), social functioning (Murphy et al., 2004), better quality of life (Brown & Landgraf, 2010) and adjustment in adulthood (Mischel & Ayduk, 2004).

Attentional control is an EF skill that is central to ACT. Attentional control refers to an individual's top-down command over different components of attention, including attentional focus and shifting (Armstrong et al., 2011; Muris et al., 2007). Attentional focus refers to the ability to pay attention and ignore irrelevant distractions, while attentional shifting is the ability to move attention resources from one stimulus to another (Armstrong et al., 2011; Muris et al., 2007). Attentional control skills improve steadily with age, until the beginning of adolescence (Muris et al., 2007). Given that attentional control and inhibitory control are closely related, it is important to note that studies often use similar methods of assessing these constructs (e.g., a task with distractors).

Although not always traditionally conceptualized as an EF, emotion regulation is closely related to EFs, and overlaps substantially with inhibitory control (Diamond, 2013). There is debate in the literature regarding how to best conceptualize emotion regulation, but broadly, the construct refers to the monitoring, evaluating, and modifying of one's emotions in adaptive ways, responding to the demands of the social context (Campos et al., 1994; Diamond, 2013). Deficits or impairments in emotion regulation are associated with childhood psychopathology in general (Vasey & Dadds, 2001), and specifically with emotional disorders, including anxiety (Southam-Gerow & Kendall, 2000; Trosper et al., 2009).

EFs, Anxiety, and OCD

As mentioned previously, attentional control theory (ACT) provides an explanation for the proposed relationship between anxiety, OCD, and disruption in executive functioning. ACT proposes that executive attention control is impaired by high anxiety, due to the allocation of attentional resources to threat-related stimuli (Eysenck et al., 2007). Previous research has broadly supported the relations between anxiety and impaired EFs in adults (Basten et al., 2011; Gorlin & Teachman, 2015). Research also supports correlations between anxiety and EFs in children and adolescents, though this research is more limited (Geronomi et al., 2016; Hadwin et al., 2005; Mogg et al., 2015; Ursache & Raver, 2014).

While there is a relatively substantial body of work that has examined the relations between executive functions and OCD in adults, the findings are inconsistent (Abramovitch et al., 2013; Shin et al., 2013; Snyder et al., 2015). Recently, several meta-analyses have been published that examined executive dysfunction among adults with OCD (Abramovitch et al., 2013; Shin et al., 2013; Snyder et a., 2015). Snyder and colleagues (2015) synthesized 110 studies that included adults with OCD and comparison groups. Overall, Snyder et al. (2015) found that individuals with OCD showed significantly impaired performance on the majority of EF tasks, with most effect sizes in the small to moderate range. Abramovitch et al. (2013) similarly conducted a meta-analysis of the literature on OCD and neuropsychological functioning, with 115 studies. In contrast to Snyder et al.'s (2015) conclusions, though Abramovitch et al. (2013) found reduced performance on a variety of EF tasks compared to healthy controls, the authors noted that the effect sizes were likely not large enough to be clinically significant. Research has generally supported the relations between deficits in EFs and pediatric OCD, although again, findings are mixed and sometimes incongruent with adult

findings (Abramovitch et al., 2012). These mixed findings are coupled with a limited amount of studies that have explored the relations between executive functioning and pediatric OCD.

Attentional Control

Anxiety. While extensive research has examined anxiety and attention biases to emotional or threatening information (Bar-Haim, 2010; Heeren et al., 2015), less research has explored attentional control under conditions that do not involve affective material, which would reflect a more stable attentional deficit. Among extant studies with adult samples, research has found that anxiety is negatively associated with attentional control (Pacheco-Unguetti et al., 2010). On a reaction-time task, Pacheco-Unguetti et al. (2010) found that distractors interfered with task performance to a greater extent for individuals with high-trait anxiety, compared to low-trait anxiety. Similarly, Armstrong and colleagues (2011) found that self-reported attentional control was significantly lower among adults with GAD, compared to a control group.

Consistent with findings from adult research, studies of attentional control with children have typically found that higher anxiety is associated with poorer attentional control (Muris et al., 2004, 2007, 2008). Muris and colleagues (2004, 2007, 2008) conducted a series of studies in the Netherlands with non-clinical samples of children, finding that attentional control was significantly, negatively related to trait anxiety, even after controlling for age and gender (Muris et al., 2004) and neuroticism (Muris et al., 2007). Muris et al. (2008) examined the relations between anxiety and attention in children using a self-report measure of attentional control and standardized measure of attention, the Test of Everyday Attention for Children. Results showed that both measures of attentional control were significantly negatively correlated with anxiety, although the association was strongest between anxiety and the self-report of attentional control

(Muris et al., 2008). This research demonstrates that high anxiety is associated with attentional control deficits among youth, but causality cannot be concluded.

Fewer studies to date have examined attentional control among children with clinical levels of anxiety. Mogg and colleagues (2015) examined executive attention with children in Brazil, using a computer-based assessment to measure executive attention, alerting, and orienting. When examining the whole sample of children with anxiety disorders, children with anxiety did not differ from controls in terms of inhibition from distracters (Mogg et al., 2015). However, when children with specific phobias were excluded from the anxious group, there were significant differences in attention performance between children with anxiety and the control group. Findings suggest that children with clinical levels of anxiety may demonstrate poorer executive attention compared to children without anxiety, but only if anxiety is global in nature.

One study to date has examined whether CBT for children with anxiety disorders is related to changes in attentional control (Reinholdt-Dunne et al., 2015). In this study, children ages 7 to 12 years old (N = 22) received 14 sessions of CBT treatment, and completed a computer-based task to assess attentional control at pre- and post-treatment. At pre-treatment, children with anxiety performed significantly worse than a control group on the attentional control task; at post-treatment, there were no differences in task performance between groups (Reinholdt-Dunne et al., 2015). Results also showed a trend towards increased attentional control from pre- to post-treatment, but this increase was not significant (Reinholdt-Dunne et al., 2015). Findings from Reinholdt-Dunne and colleagues (2015) suggest that CBT treatment for anxiety may contribute to improvements in attentional control; however, this study was underpowered, given the small sample size. It is possible that further research with larger samples could reveal more robust changes in anxious youth's attentional control following CBT.

OCD. There is limited research that has directly assessed the relation between attentional control and OCD symptomology, particularly among youth. Some studies have examined similar constructs; for example, Barrett and Healy (2003) examined cognitive control, which they defined as susceptibility to distraction and attention. Barrett and Healy (2003) found that adult patients with OCD had deficits in cognitive control. Armstrong and colleagues (2011), one of the few studies to examine OCD and attentional control, hypothesized that poor attentional control, and specifically attentional shifting, could make it more challenging for individuals with OCD or anxiety disorders to disengage from obsessions or ruminative worries. On a self-report of attentional control, Armstrong et al. (2011) found that individuals with OCD reported greater deficits in attentional control on an Attentional Control Scale (Derryberry & Reed, 2002) compared to those without OCD. Moradi et al. (2014) conducted a similar study, examining attention in adults with OCD and GAD. Moradi and colleagues (2014) also used the Attentional Control Scale, finding that adults with OCD and GAD reported greater deficits in attentional control compared to a control group. An earlier study by Schmidtke et al. (1998) administered a series of neuropsychological tests to adults with clinical levels of OCD. Findings from Schmidtke et al. (1998) showed that individuals with OCD had selective deficits in attentional processing, when compared to other executive functioning skills.

Researchers have rarely studied attentional control deficits among children and adolescents with OCD. Some studies have explored the comorbidity of OCD and ADHD across youth. Geller et al. (2002) posited that ADHD symptoms may occur as "an artifact of intrusive obsessional thoughts or anxiety" (p. 52), rather than ADHD. Results of Geller et al. (2002) found that the age at onset of ADHD preceded OCD by several years. This was contrary to their hypothesis that symptoms which appear to be related to ADHD are associated with children's

internal distraction, due to intrusive obsessions. In other words, if children with OCD experienced attention difficulties due to being distracted by their own obsessions or anxiety, it would be expected that OCD would occur prior to the onset of ADHD. Masi et al. (2006) also examined comorbidity of OCD and ADHD among a clinical sample of children and adolescents, finding that 25.5% of youth with OCD also had comorbid ADHD. Consistent with results from Geller et al. (2002), Masi and colleagues (2006) noted that in almost all cases, the onset of youth's ADHD preceded OCD. These studies suggest that attentional deficits are not present due to OCD in youth, but are present prior to the onset of OCD symptoms. It is important to consider that these studies examined the presence of ADHD, rather than assessing attentional control among youth. Given that studies with adult populations have found attentional deficits among individuals with OCD, further research is needed to determine if attentional deficits are present in pediatric OCD.

Emotion Regulation

Anxiety. In contrast to attentional control, the majority of research on emotion regulation has been studied with children and adolescents, with limited research studying adult samples. Studies have consistently found that children with anxiety have difficulties regulating their emotions (Carthy et al., 2010; Esbjørn et al., 2012; Suveg et al., 2008; Zeman et al., 2002) With a community sample of fourth and fifth grade students, Zeman and colleagues (2002) found that the inability to dysregulate anger and sadness, identify emotional states, and cope with anger predicted anxiety and depression. With a clinical sample, Suveg and Zeman (2004) studied emotion regulation among children ages 8 to 12 years old with anxiety disorders, compared to a control group of children with no psychopathology. Results from this study showed that children

with anxiety experienced more dysregulated expression of emotions than controls, and experienced worry and anger with greater intensity (Suveg & Zeman, 2004).

Studies have also examined the strategies that children with and without anxiety use to regulate emotions (Carthy et al., 2010; Suveg et al., 2008). Suveg et al. (2008) found that children with anxiety disorders were five times as likely to use maladaptive emotion regulation strategies, in comparison to non-anxious children. Similarly, Carthy and colleagues (2010) examined emotion regulation among children and adolescents diagnosed with anxiety disorders compared to a non-anxious control group. To assess emotion regulation, children completed a computer task that presented ambiguous situations with potentially threatening meanings (Carthy et al., 2010). Findings demonstrated that children with anxiety showed greater use of maladaptive emotion regulation strategies, such as avoidance, and less use of adaptive strategies, such as problem-solving and reappraisal (Carthy et al., 2010).

While a relatively substantial body of research has explored the nature of emotion regulation among anxious youth, limited research has examined whether treatment for anxiety is associated with improvements in emotion regulation. There is some treatment research that has modified CBT to incorporate emotion-focused content (Suveg et al., 2006), and evaluated whether these adapted protocols increase emotion regulation. Only one study to date has examined whether youth experience gains in emotion regulation following a traditional course of CBT treatment for anxiety (Suveg et al., 2009). Participants ranged from ages 7 to 15 years old, and met criteria for GAD, SAD, or SOC (Suveg et al., 2009). Suveg and colleagues (2009) found that, from pre- to post-treatment, children reported gains in emotion awareness, significantly less worry inhibition and sadness inhibition, and significantly less worry dysregulation. No changes were found in anger inhibition or dysregulation from pre- to post-treatment (Suveg et al., 2009).

Results suggest that CBT for anxiety leads to changes in emotion regulation, but only for emotional experiences that are related to anxiety (i.e., worry, sadness). A recent study by Nielsen and colleagues (2019) examined emotion regulation as a potential predictor of CBT outcomes for adults with anxiety disorders. Utilizing short-term, group-based CBT, Nielsen et al. (2019) found that, contrary to hypotheses, emotion regulation did not predict response to CBT.

OCD. Though more limited in number, studies including youth with OCD have also typically found that these children and adolescents demonstrate emotion regulation difficulties (Berman et al., 2018; Jacob et al., 2012). Jacob and colleagues (2012) examined differences in emotion regulation across youth with anxiety disorders (N = 31) and OCD (N = 26). When controlling for treatment and medication history, Jacob et al. (2012) found significant differences in emotion regulation across groups, as assessed by an emotion regulation questionnaire. In fact, youth with OCD showed lower emotion regulation compared to youth with anxiety disorders. Jacob and colleagues (2012) interpreted their findings as consistent with research suggesting that youth with OCD use ineffective coping strategies when experiencing distressing emotions. Additionally, a recent study by Berman and colleagues (2018) examined emotion regulation among youth with OCD (*N* = 27), ages 8 to 18 years old. Parents and children completed rating scales to assess emotion regulation. Results of Berman et al. (2018) showed that greater parent reported emotion regulation was negatively associated with obsessive beliefs in children.

McGuire and colleagues (2012) is one of few studies to examine dysregulation in pediatric OCD and whether dysregulation changes in relation to treatment. Among a sample of youth with OCD (*N* = 144), McGuire et al. (2012) measured dysregulation using the Child Behavior Checklist – Dysregulation Profile, which assesses for dysregulation across the domains of affect, behavior, and cognition. Findings from this study showed improvements in youth's

dysregulation from pre-treatment to post-treatment (McGuire et al., 2012). McGuire and colleagues (2012) also found a significant, modest relationship between reduction in OCD symptom severity and reductions in dysregulation. While this study suggests that treatment for OCD may also be associated with increases in regulation, it is important to consider that McGuire et al.'s (2012) conceptualization of dysregulation differs from emotion regulation as defined in other studies.

Inhibition

Anxiety. With adults, research has consistently supported the relations between inhibition and anxiety (Basten et al., 2011; Berggren & Derakshan, 2014; Bishop, 2009). Basten and colleagues (2011) conducted an fMRI study, in which participants completed a color-word Stroop task combined with a stop-signal paradigm. Results showed that for high-anxious individuals, neural processing efficiency of the Stroop task was impaired (Basten et al., 2011). Similarly, Berggren and Derakshan (2014) found that a high-anxious group of undergraduate students performed significantly worse on a Stroop task, when compared to a group of students with low levels of trait anxiety.

Of the very few extant studies, there are mixed findings regarding the relations between children's anxiety and inhibitory control (Oosterlaan & Sergeant, 1996; Oosterlaan et al., 1998; White et al., 2011). White et al. (2011) examined behavioral inhibition, inhibitory control, and anxiety, using observations, parent ratings, and a Stroop task. Inhibitory control significantly predicted children's anxiety symptoms during preschool, explaining 7% of the variance in preschool anxiety problems (White et al., 2011). White and colleagues (2011) also concluded that high levels of inhibitory control interact with behavioral inhibition, in such a way that high levels of inhibitory control put behaviorally inhibited children at a greater risk for anxiety

symptoms. In contrast to White et al.'s (2011) findings, Oosertlaan and Sergeant (1996) and Oosterlaan et al. (1998) did not find that anxious children demonstrated high levels of inhibitory control. Oosertlaan and Sergeant (1996) examined executive inhibition, using a stop-signal task, in children with ADHD, aggression, and anxiety. Contrary to hypotheses, children with anxiety were not overinhibited, compared to controls (Oosterlaan & Sergeant, 1996). These results should be interpreted with caution, given the small size of the anxious group (N = 20), and the fact that participants were not drawn from clinical samples. A meta-analysis by Oosterlaan et al. (1998) found that anxious children demonstrated no differences in inhibitory control compared to controls (Oosterlaan et al., 1998). It is important to consider, however, that only 2 of the 8 reviewed studies in the meta-analysis included anxious children, totaling 32 participants (Oosertlaan et al., 1998). With the current state of the research, conclusions about the relations between executive inhibition and childhood anxiety cannot yet be drawn.

OCD. Researchers have theorized that deficits in inhibitory control are closely related to OCD symptomatology (Page et al., 2009; Wolff et al., 2017). Wolff and colleagues (2007) posited, "Dysfunctions in inhibitory control are a hallmark of OCD" (p. 940). Abnormal inhibitory networks could account for core symptoms of OCD, with obsessions resulting from a failure to inhibit thoughts and compulsions resulting from a failure to inhibit behavior (Page et al., 2009). In contrast to these claims, research examining the relations between inhibitory control and OCD has mixed findings regarding participants' task performance (Beers et al., 1999; Ornstein et al., 2010; Yamamuro et al., 2017; Zandt et al., 2009). Many of these studies have relied on fMRI imaging, finding differences in brain functioning but negligible differences in task performance (Woolley et al., 2008).

Yamamuro et al. (2017) and Zandt et al. (2009) found inhibitory control difficulties among children with OCD when compared to healthy controls. Using the Stroop color-word task, Yamamuro and colleagues (2017) examined inhibitory control among youth with OCD and controls, finding that youth with OCD had poorer performance on the task and less activation in the prefrontal cortex. Zandt et al. (2009) examined EF among children and adolescents with OCD, Autism Spectrum Disorder (ASD), and a control group. Zandt et al. (2009) is one of few studies to include an EF questionnaire, the BRIEF, to assess EF in children's everyday environment. All groups completed a variety of neuropsychological tasks (e.g., subtests from the Test of Everyday Attention for Children), and parents completed the BRIEF. While performance on the EF tasks varied, there were significant differences across groups on parent ratings of EF. Children with OCD had significantly lower scores on the inhibit, shift, emotional control, working memory, planning, and organization scales on the BRIEF compared to controls; there were no substantial differences between the OCD and ASD groups. Overall, these studies indicate that children with OCD display deficits in inhibitory control.

In contrast to these findings, several studies have not found differences in inhibitory control between youth with OCD and their healthy counterparts (Beers et al., 1999; Ornstein et al., 2010). In a study by Beers et al. (1999), children with OCD and healthy controls completed a variety of neuropsychological tests, including measures of inhibitory control (e.g., Stroop Color/Word task). Beers and colleagues (1999) did not find any significant group differences, concluding a lack of relationship between psychiatric symptoms and cognitive functioning. Ornstein et al. (2010) more broadly examined the neuropsychological functioning of youth with OCD, compared to typically developing children. Findings showed that there were no differences in inhibitory control across groups, as assessed by the Wisconsin Card Sort Test (WCST).

Overall, studies with adults and youth with OCD have mixed findings in regards to inhibitory control deficits. Given the current state of the research, it is difficult to draw conclusions. Of concern, studies exploring these variables typically involve very small sample sizes (i.e., less than 20 individuals with OCD included in the sample; Ornstein et al., 2010; Page et al., 2009; Yamamuro et al., 2017). Moreover, there are inconsistencies in how inhibitory control is assessed across studies. Very limited research has used parent-rated EF questionnaires, such as the BRIEF or CEFI, to examine youth's EF functioning in everyday life.

Working Memory

Anxiety. Unlike the lack of research with inhibitory control and anxiety, WM is one specific EF skill that has been explored rather extensively in regard to its relations with anxiety. With adult populations, research has consistently established that high levels of anxiety are associated with reduced WM capacity and impaired performance on WM tasks (Eysenck et al., 2007; Eysenck et al., 2005). Only in recent years have studies begun to examine the relations between WM and anxiety in children and adolescents (Visu-Petra et al., 2006).

ACT provides a theoretical basis for the relationship between anxiety and WM, arguing that anxiety consumes WM resources through worries, ruminative thoughts, and shifted attention on the self (Eysenck et al., 2007). Consumption of WM resources disrupts performance on tasks that depend on the central executive component of the WM system (Cheie et al., 2017). WM is more likely to be disrupted on relatively difficult cognitive tasks (Eysenck, 1982; Macleod & Donnellan, 1993). On simple tasks, WM capacity remains intact, even when anxiety is high. Anxiety disrupts strategic processing of information, rather than automatic processing, which further explains why only complex tasks are impaired by anxiety (Macleod & Donnellan, 1993).

Consistent with theory, studies examining the relations between WM and anxiety among youth have indeed found that higher levels of anxiety are associated with reduced WM (Aronen et al., 2005; Cheie et al., 2017; Ng & Lee, 2015; Owens et al., 2012; Visu-Petra et al., 2011). Differences in WM between anxious and non-anxious children emerge based on the complexity, difficulty, or demands of a given task (Cheie et al., 2017; Owens et al., 2012; Visu-Petra et al., 2011). With a sample of school-age children, Owens and colleagues (2012) examined the mediating influence of WM on anxiety and test performance. Consistent with ACT, Owens et al. (2012) found a significant indirect effect of anxiety on test performance through the central executive WM. The authors concluded that anxiety interferes with complex WM, which in turn, contributes to lower academic performance (Owens et al., 2012). Ng and Lee (2015) examined the effects of trait versus state anxiety and WM load on arithmetic task performance, among a non-clinical sample of school-age children. Children with high trait anxiety were less accurate on math and memory tasks when WM demands were high (Ng & Lee, 2015). Similarly, a recent study by Cheie et al. (2017) examined the relations between prospective memory, WM, and trait anxiety among children. Results revealed a significant interaction between anxiety and math task difficulty on children's WM spans (Cheie et al., 2017). The authors concluded that higher levels of trait anxiety negatively affected children's WM when their WM resources were already taxed by the demands of the difficult math task, whereas WM was not impaired by anxiety in the low difficulty and medium difficulty conditions (Cheie et al., 2017).

In sum, studies examining anxiety and WM with children and adolescents demonstrate that high anxiety does impair WM (Aronen et al., 2005; Cheie et al., 2017; Owens et al., 2012; Visu-Petra et al., 2011). WM is more impaired given the difficulty or complexity of a task (Cheie et al., 2017; Owens et al., 2012; Visu-Petra et al., 2011). It is important to consider that of the

reviewed WM studies, participants were drawn from non-clinical populations. It is possible that with clinically high levels of anxiety, youth's WM is impaired to an even greater extent than was captured in the reviewed studies.

OCD. In contrast to the consistent findings in the literature examining the relations between anxiety and WM, studies that have explored the relations between OCD and WM have mixed results. Some researchers have concluded that symptoms of OCD are consistent with WM deficits, while others argue that WM difficulties in OCD are secondary to a reduction in cognitive abilities more broadly (Abramovitch et al. 2013). In their meta-analysis of studies examining EF among adults with OCD, Abramovitch et al. (2013) found a small effect size for deficits in WM compared to healthy controls, but questioned the clinical significance of this finding. De Vries and colleagues (2014) asked adult OCD patients ($N = 44$), their unaffected siblings ($N = 19$), and a comparison group ($N = 38$) to complete a visuo-spatial WM task during fMRI. Participants watched on a screen in which a yellow dot appeared in different areas of a blue diamond. There were three increasing WM load conditions in which participants had to respond to the location of the dot with a delay of one, two, or three stimuli. Results showed that individuals with OCD displayed decreased accuracy at the most demanding level of the task, compared to siblings and comparison subjects (De Vries et al., 2014).

Cognitive Flexibility

Anxiety. Limited research has examined cognitive flexibility in youth with anxiety disorders. In fact, Tincas et al., (2007) examined cognitive flexibility and anxiety among children, asserting, "…we found no previous studies on which to ground our predictions" (Tincas et al., 2007). Among adults, studies have generally supported the relation between high anxiety and impaired cognitive flexibility (Fujii et al., 2013; Tempesta et al., 2013). Tempesta et

al. (2013) found that two groups of adults with GAD, including those who were currently taking pharmacology and those who were not, made a higher number of overall and perseverative errors on a measure of cognitive flexibility, in comparison to a control group. Fujii et al. (2013) also studied a sample of adults with generalized SAD, finding that SAD severity correlated with number of perseverative errors on the WCST.

Among research with child and adolescent participants, there have been mixed findings, although the majority of extant studies have found that high anxiety is associated with deficits in cognitive flexibility (Han et al., 2016; Mocan et al., 2014; Murphy et al., 2018). Mocan and colleagues (2014) recruited children ages 7 to 11 years old from a school setting in order to examine whether internalizing symptoms interfere with set-switching abilities. Participants were required to complete a computer task that assessed their ability to internally shift attention to emotional and neutral mental sets (Mocan et al., 2014). Results demonstrated that higher levels of anxiety were associated with lower performance efficiency, but anxiety was not associated with lower performance effectiveness (accuracy) on the task. This finding aligns with ACT, which posits that anxiety interferes with efficiency, more so than effectiveness (Eysenck et al., 2007). Additionally, a longitudinal study by Han and colleagues (2016) found that adolescents who made more total errors and non-perseverative errors on the WCST had more anxiety symptoms, two years later. However, unlike results from Mocan et al. (2014), Han et al. (2016) did not find concurrent EF deficits for adolescents with anxiety symptoms.

In contrast to these research findings, other studies have not found a significant association between high anxiety and impaired cognitive flexibility (Murphy et al., 2018; Tincas et al., 2007). With a non-clinical sample of preschool children, Tincas et al. (2007) used a set-shifting task to assess the relation between cognitive flexibility and anxiety levels. Dividing the

sample into a high-anxiety and low-anxiety group, Tincas et al. (2007) did not find group differences in set-shifting abilities. Consistent with Tincas et al.'s (2007) findings, Murphy et al. (2018) similarly found no significant differences in cognitive flexibility between school-age children and adolescents with marked anxiety symptoms and those with minimal anxiety.

There are a few possible explanations for the contrasting findings of Tincas et al. (2007) and Murphy et al. (2018) with other studies that have found that higher anxiety impairs performance on cognitive flexibility and set-shifting tasks (Han et al., 2016; Mocan et al., 2014). For one, Tincas et al. (2007) and Murphy et al. (2018) used the same assessment battery, the Cambridge Neuropsychological Test Automated Battery (CANTAB), which uses neutral (i.e., non-emotional) stimuli and tasks. As attributed by Murphy et al. (2018), it is possible that differences in findings could be due to the importance of emotional content of stimuli used. Additionally, Tincas et al. (2007) and Murphy et al. (2018) both drew from non-clinical samples of participants for their studies. It is possible that severity of anxiety matters, meaning deficits in cognitive flexibility may only be present for individuals with clinical levels of anxiety. Further research is needed to clarify these mixed findings.

OCD. Broadly, research has supported the relations between OCD and cognitive inflexibility (Cavedini et al., 2010; Chamberlain et al., 2006; Rajender et al., 2011). In fact, cognitive inflexibility has been described as trait like in individuals with OCD and underlying OCD symptomology (Rajender et al., 2011; Wolff et al., 2017). These studies have typically assessed cognitive flexibility using measures such as the WCST (Cavedini et al., 2010; Rajender et al., 2011) and the Intradimensional/Extradimensional Shift Task (Chamberlain et al., 2006).

Studies with adult populations have found that OCD is related to deficits in cognitive flexibility (Cavedini et al., 2010; Chamberlain et al., 2006; Rajender et al., 2011). Cavedini and

colleagues (2010) examined planning, cognitive flexibility, and decision-making among 35 pairs of adults with OCD and their unaffected OCD relatives, and a healthy control group with no history of OCD. Using the WCST, Cavedini et al. (2010) found that, even when accounting for severity of OCD, individuals with OCD made significantly more perseverative errors on the task compared to the control group. Similarly, Chamberlain et al. (2006) examined cognitive flexibility in adults with OCD, adults with trichotillomania, and a control group. Compared to the trichotillomania and control groups, participants with OCD required more trials at the extradimensional shifting stage of the neurocognitive task, a stage that necessitates inhibiting or shifting attentional focus away from a previously relevant stimulus dimension. Rajender and colleagues (2011) also used the WCST to assess for the cognitive flexibility of patients with OCD, their first-degree relatives, and a control group. Interestingly, findings showed deficits in cognitive flexibility for OCD patients and their first-degree relatives, but not controls. Overall, these studies with adult populations support the relation between OCD and cognitive inflexibility.

Directionality

While previous research has examined the effects of anxiety and OCD among youth, a key consideration is whether deficits in EF are a result of these mental health disorders, or whether EF deficits precede the onset of anxiety or OCD. It may be possible that difficulties in executive functions predispose individuals to develop internalizing disorders, as opposed to being a resulting symptom of anxiety. Researchers have examined directionality by studying children who are at risk for anxiety, but not yet affected by clinical levels of an anxiety disorder. If children who are at risk for anxiety and OCD but not yet affected, have higher rates of executive function deficits (compared to youth who are not at risk), this would support the

hypothesis that executive function deficits are a risk factor for anxiety disorders (Micco et al., 2009).

Micco and colleagues (2009) sought to examine this directionality among a sample of offspring of parents with major depression, panic disorder, or no mood or anxiety disorders. Results showed that, after controlling for socio-economic status, age, and ADHD, parental anxiety and depression contributed minimally to the executive functions of children and adolescents who were at risk for anxiety or mood disorders (Micco et al., 2009). In contrast, youth currently diagnosed with anxiety or depression demonstrated impairments in processing speed, verbal working memory, and sustained attention (Micco et al., 2009). These findings indicate that deficits in executive functions are not trait markers for developing internalizing disorders, suggesting that deficits in executive functions are a resulting outcome of internalizing disorders, rather than a preceding factor.

A recent study by Han and colleagues (2016) also sought to examine whether executive functions predict anxiety and depression in adolescents. Unlike Micco et al. (2009), Han et al. (2016) utilized a sample of youth with current psychopathology, rather than offspring at risk for anxiety or depression. Participants' executive functions were assessed at baseline and two years later, to assess for the predictive nature of executive functions. Contrary to their hypotheses, Han and colleagues (2016) found that there were no significant associations between global executive function deficits and cognitive flexibility at baseline and anxiety or depression symptomology two years later. Results from Micco et al. (2009) and Han et al. (2016) suggest that executive functioning difficulties are likely a symptom of anxiety disorders, rather than anxiety being a predisposing factor to executive functioning deficits.

Summary and Limitations

There is a substantial body of work that has explored the relations among EF, anxiety, and OCD. Among non-clinical and clinical populations, there is evidence to suggest that anxiety and OCD impairs EF skills, including attentional control (Muris et al., 2008), emotion regulation (Suveg & Zeman, 2004), inhibitory control (White et al., 2011), working memory (Aronen et al., 2005), and cognitive flexibility (Mocan et al., 2014). Studies on anxiety or OCD and WM, attentional control, and emotion regulation have typically found that higher anxiety relates to poorer functioning, whereas findings for inhibitory control and cognitive flexibility have been more variable. Moreover, youth's performance on emotionally-loaded, complex, and high demand tasks are often more impaired by anxiety, in comparison to neutral or less demanding tasks (Cheie et al., 2017; Ng & Lee, 2015; Owens et al., 2012). Treatment research has also been promising, regarding improvements in EF skills following CBT for anxiety (Reinholdt-Dunne et al., 2015; Suveg et al., 2009); however, very few of these studies exist.

Overall, there are limitations with the research literature examining the relations between EFs, anxiety, and OCD. First, there are simply not enough studies conducted with children and adolescents. Second, existing studies that have used youth participants typically draw from community samples, rather than clinical settings. For this reason, the vast majority of participants do not have clinical levels of anxiety, which is important to consider when interpreting findings. In addition, samples have typically been homogenous with respect to ethnicity and SES (Suveg & Zeman, 2004). Third, measures of EF that have been used in this research vary and are used inconsistently. For example, many of the reviewed studies used the WCST, but interpreted findings differently. Tempesta et al. (2013) and Han et al. (2016) referred to the WCST as a measure of broad EF, whereas other researchers interpreted findings from the WCST as a

measure of cognitive flexibility. Fourth, limited research has examined whether anxiety or OCD treatment is accompanied by changes in EF skills, and research that has been done has used very small samples. With the current state of the research, it is not only unclear if youth with clinical anxiety disorders or OCD exhibit impairments in EF skills, but also whether treatment for these disorders can lead to improvements in this area.

Self-Efficacy

Self-efficacy is a self-evaluation construct in the motivation literature, and a central construct of Social Cognitive Theory (Bandura, 1982, 1986). Self-efficacy has been defined as perceived "…judgments of how well one can execute courses of action required to deal with prospective situations" (Bandura, 1982, p. 122). Self-efficacy refers to an individual's perception of their own competence, based on an evaluation of various sources of information about one's abilities (Bandura, 1997; Muris, 2002). An important distinction is that self-efficacy refers to beliefs about one's abilities to achieve certain outcomes and may not reflect reality (Muris, 2002). Self-efficacy is also often described as prospective and action-oriented (Luszczynska et al., 2005).

Self-efficacy is important because it affects an individual's quality of life and functioning (Bandura, 2012), making a difference in how people think, feel, and behave (Luszczynska et al., 2005). Research shows that people with high self-efficacy choose to face more challenging tasks, have greater effort and persistence on tasks, set higher goals for themselves and stick to them, and problem-solve more effectively (Bandura, 1997; Linnenbrink & Pintrich, 2002; Pintrich & Schunk, 2002). Moreover, higher self-efficacy is related to academic achievement and positive work outcomes (Ehrenberg et al., 1991; Linnenbrink & Pintrich, 2002).

An important conceptual distinction is between domain-specific (or task-specific) self-efficacy and general self-efficacy (GSE). Self-efficacy that is task or domain-specific is relatively malleable in nature and specific to a given situation (Chen et al., 2004). For example, domain-specific self-efficacy is often assessed in the literature as emotional, social, or academic self-efficacy. Similarly, task-specific self-efficacy may be assessed as a student's self-efficacy about a writing assignment or mathematics. In contrast, GSE is a relatively stable, trait-like, generalized belief about one's competence to deal effectively with a variety of tasks or situations (Chen et al., 2004; Luszczynska et al., 2005). Given that domain-specific self-efficacy has been shown to be more predictive of behavior than GSE (Bandura, 2012), domain-specific self-efficacy (social, academic, and emotional) is the construct of interest in the present study.

Self-Efficacy and Mental Health

The vast majority of research examining self-efficacy and psychopathology has focused on the relations between self-efficacy and depression. In fact, research has examined the relations between self-efficacy and depression over the past several decades, consistently finding that depression is associated with low self-efficacy across a variety of domains (Ehrenberg et al., 1991; Klasen et al., 2015; Weisz et al., 1987). For instance, among an adolescent sample, Ehrenberg and colleagues (1991) found that low self-efficacy was associated with depression, and academic self-efficacy showed the strongest correlation with depression (Ehrenberg et al., 1991). Klasen and colleagues (2015) examined risk and protective factors for depression, such as parental mental health problems, family climate, social support, and GSE, as part of a large longitudinal study in Germany. Changes in depression over the course of two years were associated with changes in self-efficacy (Klasen et al., 2015). Moreover, self-efficacy had the highest direct effect on youth's depressive symptoms, compared to family climate and social

support (Klasen et al., 2015). Given the high comorbidity between anxiety and depression, it is likely that a relationship also exists between self-efficacy and anxiety.

Additionally, of the limited research that has explored self-efficacy, anxiety, and OCD, a few studies have examined individual's self-efficacy as a mechanism of change during treatment. Schwartz and colleagues (2017) studied a sample of adult patients with OCD who participated in an intensive, in-patient CBT treatment program. Schwartz et al. (2017) concluded that the greater an individual's general self-efficacy, the more symptoms decrease during treatment. Schwartz et al. (2017) reasoned that feeling in control and having a sense of mastery over OCD symptoms is beneficial for treatment outcomes.

Self-Efficacy, Anxiety, and OCD

As mentioned previously, ACT provides a theoretical explanation for the relation between self-efficacy, anxiety, and OCD. According to ACT, anxious individuals focus their attention on threatening and emotionally-charged stimuli, more so than non-threatening cues. Anxious individuals may be more likely to focus their attention on times when they faced challenging or novel situations and did not succeed. This attention towards failure may, in turn, be related to lower self-efficacy. Additionally, Social Cognitive Theory proposes that self-efficacy is related to psychopathology (Bandura, 1997). Specifically, Social Cognitive Theory asserts that self-efficacy plays an important role in anxiety and is a mechanism for change in treatments for psychological disorders (Bandura, 1997). This theory views a connection between self-efficacy and psychological functioning due to the idea that an individual's beliefs about their abilities to cope (i.e., self-efficacy) plays a role in their emotional states. Moreover, individuals with higher self-efficacy are more likely to engage in new behaviors (e.g., responding to

treatment), whereas those with low self-efficacy may not view themselves as capable of change (Bandura et al., 1977).

Research on self-efficacy among youth with anxiety and OCD is very limited. In particular, very few studies have examined the relations between OCD and self-efficacy. Rather, studies of self-efficacy among OCD populations have exclusively examined self-efficacy as it relates to behavior change. For example, Merlo and colleagues (2010) conducted an OCD treatment study, using CBT and motivational interviewing, across youth ages 6 to 17 years old with OCD. Merlo et al. (2010) assessed whether motivational interviewing increased children's self-efficacy as it related to reducing their OCD symptoms. Merlo et al. (2010) concluded that encouraging children with OCD "to 'fight' OCD may accelerate treatment progress" (p. 26). Given the paucity of research exploring OCD and self-efficacy, research examining emotional self-efficacy, academic self-efficacy, and social self-efficacy among youth with anxiety is reviewed.

Emotional Self-Efficacy

Emotional self-efficacy has been described as the perceived ability to cope with negative emotions (Muris, 2002). Given that negative emotionality is a cognitive symptom of anxiety disorders (Huberty, 2012), it is likely that anxiety is related to lower emotional self-efficacy. Additionally, contextual factors surrounding anxiety may contribute to lower emotional self-efficacy for anxious children. Parents of anxious children often respond to their child's anxiety with accommodation, removing the child from the feared situation. With such accommodations, children are likely provided fewer opportunities to practice coping with negative emotions, which could negatively affect their emotional self-efficacy (Hannesdottir & Ollendick, 2007).

Among community samples of youth, research has consistently established that anxiety is negatively associated with emotional self-efficacy (Mathews et al., 2016; Muris, 2002; Muris et al., 2016). Mathews et al. (2016) conducted a meta-analysis examining emotional competence and anxiety in children, with emotional self-efficacy as one of the domains of emotional competence. Reviewing 14 studies, Mathews et al. (2016) found a medium significant overall effect size, meaning that children with higher anxiety levels have lower self-efficacy about their emotional competence abilities. Muris (2002) used a survey design to examine whether self-efficacy, assessed by self-report on the Self-Efficacy Questionnaire for Children (SEQ-C), was associated with trait anxiety, anxiety disorder symptoms, and depressive symptoms among a large sample of adolescents (N = 596). Results showed that emotional self-efficacy was more strongly related to trait anxiety and anxious symptoms, compared to social and academic self-efficacy (Muris, 2002). A more recent study by Muris and colleagues (2016) found that self-efficacy made a significant contribution to anxiety symptoms. Upon further analyses, Muris et al. (2016) noted that only emotional self-efficacy made a unique significant contribution to anxiety. Overall, these studies indicate that emotional self-efficacy is strongly associated with anxiety (Mathews et al., 2016; Muris, 2002; Muris et al., 2016), more so than social or academic self-efficacy (Muris, 2002; Muris et al., 2016).

Among clinical samples of youth, research also demonstrates that high levels of anxiety correspond to low levels of emotional self-efficacy (Landon et al., 2007; Suveg & Zeman, 2004). Suveg and Zeman (2004) examined emotion regulation and emotional self-efficacy in a small sample of children (ages 8 to 12 years) diagnosed with anxiety disorders, and a control group of children. Children with anxiety disorders perceived themselves as having lower emotional self-efficacy than the control group of children (Suveg & Zeman, 2004). In addition, when children

were presented with different scenarios, corresponding with worry, sadness, and anger, all children in the sample perceived themselves to have lower emotional self-efficacy with the worry scenario (Suveg & Zeman, 2004). This study indicates that clinically anxious youth perceive themselves to have lower self-efficacy than non-anxious youth in the emotional domain. Similarly, Landon and colleagues (2007) assessed self-efficacy of anxious youth referred to an anxiety treatment center, and a group of non-clinical youth recruited from public schools. Landon et al. (2007) examined multiple domains of self-efficacy, finding a significant association between low emotional self-efficacy and self-reported anxiety, but not other self-efficacy domains. An important limitation with this study is that anxiety was assessed through self-report, and the non-referred group of children reported similar levels of anxiety to the referred group (Landon et al., 2007). Overall, research has consistently demonstrated strong relations between emotional self-efficacy and anxiety.

Social Self-Efficacy

Social self-efficacy has been broadly described as the perceived ability to appropriately manage social situations (Muris, 2001; Rudy et al., 2014). More specifically, social self-efficacy refers to the perceived ability to be assertive, relate to others, and get along with others (Muris, 2001, 2002). In comparison to emotional self-efficacy, limited research has explored how social self-efficacy is related to anxiety among youth. Of the extant research, the majority of studies have explored the relations between social self-efficacy and social anxiety, typically finding a negative association between these constructs (Matsuo & Arai, 1998; Rudy et al., 2012; Smári et al., 2001). For example, Matsuo and Arai (1998) examined social self-efficacy and social anxiety with a non-clinical sample of school-age children in Japan, finding that social anxiety negatively correlated with social self-efficacy (Matsuo & Arai, 1998). A more recent study by Rudy and

colleagues (2014) also examined social anxiety, social self-efficacy, and socially oriented negative self-referent cognition, with a community sample of U.S. children ages 8 to 16 years old (N = 245). The authors found that social self-efficacy mediated the relations between social anxiety and socially oriented negative cognitions. In contrast to these findings, an earlier study by Rudy and colleagues (2012) did not find that social self-efficacy was related to social anxiety. Rudy et al. (2012) examined social self-efficacy and social anxiety among non-clinical children ages 11 to 14 years old. Interestingly, Rudy et al. (2012) found that general self-efficacy, but not social self-efficacy, was negatively associated with social anxiety. With interpreting findings, it is important to consider that only 14 of the 126 participants met a clinical threshold on a measure of social anxiety. Findings may differ with a larger sample of participants who have clinically significant levels of anxiety.

A few studies have also examined the relations between social self-efficacy and other types of anxiety disorders. Studying trait anxiety, Rababah (2016) examined anxiety, depression, and self-efficacy among a sample of young adults in North Jordan (N = 573). Findings showed a significant, negative association between trait anxiety and social self-efficacy. Muris (2002), with a sample of normative adolescents, found that social self-efficacy was moderately, negatively correlated with all types of anxiety disorders that were assessed by the Screen for Child Anxiety Related Emotional Disorders (SCARED). As hypothesized, social self-efficacy was most highly correlated with social phobia (r = -0.51), compared to other types of anxiety.

In sum, research has demonstrated negative associations between social self-efficacy and social anxiety (Matsuo & Arai, 1998; Rudy et al., 2014), as well as trait anxiety more broadly (Muris, 2002; Rababah, 2016). However, conclusions that can be drawn from these studies about school-age youth in the U.S. with clinical levels of anxiety are limited, given the age of

participants across studies (i.e., young adults; Rababah, 2016), geographic location of studies (e.g., Japan, North Jordan), and community sampling. Further research is needed to understand the relations between social self-efficacy and anxiety among youth with anxiety disorders.

Academic Self-Efficacy

Academic self-efficacy has been defined as "the perceived capability to manage one's own learning behavior, to master academic subjects, and to fulfill academic expectations" (Muris, 2002, p. 340). The relations between academic self-efficacy and anxiety has received even less attention in the literature than emotional or social self-efficacy. Among the extant research, studies have typically focused on the relevance of academic self-efficacy for test anxiety, generally concluding that self-efficacy is predictive of test anxiety (Bandalos et al., 1995; Ferraro & Washington, 2005; Onyeizugbo, 2010; Yue, 1996).

Beyond test anxiety, very little research has explored the relations between academic self-efficacy and trait anxiety or anxiety disorders (Muris, 2002; Smári et al., 2001). Results from Muris (2002) showed that academic self-efficacy was significantly, negatively correlated with school phobia, panic disorder symptoms, generalized anxiety, and social phobia, with the strongest correlation between academic self-efficacy and school phobia (r = -0.34). Smári et al. (2001) examined a related construct, perceived self-competence, and its relations to social anxiety among a community sample of adolescents. Results demonstrated a weak relationship between social anxiety and perceived academic self-competence, while social anxiety and perceived social self-competence were closely related. Findings from Smári et al. (2001) suggest that the type of anxiety, and domain of self-efficacy, may need to be closely aligned to be related. However, these findings should also be interpreted with consideration that academic self-competence is a related, but distinct construct from academic self-efficacy.

Self-Efficacy and Treatment

Recent research has examined the effects of treatment for anxiety on self-efficacy; however, these studies are specific to certain anxiety disorders, and have been conducted primarily with adults. For example, self-efficacy is considered a key treatment mechanism for panic disorder with agoraphobia, an anxiety disorder most commonly found in adults (Bouchard et al., 2007; Gallagher et al., 2013; Williams & Laberge, 1994). An increase in perceived self-efficacy to control a panic attack, or the bodily sensations that occur during a panic attack, are thought to contribute to improvements in panic disorder (Williams & Laberge, 1994). Research has shown that increases in self-efficacy contribute to decreases in panic disorder symptomology (Bouchard et al., 2007; Gallagher et al., 2013). Bouchard et al. (2007) conducted daily assessments to explore participants' dysfunctional beliefs, self-efficacy, and level of panic apprehension over the course of CBT treatment. In half of the cases in the sample, Bouchard et al. (2007) found that changes in self-efficacy preceded changes in panic apprehension. Gallagher et al. (2013) also examined changes in self-efficacy across CBT treatment for panic disorder, using a large sample of adults (N = 361) participating in a multi-site randomized controlled trial. Findings showed that self-efficacy significantly improved during treatment, and that changes in self-efficacy were associated with decreases in panic symptoms (Gallagher et al., 2013).

Only a few treatment studies to date have examined the concurrent effects of CBT treatment for anxiety on self-efficacy among children and adolescents (Gaudiano & Herbert, 2007; Maric et al., 2013). Gaudiano and Herbert (2007) studied social self-efficacy among a sample of socially anxious adolescents who received 12 sessions of CBT. Participants (N = 50) completed a variety of self-report measures, as well as standardized role-plays of social situations (Gaudiano & Herbert, 2007). Even after controlling for baseline social anxiety

severity, social self-efficacy predicted anxiety symptoms and perceived performance on the role-plays (Gaudiano & Herbert, 2007). Furthermore, changes in social self-efficacy over the course of treatment were related to changes in social anxiety symptoms (Gaudiano & Herbert, 2007). A more recent study by Maric and colleagues (2013) examined the effects of CBT treatment on school refusal and self-efficacy about school attendance. Participants were adolescents (N = 19) who met criteria for anxiety-based school refusal (Maric et al., 2013). Results showed that self-efficacy, specific to school attendance, increased across participants as a result of treatment (Maric et al., 2013). Additionally, changes in self-efficacy from pre-treatment to post-treatment were significantly related to outcomes with school attendance, school-related fear, and generalized anxiety symptoms (Maric et al., 2013).

Summary and Limitations

In sum, the majority of research that has examined anxiety and self-efficacy has focused on emotional self-efficacy (Landon et al., 2007; Mathews et al., 2016; Muris, 2002), with some research exploring the relations between anxiety, social self-efficacy, and academic self-efficacy (Matuso & Arai, 1998; Muris, 2001, 2002). These studies have typically shown that there is a relationship between high anxiety and impairments in self-efficacy (Landon et al., 2007; Mathews et al., 2016; Matsuo & Arai, 1998; Muris, 2002; Muris et al., 2016), although findings are most consistent for emotional self-efficacy. CBT treatment studies also have implications for the relations between anxiety and self-efficacy. This research demonstrates that even with time-limited CBT treatment, participants show significant increases in self-efficacy (Bouchard et al., 2007; Gallagher et al., 2013; Gaudiano & Herbert, 2007; Maric et al., 2013). Additionally, these changes in self-efficacy subsequently predict decreases in anxiety symptomology. This research supports the idea that changes in self-efficacy can occur from CBT treatment for anxiety. Of

note, there is essentially an absence of studies that have explored self-efficacy and OCD. Research in this area has been limited to youth's self-efficacy as it relates to reducing their OCD symptoms.

While there is a relatively substantial amount of literature that has explored the relations between self-efficacy and mental health, there are also gaps in the research that need to be addressed. First, the majority of the research on self-efficacy and mental health has examined depression, rather than anxiety or OCD. Although depression, anxiety, and OCD are internalizing problems and often comorbid, it is likely that there are differences in the relations between self-efficacy and these various disorders. Second, there is a lack of research using clinical samples. Additionally, extant research with clinical samples has included school-age children, but not adolescents (Landon et al., 2007; Suveg & Zeman, 2004). Third, there are limitations in the extant treatment research, examining the effects of CBT treatment for anxiety on self-efficacy. While this treatment research is encouraging, many of the reviewed studies included measures of self-efficacy that were specific to the anxiety disorder (Bouchard et al., 2007; Gallagher et al., 2013; Gaudiano & Herbert, 2007; Maric et al., 2013; Williams & Laberge, 1994). Further research is needed to understand if changes in domain-specific self-efficacy (e.g., emotional, academic, and social self-efficacy) occur from psychotherapy, not specific to particular anxiety symptoms. Additional research in this area is also needed with children and adolescents, and with different types of anxiety disorders and OCD.

School Engagement

School engagement refers to the level of involvement, attachment, and commitment to academic and social activities at school (Li, 2011). School engagement is often conceptualized as multi-faceted, consisting of behavioral, emotional, and cognitive components (Fredricks et al.,

2004). The behavioral component of school engagement includes students' observable actions, such as participation in extracurricular activities, answering questions during class, and completing homework (Appleton et al., 2008; Fredricks et al., 2004; Jimerson et al., 2003). The emotional, or affective, component of school engagement involves students' feelings and reactions to the school, teachers, and peers (Fredricks et al., 2004; Jimerson et al., 2003). The cognitive component is comprised of students' self-regulation, learning goals, motivation, and willingness to exert effort to learn (Fredricks et al., 2004; Jimerson et al., 2003).

School engagement matters for youth's functioning. Put simply, students with greater engagement at school are more likely to acquire academic skills and be academically successful (Pintrich & DeGroot, 1992; Roeser et al., 2002). In addition to the academic benefits, students who are engaged at school also have higher self-esteem, resilience, and self-worth (Henry et al., 2011; Wang & Peck, 2013). Students who report higher school engagement concurrently report greater life satisfaction (Lewis et al., 2011). In contrast, harmful outcomes may occur for students who are disengaged at school, such as school dropout (Archambault et al., 2009).

School Engagement and Mental Health

While some extant research has explored the relations between school engagement and psychopathology, the vast majority of these studies have focused on the effects of school engagement on externalizing problems and related outcomes, such as school dropout and delinquency (Hirschfield & Gasper, 2011; Li & Lerner, 2011). Other studies have included broadband measures of both externalizing and internalizing problems to examine the relations between school engagement and mental health. Li & Lerner (2011) examined trajectories of school engagement among middle school students, and how trajectories related to internalizing and externalizing problems (i.e., depression, delinquency, and substance use). Findings showed

that youth who were members of trajectories with decreasing engagement reported the highest rates of delinquency and substance use, and more depressive symptoms (Li & Lerner, 2011).

Noting a prominent gap in the literature, Stiles and Gudiño (2018) sought to examine the bidirectional associations between school engagement and mental health symptoms, rather than only examining the effect of school engagement on mental health. Using a nationally representative sample of children (ages 6 to 16 years old) in the Child Welfare System, Stiles and Gudiño (2018) found that internalizing and externalizing symptoms predicted lower levels of school engagement, 18 months later. Stiles and Gudiño (2018) concluded that students with fewer internalizing and externalizing symptoms were more likely to be more engaged in school over time. There are limitations with generalizability to consider in this study, as the sample is a specific population of high-risk youth. Overall, research demonstrates that there are associations between school engagement and mental health outcomes, including both internalizing and externalizing problems (Hirschfield & Gasper, 2011; Li & Lerner, 2011; Stiles & Gudiño, 2018).

Anxiety and School Engagement

There is some prior research that has explored the relations between anxiety and school engagement, consistently finding that higher levels of anxiety contribute to students' disengagement at school (Martin et al., 2012; Raufelder et al., 2015; Roeser, Eccles, & Strobel, 1998; Roeser et al., 2002; Wilcox et al., 2016). Roeser and colleagues (1998) sought to determine how test anxiety, in addition to other types of emotional distress, relates to patterns of maladaptive behavior in the classroom for middle school students. Roeser et al.'s (1998) conceptualization of maladaptive patterns of behavior included poor classroom participation, failure to complete assignments, and hostility towards the teacher. Findings showed that test anxiety was most strongly associated with withdrawal behavior, such as not participating in

classroom discussions (Roeser et al., 1998). Consistent with these findings, Raufelder and colleagues (2015) examined the relations between test anxiety, school engagement, and parental relationships among a large sample (N = 1088) of adolescents in Germany. Raufelder et al. (2015) provided essentially no review on the relations between test anxiety and school engagement, noting that little research has been conducted in this area. Results of their study indicated that the more students report inhibitory test anxiety, the less engaged they are at school.

Beyond test anxiety, Martin and colleagues (2012) examined math anxiety and other predictors of middle school students' (N = 1601) engagement in mathematics. Martin et al. (2012) used an ecological perspective to examine a wide range of factors internal and external to the student. Mathematics anxiety strongly predicted disengagement in math, more so than other variables, such as mathematics ability and self-efficacy (Martin et al., 2012). Findings from Roeser et al. (1998), Raufelder et al. (2015), and Martin et al. (2012) indicate that anxiety specific to tests or school subjects does negatively affect students' level of engagement.

While limited in number, some research has examined the effects of trait anxiety, and social-emotional functioning more broadly, on school engagement (Roeser et al., 2002; Wilcox et al., 2016). For example, Wilcox et al. (2016) examined the role of anxiety and social support in changes in school engagement between elementary and junior high school. This study included students from Kindergarten to Grade 9, recruited from Catholic schools in Canada. Wilcox and colleagues (2016) found that junior high school students who self-reported high levels of anxiety were less likely to be academically engaged than students who did not report anxiety; however, this finding did not hold true for elementary school students. This study has several limitations that are important to consider. The measure of school engagement used was a 5-item scale, with moderate to low internal consistency (Wilcox et al., 2016). The lack of a well-

established measure of school engagement, as well as recruiting students from Catholic schools, limits the generalizability of findings.

With a similar purpose, Roeser and colleagues (2002) used person-centered analyses to examine how early adolescents' motivation and social-emotional functioning is associated with their engagement at school. Roeser et al. (2002) conceptualized social-emotional functioning as feelings of emotional wellbeing or distress, such as sadness, anger, and anxiety. Roeser and colleagues (2002) found that reported emotional distress predicted learning distractions and withdrawal behaviors, such as avoiding help seeking during class. While Roeser et al. (2002) found a relationship between distress and disengagement, the specific influence of anxiety symptoms on school engagement was unclear in the results of this study.

OCD and School Engagement

Consistent with the state of the literature exploring anxiety and self-efficacy, there is very limited research that has examined the relations between OCD and school engagement. While there are "long-held clinical observations" that pediatric OCD is associated with significant impairments in academic functioning (Piacentini et al., 2003, p. 67), there is a lack of systematic documentation of the effects of OCD on academic functioning more broadly, and certainly school engagement as a specific construct.

There is evidence that OCD symptoms and severity broadly have a negative effect on school and occupational performance, among youth and adult populations (Coluccia et al., 2017; Hollander et al., 1998). Hollander and colleagues (1998) surveyed members of the Obsessive Compulsive Foundation (N = 701; 82% patients, 18% family members). Ages of responders ranged from 5 to 82 years old, encompassing children, adolescents, and adults with OCD. Approximately 60% of participants noted that OCD symptoms negatively affected their

academic achievement; interfered with their ability to study; and interfered with their ability to work. Moreover, for patients who were students (N = 582), 34% were unable to go to school or college, as a result of their OCD, for a period of time (median = 9.5 months). While this study has many limitations (i.e., no random sample, cross-sectional design, large age range of participants), it provides preliminary evidence to support that individuals perceive that there is a negative influence of OCD on their school and work functioning. A more recent review and meta-analysis by Coluccia et al. (2017) examined quality of life, including school functioning, among children and adolescents with OCD. Coluccia et al. (2017) reviewed three studies that examined OCD and school functioning, finding that patients with OCD had significantly lower scores on school quality of life outcomes compared to controls, with a moderate effect size. Again, results from Coluccia et al. (2017) indicate that school functioning is affected by OCD; however, the outcome variable was not specific to school engagement.

Several studies have examined the effect of OCD on school engagement among youth, consistently finding that OCD symptoms and severity are linked to poor school engagement (Piacentini et al., 2003; Valderhaug & Ivarsson, 2005). Piacentini and colleagues (2003) posited that OCD symptoms such as counting rituals and intrusive thoughts have the potential to impair youth's focus and concentration, which could then interfere with reading, listening, or engagement at school. With a sample of children and adolescents ages 5 to 17 years old (N = 151), Piacentini et al. (2003) used the COIS to examine the impact of OCD on youth's school, home, and social functioning. Results showed that 47% of parents and 44% of children reported significant OCD-related problems in school/academic functioning (Piacentini et al., 2003). For example, parents and children commonly endorsed problems concentrating on schoolwork (47% of parents, 37% of children) and doing homework (46% of parents, 32% of children) as a result

of OCD symptoms. Of note, comorbidity was common within the sample, with 38% of OCD patients also having one or more anxiety disorders. Storch and colleagues (2009) conducted a similar study that examined the relations between OCD symptom severity and functional impairment among a sample of children and adolescents with OCD (N = 99). Using the COIS, Storch et al. (2009) found that OCD severity significantly predicted school impairment.

Valderhaug and Ivarsoon (2005) also used the COIS to study OCD-related functional impairments among Norwegian and Swedish children with OCD recruited from child psychiatric outpatient clinics. Results showed that 69% of children with OCD, and 83% of parents, rated "global problems at school" as a slight problem or significant problem. School items that were most commonly endorsed as a significant problem included getting to school on time, doing homework, and concentrating on work. Children with two or more comorbid disorders had significantly higher COIS scores compared to those with one or no comorbid disorders (Valderhaug & Ivarsoon, 2005). While researchers have begun to examine the effect of OCD on school engagement, these studies are limited to cross-sectional designs. Further research is needed to determine whether treatment for OCD is associated not only with reductions in OCD symptoms and severity, but also with improvements in school engagement.

Summary and Limitations

In sum, school engagement is an area of research that has not traditionally been studied with mental health. Of studies that have examined school engagement and mental health, most of this research has focused on the effects of school disengagement on externalizing problems and related outcomes (Hirschfield & Gasper, 2011; Li & Lerner, 2011). Others have used broadband measures of internalizing problems or social-emotional functioning, which are distinct from anxiety disorders and OCD (Roeser et al., 2002; Stiles & Gudiño, 2018). The few studies that

have examined anxiety and school engagement have found that high anxiety predicts low engagement at school, suggesting that a relationship does exist between these constructs and is worth studying further in relation to anxiety treatment (Roeser et al., 1998, 2002; Wilcox et al., 2016). Some researchers have examined OCD and school engagement, consistently finding that OCD severity is associated with impairments in school functioning (Piacentini et al., 2003; Valderhaug and Iversoon, 2005).

Overall, research exploring the relations between anxiety, OCD, and school engagement is limited. Broadly, this paucity of research is representative of the lack of interdisciplinary studies bridging the gap between educational and mental health research. Previous studies have examined youth with anxiety disorders and OCD and their academic performance in school, assessed by grades or standardized test scores (Roeser et al., 1998, Wood, 2006). However, this research has not typically included a measure of school engagement, which is a more proximal factor to anxiety than objective measures of academic performance. The predictive nature of anxiety disorders or OCD on school engagement is not well understood. Additional research is needed to better understand whether anxiety disorders and OCD influence engagement.

Present Study

The present study contributes to the literature on the intersection between anxiety, OCD, cognition, and motivation. A modified pre- and post-test design was used to examine changes in anxiety or OCD among youth following modular CBT treatment. This study examined how youth's anxiety or OCD symptoms, EF, domain-specific self-efficacy (i.e., emotional, social, and academic self-efficacy), and school engagement changed over the course of treatment. Additionally, given this study was conducted during the COVID-19 pandemic, youth and parents

who participated in follow-up data collection were asked about their experiences during the pandemic and how anxiety or OCD symptoms were affected during this unprecedented time.

This study addresses gaps in the present literature in several ways. Broadly, the number of studies exploring the intersection between mental health and school functioning are substantially lacking. Assessing anxiety and OCD treatment outcomes beyond symptomology (i.e., relevant outcomes for school functioning) is an important step to better understand the intersection between mental health and academic success. Additionally, research in this area has typically been conducted with non-clinical samples of children and adolescents, recruited from schools or community settings. The present study seeks to fill this gap by examining whether CBT treatment for anxiety or OCD is accompanied by changes in EF, self-efficacy, and school engagement. In regard to EF, the extant research is mixed, with certain EF skills (e.g., inhibitory control) and their relation to anxiety and OCD receiving little attention in the literature. With self-efficacy and mental health, research has typically examined the associations between self-efficacy and depression, rather than anxiety or OCD. Additionally, research on school engagement and mental health outcomes has traditionally focused on externalizing problems, and outcomes such as school dropout. Moreover, this research has typically been one-directional, studying the effects of school engagement on mental health. The present study is one of few studies to examine how anxiety and OCD are uniquely related to youth's engagement in school. Finally, research with clinical samples of youth with anxiety and OCD have traditionally been quantitative studies or individual case studies. This research provides a unique examination of participants' experiences by including qualitative data.

Research Questions and Hypotheses

1. How does anxiety/OCD change over the course of psychological treatment?

Hypothesis: It was expected that both anxiety and OCD symptoms and severity would decrease after treatment.

2. How do perceptions of anxiety/OCD symptoms compare between parents and their children?

   Hypothesis: Based on previous research, it was hypothesized that parents and children would have different perceptions of the child's anxiety and OCD symptoms, and discrepant perceptions of changes in symptomology over time.

3. How does executive functioning change over the course of psychological treatment?

   Hypothesis: It was expected that executive functioning would increase for participants after treatment.

4. How does self-efficacy change over the course of psychological treatment?

   Hypothesis: It was expected that self-efficacy would improve over the course of treatment. It was also hypothesized that participants would experience the largest improvements in emotional self-efficacy, compared to academic or social self-efficacy.

5. How does school engagement change over the course of psychological treatment?

   Hypothesis: It was hypothesized that youth's levels of school engagement would increase after treatment.

6. What is the level and pattern of anxiety/OCD symptoms among children, in the midst of a national emergency, the COVID-19 pandemic?

   Hypothesis: Given the unprecedented nature of the COVID-19 pandemic, and the later addition of this research question, no hypotheses were established.

7. Do levels of anxiety/OCD and executive functioning, self-efficacy, and school engagement show similar patterns over the course of psychological treatment?

Hypothesis: It was predicted that as anxiety/OCD decreased, EF, self-efficacy, and school engagement would decrease.

CHAPTER 3:

METHODS

This study used a modified pre- and post-test survey design. Children and adolescents seeking treatment for anxiety disorders or OCD were recruited from mental health clinics in the community. Participants enrolled in the study across 10 months (spring 2019 to winter 2020). Children received treatment as usual, modular CBT, from their assigned clinician. Participants (i.e., child/parent dyads) completed measures online to assess anxiety or OCD symptoms, EF, self-efficacy, and school engagement, at Time 1 (prior to the completion of 7 treatment sessions) and Time 2 (10 weeks after the completion of Time 1 measures). In late spring 2020, participants were invited to participate in a Time 3 follow-up survey and phone interview. The follow-up survey was identical to the surveys at Time 1 and Time 2.

Recruitment

Participants included children and adolescents (the client) and their parent or caregiver. Participants were recruited across four mental health clinics by asking clinicians to distribute the information packets to eligible clients. The researcher informed clinicians about the study during staff meetings at Clinic A1, Clinic A2, and Clinic B. The researcher informed the participating psychologist at Clinic C about the study procedures via phone call. The researcher provided an overview about the purpose of the study and what the clinician was asked to do (i.e., determine if new clients are eligible to participate in the study, distribute materials).

Inclusionary Criteria

Youth. Inclusionary criteria for youth to participate in this study included the following: 1) youth were between the ages of 8 and 17 years old, 2) youth met *DSM-5* criteria for at least

one anxiety disorder or OCD, and 3) youth had completed 7 treatment sessions or fewer at the time of Time 1 data collection at one of four mental health clinics.

Parents. Parents met the following inclusionary criteria: 1) their child was seeking treatment for anxiety or OCD at one of the participating clinic locations, and 2) the parent is a primary caregiver/legal guardian for the child. Participating parents were asked to complete assessments of their child online at the various time points. The parent or caregiver was also asked to assist his or her child in reading items on measures (for those ages 12 years old and younger, or for youth who have difficulty reading). In addition, parents were asked to assist his or her child in navigating the online survey.

Exclusionary Criteria

Children were excluded from the present study if they had completed more than 7 treatment sessions prior to data collection for this study. Children with an Intellectual Disability (ID) or Autism Spectrum Disorder (ASD) were also excluded, as reported by the child's parent (i.e., children were not evaluated for ID or ASD as part of this research study). Clinicians would have needed to adapt modular CBT as usual for children with ID or ASD, which was beyond the scope of the present study. Youth were not excluded from the study if they were taking medication for anxiety or OCD; however, medication must have been taken consistently for 6 weeks to ensure stability (i.e., youth were excluded from participating if they had been taking medication for anxiety or OCD for less than 6 weeks). If a child had been taking medication for a period of 6 weeks or longer, and they were seeking therapy, the child's anxiety or OCD likely still reached clinical levels to warrant further intervention.

Children were not excluded from the study on the basis of comorbidity or a secondary psychological diagnosis. Restricting the sample to youth with only a primary diagnosis of

anxiety or OCD would be problematic. This would have limited study generalizability because many children and adolescents with anxiety disorders or OCD have comorbid disorders (Albano et al., 2003). The inclusion of these individuals was likely a more representative sample of the clients whom clinicians typically treat in practice.

Settings

Participants were recruited from four mental health clinics in the community: Clinic A1, Clinic A2, Clinic B, and Clinic C. The lead psychologists and social workers at Clinics A and B were consulted during the development of this study to identify common research interests, meet the needs of the clinics and their clinicians, and ensure feasibility of data collection. Clinic C was added as a recruitment site after the initial implementation of the study. Clinic A provides services at two locations, Clinic A1 and A2.

Clinic A. Clinic A is a private mental health clinic that serves individuals across the lifespan for a variety of disorders. Services offered at Clinic A include psychological testing, educational consulting services, consultation with medical professionals, and individual and group psychotherapy. Clinic A employs sixteen clinicians across two locations, including clinical psychologists (Ph.D., Psy.D.), Master's level clinicians (limited licensed psychologists, social workers), and graduate students in psychology doctoral programs completing advanced practicum placements and internships. Sixteen clinicians were initially asked to assist with study recruitment[1]. Clinicians at Clinic A specialize in treating anxiety, phobias, selective mutism, OCD, ADHD, depression, panic disorder, behavioral issues, and marital stress. Clinicians primarily use a modular CBT approach to treatment.

[1] Employment changed throughout recruitment, with some of the initial clinicians leaving Clinic A and new employees hired. New clinicians were emailed instructions for how to recruit participants; the lead psychologist was also available to answer any questions that new clinicians had about recruitment.

Clinic B. Clinic B is also a private mental health clinic that serves individuals across the lifespan. Services offered include evaluations, consultations, individual psychotherapy, and group classes. Clinic B specializes in treating OCD and anxiety disorders. Clinic B has thirteen clinicians, including six licensed clinical psychologists (two limited license psychologists, completing post-doctoral training), five social workers, and two psychiatrists. Eleven clinicians at Clinic B were asked to participate in the study, excluding the two psychiatrists. Clinicians primarily operate using a CBT approach, although other research-based treatments are used depending on the presenting problem (e.g., Habit Reversal Therapy for Body-Focused Repetitive Behaviors).

Clinic C. Clinic C is a private mental health practice that provides psychotherapy services to children, adolescents, and adults. Clinic C is the private practice of one licensed clinical psychologist, who specializes in treating anxiety, OCD, and Tourette's Syndrome. Psychological services offered include diagnostic evaluations and individual therapy. The psychologist at Clinic C uses a modular CBT approach, exposures, and Habit-Reversal Therapy, depending on the presenting problem of the client.

Materials

Participant Information Packets

The researcher provided the clinics with Participant Information Packets that were distributed to clients who were eligible to participate in the study. There were four color-coded versions of the Participant Information Packets: 1) For clients ages 8-10 years old with a primary diagnosis of an anxiety disorder (blue packets), 2) For clients ages 11-17 years old with a primary diagnosis of an anxiety disorder (green packets), 3) For clients ages 8-10 years old with a primary diagnosis of OCD (red packets), and 4) For clients ages 11-17 years old with a primary

diagnosis of OCD (orange packets). Clinicians were instructed to select the appropriate packet (i.e., age, diagnosis) when distributing the information to eligible clients.

Participant Information Packets contained four documents: 1) Inclusionary Criteria Checklist (see Appendix A for example anxiety checklist), 2) Participant Information Handout (see Appendix B), 3) two copies of the consent form, dependent on the child's age (see Appendix C), and 4) HIPAA Authorization Form (see Appendix D). A cover sheet was attached to the front of each folder, and a stamped manila envelope was included in the packet. Each Participant Information Packet was assigned a unique Research ID Number.

Inclusionary Criteria Checklist. The Inclusionary Criteria Checklist is a handout that clinicians used to determine whether a client met criteria to participate in the study. There were two versions of the checklist, for clients with a primary diagnosis of anxiety and clients with a primary diagnosis of OCD. The checklist contained four items, followed by a script that clinicians read to introduce the study (see "Procedures" for additional details).

Participant Information Handout. The Participant Information Handout outlined the general instructions for how to participate in the study, provided parents with the links to the Time 1 measures, and explained next steps for participants after completing the Time 1 measures.

Consent Forms. There were two versions of the consent form, due to differences in incentives for children ages 8-10 and children ages 11-17. The researcher kept one copy of the signed consent form for each participant; thus, study participation was not anonymous, but confidential. Children assented to the study online, prior to starting the surveys (see Appendix E for Child Assent). The parent surveys also contained an online consent form (i.e., an abbreviated

version of the hard-copy consent form; see Appendix F). The purpose of this online consent form was to ensure that parents consented to the study prior to completing the Time 1 surveys.

HIPAA Authorization Form. The purpose of the HIPAA Authorization Form was to seek parental consent for obtaining relevant data from the medical records, such as mental health diagnosis, number of treatment sessions completed, etc.

Participants

Participants included 12 children and their parents, for a total of 25 participants (both parents of one child participated). Eight of the 12 participants also completed Time 3 data[2]. Children ranged in age from 9 to 17 years old (M = 12.5, SD = 2.51). The participating parent was typically the child's mother (N = 11). For one participant (Carrie[3]), both the mother and father completed the Time 1 and Time 2 measures. For one participant (Alison), both the mother and father participated in the Time 3 phone interview. The sample was predominately female children and adolescents (N = 10). Participants were White (N = 10), Black (N = 1), and Native American (N = 1). Primary diagnoses assigned to children and adolescents at intake included GAD (N = 8), Social Anxiety Disorder (N = 1), Unspecified Anxiety Disorder (N = 1), and OCD (N = 2). Five of the 12 cases were also assigned secondary diagnoses at intake, including: Separation Anxiety Disorder (N = 1), OCD (N = 1), Major Depressive Disorder (N = 2), and Reaction to Severe Stress, Unspecified (N = 1). One of the 12 cases (Max) was assigned a third diagnosis at intake, Unspecified Disruptive Behavior Disorder. The majority of participants were not prescribed any medications at the time of the intake assessment or during treatment (N = 10). The two participants with OCD as a primary diagnosis (Carrie, Jane) were both taking medication during treatment. See Table 1 for demographic characteristics of youth at baseline.

[2] For one parent/child dyad (Carrie), the child chose not to participate in the Time 3 phone interview but completed the Time 3 online survey.
[3] All participant names are pseudonyms.

Table 1:

Demographic Characteristics of Youth Participants at Baseline

Baseline Characteristic	*N*	%
Gender		
Female	10	83.3%
Male	2	16.7%
Race/Ethnicity		
White/Non-Hispanic	10	83.3%
Black	1	8.3%
Native American	1	8.3%
Primary Diagnosis		
GAD	8	66.7%
Social Anxiety Disorder	1	8.3%
Unspecified Anxiety Disorder	1	8.3%
OCD	2	16.7%
Secondary Diagnosis[a]		
Separation Anxiety Disorder	1	20%
OCD	1	20%
MDD	2	40%
Reaction to Severe Stress	1	20%
Tertiary Diagnosis[a]		
Unspecified Disruptive Behavior Disorder	1	100%
Psychotropic Medication	2	16.7%

Note. [a]Reflects the number and percentage of participants who were assigned secondary or tertiary diagnoses at intake.

Demographics

Table 2 provides demographic characteristics of each participant, including age, sex, race/ethnicity, and diagnosis(es). The eight participants who completed follow-up (Time 3) data are presented first, followed by the remaining four participants who participated in the Time 1 and Time 2 data collection only. Within those two groupings, participants are presented in order of age (youngest to oldest).

Table 2:

Demographic Characteristics of Individual Participants

Participant	Age	Sex	Race/Ethnicity	Diagnosis(es)[a]
1. Lily	9	Female	White	GAD
2. Megan	10	Female	White	GAD
3. Evie	11	Female	White	GAD
4. Max	12	Male	White	GAD, Separation Anxiety, Disruptive Behavior Disorder
5. Sarah	14	Female	Native American	GAD, Reaction to Severe Stress, Unspecified
6. Alison	15	Female	White	GAD, MDD
7. Bea	17	Female	White	GAD, OCD
8. Carrie	11	Female	White	OCD
9. Katie	11	Female	White	GAD
10. Nora	11	Female	White	Unspecified Anxiety Disorder
11. Jane	13	Female	White	OCD
12. Jacob	16	Male	Black	Social Anxiety Disorder

[a] The primary diagnosis is listed first, followed by secondary and/or tertiary diagnoses, if applicable

Participant Descriptions

Brief descriptions of each participant are presented below. For the first eight participants, Time 1 quantitative data and qualitative data from the Time 3 phone interviews was used to provide information about youth's presenting problems at Time 1. For the additional four participants, descriptions were formulated from the Time 1 quantitative data and qualitative survey questions, if parents provided responses.

Lily. Lily is a 9-year-old female who was diagnosed with GAD at intake. At Time 1, both Lily and her mother's responses on a measure of anxiety (Screen for Child Anxiety Related Emotional Disorders; SCARED) indicated a presence of Panic Disorder, GAD, and Separation Anxiety. When asked how she felt most of the day, most days of the week, Lily shared, "A lot of times I felt frustrated and anxious, but some of the times, I felt excited, and happy, and good." Lily's mother reported that, before treatment, Lily's anxiety was higher at home than at school. She attributed Lily's anxiety at home to her difficult relationship with her brother. Lily's mother reported that Lily's anxiety was not as evident in the school setting, and she only experienced moments of anxiety occasionally when she was at school ("…there would be some moments and it would surprise her teacher it wasn't very often…so I would say maybe a couple times a month at school").

Megan. Megan is a 10-year-old female who was diagnosed with GAD at intake. Parent and child responses on the SCARED at Time 1 indicated a presence of Panic Disorder, GAD, Separation Anxiety, Social Anxiety Disorder, and Significant School Avoidance. Prior to treatment, Megan experienced a wide variety of anxiety symptoms that reflected her diagnosis of GAD. Megan reported that before treatment, she typically felt "pretty normal" most of the day, most days of the week. She estimated that she felt anxious around "four times per week." Megan's mother reported that she initially sought treatment for Megan due to anxiety that she was experiencing related to school, such as concerns about her school performance and school refusal. Megan also experienced some depressive symptoms before treatment, although she did not have a diagnosis of depression. Megan described her symptoms: "I had kind of noticed I felt like, really, really down. And I was sad and tired a lot."

Evie. Evie is an 11-year-old female who was diagnosed with GAD. At Time 1, Evie's responses on the SCARED fell below the cutoff of "may indicate the presence of an anxiety disorder." Her mother's responses on the SCARED suggested a presence of Panic Disorder, GAD, and Separation Anxiety. Evie self-reported that before starting treatment, she typically felt "normal" during the day but felt "more anxious at nighttime." Evie's parents initially sought treatment for Evie after she had experienced several panic attacks. Evie wanted to run cross country at school, but her heart rate was so elevated that numerous doctors would not sign off on her sports physical. Doctors determined that her elevated heart rate was due to anxiety, rather than a heart condition.

Max. Max is a 12-year-old male who was assigned a diagnosis of GAD at intake, with secondary diagnoses of Separation Anxiety and Unspecified Disruptive Behavior Disorder. Max's responses on the SCARED at Time 1 indicated the presence of GAD, Separation Anxiety, Social Anxiety, and Significant School Avoidance. Max's mother's responses on the SCARED suggested the presence of GAD, Separation Anxiety, and Social Anxiety Disorder. Max shared that he typically felt "normal" most of the day, most days of the week. Max also noted that before treatment, he often felt worried. Max's mother reported that parents initially sought treatment for Max due to his behavior at school, rather than for anxiety, but assessment revealed that Max was experiencing a variety of anxiety symptoms. According to his mother, behavior concerns at school for Max included a lack of work completion and resistance to seek or receive help ("He was reluctant to have any help of any kind").

Sarah. Sarah is a 14-year-old female who was diagnosed with GAD at intake, with a secondary diagnosis of Reaction to Severe Stress, Unspecified. At Time 1, both Sarah and her mother's responses on the SCARED indicated the presence of Panic Disorder, GAD, Separation

Anxiety, Social Anxiety, and Significant School Avoidance. Sarah reported that she had "pretty normal days" most of the day, most days of the week. However, she indicated that she felt anxious "a lot during my school time and during my classes." Sarah's mother reported that parents initially sought treatment for Sarah due to "…performance anxiety specifically with academics and test taking." Sarah's mother also noted that this performance anxiety "…spilled over into other activities and areas for life." In addition to the anxiety concerns prior to treatment, Sarah's mother reported concerns related to food (food aversions, eating candy and hiding the wrappers), body image issues, and "not being very truthful" with parents.

Alison. Alison is a 15-year-old female who was diagnosed with GAD with a secondary diagnosis of MDD. Alison's responses on the SCARED at Time 1 suggested the presence of Panic Disorder, GAD, Social Anxiety Disorder, and Significant School Avoidance. Her mother's responses on the SCARED indicated the presence of Panic Disorder, GAD, and Social Anxiety Disorder. Alison shared that most of the day, most days of the week, she would describe her mood as "…probably anxious…I was worrying about anything and everything I could worry about." Alison's family initially sought treatment due to concerns with Alison not completing her homework, being very short-tempered and withdrawn, and her parents feeling like something was "off." Alison's mother noted that she did not realize that Alison was experiencing anxiety prior to seeking treatment, but assessment indicated that Alison was experiencing a variety of anxiety symptoms.

Bea. Bea is a 17-year-old female who was diagnosed with GAD at intake with a secondary diagnosis of OCD. At Time 1, Bea's responses on the SCARED indicated the presence of Panic Disorder, GAD, and Significant School Avoidance. Her mother's responses on the SCARED fell below the cutoff of "may indicate the presence of an anxiety disorder." When

asked how she felt most of the day, most days of the week, Bea replied, "Well, I think I was on high alert, all the time. I feel like, the anxiety came on really quickly and suddenly." Bea's mother reported that the family initially sought treatment for Bea because "…it was pretty clear that she was experiencing anxiety that was…beyond the range of the everyday anxiety that everybody experiences." Bea's mother noted that Bea's anxiety was also affecting her sleep and mood.

Carrie. Carrie is an 11-year-old female with a diagnosis of OCD. On the CY-BOCS Symptom Checklist, Carrie reported that her obsessions included contamination obsessions, aggressive obsessions, religious obsessions (excessive concern/fear of offending religious objects), and miscellaneous obsessions. Carrie reported that her compulsions included washing/cleaning, checking, ordering/arranging, and miscellaneous (i.e., needing to do things until feels just right). Carrie's mother described her as frequently upset, uncomfortable, isolated, and lonely, prior to treatment. Carrie's mother reported that parents initially sought treatment for Carrie after she started developing symptoms of not wanting to be touched. Carrie's parents noticed that she was not sitting on furniture at home, had difficulty sitting next to her sister, and would not touch anything that her sister had potentially touched. An additional concern that Carrie's mother wanted to address during treatment was the relationship between Carrie and her sister.

Katie. Katie is an 11-year-old female who was assigned a diagnosis of GAD at intake. At Time 1, parent responses on the SCARED indicated the presence of Panic Disorder or Significant Somatic Symptoms, Social Anxiety Disorder, and Significant School Avoidance. Katie's responses on the SCARED suggested the presence of Panic Disorder and Social Anxiety Disorder.

Nora. Nora is an 11-year-old female who was diagnosed with Unspecified Anxiety Disorder at intake. Parent responses on the SCARED at Time 1 suggested that Nora experienced symptoms consistent with Separation Anxiety. Child responses on the SCARED indicated that Nora perceived herself as experiencing symptoms of GAD.

Jane. Jane is a 13-year-old female who was diagnosed with OCD at intake, with a secondary diagnosis of MDD. On the CY-BOCS Symptom Checklist, Jane reported that her obsessions included contamination obsessions, aggressive obsessions, magical obsessions (e.g., lucky/unlucky numbers, colors, words), somatic obsessions (e.g., excessive concern with body part or aspect of appearance), and miscellaneous obsessions. Jane reported that her compulsions included washing/cleaning, repeating, ordering/arranging, excessive games/superstitious behavior, rituals involving other persons, and miscellaneous. When asked on the Time 1 surveys how Jane's OCD has affected her feelings and reactions towards school, teachers, and peers, Jane's mother responded that she seemed to have a distracted mind all of the time. She noted that Jane "always puts rituals first before anything else."

Jacob. Jacob is a 16-year-old male who was assigned a diagnosis of Social Anxiety Disorder at intake. Jacob's mother indicated that he attended online school during the school year, notably prior to COVID-19 in-person school closures. At Time 1, Jacob's responses on the SCARED suggested the presence of GAD, Social Anxiety Disorder, and Significant School Avoidance. Jacob's mother's responses on the SCARED suggested the presence of Social Anxiety Disorder.

Clinicians

Twelve clinicians treated participants, and each participant had a different clinician. Clinicians held their Master's degree or doctoral degree. The majority of clinicians (58.3%)

adhered to modular CBT only. Given that all clinicians endorsed using CBT, CBT/ACT[4], or CBT/ERP, no cases were excluded from data analysis. Seven clinicians (58.3%) reported that they used CBT only; three clinicians reported using CBT/ACT (25%), and two clinicians (16.7%) reported using CBT/ERP. See Table 3 for characteristics of the clinicians and the participant they treated.

Table 3:

Clinician Characteristics

Clinician	Sex	Clinic	Degree	Treatment Approach	Participant
Clinician 1	Female	A2	M.A.	CBT	Lily
Clinician 2	Female	A1	M.A.	CBT	Megan
Clinician 3	Female	A1	M.A.	CBT/ERP	Evie
Clinician 4	Female	A1	M.A.	CBT	Max
Clinician 5	Female	A2	M.A.	CBT/ACT	Sarah
Clinician 6	Female	A1	Ph.D.	CBT/ACT	Alison
Clinician 7	Female	B	Ph.D.	CBT/ERP	Bea
Clinician 8	Female	A1	M.A.	CBT	Carrie
Clinician 9	Female	A2	M.A.	CBT	Katie
Clinician 10	Female	A1	Ph.D.	CBT/ACT	Nora
Clinician 11	Male	C	Ph.D.	CBT	Jane
Clinician 12	Female	B	Ph.D.	CBT	Jacob

[4] Acceptance and Commitment Therapy (Hayes, Strosahl, & Wilson, 1999) is considered to be a "third wave"CBT intervention. ACT is psychological intervention based on modern behavioral psychology.

Treatment Characteristics

Participants received treatment at Clinic A1 (N = 6), Clinic A2 (N = 3), Clinic B (N = 2), or Clinic C (N = 1). Participants completed a range of 0 to 6 treatment sessions prior to completing the Time 1 measures (M =2.6 sessions, SD = 2.1). Participants completed a range of 6 to 13 additional treatment sessions before completing the Time 2 measures (M = 9.8, SD = 2.2). The total number of treatment sessions that participants completed while enrolled in the study ranged from 9 to 18 sessions (M = 12.3, SD = 2.8). Of note, all participants were continuing to receive treatment at the Time 2 data collection. For those who participated in the Time 3 follow up data collection, some participants had terminated treatment, and others were continuing treatment at that time. See Table 4 for the number of sessions completed by each participant.

Table 4:

Number of Treatment Sessions Completed by Participant

Participant	Sessions (Time 1)	Sessions (Time 2)	Total Sessions	Terminated treatment at Time 2?	Terminated treatment at Time 3?[c]
Lily[b]	1	8	9	N	N
Megan	1	8	9	N	N
Evie	6	6	12	N	N
Max	2	11	13	N	Y
Sarah	2	8	10	N	N
Alison	2	12	14	N	Y
Bea	5	13	18	N	Y
Carrie	6	10	16	N	N
Katie[a]	0	12	12	N	--
Nora[a]	1	12	13	N	--
Jane[a]	4	8	12	N	--
Jacob[a]	1	8	9	N	--

[a]Participants who did not complete Time 3 phone interviews
[b]Lily terminated treatment at Clinic A2 but continued to receive treatment at a different clinic at Time 3. Lily's mother indicated that the new clinic accepted their insurance.
[c]All participants who continued to receive treatment at Time 3 were receiving teletherapy, rather than in-person sessions, due to COVID-19.

Regarding treatment components, clinicians used psychoeducation, mindfulness, cognitive techniques, relaxation training, exposure, exposure with response prevention, parent training, acceptance techniques, behavioral activation, and emotion regulation as components of treatment. Clinicians used a range of 4 to 7 treatment components with their client (M = 4.83, SD = 0.94). Across all participants, clinicians used psychoeducation as a component of their psychological treatment. Cognitive techniques were also often used, followed by exposures and parent training. See Table 5 for the frequency of treatment components that were used and Table 6 for treatment components used across individual participants.

Table 5:

Frequency of Treatment Components Used

Treatment Components Used	*N*	%
Psychoeducation	12	100%
Cognitive Techniques	10	83.3%
Exposure	8	66.7%
Parent Training	8	66.7%
Mindfulness	5	41.7%
Relaxation Training	4	33.3%
ERP	3	25%
Acceptance Techniques	3	25%
Emotion Regulation	3	25%
Behavioral Activation	2	16.7%

Table 6:

Treatment Components Used

		Treatment Component[a]									
Participant	# of Treatment Components	1	2	3	4	5	6	7	8	9	10
Lily	5	X	X	-	X	X	X	-	-	-	-
Megan	7	X									
Evie	4	X	-	X	-	X	X	-	-	-	-
Max	5	X	-	-	X	X	X	-	-	X	-

Table 6 (cont'd):

Sarah	6	X	X	X	-	X	-	X	-	X	-
Alison	5	X	X	-	-	X	-	X	X	-	-
Bea	4	X	-	-	X	-	X	-	-	-	X
Carrie	3	X	-	-	-	-	X	-	-	-	X
Katie	4	X	-	X	X	X	-	-	-	-	-
Nora	5	X	X	-	-	X	X	X	-	-	-
Jane	5	X	X	X	-	-	-	X	-	X	-
Jacob	4	X	-	-	X	X	X	-	-	-	-

[a] 1 = Psychoeducation; 2 = Cognitive Techniques; 3 = Exposures; 4 = Parent Training; 5 = Mindfulness; 6 = Relaxation Training; 7 = Exposure with Response Prevention; 8 = Acceptance Techniques; 9 = Emotion Regulation; 10 = Behavioral Activation

Procedures

Intake Session

Clinicians assigned participants a diagnosis of an anxiety disorder or OCD at the initial intake session or during the first few treatment sessions. Diagnoses were determined based on a diagnostic clinical interview and measures that are administered to all clients as standard practice of the clinics. Initial intake sessions differed by clinic site. For example, initial intake sessions at Clinic A consist of a two-hour clinical interview without the child, while the initial intake session at Clinic B involves a one-hour clinical interview with the child and parent. The researcher obtained the mental health diagnoses of participants from the medical records (Clinics A1 and A2) or a clinician survey (Clinics B and C; see "Measures" section for more information).

Data Collection Procedures

Measures were administered to all participants at Time 1 and Time 2 ($N = 12$), and to participants who were interested in follow-up assessment at Time 3 ($N = 8$). Parents were provided with the necessary information to complete the Time 1 measures on the Participant Information Handout that they received; thus, participants were able to complete the Time 1 measures as early as the same day that they received the study information. All measures were completed online via Qualtrics or the MHS Online Assessment Center.

Phase 1: Time 1 Data Collection. During the intake session or a treatment session, if eligibility criteria were met, clinicians briefly described the study procedures (outlined on the Inclusionary Criteria Checklist) and gave the parent the Participant Information Packet. On the Participant Information Handout, parents were instructed to mail a signed copy of the consent form and HIPAA Authorization Form to the researcher[5] as soon as possible. Upon receiving the forms in the mail, two copies of the HIPAA Authorization Form were made. One of the copies was mailed to the respective clinic, and the other was mailed back to the parent for them to keep for their records. The consent forms were stored in a locked cabinet.

The researcher frequently checked the status of completed surveys on Qualtrics and the MHS Online Assessment Center. The researcher emailed the parent (using the email address provided on the signed consent form) the Time 1 incentives upon completion of the Time 1 measures (see "Incentives"). This email also contained reminders about when parents should expect to receive an email with links to the Time 2 measures.

Phase 2: Time 2 Data Collection. Nine weeks following the completion of the Time 1 measures, the researcher emailed the link to the Time 2 measures to the parent to complete. The researcher sent email or phone call reminders to the client's parent as needed. The researcher emailed the parent the Time 2 incentives immediately following the completion of the parent and child surveys.

Phase 3: Time 3 Data Collection. In May 2020, the researcher contacted participants via email to invite participation in a Time 3 follow-up survey and phone interview. The researcher provided links to the Time 3 surveys within this initial email, which also included a consent form for parents and assent form for children. At the end of the surveys, the opportunity for phone

[5] To the researcher or research assistant, starting July 2019

interviews was presented. Parents had the option to consent to participate, indicate they were not interested in participating, or request additional information directly from the researcher about the phone interviews prior to consenting. If they consented to participate, parents were emailed a PDF copy of the online consent form to keep for their records, and the researcher contacted them via email to schedule the interviews.

Phone Interviews

All participants who completed the Time 3 follow-up survey also consented to participate in the phone interviews ($N = 8$). For one child/parent dyad (Carrie), the parent participated in the phone interview, but the child did not participate. Topics of the phone interview included: 1) the initial reason for seeking treatment, 2) the child's anxiety or OCD symptoms, before and after treatment, 3) self-efficacy, 4) school engagement, and 5) executive functioning (see Appendix G for interview protocol). The timing of the phone interviews (May – June 2020) coincided with the COVID-19 pandemic. Thus, an additional topic during the phone interviews was how participants were coping during the pandemic and whether their anxiety or OCD symptoms had been affected. The phone interviews began with interviewing the parent first, followed by the child. Interviews were audio recorded and transcribed using a transcription service. Interviews were not time limited and were on average, 30 minutes in length. Parent interviews ranged from 23 minutes to 37 minutes and child interviews ranged from 20 minutes to 36 minutes. Phone interview recordings were deleted following their transcription.

Incentives

Children and adolescent participants, and their parent or primary caregiver, were provided incentives (electronic gift cards) for their participation in the study. See Table 7 for a description of incentives provided to participants at each time point.

Table 7:

Participant Incentives

Participant	Time 1	Time 2	Time 3 Online Survey	Time 3 Interview
Child Ages 8-10	$5 electronic Target gift card	$10 electronic Target gift card	$25 electronic gift card of their choice[a]	$50 electronic gift card of their choice[a]
Child Ages 11-17	$10 electronic Target gift card	$15 electronic Target gift card	$35 electronic gift card of their choice[a]	$50 electronic gift card of their choice[a]
Parent	$20 Amazon gift card	$25 Amazon gift card	$50 gift card of their choice[a]	$100 gift card of their choice[a]

[a] "Of their choice" referred to Target, Amazon, or Starbucks

Research Assistant

A research assistant was hired to facilitate various tasks, starting in July 2019. The research assistant was a doctoral student in the School Psychology Program who completed MSU Institutional Review Board (IRB) training. Research assistant responsibilities included: 1) checking the researcher's on-campus mailbox three times per week and tracking this activity, 2) making copies of the signed HIPAA Authorization Forms to mail to the respective parents and clinics, 3) recording the demographics of new participants (i.e., name, Research ID number, email address) on a password protected spreadsheet and emailing it to the primary researcher, and 4) distributing additional research folders to the participating clinics as needed. `

Measures

Demographic Information

A brief, demographic questionnaire was designed for the purposes of this study and was included at the beginning of the Qualtrics survey. Items included: the child's birth date, sex,

race/ethnicity, the number of treatment sessions completed prior to Time 1 data collection, and the parent's email address.

Health Records Data

Data were extracted from clinic health records to gather information about the nature of treatment and to establish treatment integrity (see "Participants" and "Treatment Characteristics" sections). As advised by the MSU Institutional Review Board (IRB), the clinics decided the method for extracting health records data that best suited their commitment to client confidentiality. Clinics A1 and A2 provided health records data to the researcher, and the researcher extracted the treatment data. Clinics B and C determined that individual clinicians should review their own treatment notes to record the treatment data for a particular participant. At Clinics B and C, clinicians completed a "Clinician Survey" (see Appendix H) via Qualtrics to provide this data to the researcher.

Anxiety Measures

The following section describes the measures that parents and children were asked to complete for children in the study with anxiety as their primary diagnosis. Participants completed identical measures at Time 1, Time 2, and Time 3.

Screen for Child Anxiety Related Disorders (SCARED; Parent and Child). The SCARED (Birmaher et al., 1999) was used to assess changes in children's symptoms of anxiety. The SCARED is a self-report scale completed by children and parents that is frequently used to assess youth's anxiety in both research and clinical settings. The SCARED is designed for youth ages 8 to 18 years old. Clinicians at Clinic A and Clinic B regularly use the SCARED in their practices. In addition to its widespread use, the SCARED was an appropriate measure of anxiety

for the current study because it was developed specifically for the screening of anxiety disorders in children and adolescents, as opposed to being an extension of adult scales (Wren et al., 2007).

Although the SCARED was developed in 1999, it is still a relevant and appropriate measure. The SCARED was developed to screen for DSM-IV anxiety disorders, which are not substantially different from criteria for anxiety disorders in the current DSM-V. Moreover, the psychometric properties of the SCARED have been assessed and validated in numerous studies (Monga et al., 2000; Wren et al., 2004, 2007). Muris et al. (1999) developed a revised version of the SCARED (SCARED-R) in the same year of its original development; however, given the greater length of this measure (66 items versus 41 for the SCARED) and similar psychometric properties, the original SCARED developed by Birmaher and colleagues (1999) was selected for the present study.

There are two forms of the SCARED, parent and child self-report. The two forms are identical, with the exception of how the items are phrased (i.e., "you" on the child forms, "your child" on the parent forms). The developers of the SCARED recommend that for children ages 8 to 11 years old, an adult reads the items to the child and is available to answer any questions. The SCARED has a total of 41 items. Responses to each item are made on a 3-point Likert scale (0 = *Not true or hardly ever true,* 1 = *Somewhat true or sometimes true,* 2 = *Very true or often true*). Items on the SCARED correspond to a specific type of anxiety disorder. For example, the item, "I worry that something bad might happen to my parents", corresponds with Separation Anxiety, whereas, "People tell me that I worry too much" corresponds with Generalized Anxiety Disorder. A total score of 25 or more "may indicate the presence of an anxiety disorder," and scores higher than 30 may indicate a specific anxiety disorder, including: Panic Disorder or Significant Somatic Symptoms (13 items; requires a score of 7 or higher), Generalized Anxiety

Disorder (9 items; requires a score of 9 or higher), Separation Anxiety (8 items, requires a score of 5 or higher), Social Anxiety (7 items; requires a score of 8 or higher), and Significant School Avoidance (4 items; requires a score of 3 or higher).

Psychometric properties of the SCARED are adequate and have been established across multiple studies. The SCARED has acceptable internal consistency, ranging between a Cronbach's alpha of 0.78 and 0.87 for the five scales. Cronbach's alpha for the total score is 0.90 (Birmaher et al., 1999). A recent study by Behrens et al. (2019) also established psychometric properties of the SCARED, including test-retest reliability. A subset of children and parents in the study (N = 298 parent/child dyads) completed a second administration of the SCARED, 5 days to 15 weeks after the first administration (Behrens et al., 2019). Intra-class correlation values (ICC) were 0.86 for the total score on the parent report (SCARED-P) and 0.62 for the total score on the child report (SCARED-C). Sensitivity and specificity of the SCARED was also assessed in a recent study utilizing a community-based sample (DeSousa et al. 2013). Results indicated that the SCARED significantly differentiated children with a positive diagnosis of anxiety disorders from children with no anxiety disorder diagnosis (DeSousa et al., 2013).

The total score on the SCARED was used in this study to determine whether changes occurred in anxiety. The total score on the SCARED was considered the primary quantitative measure of anxiety in this study. Changes in subscale scores were also examined. The SCARED was administered to parents (SCARED-Parent Form) and children (SCARED-Child Form) online through Qualtrics. Parents were instructed on Qualtrics to read items aloud to their child if they are 12 years old or younger, and to assist them with completing the Qualtrics form.

DSM-5 Level 2 Anxiety Measure (Parent). The DSM-5 Level 2 Anxiety-Parent/Guardian of Child Age 6-17 assessment was used to assess anxiety severity. This measure

is considered an "emerging measure" in the DSM-5, located in Section III. This measure was developed for the DSM-5 with the purpose of administration at the initial patient interview, and is adapted from the PROMIS Emotional Distress-Anxiety-Parent Item Bank.

This measure asks parents to answer how their child has been bothered by a list of symptoms during the past 7 days. This Level 2 measure is specific to anxiety disorders and was designed to closely correspond to DSM-5 criteria for anxiety disorders. This assessment includes 10 items on a 5-point Likert scale (1 = *Never*, 2 = *Almost never*, 3 = *Sometimes*, 4 = *Often*, 5 = *Almost always*). Scores range from 10 to 50, with higher scores indicating greater severity of anxiety. Raw scores are summed, and T-Scores are calculated from the total raw score. T-scores are interpreted to indicate anxiety severity (Less than 55 = None to slight, 55.0-59.9 = Mild, 60.0-69.9 = Moderate, 70 and over = Severe). T-scores and the categorical descriptor were used as the anxiety severity score in this study.

Psychometric properties of the Level 2 anxiety assessment have been established as adequate (Irwin et al., 2010), although further research is needed. Irwin and colleagues (2010) administered the PROMIS pediatric measures, including the Level 2 anxiety measure, to parents and children ages 8 to 12 years old (N = 1,529), finding a reliability coefficient of 0.85. The purpose and nature of this measure, asking parents to report on their child's anxiety over the past 7 days, suggests that the measure is intended to be administered frequently, as a method for monitoring progress.

Children's Anxiety Impact Scale (CAIS-Parent), School Subscale. The CAIS-P is a multidimensional parent questionnaire that was used to assess the effects of anxiety on school engagement. The CAIS-P was developed to assess the effects of anxiety symptoms on the psychosocial functioning of children and adolescents (Langley et al., 2004; Langley et al., 2014).

The CAIS-P was developed as a baseline measure and to measure treatment response, given the lack of measures specifically designed for assessing the effects of anxiety on various domains of youth's psychosocial functioning (Langley et al., 2014).

The CAIS-P is designed for use with children and adolescents ages 7 to 17 years old. The measure is a 27-item questionnaire with a 4-point Likert scale (0 = *Not at all,* 1 = *Just a little,* 2 = *Pretty much,* 3 = *Very much*). The total score is the sum of all items, with possible scores ranging from 0 to 81. Items on the CAIS-P fall into three categories of impairment: impairment in academic (school), social, and home/family environments (Langley et al., 2014). Items ask the responder to rate how much difficulty the child has had completing activities due to his or her anxiety symptoms during the last month.

For the purposes of this study, only the school subscale was used, which consists of 10 items. Thus, the total score on the school subscale range from 0 to 30. The school subscale includes items such as how much anxiety symptoms impair giving oral reports or reading out loud, eating lunch with other kids, and concentrating on work. A limitation of the school subscale as a measure of school engagement is the focus of items on behavioral engagement. Given the multidimensional nature of school engagement as a construct, parents were also asked to respond to two open-ended questions on Qualtrics, to capture the influence of anxiety on their child's emotional and cognitive engagement: 1) "Over the past 2 weeks, how has your child's anxiety affected his or her feelings and reactions towards school, teachers, and peers?" and 2) "Over the past 2 weeks, how has your child's anxiety affected his or her motivation and effort towards school?

Strong psychometric properties of the CAIS-P have been established across several studies (Albano et al., 2018; Langley et al., 2004, 2014). The CAIS-P has adequate internal

consistency; Cronbach's alpha for the CAIS-P school subscale is 0.86 (Langley et al., 2004). Treatment studies utilizing the CAIS-P have also found that internal consistency is high within their samples (Cronbach's alpha = 0.92; Albano et al., 2018). Although additional research is needed to establish test-retest reliability of the CAIS-P, prior treatment studies have used the CAIS-P to assess changes in functional impairment throughout treatment (Albano et al., 2018) and from pre- to post-treatment (Caporino et al., 2013). Albano et al. (2018) administered the CAIS-P at frequent intervals (Weeks 0, 4, 8, 12, 24, and 36). Caporino et al. (2013) and Taylor et al. (2018) administered the CAIS-P at pre- and post-treatment, over the course of 12 weeks of cognitive-behavioral therapy. Given this measure's psychometric properties and utilization in previous treatment research, it was hypothesized that the CAIS-P will be sensitive to changes in the functional impact of anxiety in the current study. The CAIS-P was administered online through Qualtrics.

Metacognitions Questionnaire for Children (MCQ-C; Child). The MCQ-C is a self-report measure that was used to assess participants' metacognitive beliefs about anxiety and worry (Bacow et al., 2009). The MCQ-C has been used in research to measure children's levels of cognitive monitoring, positive meta-worry, negative meta-worry, and superstitious, punishment, and responsibility (SPR) beliefs. The MCQ-C is an adaptation of the Metacognitions Questionnaire for Adolescents (MCQ-A; Cartwright-Hatton et al., 2004), which was originally adapted from the Metacognitions Questionnaire-30 for adults (Wells & Cartwright-Hatton, 2004).

The MCQ-C was designed for use with children ages 7 to 17 years old. The MCQ-C is a 24-item self-report with a 4-point Likert scale (1 = *Do not agree,* 2 = *Agree slightly,* 3 = *Agree moderately,* 4 = *Agree very much).* Instructions on the measure indicate that the items represent a

number of beliefs that people have. Children are instructed to read each item and say how much they generally agree with each item. The MCQ-C was adapted from the MCQ-A to be understandable for young children. Several items were re-worded; for example, "Worrying helps me cope" was changed to "Worrying helps me feel better" (Bacow et al., 2009). In addition to rewording several items, the MCQ-C also eliminated one of the five subscales from the MCQ-A: Cognitive Confidence. Thus, the MCQ-C consists of four subscales: positive meta-worry, negative meta-worry, SPR Beliefs, and cognitive monitoring (Bacow et al., 2009). Scores are calculated by summing the items in each subscale, and the total score is the sum of all items and could range from 24 to 96.

Several researchers have validated the psychometric properties of the MCQ-C. Bacow and colleagues (2009) found that among a clinical sample of children, coefficient alphas were 0.89 for the total scale, 0.89 for positive meta-worry, 0.74 for negative meta-worry, 0.69 for SPR beliefs, and 0.75 for cognitive monitoring. Test-retest reliability has only been established for the MCQ-A; future research needs to investigate test-retest reliability for the MCQ-C. Developers of the MCQ-A found that test-retest reliability coefficients ranged from 0.61 to 0.81 for four of the individual MCQ-A subscales (Cartwright-Hatton et al., 2004). Only the total score on the MCQ-C was used in the present study to assess children's metacognitive beliefs. The MCQ-C was administered online through Qualtrics.

Self-Efficacy Questionnaire for Children (SEQ-C; Child). The SEQ-C (Muris, 2001) was used to assess participants' perceptions of self-efficacy. The SEQ-C was originally developed in the Netherlands (Muris, 2001). Muris (2001) developed the SEQ-C to create a method of assessing children's self-efficacy that was not an adaptation of pre-existing adult scales. This study used a version of the SEQ-C that has been adapted for use with U.S.

populations (Suldo & Shaffer, 2007). This adaptation of the SEQ-C features slight modifications in the wording of items to increase readability. For example, the item "How well can you prevent to become nervous?" (Muris, 2001) was changed to "How well can you prevent becoming nervous?" (Suldo & Shaffer, 2007). The SEQ-C was appropriate for use in the current study, given that it was designed specifically for research with youth with affective disorders, and has been frequently used in prior research with children and adolescents ranging in ages 5 to 18 years old (Muris, 2001; Muris, 2002; Niditch & Varela, 2012; Suldo & Shaffer, 2007).

The SEQ-C (adapted by Suldo & Shaffer, 2007) is a 21-item, Likert-scale questionnaire with 3 subscales: social self-efficacy (perceived ability to relate and get along with peers), academic self-efficacy (perceived ability to succeed in school and fulfill academic expectations), and emotional self-efficacy (perceived ability to regulate unpleasant emotions). Each subscale contains 7 items, scored on a 5-point Likert scale from 1 (*Not at all*) to 5 (*Very well*). Scores are summed to yield a total self-efficacy score and 3 subscale scores. Possible total self-efficacy scores range from 24 to 120, and possible subscale scores range from 8 to 40. Higher scores represent higher self-efficacy. Example items on the *social self-efficacy* subscale include, "How well can you express your opinions when other classmates disagree with you?," and "How well can you tell a funny event to a group of young people?" Examples items on the *academic self-efficacy* subscale include, "How well can you study when there are other interesting things to do?" and "How well do you succeed in passing all school subjects?" Example items on the *emotional self-efficacy* subscale include, "How well do you succeed in becoming calm again when you are very scared?" and "How well do you succeed in not worrying about things that might happen?"

The SEQ-C has acceptable psychometric properties. Regarding the internal consistency of the measure, Cronbach's alpha for the total self-efficacy scale is 0.88, and ranges from 0.85 (social self-efficacy) to 0.88 (academic self-efficacy) on the subscales (Muris, 2002). Test-retest reliability has been established as 0.89 for the total self-efficacy score, and 0.88 for emotional self-efficacy (Tahmassian & Moghadam, 2011). Parents were instructed on Qualtrics to read items on the SEQ-C aloud to their child if they are 12 years old or younger, and to assist them with completing the Qualtrics form.

Comprehensive Executive Functioning Inventory (CEFI; Parent). The CEFI (Naglieri & Goldstein, 2013) was selected for this study to assess youth's executive functioning. The CEFI is a rating scale published by Multi-Health Systems Inc. (MHS) that is frequently used in research, clinical, and educational settings as a measure of executive functioning for individuals ages 5 to 18 years old (Fenwick & McCrimmon, 2015). The CEFI includes a teacher form, parent form, and self-report form (ages 12-18 years). Given the age range of participants for the present study, only the parent form was used.

The CEFI is a 100-item rating scale that is designed to measure the strengths and weaknesses of a variety of behaviors associated with executive functioning. Parents are asked to respond to items based on how often they viewed a behavior from their child during the past four weeks. Items are listed as a 5-point Likert-scale, ranging from "Never" to "Always." Ratings from the parent report form yield a Full Scale score, as well as nine CEFI scales: Attention, Emotion Regulation, Flexibility, Inhibitory Control, Initiation, Organization, Planning, Self-Monitoring, and Working Memory (Naglieri & Goldstein, 2013). Additional scales, including a Consistency Index, Negative Impression, and Positive Impression scales are also computed.

For the purposes of this study, the total score on the CEFI was used, as well as the following scales: Attention, Emotion Regulation, Flexibility, Inhibitory Control, and Working Memory. Example items on the Attention subscale include: “In the past 4 weeks, how often did [the child] focus on one thing?” and “pay attention to a boring task?” Example items on the Emotion Regulation subscale include: “get upset when plans were changed?” and “stay calm when handling small problems?” Example items on the Flexibility subscale include: “solve a problem in different ways?” and “have many ideas about how to do things?” Example items on the Inhibitory Control subscale include: “complete a task that took a long time?” and “think of the consequences before acting?” Example items on the Working Memory subscale include: “remember many things at one time?” and “remember what he/she heard?”

The CEFI is available for administration via paper and pencil or online in the Multi-Health Systems, Inc. (MHS) Online Assessment Center; in this study, the online version of the CEFI was used. The CEFI was scored using the Online Scoring Software, available through the MHS Online Assessment Center. Raw scores for the total score and 9 subscales are converted to standard scores and percentile ranks. Higher scores for the total score and each subscale score represent higher executive functioning. Standard scores ranging from 90 (25^{th} percentile) to 110 (50^{th} percentile) fall in the average range.

The CEFI was normed and has excellent reliability and validity. The normative samples were obtained using a stratified sampling plan to ensure that the sample was representative of the U.S. population. Children and adolescents who were included in the sample had a clinical diagnosis or were eligible to receive special education services based on IDEA criteria (Nagleri & Goldstein, 2013). Internal reliability coefficients for the CEFI Full Scale and additional nine scales are high ranging from .80 to .99. For the parent report for children ages 5 to 11 years old,

Cronbach's alpha for the Full Scale is 0.98, and the internal reliability for the subscales range from 0.84 (Flexibility) to 0.92 (Attention). For the parent report for children ages 12 to 18 years old, Cronbach's alpha for the Full Scale is 0.99, and ranges from 0.85 (Flexibility) to 0.93 (Attention, Planning) for the additional nine subscales. Test-retest reliability is also high (Full Scale = 0.91; range for scales = 0.80 to 0.89). Criterion validity was also established with the Behavior Rating Inventory of Executive Functioning (BRIEF; Gioia et al., 2000). The correlation between the CEFI Full Scale and BRIEF General Executive Composite is 0.85.

OCD Measures

The following section describes the measures that parents and children were asked to complete for children in the study with OCD as their primary diagnosis. In addition to the measures listed below, participants in the study with OCD as their primary diagnosis completed the MCQ-C, SEQ-C, and CEFI (see descriptions under "Anxiety Measures").

Children's Yale-Brown Obsessive-Compulsive Scale-Symptom Checklist (Parent and Child). The Symptom Checklist from the CY-BOCS (CY-BOCS-SC; Scahill et al., 1997; revised 2007) was used to assess OCD symptoms for children and adolescents. An age range is not specified for the CY-BOCS-SC; psychometric properties for the CY-BOCS-SC have been established for children and adolescents ranging in ages from 8 to 20 years old (Gallant et al., 2008). The CY-BOCS (Scahill et al., 1997) is a clinician-administered, semi-structured interview that is widely used and considered to be the gold standard of assessing OCD symptoms and severity (Uher et al., 2007). The Symptom Checklist used in this study is from the clinician-administered interview but was used as a self-report and parent-report checklist, rather than administered in an interview format. The checklist contains 79 total items, 39 items corresponding with the Compulsions Checklist and 40 items corresponding with the Obsessions

Checklist. For each item, the rater indicates whether the item is a current symptom, past symptom, or neither a current nor past symptom. The current symptoms were summed, and the raw score for the Obsession Checklist, Compulsion Checklist, and Total Score were used.

Children's Yale-Brown Obsessive-Compulsive Scale: Parent Report and Self-Report (CY-BOCS; Parent and Child). The CY-BOCS: Parent Report (CY-BOCS-PR) and CY-BOCS: Child Report (CY-BOCS-CR) were used to assess changes in children's OCD severity. The CY-BOCS-PR and CY-BOCS-CR are each 10-item measures of obsessive-compulsive behavior, designed for use with children ages 8 to 17 years old (Storch et al., 2006). The CY-BOCS-PR and CY-BOCS-CR were developed from the original CY-BOCS (clinician-administered measure). Wording of the parent- and child-report versions of the CY-BOCS are derived from the clinician-administered wording (Storch et al., 2006). The CY-BOCS is frequently used in clinical practice and research to assess the severity of children's obsessive and compulsive symptoms.

On both the CY-BOCS-PR and CY-BOCS-CR, the rater is asked to respond to this measure based on obsessive and compulsive behavior over the past week. There are 5 items that correspond with obsession severity, and 5 items that correspond with compulsion severity. Raters respond to each item using a 5-point Likert-scale. The measure yields 3 scores: CY-BOCS Total, CY-BOCS Obsession, and CY-BOCS Compulsion. The CY-BOCS Total scores range from 0 to 40; the Obsession and Compulsion Scores range from 0 to 20, respectively.

Several studies have found that the CY-BOCS parent and child-rating scales have adequate psychometric properties, including sensitivity to change. Cronbach's alpha for the total score on the CY-BOCS-PR is 0.86; the obsession severity scale is 0.83, and the compulsion severity scale is 0.70 (Storch et al., 2006). Cronbach's alpha for the total score on the CY-BOCS-

CR is 0.87; the obsession severity scale is 0.78, and the compulsion severity scale is 0.81 (Storch et al., 2006). Freeman et al. (2011) assessed the psychometric properties of the CY-BOCS with a sample of young children with OCD who were receiving treatment. The CY-BOCS was administered at baseline, Week 6, and Week 12 of treatment, and significant changes in scores were detected at each of these time points (separating treatment responders from non-responders).

Child-Obsessive Compulsive Impact Scale Revised (COIS-R), School Subscale (Parent). The COIS-R is a parent questionnaire that was used to assess the effects of OCD on school engagement. The COIS-R was developed to assess the impact of OCD symptoms on the psychosocial functioning of children and adolescents (Piacentini et al., 2007). The COIS-R is a 52-item rating scale scored on a 4-point Likert scale (0 = *Not at all,* 1 = *Just a little,* 2 = *Pretty much,* 3 = *Very much*). The total score is the sum of all items, with possible scores ranging from 0 to 156. The COIS-R assesses four areas: Daily Living Skills, School, Social, and Family/Activities (Piacentini et al., 2007).

For the purposes of this study, only the 10-item School Subscale of the COIS-R was used. Possible scores range from 0 to 30. The school subscale includes items such as how much OCD symptoms impair writing in class, taking tests, and concentrating on work. Similar to the CAIS-P (anxiety measure; see description above), a limitation of the school subscale as a measure of school engagement is the focus of items on behavioral engagement. Parents of children with OCD were also asked to respond to two open-ended questions on Qualtrics, to capture the influence of OCD on their child's emotional and cognitive engagement: 1) "Over the past 2 weeks, how has your child's OCD affected his or her feelings and reactions towards school, teachers, and peers?" and 2) "Over the past 2 weeks, how has your child's OCD affected

his or her motivation and effort towards school? The COIS-R has good psychometric properties. Cronbach's alpha is 0.96 (Storch et al., 2009), and two-week test-retest reliability was good for the School Subscale (ICC = 0.88; Piacentini et al., 2007). Table 8 summarizes the relevant constructs, indicators, and measures used for this study, and how measures were completed.

Table 8:

Construct, Indicators, and Measures

Construct	Indicators	Measure	Data Source	Type of Measure	Format
Anxiety	Level of severity	DSM-5 Level 2 - Anxiety	Parent	Rating Scale	Qualtrics
	Symptoms of anxiety	SCARED-P SCARED-C	Parent Child	Rating Scale	Qualtrics
	Metacognition	MCQ-C	Child	Rating Scale	Qualtrics
OCD	Level of severity	CY-BOCS-PR CY-BOCS-SR	Parent Child	Rating Scale	Qualtrics
	Symptoms of OCD	CY-BOCS-Symptom Checklist	Parent Child	Rating Scale	Qualtrics
Motivation	Self-Efficacy	SEQ-C	Child	Rating Scale	Qualtrics
Executive Functioning	Total EF Score, Attention, Emotion Regulation, Flexibility, Inhibitory Control, Working Memory	CEFI	Parent	Rating Scale	Online (MHS Assessment Center)
School Engagement	-	CAIS-P: School subscale	Parent	Rating Scale	Qualtrics
		COIS-R – School Subscale	Parent	Rating Scale	Qualtrics

Table 8 (cont'd):

Treatment	-	Clinician Survey Medical Records	Clinician	Rating Scale	Qualtrics

Scoring

The study author scored all measures. Measures relevant to anxiety or OCD, and potentially relevant for treatment planning purposes, were shared with interested clinicians. For clients with anxiety as their primary diagnosis, total scores on the following measures were shared with clinicians: 1) SCARED (Parent & Child), 2) DSM-5 Level 2 Anxiety Severity Measure, 3) CAIS-P (School Subscale), 4) MCQ-C. For clients with OCD as their primary diagnosis, total scores on the following measures were shared: 1) CY-BOCS-CR, CY-BOCS-PR, 2) CY-BOCS Symptom Checklist (Parent & Child), 3) COIS-R (School Subscale), 4) MCQ-C. The researcher also offered to share aggregate findings with clients (as noted on the consent form) upon completion of the study, if interested.

CHAPTER 4:

RESULTS AND DISCUSSION PART I

The following results and discussion sections are organized by research questions. For this section, a discussion of how quantitative and qualitative data were analyzed is presented first. Results and Discussion Part I presents the results and discussion for research questions (RQs) 1 and 2, which examine how anxiety and OCD symptoms change over the course of treatment (RQ 1) and differences in perceptions between parents and children (RQ 2). Aggregate results of quantitative data are presented, followed by quantitative data for individual participants. Themes from the qualitative data (i.e., Time 3 phone interviews) are presented next. Results are followed by a discussion of findings.

Quantitative Data Analysis

Given the small number of participants in the study ($N = 12$), quantitative data were primarily analyzed by calculating descriptive statistics. Participant responses to measures on the Qualtrics surveys were scored by hand and then entered into SPSS Statistics Software, Version 27. Score reports for the CEFI were generated from the MHS Online Assessment Center, and then entered into SPSS. All descriptive statistics were calculated using SPSS. Reliable change index (RCI) scores were also calculated for each participant to examine the significance in change of scores on measures from Time 1 to Time 2, and from Time 2 to Time 3 (see Chapter 6 for Time 3 scores). As an example, a description of how RCI scores were calculated are provided for the SCARED-P, SCARED-C, CY-BOCS-PR, and CY-BOCS-CR. See Appendix I for supplemental tables, including information on how RCI scores were calculated for additional measures in this study (i.e., statistics that were included in the RCI calculations).

Reliable Change Index

The reliable change index (RCI) provides a measure of statistical and clinical significance of change scores, taking the scale reliability into account (Jacobson & Truax, 1991; Zahra & Hedge, 2010). RCIs are calculated as the change in a participant's score from Time 1 to Time 2, divided by the standard error of the difference for the test being used. RCIs were calculated using an Excel spreadsheet (Zahra, 2010), using the formula as seen in (1), (2), and (3). Scores of 1.96 or greater in either direction is statistically significant at $p < .05$ (Jacobson & Truax, 1991).

$$\mathrm{RCI} = \frac{x_2 - x_1}{S_{diff}} \quad (1)$$

$$S_{diff} = \sqrt{2(S_1)^2} \quad (2)$$

$$S_1 = \sqrt{1 - r_{xx}} \quad (3)$$

Anxiety. The calculation of RCI scores for the SCARED-P and SCARED-C are described below. RCIs were computed using the following data: 1) the total score on the SCARED-P and SCARED-C for each participant at Time 1 and Time 2, 2) the test-retest reliability of the SCARED, and 3) the standard deviation of the sample's scores in the present study at Time 1. Psychometric properties of the SCARED from a recent study by Behrens et al. (2019) were used when calculating the RCI. Behrens et al.'s (2019) sample of participants was similar to the participants in the current study; children and parents were enrolled in a research study examining pediatric anxiety disorders at the National Institute of Mental Health (Behrens et al., 2019). Children ranged from 7 to 18 years old (Behrens et al., 2019). To establish test-retest reliability, a subset of children and parents in the study (N = 298 parent/child dyads) completed a second administration of the SCARED, 5 days to 15 weeks after the first

administration (Behrens et al., 2019). Intra-class correlation values (ICC) were 0.86 for the total score on the parent report (SCARED-P) and 0.62 for the total score on the child report (SCARED-C). These values were used in the calculation of the RCI scores for participants in this study. The standard deviation of the total score on the SCARED-C at Time 1 (M = 39.6, SD = 13.7) and SCARED-P at Time 1 (M = 33.8, SD = 11.6) among participants in this study were also used in the RCI calculations.

OCD. For participants with OCD as a primary diagnosis, RCIs were computed using the following data: 1) the total score on the CY-BOCS-PR and CY-BOCS-CR for each participant at Time 1 and Time 2, 2) the reliability of the CY-BOCS, and 3) the standard deviation of participants' scores from Storch et al. (2004). Psychometric properties of the CY-BOCS, established by Storch et al. (2004, 2006)[6], were used for the RCI calculation. Storch et al.'s (2004, 2006) sample of participants were similar to the participants in the current study. Participants in both studies included children with OCD and their parents. Storch et al. (2004)'s study included children and adolescents with OCD (N = 61) ranging from 4 to 18 years old. Storch et al.'s (2006) study included youth with OCD (N = 53) ranging from 8 to 17 years old.

Storch et al. (2004) established test-retest reliability for the CY-BOCS-CR (ICC = 0.79). Due to the small sample (N = 2) of participants in the current study with OCD as a primary diagnosis, the standard deviation of the sample from Storch et al. 2004 (M = 21.87, SD = 7.69) was used for the RCI calculation for the CY-BOCS-CR, rather than the standard deviation of the sample in the present study. For the CY-BOCS-PR, test-retest reliability has not been established in prior research studies. Internal consistency of the total score (Cronbach's alpha = 0.86), established in Storch et al. (2006), was used as a substitute (Storch et al., 2006). The standard

[6] Storch et al. (2004) evaluated psychometric properties of the CY-BOCS-CR only; Storch et al. (2006) evaluated psychometric properties of the CY-BOCS-CR and CY-BOCS-PR, but did not establish test-retest reliability of either measure.

deviation of the sample (M = 19.1, SD = 7.6) was used to calculate the RCI for the CY-BOCS-PR (Storch et al., 2006).

Qualitative Data Analysis

Qualitative data from the parent and child phone interviews were analyzed using thematic analysis (Braun & Clarke, 2006). Thematic analysis involved two phases. First, interview transcripts were read and re-read to familiarize the researcher with the data. Notes were written as interview transcripts were read, to highlight items of particular interest. Next, themes were identified inductively from the text, guided by the primary research questions of this study. Themes were created inductively, rather than deductively, given the nature of the interview and interview questions. Specifically, interview questions focused on asking participants to describe particular aspects of functioning before and after treatment, and thus, responses did not lend themselves to a deductive analytic technique. Themes that emerged across participants are presented for all research questions. For research question #7, a select group of individual case studies are additionally presented in order to illustrate patterns across changes in anxiety/OCD, executive functioning, self-efficacy, and school engagement within the individual. Qualitative data for the case presentations were similarly analyzed by reading and re-reading interview transcripts and summarizing key findings. The researcher was the only coder of the qualitative data.

Summary Codes

Summary codes were also developed and applied to parent and child descriptions of children's EF, self-efficacy, and school engagement. The purpose of the summary codes is to synthesize the qualitative data and provide brief snapshots of parent and child perceptions of

children's EF, self-efficacy, and school engagement at Time 1, as well as the changes that occurred from Time 1 to Time 2.

As an example, summary codes of high, moderate, or low self-efficacy were applied to describe each parent and child's description of domain-specific self-efficacy. First, interview transcriptions were compiled to create one document that contained excerpts in which participants discussed self-efficacy. Next, self-efficacy excerpts from each parent and child were read several times. For each participant, a brief summary of phrases was written of the participant's responses regarding their academic, emotional, and social self-efficacy. Each participant was given a code of low, moderate, or high self-efficacy across each domain, based on the summary phrases that were created. The same procedure was used to create summary codes for level of improvement (no change, minimal improvement, moderate improvement, substantial improvement).

The following example describes how summary codes were created for academic self-efficacy. Participant responses were coded as "high academic self-efficacy" if parents or children mentioned phrases such as feeling confident in their ability to complete schoolwork successfully. Responses were coded as "moderate academic self-efficacy" if participants indicated that the child was "fairly confident," with a small caveat. For example, Lily's response was coded as moderate academic self-efficacy because she said, "I did good, but it was a little harder because I was worrying about it half the time." Responses were also coded as "moderate academic self-efficacy" if the participant provided conflicting responses, with one aspect of academic self-efficacy being high and another aspect being low. Finally, responses were coded as "low academic self-efficacy" if participants adamantly reported that children did not think they could

do their schoolwork independently or successfully, or if the child was afraid to attempt schoolwork on their own for fear of failure.

Research Questions 1 and 2

Aggregate Results

Anxiety. Descriptive statistics across all 10 participants in the study with anxiety disorders indicate that average ratings on the SCARED at Time 1 for children and parents surpassed the cutoff score[7] of 30 ("may indicate a specific anxiety disorder"; see Table 9). Additionally, Time 1 scores on the DSM-5 Level 2 Anxiety Measure fell in the "moderate" range, based on interpretation guidelines. The average score on the MCQ-C at Time 1 was higher than MCQ-C scores of clinical samples in similar studies[8], with higher total scores on the MCQ-C indicating more maladaptive cognition about anxiety. These data indicate that participants in the sample were experiencing moderate to severe levels of anxiety symptoms at Time 1.

Table 9:

Anxiety Symptoms Across Psychological Treatment

Anxiety Measure	Time 1[a]			Time 2[a]			Change Score
	M	*SD*	Range	*M*	*SD*	Range	*M*
SCARED-P							
Total Score	33.8	11.6	11-49	26.5	9.6	14-38	-7.3
Panic	7.2	4.0	3-13	4.4	2.8	1-8	-2.8
GAD	10.7	4.1	5-17	9.5	3.4	3-14	-1.2
Separation Anxiety	5.9	4.1	1-12	4.2	3.2	0-8	-1.7
Social Anxiety	7.9	5.1	0-14	6.9	4.5	0-14	-1.0
School Refusal	2.0	1.6	0-4	1.3	1.1	0-3	-0.7
SCARED-C							
Total Score	39.6	13.7	19-65	33.8	14.7	12-58	-5.8

[7] A total score of 25 or more on the SCARED "may indicate the presence of an anxiety disorder." Scores higher than 30 "may indicate a specific anxiety disorder" (Birmaher et al., 1999).
[8] Smith and Hudson (2013) studied a sample of children ages 7-12 with clinical levels of anxiety ($N = 49$). The average total score on the MCQ-C was 46.3.

Table 9 (cont'd):

Panic	10.3	6.5	3-20	8.6	5.1	0-15	-1.7
GAD	11.9	3.1	8-18	11.2	4.0	6-18	-0.7
Separation Anxiety	5.6	3.4	3-13	4.8	3.7	1-13	-0.8
Social Anxiety	8.8	4.5	1-14	7.4	4.2	0-13	-1.4
School Refusal	3.3	2.6	0-8	1.9	1.5	0-5	-1.4
DSM-5 Level 2 Anxiety							
T-Score	64.7	9.4	46.5-75.9	59.3	6.8	51.1-73.0	-5.4
Categorical Score	2.6	1.3	0-4	2.0	1.3	0-4	-0.6
MCQ-C							
Total Score	55.1	10.3	39-73	51.9	10.3	37-67	-3.17

[a] $N = 10$

Overall, anxiety symptoms decreased from Time 1 to Time 2, on all anxiety measures. The mean total score on the SCARED-P at Time 2 still reached the threshold of "may indicate the presence of an anxiety disorder," and the mean total score on the SCARED-C at Time 2 reached the threshold of "may indicate the presence of a specific anxiety disorder." This indicates that parents and children perceived that children continued to experience some degree of anxiety symptoms at Time 2. For both parents and children, the panic subscale on the SCARED had the largest change of all SCARED subscales, on average, from Time 1 to Time 2. Parent reports of anxiety severity (DSM-5 Level 2 Anxiety), and youth's metacognition about anxiety (MCQ-C), also declined across treatment.

Parent and Child Perceptions of Anxiety Symptoms. Descriptive statistics indicate that children reported higher levels of anxiety symptoms than parents. The total score on the SCARED-C at Time 1 was 5.8 points higher than the total score on the SCARED-P. On the SCARED subscales, children had higher average scores at Time 1 on the Panic, GAD, social anxiety, and school refusal subscales; parents had higher scores on the separation anxiety subscale. The Pearson correlation between the SCARED-C total score and SCARED-P was 0.19.

OCD. Descriptive statistics indicate that the two participants in the sample with OCD as a primary diagnosis experienced both obsessions and compulsions, as rated by parents and children (see Table 10). For comparison purposes, the average total score on the CY-BOCS-PR and CY-BOCS-CR were higher in this study than scores of clinical samples in similar studies.[9] Descriptive statistics also indicated that OCD symptoms decreased slightly from Time 1 to Time 2 (see Table 10). These descriptive statistics should be interpreted with caution, given that there were only two parent/child dyads who completed OCD-specific measures.

Table 10:

OCD Symptoms Across Psychological Treatment

OCD Measure	Time 1			Time 2			Change Score
	M	*SD*	Range	*M*	*SD*	Range	*M*
CY-BOCS-PR							
Total Score	29.5	0.7	29-30	27.5	3.5	25-30	-2.0
Obsessions	14.0	1.4	13-15	13.5	2.1	12-15	-0.5
Compulsions	15.5	0.7	15-16	14.0	1.4	13-15	-1.5
CY-BOCS-SR							
Total Score	26.5	6.4	22-31	21.5	0.7	21-22	-5.0
Obsessions	13.5	2.1	12-15	10.0	1.4	9-11	-3.5
Compulsions	13.0	4.2	10-16	11.5	0.7	11-12	-1.5
Checklist (Parent)[a]							
Total Score	11.5	0.7	11-12	7.0	1.4	6-8	-4.5
Obsessions	3.5	0.7	3-4	2.5	0.7	2-3	-1.0
Compulsions	8.0	1.4	7-9	4.5	0.7	4-5	-3.5
Checklist (Child)[b]							
Total Score	22.0	1.4	21-23	16.0	9.9	9-23	-6.0
Obsessions	11.5	0.7	11-12	8.0	4.2	5-11	-3.5
Compulsions	10.5	0.7	10-11	8.0	5.7	4-12	-2.5

[a] CY-BOCS Parent Symptom Checklist (CY-BOCS-PR-SC)
[b] CY-BOCS Child Symptom Checklist (CY-BOCS-SR-SC)

[9] Storch et al. (2006) administered the CY-BOCS-CR and CY-BOCS-PR to youth ages 8 to 17 years old ($N = 53$) diagnosed with OCD and their parents. The average total score on the CY-BOCS-CR was 14.2, and the average total score on the CY-BOCS-PR was 19.1.

Parent and Child Perceptions of OCD Symptoms. Descriptive statistics indicate that parent's total scores on the CY-BOCS were higher than children's total scores, on average, at Time 1. In contrast, children had higher total symptom counts on the CY-BOCS-SC, compared to parents. Children's scores decreased more than parent scores on both the CY-BOCS and CY-BOCS Symptom Checklist from Time 1 to Time 2. Correlations between parent and child measures were not calculated due to the small sample size.

Individual Quantitative Results

Individual participant scores on the SCARED, DSM-5 Level 2 Anxiety Measure, and MCQ-C are presented for all participants in the study with anxiety disorder(s) as a primary diagnosis. Individual participant scores on the CY-BOCS and CY-BOCS Symptom Checklist are also presented for the two participants (Carrie, Jane) with OCD as a primary diagnosis. See Appendix I for a summary table of changes in scores on quantitative measures for each individual participant from Time 1 to Time 2.

Anxiety Severity. Children's anxiety severity was assessed by the DSM-5 Level 2 Anxiety Measure, completed by parents (see Table 11). At Time 1, two parent's scores on this measure fell in the "severe" range (Alison, Evie). Five parent's scores fell in the "moderate" range (Lily, Megan, Max, Sarah, Katie), with the remaining parent's scores falling in the "mild" range (Bea, Nora, Jacob). Overall, these scores indicate that the majority of parents perceived their child to have moderate to severe levels of anxiety prior to treatment. Furthermore, 8 of the 10 parents perceived that children's anxiety severity decreased from Time 1 to Time 2. Two of the parents' ratings significantly reduced from Time 1 to Time 2, based on the RCI score (Evie, Max).

Table 11:

Changes in Anxiety Severity Across Treatment

Participant	Time 1	Time 2	Change Score	RCI	Reliable Change?
Lily	68.9	66.9	-2	-0.39	N
Megan	67.9	58.2	-9.7	-1.89	N
Evie	**75.9**	**60.4**	**-15.5**	**-3.02**	**Y**
Max	**67.9**	**52.6**	**-15.3**	**-2.98**	**Y**
Sarah	66.9	61.5	-5.4	-1.05	N
Alison	74.9	73.0	-1.9	-0.37	N
Bea	57.1	58.2	+1.1	0.21	N
Katie[a]	66.9	58.2	-8.7	-1.67	N
Nora[a]	53.6	51.1	-2.5	-0.49	N
Jacob[a]	46.5	52.4	+5.9	1.15	N

Note: Bolded scores represent significant scores on the RCI at the $p < .05$ level
[a] Participants who did not complete Time 3 Phone Interviews

Anxiety Symptoms. The majority of children had total scores on the SCARED-C at Time 1 that met or surpassed the threshold of 30 ("may indicate a specific anxiety disorder"; see Table 12). Evie and Nora were the only participants at Time 1 whose total scores on the SCARED were less than 25, the cutoff score for "may indicate the presence of an anxiety disorder." Scores on child ratings of anxiety (SCARED-C) symptoms decreased for 7 participants from Time 1 to Time 2. One participant (Max) showed a significant decrease in anxiety symptoms based on the RCI score. Five participants did not demonstrate clinically significant levels of anxiety at Time 2: Evie, Max, Katie, Nora, and Jacob.

Table 12:

SCARED-C: Changes in Total Scores Across Treatment

Participant	Time 1	Time 2	Change	RCI	Reliable Change? (Y/N)	Clinically Significant Anxiety at Time 2?[b]
Lily	37	38	+1	0.08	N	Y
Megan	65	58	-7	-0.96	N	Y
Evie	21	20	-1	-0.08	N	N

Table 12 (cont'd)

Max	**39**	**12**	**-27**	**-2.26**	**Y**	N
Sarah	50	43	-13	-0.59	N	Y
Alison	44	51	+7	0.59	N	Y
Bea	50	41	-11	-0.75	N	Y
Katie[a]	37	24	-13	-1.09	N	N
Nora[a]	19	26	+7	0.59	N	N
Jacob[a]	34	25	-9	-0.75	N	N

Note: Bolded scores represent significant scores on the RCI at the $p < .05$ level

[a] Participants who did not complete Time 3 Phone Interviews

[b] Indicator of whether participants continued to experience clinically significant levels of anxiety at Time 2, based on the cutoff score of ≥ 30 ("may indicate a specific anxiety disorder")

Seven parents had total scores on the SCARED-P at Time 1 that met or surpassed the cutoff score of 30 (see Table 13). Nora and Bea's parents total scores on the SCARED-P at Time 1 were less than 25, the cutoff score for "may indicate the presence of an anxiety disorder." Scores on parent ratings of anxiety decreased for 9 participants from Time 1 to Time 2. One participant's score increased slightly (Bea). Three participants showed a clinical and significant decrease in anxiety symptoms based on the RCI score: Sarah, Megan, and Katie. Based on the clinical cutoff score of 30 on the SCARED-P, 5 participants did not demonstrate clinically significant levels of anxiety at Time 2: Megan, Bea, Katie, Nora, and Jacob.

Table 13:

SCARED-P: Changes in Total Scores Across Treatment

Participant	Time 1	Time 2	Change Score	RCI	Reliable Change? (Y/N)	Clinically Significant Anxiety at Time 2?[b]
Lily	34	31	-3	-0.49	N	Y
Megan	**40**	**28**	**-12**	**-1.96***	**Y**	N
Evie	42	31	-11	-1.79	N	Y
Max	40	37	-3	-0.49	N	Y
Sarah	**49**	**36**	**-13**	**-2.12***	**Y**	Y
Alison	40	38	-2	-0.33	N	Y
Bea	11	14	+3	0.49	N	N
Katie[a]	**37**	**18**	**-19**	**-3.10***	**Y**	N
Nora[a]	20	17	-3	-0.49	N	N

Table 13 (cont'd):

Jacob[a]	25	15	-10	-1.63	N	N

Note: Bolded scores represent significant scores on the RCI at the $p < .05$ level
[a] Participants who did not complete Time 3 Phone Interviews
[b] Indicator of whether participants continued to experience clinically significant levels of anxiety at Time 2, based on the cutoff score of ≥ 30 ("may indicate a specific anxiety disorder")

Parent and Child Perceptions of Anxiety Symptoms. Parents and children both completed the SCARED. As noted in the aggregate descriptive statistics, children, on average, reported higher total scores on the SCARED. At the individual level, more parents than children had total scores at Time 1 that were at or below 25. This suggests that most children perceived themselves as having more anxiety symptoms than their parents. While children initially had higher scores at Time 1, more parents than children had a decrease in scores from Time 1 to Time 2. Additionally, more parents (Sarah, Megan, Kate) than children (Max) had a significant decrease in total scores across treatment, based on the RCI calculation. This indicates that children perceived higher initial levels of anxiety symptoms, and less improvements across treatment, when compared to parents.

OCD Symptoms. OCD symptoms were assessed using the CY-BOCS-CR and CY-BOCS-PR (see Table 14). For both participants in the study with OCD, children's ratings on the CY-BOCS-CR decreased from Time 1 to Time 2. However, neither of these changes were significant based on the RCI score. Parent ratings of Jane on the CY-BOCS-PR remained stable from Time 1 to Time 2. Parent ratings of Carrie slightly decreased across treatment, although again, this change was not significant.

Table 14:

Changes in OCD Symptoms Across Treatment

Participant	Time 1	Time 2	Change Score	RCI	Reliable Change?
CY-BOCS-CR					

Table 14 (cont'd):

Carrie	22	21	-1	-0.08	N
Jane	31	22	-9	-0.75	N
CY-BOCS-PR					
Carrie	29	25	-4	-0.99	N
Jane	30	30	0	0	N

Perceptions of OCD Symptoms Across Parents and Children. Parents and children both completed the CY-BOCS. Jane and her parent had very similar scores on the CY-BOCS at Time 1. Carrie's parent had a higher score at Time 1 than Carrie. Parent/child dyads had different perceptions regarding changes in OCD symptoms across treatment. Jane perceived a decrease in OCD symptoms, while her parent's ratings remained stable. In contrast, Carrie's parent perceived a greater decrease in OCD symptoms across treatment compared to Carrie.

Metacognition. Children's metacognition was assessed by children's report on the MCQ-C, which all participants completed (see Table 15). Higher total scores on the MCQ-C indicate more maladaptive cognition about anxiety. Seven participants' scores on the MCQ-C decreased from Time 1 to Time 2, in the expected direction. Jacob's score remained the same, and the remaining three participant's scores increased (Jane, Katie, Carrie).

Table 15:

Changes in Metacognition Across Treatment on the MCQ-C

Participant	Time 1	Time 2	Change Score	RCI	Reliable Change?
Lily	57	48	-9	-1.86	N
Megan	66	60	-6	-1.24	N
Evie	**58**	**39**	**-19**	**-3.92**	**Y**
Max	**49**	**39**	**-10**	**-2.06**	**Y**
Sarah	39	37	-2	-0.41	N
Alison	69	66	-3	-0.62	N
Bea	73	67	-6	-1.24	N
Carrie	44	47	+3	0.62	N
Katie[a]	47	51	+4	0.83	N

Table 15 (cont'd):

Nora[a]	49	53	+4	0.83	N
Jane[a]	53	59	+6	1.24	N
Jacob[a]	57	57	0	0	N

Note: Bolded scores represent significant scores on the RCI at the $p < .05$ level
[a] Participants who did not complete Time 3 Phone Interviews

Summary of Quantitative Results. Quantitative data indicate that participants with anxiety experienced more substantial changes in symptoms across treatment, in comparison to the two participants with primary diagnoses of OCD, based on the change scores and RCI scores. Five participants in the study had significant decreases in anxiety symptoms, based on the RCI score of at least one of the anxiety measures: Max (SCARED-C, DSM-5, MCQ-C), Evie (DSM-5, MCQ-C), Sarah (SCARED-P), Megan (SCARED-P), and Katie (SCARED-P). Of the participants who experienced significant changes in symptoms across treatment, based on the RCI score, two of the participants demonstrated improvements across multiple measures. Evie and Max both had significant decreases in anxiety severity, based on parent ratings on the DSM-5 Level 2 Anxiety measure. Additionally, both Evie and Max's metacognition scores on the MCQ-C decreased significantly, and Max's score on the SCARED-C also significantly decreased. For the two participants with OCD, neither child experienced significant changes in symptoms after treatment, based on the RCI scores on the CY-BOCS.

Changes in Symptoms and Treatment Characteristics. Treatment characteristics were also examined for patterns, to explore whether there were trends in the characteristics of treatment among participants who showed significant improvements on quantitative anxiety measures. The average number of total treatment sessions among all participants in the study was 12.3 (SD = 2.8). For the five participants who had at least one anxiety measure with a significant decrease in symptoms from Time 1 to Time 2, the average number of treatment sessions among this subsample of participants was 11.4 (SD = 1.52). Thus, participants who experienced

significant changes in anxiety symptoms had slightly less treatment sessions, on average, than the entire sample. The number of treatment sessions prior to completion of the Time 1 data was also examined. Across all participants in the study, the average treatment sessions completed before Time 1 data was collected was 2.6 (*SD* = 2.1). Among the subsample of 5 participants who demonstrated significant reductions in anxiety, the average number of treatment sessions completed prior to Time 1 data collection was 2.2 (*SD* = 2.28). Finally, the number of treatment components that clinicians used with participants was examined. On average, clinicians used 5.2 (*SD* = 1.3) treatment components among participants who demonstrated significant changes in symptoms. This is slightly higher than the average of 4.83 treatment components across all participants in the study. In sum, a review of treatment characteristics indicate that those participants who demonstrated significant changes in anxiety symptoms after treatment had similar treatment characteristics to all participants in the study.

Qualitative Results

The following qualitative results were drawn from the phone interviews conducted with parent-child dyads at Time 3[10]. Interview questions related to anxiety asked parents and children to describe anxiety symptoms the child was experiencing prior to and after treatment, and whether anxiety symptoms interfered with the child's school day. Patterns were examined in the data to identify themes that emerged in how parents and children described the child's anxiety and changes in their anxiety.

Research Question 1: Changes in Anxiety Over the Course of Treatment. ***School-Related Anxiety.*** After responding to open-ended interview questions, participants were asked if the child experienced anxiety related to any of the following: 1) going to school, 2) completing

[10] Only one participant who completed Time 3 data had a primary diagnosis of OCD. See "Individual Case Studies" section in Chapter 7 for an analysis of qualitative data for this participant.

school assignments, 3) grades, 4) taking tests, 5) participating during class, 6) talking or presenting to the class, 7) talking to other students at school, 8) asking questions about something that they don't understand, 9) avoiding difficult tasks, 10) trouble starting or completing work, 11) being perfectionistic, or 12) physical or somatic symptoms of anxiety. Across all participants in the subsample, parents and children reported that the child experienced at least one school-related anxiety symptom prior to treatment. Parents reported an average of approximately 4 school-related anxiety symptoms ($M = 4.42$) at Time 1, while children reported an average of approximately 6 symptoms ($M = 5.57$). Figure 2 provides a visual representation of the frequency of parent and child reported anxiety symptoms at Time 1. See Table 16 for a summary of parent-reported anxiety symptoms by each participant, and Table 17 for a summary of child-reported anxiety symptoms by each participant.

Figure 2:

Frequency of School-Related Anxiety Symptoms at Time 1

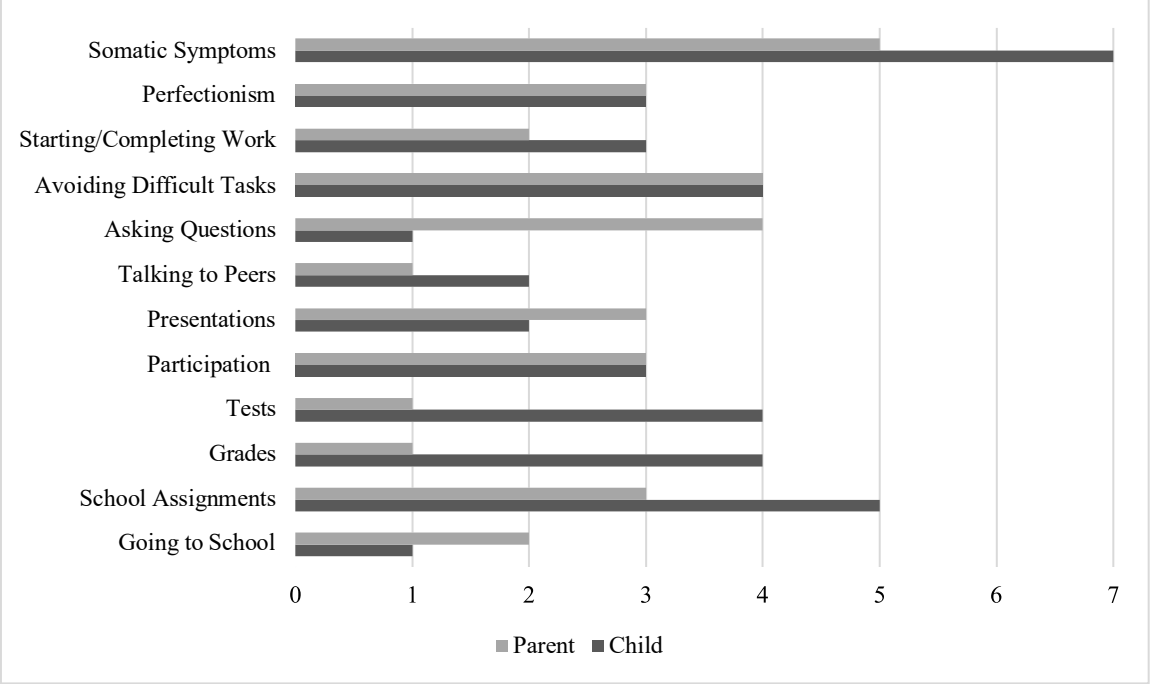


Table 16:

Summary of Parent Reported School-Related Anxiety Symptoms

		School-Related Anxiety Symptoms - Parent Reported											
	# of School-Related Symptoms	1	2	3	4	5	6	7	8	9	10	11	12
Lily	6	-	X	-	-	-	X	-	X	X	-	X	X
Megan	5	X	-	-	-	X	X	-	-	-	-	X	X
Evie	6	X	X	-	-	-	-	-	X	X	-	X	X
Max	3	-	-	-	-	X	-	-	X	-	-	-	X
Sarah	6	-	X	X	X	-	-	-	X	X	X	-	-
Alison	5	-	-	-	-	X	X	X	-	X	X	-	-
Bea	1	-	-	-	-	-	-	-	-	-	-	-	X

Note: 1) going to school, 2) completing school assignments, 3) grades, 4) taking tests, 5) participating during class, 6) talking or presenting to the class, 7) talking to other students at school, 8) asking questions about something that they don't understand, 9) avoiding difficult tasks, 10) trouble starting or completing work, 11) being perfectionistic, 12) physical or somatic symptoms of anxiety

Table 17:

Summary of Child Reported School-Related Anxiety Symptoms

		School-Related Anxiety Symptoms.- Child Reported											
	# of School-Related Symptoms	1	2	3	4	5	6	7	8	9	10	11	12
Lily	6	-	X	-	X	-	-	-	-	X	X	X	X
Megan	8	X	X	X	X	-	X	-	-	X	-	X	X
Evie	4	-	X	X	-	-	-	-	-	-	-	X	X
Max	2	-	-	-	-	X	-	-	-	-	-	-	X
Sarah	8	-	X	X	X	X	-	-	X	X	X	-	X
Alison	9	-	X	X	X	X	X	X	-	X	X	-	X
Bea	2	-	-	-	-	-	-	X	-	-	-	-	X

Note: 1) going to school, 2) completing school assignments, 3) grades, 4) taking tests, 5) participating during class, 6) talking or presenting to the class, 7) talking to other students at school, 8) asking questions about something that they don't understand, 9) avoiding difficult tasks, 10) trouble starting or completing work, 11) being perfectionistic, 12) physical or somatic symptoms of anxiety

Somatic Symptoms. The most frequent school-related anxiety symptom reported by children was somatic symptoms experienced before attending school or during school. All

children in the subsample endorsed some level of somatic symptoms prior to treatment (see Table 17). The most common somatic symptom endorsed by participants was an elevated heart rate. When asked about physical symptoms of anxiety, Lily replied, “the racing heart rate I have.” Similarly, Evie replied, “Just the heart one, my heart would beat really fast.” Max described his elevated heart rate as “his heart ‘pumping real fast.’” Sarah also reported experiencing physical symptoms of anxiety: “I would definitely feel like I had a racing heartbeat.”

Five parents also reported that their child appeared to experience physical symptoms of anxiety at Time 1. Some parents reported that their child experienced an elevated heart rate. Evie’s mother noted how Evie’s elevated heart rate prevented her, temporarily, from participating in sports after school: “We went to five doctors and they couldn't sign off on her forms because her heart rate was so high.” Lily’s mother was also aware of her daughter’s physical symptoms, sharing: “She complained about a racing heartbeat.” Other parents were unaware of any physical symptoms of anxiety their child experienced. Sarah’s mother shared, “No, I don't think physical. I mean, maybe there were, but she wouldn’t speak about it.” In addition to an elevated or rapid heartbeat, participants shared that other somatic symptoms of anxiety that children commonly experienced included stomachaches, physical tension, and headaches.

Completing School Assignments. An additional theme that emerged was children’s anxiety related to completing school assignments. Five children (Alison, Megan, Sarah, Evie, Lily) and three parents (Sarah, Evie, Lily) reported that this was an area of concern. Children described feeling anxious about whether or not they would have time to complete their assignments and if they would make mistakes on an assignment. For example, when asked about

homework assignments, Lily stated, “I was very anxious about what I was doing wrong.” Megan shared that she worried about “…how hard the work is going to be and how much work I’m going to have to do. And, if I won’t be able to get it done, or if I’ll be really stressed.” Sarah also commented on feeling worried about time and completing her work well: “Depending on how much work I had to do, I'd be worried about, how long it would take me to do and, if I was able to do it to the best of my ability.” Some parents also discussed their children’s anxiety regarding school assignments. For example, Alison’s father shared, “…she was worried she wouldn’t understand them [assignments] so she just wouldn’t start it.”

Social Anxiety. In addition to school-related anxiety symptoms, social anxiety emerged as a theme from the parent and child interviews at Time 3. Four participants (Megan, Max, Alison, Bea) described experiencing social anxiety symptoms at Time 1. Megan’s mother reported that Megan worried about “…how other kids would react to her, worrying about what they would say and what they would think, throughout the day.” Megan attended a religious school, and felt anxious about attending chapel, where she could be in a group of students from a variety of grades (“…cause I’d be in a chapel family with people I didn’t really know”). Max’s mother shared that Max would often ask questions about upcoming social events, such as if his family is going camping: “…he always wants to know who’s there…he asked me every day leading up to it, who is going to be there, who he can play with.” When prompted with various examples of worries children might experience at school, Max endorsed feeling anxious about volunteering or participating during class, because he was worried that other students might not like him.

Specific Phobias. Three participants (Lily, Alison, Bea) reported experiencing specific phobias prior to treatment. Lily shared, “I felt anxious about, fires and natural disasters like

tornadoes, and thunderstorms." Alison and her father also described driving as a specific phobia that Alison experienced. Alison reported that "driving" and "driving over bridges" were topics that she frequently worried about. Alison's father noted, "She was afraid to drive on the highway because she had envisioned all these horrible outcomes." Bea and her mother also reported that Bea had specific phobias related to throwing up and germs. More specifically, Bea was anxious about throwing up, other people throwing up, hearing stories about individuals throwing up, or seeing throw up. Bea reported, "I was scared that. Something I ate would make me puke. I was scared that if I didn't eat I would throw up. I was scared that. Somebody else would throw up."

Reduction in Anxiety Severity. One theme that arose regarding changes in anxiety after treatment was a decrease in the severity of youth's anxiety symptoms. Six participants (Megan, Evie, Max, Sarah, Alison, Bea) indicated during the phone interviews that the severity of the child's anxiety reduced after treatment. For example, Evie reported that her anxiety decreased after treatment: "I haven't really been anxious about anything, recently." Bea and her mother also reported a reduction in the severity of Bea's anxiety symptoms. According to Bea, "I just felt like I was more able to do things, the way that I used to and not freak out about it." Bea's mother also commented on how a reduction in Bea's anxiety symptoms appeared to be related to improved mood:

> I perceive her to be, just a little lighter in spirits, or maybe actually a lot lighter in spirit. Not walking around with this overwhelming, giant suitcase full of, fear that no one's tending to, or that she can't quite, pull heavily. So I think her general mood has improved and, I think she feels a little more… confident about the problem as a whole. (Time 3, Phone Interview)

Three of the parent/child dyads who reported a reduction in anxiety severity (Evie, Alison, Bea) also noted a decrease in the severity of their physical anxiety symptoms. Evie's mother reported that Evie's somatic symptoms, such as her elevated heart rate, substantially changed after treatment: "…she was able to go to the doctor and eventually get her heart rate down. So we were able to sign off, get the sport's physical." Evie agreed that her heart rate decreased when specifically asked ("Yeah, I think so"), but did not spontaneously offer this information, suggesting her heart rate was not a primary change in anxiety that she noticed. Alison reported a reduction in both the severity and frequency of her somatic symptoms after treatment. She shared, "…the panic attacks aren't as painful. They still happen, but they're not, it's not as bad as it was."

Decrease in School-Related Anxiety Symptoms. Four parent/child dyads (Megan, Evie, Sarah, Alison) described a reduction in school-related anxiety symptoms after treatment, including improvements in anxiety related to going to school, grades, completing homework assignments, and taking tests. Alison reported that she experienced reductions in some school-related anxiety symptoms: "I stopped feeling anxiety over assignments. Test anxiety is still something that I struggle with." Although Alison's parents did not discuss reductions in Alison's school-related anxiety symptoms, they described improvements in Alison's school behaviors. For example, her mother reported, "She was on track. She was doing her homework. She was doing really well." Megan also reported a decrease in school-related anxiety symptoms. Megan reported, "I felt like I was more, confident going to school and I was less anxious." Megan also shared that, after treatment, she became less anxious about her grades. Megan noted that she learned in treatment "…it's ok to not always succeed." Sarah indicated during her phone

interview that she experienced some reductions in her test anxiety after treatment: "…with testing, that would still cause some nervousness but never as bad as before."

Increase in Anxiety Control. An additional theme that emerged from the Time 3 parent and child interviews was an increase in youth's anxiety control (Megan, Sarah, Bea). Anxiety control, or children's perception of control over external or internal threats, has been found to be a unique predictor of reductions in anxiety symptoms after CBT (Muris et al., 2009). Several participants spoke to improvements in the child's perceived ability to cope with anxiety if it did arise. For example, Sarah discussed how she gained confidence in her ability to cope with her anxiety. She shared:

> I think it changed how, I deal with my anxiety and the situations that I'm, in, with school and stuff. I'm able to kind of step, when I find myself getting fidgety or nervous in situations, I just kind of take a step back to breathe and think about why I'm nervous. So that's really helped. So I've gained kind of a lot of confidence since then when I go into things, because I know how I can handle it. (Time 3, Phone Interview)

Similarly, Megan's mother reported that Megan's school days "went a lot smoother because she knew how to handle the situations when they did come up." Megan also reported that she had more tools to cope with her anxiety.

Research Question 2: Parent and Child Perceptions of Anxiety Symptoms.

Consistency in Reporting Specific Phobias. Regarding parent and child perceptions of anxiety symptoms, one theme that emerged was parents and children's consistency in reporting specific phobias that children experienced (Alison, Lily, Evie, Bea). Lily and her mother both reported that Lily experienced specific phobias related to natural disasters. As previously mentioned, Bea and her mother both reported that Bea had a specific phobia related to throwing up. Her mother

provided a similar account to Bea, indicating that Bea would feel anxious "…if they were watching a movie or something and somebody in the movie threw up…or one of her classmates said, 'Oh, last night I threw up.'"

Consistencies in Reporting School-Related Anxiety Symptoms. An additional theme that arose was parent/child dyads' (Megan, Max, Lily, Evie, Sarah, Bea) consistency in reporting youth's school-related anxiety symptoms. In other words, parents and children generally agreed when discussing whether children experienced school-related anxiety symptoms. For example, both Evie and her mother reported school-related symptoms of anxiety. Evie described experiencing some worries about her grades: "I'm not really worried about taking tests but sometimes if I didn't know most of the answers I'd be worried about when we when we got the test back." She also shared, "I feel like my work needs to be perfectly done." Evie's mother also described her daughter as "perfectionistic" and resistant to asking her teacher for help: "…when she would bring homework home, and if she didn't understand something…and we'd say you have to go ask your teacher and that just threw her over the edge." Similarly, Lily and her mother described Lily's anxiety related to making mistakes on assignments. Lily said, "I was very anxious about what I was doing wrong." Her mother reported that Lily experienced anxiety related to "…completing school assignments if something is challenging." Conversely, neither Max nor his mother described many anxiety symptoms that were related to school. While many parent/child dyads were consistent in their reporting of whether the child experienced any school-related anxiety symptoms, some participants had slight discrepancies regarding the specific school-related symptoms that were experienced (see Tables 16 and 17).

Discrepancies in Somatic Symptoms. An additional theme that arose was the discrepancy in parent and child reports of youth's physical symptoms of anxiety (Sarah, Evie, Max). For

example, Sarah, but not her mother, indicated that she experienced somatic symptoms: “I would definitely feel like I had a racing heartbeat. I would get fidgety too, there would always be something that I would be doing with my hands.” In contrast, Sarah’s mother shared that from her perspective, she was not aware of any physical symptoms of anxiety: “Not, I don't think physical. I mean, maybe there were, but she wouldn’t speak about it.” Evie and her mother also differed in how they described Evie’s somatic symptoms. When given examples of somatic symptoms that children with anxiety might experience, Evie replied, “Just the heart one, my heart would beat really fast.” In contrast, Evie’s mother reported that Evie experienced several somatic symptoms, including elevated heart rate, panic attacks, stomachaches, and headaches. Evie’s mother shared, “…over the summer, she went to stay with her aunt for a few weeks. And while she was there…she had a couple of panic attacks.” Evie’s mother also added that Evie complained of somatic symptoms in the mornings when she did not want to attend school: “So in the morning, it's always I have a stomachache, my throat hurts, my head hurts.”

Discussion

Findings from this study indicate that participants experienced clinical levels of anxiety and OCD symptoms at Time 1. Average ratings on the SCARED exceeded the clinical cutoff score for both parents and children. Additionally, anxiety severity ratings fell in the “moderate” range on average, and participant ratings of metacognition about anxiety were higher than other research with clinical samples (Smith & Hudson, 2013). Similarly, participant scores on the CY-BOCS were also higher than comparative studies (Storch et al., 2006). Qualitative data indicated that many children in the study experienced a variety of school-related anxiety symptoms prior to treatment, such as physical symptoms of anxiety before or during school, and anxiety related to

completing school assignments, their grades, and taking tests. Many parent/child dyads also reported that their child experienced social anxiety and specific phobias prior to treatment.

Furthermore, results of this study indicate that the majority of participants experienced improvements in symptomology and severity after an average of approximately 11 treatment sessions. Five participants (Max, Evie, Sarah, Megan, Katie) had scores on at least one anxiety measure that significantly changed from Time 1 to Time 2, based on the RCI scores. In contrast, neither of the two participants with OCD as a primary diagnosis experienced significant changes in OCD symptoms after treatment, based on parent or child ratings. Based on parent and child reports from the phone interviews, the following themes emerged as changes in anxiety symptoms across treatment: reduction in anxiety severity, decreases in school-related anxiety symptoms, and an increase in anxiety control. Although not a focus of the present study, treatment characteristics did not appear to be associated with whether participants experienced significant changes in symptomology after treatment. The five participants who had RCI scores that reached significance on various anxiety measures from Time 1 to Time 2 had similar treatment characteristics (i.e., total number of sessions, number of treatment components used) when compared to the entire sample.

Additionally, parent and child perceptions of anxiety symptoms were examined. Quantitative data indicated that children, on average, reported higher anxiety symptoms and severity at Time 1 (based on the SCARED total score), in comparison to parents. Qualitative data across participants with anxiety disorders revealed that parents and children generally agreed on specific phobias that the child experienced, as well as whether youth experienced school-related symptoms. There were discrepancies noted in parent and child reports of somatic symptoms, with some parents or children denying the presence of physical symptoms or describing

symptoms differently. For the participants with OCD, there were discrepancies across raters: Jane reported slightly more symptoms at Time 1 than her parent, whereas Carrie's parent reported greater symptoms at Time 1 than Carrie. Regarding changes in anxiety across treatment, more parents than children reported reductions in anxiety symptoms. Again, there were discrepancies among participants with OCD: Jane reported a greater decrease in symptoms than her parents, and Carrie's parent reported a greater reduction in symptoms than Carrie.

Overall, findings that the majority of participants experienced a decrease in symptomology after a course of CBT, CBT/ACT, or CBT/ERP is consistent with effectiveness studies of CBT for pediatric anxiety. There is substantial research support for the efficacy of CBT when treating youth with anxiety disorders (Cartwright-Hatton et al., 2004; Walkup et al., 2008). Five of the 12 participants (41.7%) experienced clinically and statistically significant decreases in scores on at least one anxiety measure from Time 1 to Time 2. This is relatively similar to efficacy rates of CBT without medication management (Walkup et al., 2008). Walkup et al. (2008) found that among children between the ages of 7 and 17 years old ($N = 488$) who received 14 sessions of CBT, 59% were rated as treatment responders by clinicians. With the current study, it is important to consider that data collected at Time 2 did not signify, for all participants, that treatment was completed. For some, treatment continued after the Time 2 data point; thus, it is possible that youth's anxiety symptoms continued to decrease as treatment progressed.

In contrast to these findings, the two participants with OCD displayed more stable symptoms from Time 1 to Time 2 than their counterparts with anxiety disorders. For Carrie and Jane, neither parents nor children reported significant decreases on the CY-BOCS from Time 1 to Time 2. This is consistent with prior research, which has found that remission rates after a

course of CBT are lower for youth with OCD compared to those with anxiety disorders (March et al., 2004). The Pediatric OCD Treatment Study (March et al., 2004), a randomized controlled trial, found that after 12 weeks of CBT, 39% of youth with OCD experienced a reduction in OCD symptoms to a subclinical level. This is less than the treatment response rate typically found for children with anxiety disorders who receive a course of CBT (Walkup et al., 2008).

Although not all participants experienced significant decreases in quantitative measures of symptomology, many parent/child dyads reported improvements in their child's anxiety symptoms during the phone interviews. One theme that emerged was an increase in youth's anxiety control. Several participants noted that although the child continues to experience anxiety, there are improvements in the child's perceived ability to cope with anxiety when it does arise. Chorpita and Barlow (1998) theorized that an individual's lack of control may play a role in the etiology of anxiety disorders, making individuals more vulnerable to developing anxiety. Though limited, some studies have examined anxiety control, comparing levels of perceived control among youth with and without anxiety disorders. For example, Weems et al. (2003) examined control beliefs among youth with anxiety disorders (N =86) and a control group (N = 31). Weems and colleagues (2003) assessed youth's sense of control over external (i.e., events, objects, situations that produce fear) and internal (i.e., bodily experiences of anxiety) threats. Results showed that youth with anxiety had significantly lower perceived control over both external and internal threats (Weems et al., 2003). Muris and colleagues (2008) examined whether youth's anxiety control changed following group CBT. Findings showed that youth's anxiety symptoms decreased after treatment, and this decrease in anxiety symptoms was related to an increase in anxiety control (Muris et al., 2008). Consistent with this prior research,

qualitative results from the current study suggest that youth's improvements in anxiety were related to an increase in anxiety control.

In regards to parent and child perceptions, results from the present study indicated that children reported higher anxiety symptoms and severity at Time 1, when compared to parents. This is consistent with previous research, which has found that children report more anxiety symptoms, and a greater severity of symptoms, than their parents (Bird et al., 1992). Researchers have posited several reasons for the discrepancies in parent and child report of internalizing symptoms, and specifically anxiety. For one, as an internalizing disorder, many symptoms of anxiety may be outside of the awareness of an observer (Comer & Kendall, 2004). In the current study, parents and children often had discrepant reports of the physical symptoms of anxiety. For example, Sarah's mother noted that perhaps Sarah did experience physical symptoms of anxiety, "but she wouldn't speak about it." Somatic symptoms are an example of one symptom of anxiety that may be difficult for parents to be aware of, particularly if children do not talk about this experience with their parents.

Discrepant reports between parents and children may also be present because observable symptoms of anxiety may more frequently occur outside of the home (Comer & Kendall, 2004). In this study, parents and children were often consistent in their reports of the presence of school-related anxiety symptoms, to some degree. However, there were some discrepancies in the specific worries that children had regarding school, such as worries related to completing homework assignments or taking tests. Again, these discrepancies could be due to these worries or anxiety symptoms occurring outside of the home, and parents not being fully aware of the school-related anxiety symptoms that their children may be experiencing. In fact, Comer and Kendall (2004) found that parent-child agreement on non-school-based symptoms was stronger

than agreement on school-based symptoms. Discrepancies in parent and child reporting of anxiety and OCD symptoms speaks to the importance of using a comprehensive, multi-informant assessment process when diagnosing children with anxiety disorders or OCD, and when determining whether treatment progress has been made.

CHAPTER 5:

RESULTS AND DISCUSSION PART II

Part II presents the results and discussion sections for research questions 3, 4, and 5, which examine how executive functioning (RQ 3), self-efficacy (RQ 4), and school engagement (RQ 5) change over the course of psychological treatment. For each research question, aggregate results and individual results across the sample are first presented. Next, integrated results for the Time 3 subsample of participants are described. Results are followed by a discussion of findings for each research question.

Research Question 3: Changes in Executive Functioning Across Treatment

Aggregate Results

Across the sample, the total score on the CEFI and the majority of subscale scores fell in the average range[11] at Time 1 and Time 2, suggesting that parents did not perceive their children to have difficulties in executive functioning (see Table 18). The Emotion Regulation and Cognitive Flexibility subscales were the only mean scores that fell in the low average range at Time 1. Contrary to predictions, total scores and the majority of subscale scores on the CEFI slightly decreased from Time 1 to Time 2: Attention, Cognitive Flexibility, Inhibitory Control, and Working Memory. Emotion Regulation was the only subscale that slightly increased.

Table 18:

EF (CEFI) Scores Across Psychological Treatment

EF Measure	Time 1[a]			Time 2[a]			Change Score
	M	*SD*	Range	*M*	*SD*	Range	*M*
EF Total Score (CEFI)	91.6	13.6	73-113	89.5	16.2	59-117	-2.1
Attention	94.5	11.4	73-110	91.9	15.3	61-117	-2.6

[11] On the CEFI, standard scores from 90-110 fall in the average range. Standard scores from 80-90 fall in the low average range.

Table 18 (cont'd):

Emotion Regulation	87.4	16.3	62-115	88.2	17.8	66-115	+0.8
Cognitive Flexibility	87.0	13.0	69-113	86.8	14.8	56-113	-0.3
Inhibitory Control	94.7	14.4	77-118	92.2	20.0	65-121	-2.5
Working Memory	96.0	14.5	74-116	92.8	17.8	59-114	-3.2

[a] $N = 12$

Individual Results

When examining total scores on the CEFI at the case level, 6 of the 12 participants demonstrated improvements in executive functioning, as rated by their parents: Katie, Megan, Carrie, Alison, Nora, and Bea (see Table 19). Of these participants, Alison was the only participant who demonstrated a reliable change in scores on the CEFI, based on the RCI calculation. Contrary to hypotheses, five of the 12 participants showed a decrease in executive functioning from Time 1 to Time 2: Sarah, Jane, Jacob, Evie, and Lily. Two of these 5 participants demonstrated a reliable change in scores, in the unexpected direction: Sarah and Jane. Max's score remained stable across treatment.

Table 19:

RCI Calculations: Total Score on the CEFI

Participant	Time 1	Time 2	Change	RCI	Reliable Change? (Y/N)
Lily	83	74	-9	-1.56	N
Megan	91	94	3	0.53	N
Evie	97	91	-6	-1.04	N
Max	74	74	0	0.00	N
Sarah	**110**	**88**	**-22**	**-3.80**	**Y**
Alison	**79**	**91**	**12**	**2.08**	**Y**
Bea	113	117	4	0.69	N
Carrie	89	96	7	1.21	N
Katie[a]	98	101	3	0.52	N
Nora[a]	107	110	3	0.52	N
Jane[a]	**73**	**59**	**-14**	**-2.42**	**Y**
Jacob[a]	85	79	-6	-1.04	N

Note: Bolded scores represent significant scores on the RCI at the $p < .05$ level
[a]Participants who did not complete Time 3 phone interviews

Integrated Results

The following integrated results are drawn from the phone interviews conducted with parent-child dyads at Time 3[12], and individual participant scores on the Attention and Emotion Regulation subscales of the CEFI for all participants (see Appendix I for individual participant scores on the Cognitive Flexibility, Inhibitory Control, and Working Memory subscales). Interview questions related to executive functioning asked parents and children to describe the child's attention, ability to control his or emotions, and ability to control his or her behavior, before and after treatment. Descriptive results are presented across three areas of EF: attention, emotion regulation, and behavior. Patterns were examined in the data to identify themes reflected in how parents and children described changes in their attention, emotion regulation, and behavior. For each area of EF, descriptive results of the qualitative data are presented first, followed by themes. See Appendix I for a qualitative summary of changes in school functioning variables from Time 1 to Time 2 across individual participants.

Attention. The majority of parents described their children (Evie, Sarah, Max, Megan, Lily, Carrie, Alison) as having some degree of difficulty focusing on tasks, prior to treatment. For example, Sarah's mother noted that she would "struggle a little bit" if asked to focus on a task that did not interest her. Max's mother indicated that Max did not consistently have difficulty focusing: "I don't want to say he never paid attention because he did." Two parents, Alison and Lily, described more substantial concerns with their child's attention. For example, Lily's mother noted that "she struggled, which kind of…it worried me." Bea's mother was the only parent who described her daughter's ability to focus, before treatment, as "very high." See Table 20 for a summary of children's attentional control at Time 1 and Time 2, based on

[12] Seven parent-child dyads and one parent (one child did not participate)

Attention subscale scores on the CEFI and parent and child perceptions of attention via phone interviews.

Table 20:

Attentional Control: Integrated Results Across Treatment

Participant	CEFI Time 1[a]	CEFI Time 2[b]	Parent		Child	
			Time 1	Time 2	Time 1	Time 2
Lily	93 (Average)	82* (Low Average)	Substantial concern	**Moderate improvement**	Minimal concern	**Moderate improvement**
Megan	98 (Average)	101 (Average)	Minimal concern	No change	Moderate concern	**Moderate improvement**
Evie	104 (Average)	93* (Average)	Minimal concern	**Moderate improvement**	No concern	No change
Max	73 (Below Average)	79 (Below Average)	Minimal concern	**Substantial improvement**	Minimal concern	No change
Sarah	102 (Average)	89* (Low Average)	Minimal concern	No change	Substantial concern	**Substantial improvement**
Alison	97 (Average)	100 (Average)	Substantial concern	**Substantial improvement**	Moderate concern	**Moderate improvement**
Bea	110 (High Average)	117 (High Average)	No concern	No change	Moderate concern	**Moderate improvement**
Carrie	92 (Average)	95 (Average)	Minimal concern	No change	[No child interview]	[No child interview]
Katie[b]	105 (Average)	107 (Average)	--	--	--	--

Table 20 (cont'd):

Nora[b]	99 (Average)	102 (Average)	--	--	--	--
Jacob[b]	84 (Low Average)	77 (Below Average)	--	--	--	--
Jane[b]	77 (Below Average)	61* (Well Below Average)	--	--	--	--

Note: Parent and child "Time 1" and "Time 2" columns summarize parent and child perceptions of the child's attentional control at Time 1 (Time 1 column) and changes from Time 1 to Time 2 (Time 2 column)
[a] Standard Scores on the Attention subscale (CEFI)
[b] Participants who did not complete Time 3 Phone Interviews
* Significant change in scores based on RCI calculation

Although many parents mentioned that their child had some difficulty focusing or attending to certain tasks, for the majority of parents, attention did not appear to be one of the primary concerns they had about their child's functioning. In other words, parents typically described some, but minimal, concerns with their child's attention during the phone interviews. In contrast to the majority, Lily and Alison's parents both described their children's attentional control as a substantial concern at Time 1. Of note, only Max and Jane's parents' rating on the Attention subscale of the CEFI fell in the below average range at Time 1. This suggests that scores on the CEFI and verbal parent report did not always align. For the remaining participants, parents rated their children's attention in the low average to high average range at Time 1, based on the CEFI scores. Based on interview data, more than half of parents who indicated some level of concern with attention perceived moderate to substantial improvements in their child's attentional control after treatment, while the remaining parents perceived no improvements. Parents who described improvements in their child's attentional control during the phone

interviews did not similarly have increasing scores on the attentional control subscale of the CEFI from Time 1 to Time 2.

Of the four parents (Bea, Megan, Carrie, Sarah) who did not perceive changes in their child's attention, one parent did not have concerns in this area according to the CEFI. The others had minimal concerns based on the CEFI, and indicated on both the CEFI and in the interview that their child's attentional control did not appear to change after treatment. For example, Sarah's mother reported:

> I think that generally, it's the same as before, generally she pays attention and, and pays attention to details, sometimes I see her miss things that we've just talked about, because perhaps she wasn't listening or she was distracted by something. (Time 3, Phone Interview)

In contrast, the remaining four parents shared that their child's attention appeared to improve moderately (Evie, Lily) or substantially (Max, Alison) after treatment in line with their CEFI ratings. Of note, Lily and Alison's parents were the two who initially had more concerns about their child's attentional control, prior to treatment. Evie's mother described an improvement in Evie's ability to stay seated and complete her work: "She does it [homework] all independently, and later, if she does have something, she'll come to us after and be like, can you just check this." Alison's father described substantial improvements in Alison's ability to pay attention after treatment, which affected her school performance: "In class, when she was in the classroom, she put the books away and she started paying attention more, started taking notes, and her grades improved dramatically because of it as well."

Parent Perceptions of Attention as Developmentally Appropriate. One theme that emerged when examining why the majority of parents did not describe attention as a primary

concern for their child was that some parents perceived their child's attention as developmentally appropriate. Some parents noted that their child's difficulty focusing was not surprising to them, given the child's age. When asked if Lily's attention improved after treatment, Lily's mother shared, "…her age, she's still working on it." Carrie's mother similarly reported: "I think she has difficulty focusing because of her being the kid, like the age kid that she is." These findings demonstrate how parents appeared to take into account the child's age and developmental status in calibrating their expectations and concern.

Anxiety-Related Attention Difficulties. An additional theme that emerged was the connection between anxiety and attention difficulties. Some parents described their child as having attention difficulties only when their child's anxiety was heightened. For example, Evie's mother noted how Evie appears to have difficulty staying on-task only during those instances when her anxiety is high: "…if she's feeling anxious, she'll get up a lot and like, come to wherever I'm at." Lily's mother described a similar situation for her daughter: "But it was when her anxiety was up. She would run around like she didn't know what to focus on. So sometimes that was with reading or, finishing a task…so the anxiety did affect that ability to concentrate." Megan also described herself as "very alert" due to her anxiety, and had difficulty focusing as a result: "I wouldn't be able to ignore like distractions because I'd be so alert, whether I knew it or not, but I would just be able to get distracted easily."

Reduced Anxiety and Improvements in Attentional Control. A theme that arose from participant discussions about changes across treatment was how reductions in anxiety symptoms appeared to be related to improvements in attentional control. Two participants described specifically how reductions in anxiety were related to improvements in their ability to pay attention. For example, Bea reported, "I think I was less distracted by, anxieties and worries like

specifically with how my body was feeling." Megan also spoke about this connection: "…I feel like having the tools to help with my anxiety has also helped me to not be so alert and get distracted as easily." Both of these participants also showed slight improvements on the Attention subscale of the CEFI from Time 1 to Time 2, although changes were not significant. These descriptions of attention align with Eysenck's Attentional Control Theory, which posits that for individuals with high anxiety, attentional resources are allocated to external or internal factors in their environment, rather than the task at hand. In other words, these participants appeared to display less attention towards tangential stimuli and were better able to focus on the task at hand, after experiencing reductions in their anxiety. For example, in Megan's case, Megan appeared to experience an allocation of her attentional resources to threat-related stimuli, which she described as external distractors in her environment. In contrast, Bea spoke specifically about internal distractors (i.e., worry, awareness of bodily sensations).

Ability to Compensate for Attentional Difficulties. Data suggest that some parents viewed their child as able to compensate for attentional difficulties. Despite having difficulty focusing, parents described their children as still able to complete tasks. Megan's mother described how Megan: "…seemed to have some difficulty focusing. But she still seemed to be able to motivate herself well enough to get the task done that she needed to do, at least eventually." Bea's mother acknowledged that anxiety likely affected Bea's ability to concentrate, but it did not appear to be impairing her functioning: "I think anxiety is…distracting, obviously…it never looked to me like, she couldn't focus."

Alignment and Discrepancies in Parent and Child Perceptions of Attention. For some parent/child dyads (Max, Evie, Alison, Megan), parents and children had relatively similar perceptions of the child's attention prior to treatment, based on the phone interviews. For

example, Evie's mother described Evie's ability to pay attention as "pretty good," and Evie similarly reported that it was "pretty easy" to focus. A few parent/child dyads (Lily, Sarah, Bea) had substantially different perceptions of the child's ability to attend to tasks.

For three participants (Sarah, Megan, Bea), the child reported more concerns with inattention than their parent. Bea's mother described her attention as "very high." In contrast, Bea reported that it was "pretty hard" to ignore distractions while completing schoolwork. She added, "I'm not good at that." Similarly, Sarah's mother described Sarah as struggling "a little bit" to pay attention to tasks that she is not interested in; however, she did not state that inattention was a primary concern. Sarah, however, reported significant difficulties with attending to tasks. When asked how difficult it was to ignore distractions, Sarah replied, "That would be hard. I would always find myself, finding things that would distract me, like the kid that plays with his pencil, or that person that turns the page a little too loudly." Whereas Lily's mother described concerns with Lily's inattention, Lily did not report having difficulties in this area. Lily's mother described her as having difficulty paying attention: "She struggled, which kind of, it worried me because her brother has ADHD." Unlike her mother's report, when asked if it was difficult to ignore distractions, Lily shared: "It was, kind of hard, but kind of not…I didn't really have that much distraction."

In contrast to observing some similarities in parent and child perceptions before treatment, all of the parent/child dyads differed in their perceptions of whether the child's attentional control improved after treatment. Four children reported moderate (Bea, Megan, Lily, Alison) or substantial (Sarah) improvements in their attentional control after treatment, which contrasted with their parent's perceptions. For example, Sarah noticed improvements in her attention and ability to ignore distractions in the classroom after treatment: "…for times when it

would get bad before, I would take my test out in the hall by myself. But I've been able to be in the classroom during that time, taking the test. And that was something new." For these youth, improvements in anxiety symptoms were accompanied by improvements in attention and focus. Of these five children, only Lily and her mother shared similar perceptions of changes in the child's attentional control after treatment.

Two children (Max, Evie) reported no improvements in attentional control after treatment. In contrast, both Max and Evie's parents did report moderate or substantial improvements in their attentional control. Max shared that "nothing ever changed" with his ability to pay attention after treatment. Evie similarly shared that she had no concerns with her ability to pay attention after treatment.

Emotion Regulation. All parent/child dyads who completed Time 3 data reported concerns prior to treatment with emotion regulation, which they often described as difficulties with "calming down," "self-control," and "controlling emotions." Both parents and children shared that the child experienced difficulties with emotion regulation, with varying degrees of severity. Parents reported more substantial concerns than children. On the CEFI at Time 1, several parents' ratings of their child's emotion regulation skills fell below average at Time 1. Five parents' scores on the emotion regulation subscale fell in the average or high average range at Time 1. Additionally, many parents (Bea, Max, Megan, Sarah, Carrie, Evie) and children (Bea, Alison, Lily, Sarah), described moderate to substantial improvements in the child's ability to control his or her emotions after treatment. Max's mother noted dramatic improvements after treatment: "That has gotten a lot better…it didn't used to be good at all. And now he seems to have complete control over it now." Lily shared that after treatment, she found that it was "more easy to control myself." See Table 21 for a summary of children's emotion regulation at Time 1

and Time 2, based on emotion regulation subscale scores on the CEFI and parent and child perceptions of emotion regulation via phone interviews.

Table 21:

Emotion Regulation: Integrated Results Across Treatment

Child	Parent Perception				Child Perception	
	CEFI Time 1[a]	CEFI Time 2[a]	Time 1	Time 2	Time 2	Time 2
Lily	69 (Well Below Average)	69 (Well Below Average)	Moderate concern	**Minimal improvement**	Moderate concern	**Moderate improvement**
Megan	80 (Below Average)	78 (Below Average)	Substantial concern	**Substantial improvement**	Minimal concern	**Minimal improvement**
Evie	71 (Below Average)	74 (Below Average)	Substantial concern	**Substantial improvement**	Moderate concern	**Minimal improvement**
Max	78 (Below Average)	66 (Well Below Average)	Substantial concern	**Substantial improvement**	Minimal concern	No improvement
Sarah	115 (High Average)	100* (Average)	Moderate concern	**Moderate improvement**	Moderate concern	**Moderate improvement**
Alison	62 (Well Below Average)	78* (Below Average)	Moderate concern	**Minimal improvement**	Moderate concern	**Moderate improvement**
Bea	101 (Average)	115* (High Average)	Minimal concern	**Moderate improvement**	Substantial concern	**Moderate improvement**
Carrie	89 (Low Average)	98 (Average)	Moderate concern	**Moderate improvement**	[No student interview]	[No student interview]

Table 21 (cont'd):

Katie[b]	102 (Average)	106 (Average)	--	--	--	--
Nora[b]	106 (Average)	115 (High Average)	--	--	--	--
Jacob[b]	91 (Average)	85 (Low Average)	--	--	--	--
Jane[b]	85 (Low Average)	74 (Below Average)	--	--	--	--

Note: Parent and child "Time 1" and "Time 2" columns summarize parent and child perceptions of the child's emotion regulation at Time 1 (Time 1 column) and changes from Time 1 to Time 2 (Time 2 column)
[a] Standard Score on the Emotion Regulation subscale (CEFI)
[b] Participants who did not complete Time 3 Phone Interviews
* Significant change in scores based on RCI calculation

There was some alignment between parent ratings on the emotion regulation subscale of the CEFI and parents' responses during phone interviews. For example, Max, Megan, and Evie's parents all described substantial concerns with their child's emotion regulation before treatment. These three parents also had subscale scores on the CEFI that fell in the below average range. A clear discrepancy was Sarah's mother's ratings on the CEFI and her phone interview data. Sarah's mother described moderate concerns with Sarah's emotion regulation, as well as moderate improvement from Time 1 to Time 2. However, her CEFI scores initially fell in the high average range at Time 1, and substantially decreased at Time 2. One possible explanation is that Sarah's mother's conceptualized emotion regulation differently when completing questions on the CEFI and when asked to describe her daughter's emotion regulation skills. There may also be differences how parents respond to the different formats of these two measures.

Emotional Awareness. When asked about children's ability to control his or her emotions, one theme that emerged was children's emotional awareness. A few parents described how, before treatment, their child (Lily, Carrie, Sarah) did not appear to be aware of or

understand the emotions that they were feeling. For example, Lily's mother shared: "She just was kind of, ignoring the real feelings that she was having. So she'd be like, "I handle them just fine!" Similarly, Carrie's mother described Carrie as being initially unaware or unsure of her emotions: "I don't think that she really knew what was wrong."

Two of the adolescent participants (Alison and Sarah) were reported to suppress or mask their emotions, by Alison and Sarah's mother, respectively. Alison attributed learning to suppress her emotions with life changes for her family (i.e., moving to a new state):

> I had gotten really good at like masking my emotions. Because the entire summer before it really got bad, it felt like a lot of the responsibility had fallen on me because my brothers weren't handling our whole transition really well. And it just felt like a lot of responsibility got put on me. So for a lot of the anxiety and sadness and all that emotional stuff, it felt like I had to hide it. So. People didn't really notice it, but I definitely did (Time 3, Phone Interview).

While Alison discussed hiding her emotions, neither of Alison's parents mentioned this during the phone interviews. Sarah's mother described her as suppressing her emotions, although Sarah herself did not describe this as her experience. Her mother shared: "I can definitely tell you that from our perspective, she was always kind of suppressing a lot of those emotions…it definitely seemed like she was, you know, holding everything back and trying to keep everything steady." These examples are consistent with previous research which has shown that difficulty identifying emotional states is related to anxiety (Zeman et al., 2002; Sendzik et al., 2017).

Calming Down from Heightened Emotions. An additional theme that emerged was the difficulties that children had with calming down when experiencing heightened emotions, and improvements in this area after treatment. For example, Megan explained her experience: "Like

when I was like really, really anxious. It was kind of hard to just, get myself to calm down and, to control myself from just completely freaking out, flipping out." When asked if Evie was able to calm herself down when feeling anxious, Evie's mother reported, "No, not at all." Evie's mother shared an example:

> I'm just thinking back to when she was at my, at her aunt's this summer, and they were at a movie theater and she went in the bathroom and she was just hysterically crying. She was like, I can't breathe. And so she felt like she couldn't get herself to calm down. (Time 3, Phone Interview)

Evie's mother's report is an example of a specific instance that represents the difficulty that Evie faced with calming herself down when experiencing heightened emotions. Her mother reported a decrease in emotional outbursts after treatment: "She was definitely not having any reactions like that. And she's also gotten upset about different things, but she's, like, walked away and taken some time." Evie's mother's report describes both a decrease in frequency of emotional outbursts and a shift in how Evie copes with her emotions to reduce their intensity.

Carrie's mother also shared concerns that she had, prior to treatment, with helping Carrie calm down. Her mother connected these concerns to Carrie's OCD symptoms: "But when the OCD flares, it's hard to kind of, get her to calm down, um, if it's really bad." Carrie's mother described improvements in Carrie's ability to handle heightened emotions: "I think she's better at controlling things now than she was before treatment." Carrie's mother noted that the addition of medication to Carrie's therapy appeared to help with her emotion regulation: "…she's also on medication, which I think helped significantly because the first few months of therapy was still really difficult."

Bea also reported difficulties controlling her emotions, prior to treatment. Bea described herself as a "disaster at controlling my emotions." Bea described a sense of helplessness before treatment, with an inability to control her emotions: "I don't think I like knew at the time, even really how to try to control it." These reports from participants are representative of the difficulty that children with anxiety face with regulating their emotions, which has been established in prior research (Carthy et al., 2010; Dochnal et al., 2019; Suveg & Zeman, 2004). These reports also demonstrate that children made improvements in their ability to calm themselves down and control their emotions.

Improvements in Controlling Anger and Frustration. Participants not only described children's difficulty in controlling anxiety, but also described difficulties with controlling other emotions such as anger and frustration. Before treatment, Max's mother described his difficulties with anger: "He would act out. Throwing things, and yelling and stuff like that." Carrie's mother also described Carrie's OCD as causing her to "lash out" at her family members, out of anger and frustration: "When the OCD started appearing, she would lash out…I would describe it as lashing out." Megan's mother similarly described that her daughter would "flip out in certain situations". When asked to elaborate, Megan's mother replied, "…if she gets in trouble for something…a lot of times, she'll just have an outburst about it and, I guess essentially flip out, over it." A few of the adolescent participants similarly described themselves as having difficulty controlling their anger and frustration before treatment. For example, Alison shared, "I got really violent with my words. And just started yelling and screaming a lot." Bea described herself as experiencing anger as well: "I basically felt sad and angry for two straight years." These examples suggest that for many children with anxiety or OCD, children also had difficulty

regulating emotions such as anger, or that anxiety was expressed in different ways for some youth.

Several participants discussed improvements in children's abilities to control anger or frustration. Max's mother reported improvements in Max's ability to control his anger after treatment: "Yeah, he seems to be better with that. And has better control over that." Carrie's mother described her as having less frequent instances of "lashing out" after treatment ("She doesn't have as many flares…it's much better"). Carrie's mother also shared that "…overall, she's more even tempered." Alison described improvements in her family relationships: "We don't argue as much." Although Alison did not explicitly state improvements in the ability to control her anger and frustration, less frequent arguments with her family indirectly suggests improvements in this area. Megan's mother described Megan as better able to cope with anger and frustration after treatment, noting that "…she's learned to better control some of her reactions in those situations." Megan's mother also shared:

> We've also in therapy discussed a lot of our…as parents, our interactions with her and how we can navigate some of those situations and better handle them. And so I think we've been given some tools to better handle those situations. (Time 3, Phone Interview)

This account from Megan's mother suggests that not only did Megan's emotion regulation skills improve after treatment, but also Megan's parents gained skills on how to assist her during periods of heightened emotions.

Increase in Adaptive Emotion Regulation Strategies. Several parent/child dyads discussed an increase in the child's use of appropriate strategies to calm down after treatment. Evie and Bea's parents noticed that their children began to use new strategies learned during treatment. Evie's mother described a change in Evie's ability to calm herself down:

She's also gotten upset about different things, but she's, walked away and taken some time, she'll go to, you know, go in her room and then she'll come back and say, 'Okay, I was just really frustrated and I thought about it' or like, 'I was just', you know, she'll be able to talk through it a little bit more. (Time 3, Phone Interview)

Evie's mother's response indicates that Evie began to cope more effectively during moments of distress. Of note, both Evie and Bea's parents reported moderate to substantial improvements in emotion regulation after treatment. Additionally, Bea's mother's ratings on the CEFI improved significantly across treatment, based on the RCI score (see Table 21). Bea's mother noticed improvements in how Bea handled various situations that could evoke an emotional response. Bea's mother shared, "I would say that I see a pretty noticeable growth in maturity in terms of, how you, how she deals with it after she's had a fiery moment."

Megan, Sarah, and Lily also described an increased use of adaptive coping strategies. Megan shared that she now uses coping strategies or walks away "to just help me so I'm not, so I don't freak out." Sarah noted how she previously was unsure of how to calm herself down, but using the strategies she has learned during treatment has helped: "…now it's definitely more controlled, now that I have strategies." Strategies that youth listed as effective for them included deep breathing (Lily), taking a mental step back from the situation (Sarah), and problem-solving (Megan). In addition to describing an increased use of adaptive strategies, these children reported some improvements in their emotion regulation after treatment (see Table 20). When researchers have examined the mechanisms underlying emotion regulation deficits among children with anxiety, studies have found that anxious youth are more likely to use maladaptive emotion regulation strategies, and less likely to use effective strategies (Dochnal et al., 2019). For example, Dochnal and colleagues (2019) found that anxious youth were more likely to engage in

social withdrawal from peers as a strategy when upset. Results from the current study suggest that, after treatment, youth were able to utilize more adaptive emotion regulation strategies during moments of distress.

Improvements in Interpersonal Relationships. Several parent/child dyads (Alison, Carrie, Sarah, Bea, Max) discussed how difficulties regulating emotions and behavior, and improvements in their emotion regulation skills, have affected their relationships with family and friends. For example, before treatment, both Alison and her father reported that Alison was often in conflict with others. Alison reported that she would "get really violent with my words…yelling and screaming a lot." Alison shared that since she is better able to control her emotions, she also has not been arguing with her family as much. Her father also noted improvements in her interactions with others: "Yeah, she's learning to get along with others that she does not agree with or does not normally get along with. So fewer altercations." Max's mother stated that Max had positive relationships with his family, but he was often in conflict with peers and his teachers. Although Max's mother noticed improvements in these social interactions after treatment, Max did not:

> Every time I get angry, it would always be the same. If I get angry at teachers, then I'd end up flipping out on them and like, calling them out and stuff but that's about it. And nothing ever changed. (Time 3, Phone Interview)

Carrie's mother also indicated improvements in Carrie's relationship with her sister, which she connected to a reduction in OCD symptoms: "The kids do still fight and sometimes, some days are better than others…but it's, I don't think it's as OCD related as it used to be. It's more like the sibling bickering."

Sarah also described a connection between anxiety and her relationships with others. Prior to treatment, Sarah described herself as "snapping" at others during moments of anxiety:

> When I would get nervous, I would get like fidgety, or I like I would be very short with people and talking. I would not talk much or I just like wouldn't talk at all to them, or I just kind of snapped. I wouldn't, I wouldn't want to talk to anyone when I was nervous. (Time 3, Phone Interview)

Sarah added that the changes in her interactions with others was "probably one of the biggest changes" since she started treatment. Bea also described herself before treatment as "projecting" her emotions, such as anger, and "taking them out" on her family and friends. Bea noted that she would pull away from friends during periods of distress ("I do take it out on my friends by completing pulling away from them"). After treatment, she noted that this had improved: "I think it's gotten better, this year."

Behavior. ***Limited Behavior Concerns.*** Aside from interpersonal difficulties reported by some participants, the majority of parent/child dyads did not report substantial concerns with the child's behavior prior to treatment. Max, Alison, and Lily were the only parent/child dyads in the sample to describe some concerns with "acting out" behavior. Max's mother described Max as "yelling, throwing things," prior to treatment, but Max was also the only participant to have a comorbid diagnosis of an externalizing disorder (Disruptive Behavior Disorder). Max similarly reported that he had trouble refraining from acting out when angry. While Max's mother did report improvements in his behavior after treatment, Max shared that he had difficulty applying strategies that his therapist recommended:

> She'd [his therapist] tell me, that's not the very kindest thing to do to, to yell at a teacher or like, call them out…she tried to help me handle that situation better. And I'd, I'd

always, next time I go to school I'd always try…but they [his teachers] tried to get me in trouble a lot. (Time 3, Phone Interview)

Max's response demonstrated some awareness of his own behavior, but also an external locus of control (i.e., his teachers trying to get him into trouble). Lily's mother also reported some concerns with Lily's behavior, but attributed her externalizing behaviors as connected with anxiety:

> …it was getting to the point that she was not responding to us, in ways that she had done in the past, as far as listening and being more obedient, and trusting mom and dad. But as far as behavior, she's great at regulating like she's a very thoughtful, kind person. So we didn't struggle with a lot of that but it was like anxiety-induced behavior. (Time 3, Phone Interview)

Lily described her own behavior as sometimes "crying, getting mad, and yelling." Lily reported that it felt easier to control her behavior after treatment.

Discussion

Several conclusions can be drawn from participants' responses about EF and changes in EF across psychological treatment. Many parents indicated some concern with their child's attentional control before treatment, although this was not a primary concern across all parents. Parent and child perceptions of attentional control somewhat differed, particularly when asked to express how the child's attention changed after treatment. Overall, parent/child dyads primarily expressed concerns with the child's emotion regulation skills, such as emotional awareness and the ability of the child to calm themselves down. Additionally, participants generally noticed improvements in the child's emotion regulation skills across treatment. While behavior concerns were not reported as concerning for the majority of participants, several parent/child dyads did

indicate some difficulties in the child's interpersonal relationships and social interactions at Time 1, and improvements over the course of treatment. These interpersonal difficulties were often described in relation to concerns with the child's ability to regulate their emotions and/or behavior. In sum, many parent/child dyads perceived improvements in EF across treatment based on the phone interviews, specifically emotion regulation.

The vast majority of parents reported some level of concern with their child's attentional control, although many of these concerns were minimal. Children reported more difficulty with attention control compared to their parents (i.e., half of children in the subsample reported moderate or substantial concerns with attentional control). Several accounts of participants' experiences align with ACT. Findings from the current study suggest that children with anxiety disorders or OCD do not necessarily demonstrate impairing deficits in attentional control. However, some children with anxiety disorders or OCD may be more distractible or have difficulty sustaining attention when their anxiety is heightened. For example, Megan described herself as feeling more alert, and having a more difficult time ignoring distractions, during moments of anxiety. Similarly, Lily's mother described Lily as having difficulty sitting still to complete schoolwork when she felt anxious. Moreover, two of the adolescent participants described themselves as having deficits in attentional control, although their parent did not report any problems. These adolescents described themselves as having difficulty ignoring both internal and external distractions while completing schoolwork.

The discrepancy in these accounts between parents and youth suggests that while these adolescents perceived themselves as having difficulty sustaining attention and focusing on a task at hand, this was not observable to their parents and did not hinder their work performance. These examples suggest that for some children with anxiety disorders or OCD, children may: 1)

only display deficits in attentional control during moments of heightened anxiety, 2) experience attention difficulties commensurate with their developmental age, or 3) internally experience difficulties with attentional control, but not to the extent where work is impeded or where it is observable by others. These conclusions are consistent with ACT, which posits that attentional control is impaired when attentional resources are allocated to threat-related stimuli, whether these stimuli are internal or external distractors.

These findings are somewhat consistent with previous research, which has found that higher anxiety among children is associated with poorer attentional control (Eisenberg et al., 2001; Muris et al., 2004). However, the level of parents' concern with the severity of attentional difficulties does not appear to align with prior research, which has found that children with anxiety have greater deficits in attentional control compared to their non-anxious peers (Micco et al., 2009). In fact, on the Attention subscale on the CEFI, seven of the eight parent's ratings of their child's attentional control fell in the average or high average range at Time 1.

Several parents asserted that some of the EF difficulties displayed by their children could be attributed to the child's age. In other words, some parents discussed how their child was continuing to "work on" his or her attention or emotion regulation skills, as he or she matured. Consistent with parent reports, it is well established in the research that there are steady improvements in EF across childhood and adolescence (Cragg & Nation, 2008; Davidson et al., 2006; Mărcuş et al., 2016; Mocan et al., 2014). There is also some prior research to suggest that anxiety has greater negative associations with EF among younger children. For example, Aronen et al. (2005) divided children ages 6 to 13 years old into three age groups. Results showed that the associations between anxiety and working memory were strongest for the youngest age group, indicating greater impairments in working memory with higher levels of anxiety. Two

parent/child dyads in the current study specifically drew connections between the child's anxiety and inattention, and these children were 9 and 10 years old (Lily and Megan). This is consistent with prior research, suggesting that younger children with anxiety disorders or OCD may have greater EF difficulties than older children.

Half of parents in the sample reported that their child's attentional control remained stable after treatment, while the other half of parents reported small to moderate improvements in attention after treatment. Parents who reported no changes in attentional control also had minimal or no concerns with their child's attention before treatment. This shows that, for children who did not display difficulties with attentional control prior to treatment, their attention remained stable across treatment. For parents who reported improvements in attentional control, they initially had minimal (Max, Evie) or substantial concerns (Lily, Alison) at Time 1. These data suggest that when difficulties with attention are observed before treatment, there may be improvements in attentional control across anxiety treatment. In fact, for a few participants, there were noticeable changes at school due to the child's increased attentional control. For example, Alison's father described Alison as taking more notes during class, which resulted in better grades. Sarah shared that she was able to take tests in the classroom with all of her classmates, as opposed to alone in the hallway. Limited research has examined whether treatment for children with anxiety disorders or OCD is associated with improvements in attentional control and whether this may benefit learning at school.

Researchers have indicated that further research needs to be done to see if deficits in EF remit once anxiety symptoms improve, or if they persist (Micco et al. 2009). One study to date has examined whether CBT for children with anxiety disorders is related to changes in attentional control (Reinholdt-Dunne et al., 2015). In this study, children received CBT and

completed a computer-based task to assess attentional control at pre- and post-treatment. At pre-treatment, children with anxiety performed significantly worse than a control group on the attentional control task; at post-treatment, there were no differences in task performance between groups (Reinholdt-Dunne et al., 2015). Results also showed a trend towards increased attentional control from pre- to post-treatment, but this increase was not significant (Reinholdt-Dunne et al., 2015). Findings from Reinholdt-Dunne and colleagues (2015) suggest that CBT treatment for anxiety may contribute to improvements in attentional control. Due to the methodology of the current study, it is unclear whether changes in anxiety or OCD symptoms were directly related to parent and children's reports of improvements in attentional control.

While parents reported some initial concerns with their child's attentional control, the majority of parents reported more substantial concerns with their child's emotion regulation abilities prior to treatment. Specifically, seven parents reported moderate to substantial concerns with their child's emotion regulation abilities before treatment. This finding also aligned with quantitative results on the CEFI; on average, participants' lowest scores were on the Emotion Regulation and Cognitive Flexibility subscales. On the Emotion Regulation subscale of the CEFI, four participants in the entire sample had initial scores that fell in the below average range (Max, Lily, Evie, Alison), and three participants' scores fell in the low average range (Megan, Carrie, Jane).

For one, several parents and children discussed a lack of emotional awareness prior to treatment. Emotional awareness is considered to be a "prerequisite" for adaptive emotion regulation (Rieffe et al., 2008, p. 1). Emotional awareness has been described in the literature as a process that allows individuals to monitor emotions and differentiate emotions from one another. In the current study, several parents described their child as being unaware of or unsure

of the emotions they were feeling. Additionally, two of the adolescent parent/child dyads (Alison, Sarah's mother) described the adolescents as masking or suppressing their emotions before treatment. After treatment, these dyads described the adolescent as being able to more openly share her emotions with others.

These descriptions of youth's lack of emotional awareness (i.e., unsure of emotions, hiding emotions) align with findings in previous research on emotional awareness and anxiety. For example, Rieffe and colleagues (2008) examined the association between emotional awareness and internalizing problems in youth. Rieffe et al. (2008) found that an ability to differentiate between emotions, to not hide them, and to verbally share emotions with others was negatively associated with internalizing problems, including social anxiety, worry, rumination, and somatic symptoms. A more recent study by Rieffe and Rooij (2012) similarly found that hiding emotions contributed to more worrying and ruminative thoughts among youth. Findings from the current study are consistent with this previous research that has established the relations between anxiety and emotional awareness.

Parents and children also described difficulties with emotion regulation skills beyond emotional awareness, such as difficulties calming down from heightened emotions, as well as difficulty controlling anger and frustration. Research has consistently established an association between emotion regulation deficits and internalizing disorders, including both anxiety disorders and OCD (Carthy et al., 2010; Hurrell et al., 2017; Stern et al., 2014; Suveg et al., 2008). In fact, some researchers have posited that emotion dysregulation is a core feature of anxiety disorders (Carthy et al., 2010). Previous studies have found that children with anxiety disorders report significantly more difficulty with regulating negative emotions, compared to their non-anxious peers (Hurrell et al., 2007; Suveg et al., 2008). Additionally, research has found that aspects of

emotion regulation difficulties, such as poorer understanding of emotions and greater fear of emotions, is associated with OCD symptoms (Stern et al., 2014). Findings from the current study, that the majority of parent/child dyads reported some level of difficulty with the child's emotion regulation skills, are consistent with this previous research.

As noted above, some participants also described children's difficulties with controlling emotions such as anger and frustration. While externalizing problems have been consistently linked to anger, the research is less clear on whether anger is related to internalizing problems, including anxiety disorders (Eisenberg et al., 2001). There is some research to suggest that children with anxiety disorders may experience higher levels of anger, compared to children without mental health disorders (Marsee et al., 2008; Zeman et al., 2002). For example, Zeman et al. (2002) found that an inability to regulate anger and sadness predicted anxiety. Marsee and colleagues (2008) theorized that children with anxiety and/or aggression may interpret social situations as threatening, due to social-cognitive biases. Research has shown that children with aggression or anxiety both are more likely to interpret ambiguous social situations with peers as negative or threatening (Crick et al., 2002; Weems et al., 2001). Marsee et al. (2008) proposed that "cognitive biases may be a mechanism through which anxious children become aggressive or vice versa" (p. 157). Findings from the present study suggest that anxiety may also be related to other heightened emotional states.

Overall, the majority of parent/child dyads noted that the child's emotion regulation skills appeared to improve after treatment. More specifically, participants discussed improvements in children's abilities to reduce the intensity of experienced emotions; improved ability to control anger and frustration; and an increase in adaptive emotion regulation strategies. Max, who also had a diagnosis of Unspecified Disruptive Behavior Disorder, was the only participant who

reported no change in his emotion regulation skills after treatment. Across all participants in the subsample, quantitative data showed that the Emotion Regulation subscale on the CEFI slightly increased, on average, across treatment. When examining scores at the case level, half of the participants had Emotion Regulation scores that increased from Time 1 to Time 2[13]. For participants whose subscale scores increased (Bea, Alison, Carrie, Evie, Katie, Nora), the majority of these children initially had scores that fell in the low average range or below at Time 1. For participants whose scores did not increase, three of these six participants also initially had scores that fell in the below average range or lower. This suggests that the initial score on the emotion regulation subscale did not appear to be related to whether participants' scores increased, decreased, or remained stable across treatment. This is in contrast to the findings with attentional control, which showed that only participants with some level of attention difficulties prior to treatment displayed improvements in attentional control after treatment.

Limited research has examined whether children's emotion regulation skills improve as a result of anxiety treatment. Only one study to date has examined whether youth experience gains in emotion regulation following a traditional course of CBT treatment for anxiety (Suveg et al., 2009). Findings showed that children reported gains in emotion awareness and worry regulation skills (Suveg et al., 2009). Of note, children did not improve in the regulation of other emotions, such as sadness and anger. Suveg and colleagues (2009) concluded that CBT for anxiety likely teaches skills such as emotional awareness, that extends beyond awareness of anxiety, "but may not sufficiently teach youth methods of regulating emotional experiences beyond the experience of anxiety" (p. 397). An important limitation of Suveg et al.'s (2009) study was that emotional regulation was only assessed by children's self-report. It is possible that children perceived

[13] The Emotion Regulation subscale score significantly increased, based on the RCI calculation, for only two of the 6 participants (Alison, Bea)

improvements in regulating worry due to specifically addressing this skill during treatment sessions, without recognizing that these skills generalized to other areas. In the current study, several participants described improvements in the child's ability to control their anger or frustration, but these reports tended to be from parents. This suggests that children may not be aware of their improvements in regulating certain emotions. Findings suggest that, for many youth in this study, emotion regulation skills improved across treatment. Further research is needed to conclude whether CBT for anxiety can improve emotion regulation skills beyond the regulation of worry.

An additional conclusion that can be drawn from participant responses about EF is the connection between children's EF and interpersonal relationships. Both theory and research have supported a relation between EF, and specifically emotion regulation, and children's social functioning. Eisenberg and Fabes (1992) hypothesized that children who have emotion regulation difficulties may behave in socially ineffective ways. In contrast, children who are able to effectively modulate their emotional arousal and responses are expected to behave in more socially constructive ways (Eisenberg & Fabes, 1992). Research has consistently supported this theory (Eisenberg et al., 2000; Rosen et al., 2009). According to Rosen and colleagues (2009), children with emotion regulation deficits have more difficulty processing social information efficiently and appropriately navigating conflicts, compared to those without emotion regulation difficulties. For example, studies have found that children who have difficulty regulating negative emotionality often experience poor social skills, peer rejection, and even peer victimization (Eisenberg et al., 2000). This previous research supports the findings from this study, which show that many of the participants not only experienced anxiety symptoms prior to treatment, but also displayed emotion regulation deficits. Parent/child dyads discussed concerns

with social interactions and interpersonal relationships in the context of these emotion regulation difficulties.

While many parent/child dyads reported concerns with emotion regulation, fewer participants expressed concerns with children's behavior. In the current sample, only one participant (Max) had an anxiety diagnosis comorbid with an externalizing disorder. Prior research suggests that approximately 25% to 30% of youth with an anxiety diagnosis have, or will later develop, an externalizing disorder (Seligman & Ollendick, 2011). Max was also the only participant whose parent described concerns with behavior problems that were beyond the scope of anxiety. Parents and children may conceptualize "behavior problems" that the child experiences as problems associated with anxiety or emotion regulation difficulties, or as typical for their developmental level. For example, when asked to describe behavior problems, many parents reported concerns as emotional outbursts (i.e., crying hysterically, becoming upset and yelling), rather than as noncompliance or acting out behaviors. This suggests that parents of children with anxiety disorders may interpret inappropriate behaviors as being associated with the anxiety or emotion regulation difficulties that the child is experiencing, rather than conceptualizing the issue as a "behavior problem."

Research Question 4: Changes in Self-Efficacy Across Treatment

Aggregate Results

Descriptive statistics across all 12 participants indicate that the average score on the emotional self-efficacy subscale was lower than the academic and social self-efficacy subscales at Time 1 (see Table 22). On average, children's self-efficacy scores all increased from Time 1 to Time 2. Both the total and the subscale scores increased from Time 1 to Time 2, with the highest increase in academic self-efficacy followed by emotional self-efficacy.

Table 22:

Self-Efficacy Scores (SEQ-C) Across Psychological Treatment

Self-Efficacy	Time 1[a]			Time 2[a]			Change Score
	M	*SD*	Range	*M*	*SD*	Range	*M*
Total Score (SEQ-C)	65.7	8.8	54-79	69.3	8.4	58-81	+3.3
Academic Self-Efficacy	23.8	5.5	14-33	25.4	4.7	18-35	+1.7
Emotional Self-Efficacy	18.7	3.5	15-25	20.1	5.0	15-28	+1.4
Social Self-Efficacy	23.8	3.3	20-30	24.8	4.5	14-31	+1

[a] $N = 12$

Individual Results

Eight of the 12 participants demonstrated increases in self-efficacy, based on the total score on the SEQ-C, from Time 1 to Time 2 (see Table 23). Three participants' scores decreased (Lily, Sarah, Carrie), and one participant's score remained the same (Nora). RCI scores were also calculated for each participant, and two participants had scores that significantly changed across treatment: Megan and Alison.

Table 23:

Total SEQ-C Scores for Each Participant

Participant	Time 1	Time 2	Change	RCI	Reliable Change?
Lily	66	64	-2	-0.48	N
Megan	**65**	**81**	**+16**	**3.87**	**Y**
Evie	79	81	+2	0.48	N
Max	56	58	+2	0.48	N
Sarah	76	74	-2	-0.48	N
Alison	**54**	**63**	**+9**	**2.18**	**Y**
Bea	66	71	+5	1.21	N
Carrie	70	63	-7	-1.69	N
Katie[a]	59	65	+6	1.45	N
Nora[a]	77	77	0	0	N
Jacob[a]	69	76	+7	1.69	N
Jane[a]	54	58	+4	0.97	N

Note: Bolded scores represent significant scores on the RCI at the $p < .05$ level

[a] Participants who did not complete Time 3 Phone Interviews

Integrated Results

The following integrated results are based on the phone interviews conducted with parent-child dyads at Time 3 and children's scores on the SEQ-C. Interview questions related to self-efficacy asked parents and children to describe the child's academic, social, and emotional self-efficacy, before and after treatment. First, general themes across the three types of self-efficacy are presented: 1) parent difficulty describing self-efficacy, 2) the connection between self-efficacy and treatment, and 3) the connection between self-efficacy and anxiety. Next, themes are presented in the context of the three self-efficacy domains: academic self-efficacy, emotional self-efficacy, social self-efficacy. Patterns were examined in the data to understand how parents and children described initial levels of self-efficacy and changes in the various self-efficacy domains across treatment. For each domain of self-efficacy, descriptive results are presented first, followed by themes.

Parent Difficulty Describing Self-Efficacy. When asked to describe their child's level of academic, emotional, and self-efficacy, many parents had difficulty articulating a response. Some parents expressed general difficulty in answering the question, while others noted that they were unsure of their child's self-efficacy. For example, when asked how her daughter viewed her own ability to successfully complete her schoolwork, Sarah's mother said, "Boy, that's a good question, and I'm not sure." Her mother elaborated on why it was difficult to answer, imagining what Sarah might think: "Do I complete it [schoolwork]? Yes, she would probably say, but do I complete it at a high level of performance? Probably no." When asked about Lily's ability to control her emotions, Lily's mother also had difficulty determining this: "I think that's hard. From my perception." A few other parents answered from their own perspective (e.g., the extent of their child's academic capabilities), without considering the child's view of their own abilities.

For example, when asked about Max's ability to control his emotions, Max's mother responded, "No, no, he couldn't at all," but did not elaborate on how Max may have perceived this ability.

Self-Efficacy and Treatment. Some participants explicitly discussed connections between changes in self-efficacy and treatment. Lily and Bea's mothers questioned the connection between treatment and improvements in academic self-efficacy. Lily's mother discussed Lily gaining more awareness of her strengths and weaknesses, including her academic skills, after treatment ("I think she was kind of coming to realization that she was struggling in some areas, but she didn't realize she was"). Lily's mother shared, "But I don't know if that's directly related to treatment or not, or just the change that she's going through." When discussing Bea's academic self-efficacy, Bea's mother said, "I don't think that [academic self-efficacy] was an issue before treatment. So…treatment doesn't seem relevant to that."

In contrast to these reports from Lily and Bea's parents, two adolescents (Sarah, Bea) specifically discussed changes in their emotional self-efficacy and how those changes did, in fact, appear to be related to treatment. When asked how difficult it was to control her emotions prior to treatment, Sarah shared:

> It was pretty hard because, in treatment, I was then given coping skills, things I could do to calm myself down as to before I didn't, know what I was supposed to do. With my first panic attack, I did not know what was going on, and what to do in that situation. But now I, have those coping skills to use. (Time 3 Phone Interview)

Sarah's description of her experience suggests that her emotional self-efficacy improved after she was taught coping skills during treatment to use during moments of distress. Bea also described improvements in her emotional self-efficacy, when asked what changes she noticed after treatment: "I just felt, I felt like I had more control I think in, my life and like, I don't know,

figuring out that I could like, have some say in what I was thinking." Bea's response suggests that treatment helped her feel more in control with her thoughts, which affected both her emotion regulation skills and emotional self-efficacy.

Self-Efficacy and Anxiety. Several parent/child dyads drew connections between the child's level of self-efficacy and his or her anxiety symptoms. When asked about Evie's social self-efficacy prior to treatment, her mother shared, "I think she gets she gets along with most everyone. If anything, I think it's her own like anxiety. Or anxiousness that gets in the way. Maybe she holds back a little bit." Evie's mother's response suggests that Evie's social anxiety symptoms affected her social self-efficacy. Her mother's response also suggests that any difficulty that Evie had in relating to others, or interacting with others, was more closely related to her anxiety in those situations rather than a lack of social skills. Evie also described the relation between her anxiety and her emotional self-efficacy. Evie discussed being able to more easily control her emotions after treatment, "…because I haven't worried a lot, so when I do, they're just little worries." Evie's report suggests that a decrease in her anxiety symptoms, specifically the frequency and severity of her worries, was possibly related to improvements in her emotional self-efficacy.

Some participants' discussions of their self-efficacy appeared to overlap with their anxiety symptoms. In other words, some participants discussed social anxiety symptoms when asked about social self-efficacy, and school-related fears when asked to describe academic self-efficacy. For example, Bea described a "high level of nervousness" during social interactions with peers, prior to treatment. When asked about any changes in her ability to get along with others, Bea discussed a change in her anxiety symptoms: "I think like since seeing [therapist name] it's like, I don't know, medium low to low, nothing. Like to close to nothing, depending."

Alison's parents also described social anxiety symptoms when asked about Alison's social self-efficacy. Her mother noted, "She was really afraid to talk to anybody." Alison's father added, "Any adult…or students that she didn't know. She would sit back and wait for them to approach her." Alison's parent's responses suggest that they perceived Alison to have low social self-efficacy at Time 1, given some of the social anxiety symptoms she was experiencing.

Sarah and Lily both discussed how their school-related anxiety affected their academic self-efficacy. When asked how difficult it was for her to succeed in school, Sarah reported:

> I think it was quite hard to because like, the thoughts that I would have, like, 'Oh, no, I can't do this. I'm gonna get bad grades,' that would, I would bring myself down in those situations. So I think it'd be pretty hard. (Time 3, Phone Interview)

Sarah's response indicates how her worries about her grades and ability to succeed affected her academic self-efficacy. Lily also described the connection between her school-related anxiety and academic self-efficacy. Lily reported: "Well I did, I did good, but it was a little harder because I was worrying about it half of the time." Based on Lily's report, she had some level of academic self-efficacy and was aware of her success in school, but also acknowledged how her anxiety symptoms made school more difficult for her. The readiness of participants to discuss anxiety symptoms when asked about their ability to succeed in various areas demonstrates the potential association between anxiety and self-efficacy. Though limited, this association has been supported by previous research (Muris, 2002; Raknes et al., 2017). For example, Raknes and colleagues (2017) studied anxiety and self-efficacy across a large community sample of adolescents, finding that self-efficacy independently and substantially contributed to anxiety (Raknes et al., 2017).

Academic Self-Efficacy. The majority of parents in the subsample (Bea, Carrie, Evie, Lily, Megan) described their child as having high or moderate academic self-efficacy before treatment. See Table 24 for a summary of children's academic self-efficacy at Time 1 and Time 2, based on academic self-efficacy scores on the SEQ-C and parent and child perceptions of academic self-efficacy via phone interviews.

Table 24:

Academic Self-Efficacy: Integrated Results Across Treatment

	Parent				Child	
Child	Time 1	Time 2	SEQ-C	SEQ-C	Time 1	Time 2
Lily	High self-efficacy	No change	25	27	Moderate self-efficacy	**Minimal improvement**
Megan	Moderate self-efficacy	No change	26	28	High self-efficacy	No change
Evie	High self-efficacy	**Minimal improvement**	30	29	High self-efficacy	No change
Max	Low self-efficacy	**Substantial improvement**	18	18	Unsure	No change
Sarah	Low self-efficacy	**Minimal improvement**	26	23	Low self-efficacy	**Moderate improvement**
Alison	Low self-efficacy	**Substantial improvement**	14	22*	Low self-efficacy	**Moderate improvement**
Bea	High self-efficacy	No change	28	29	High self-efficacy	No change
Carrie	High self-efficacy	No change	33	35	[No child interview]	[No child interview]
Katie[a]	--	--	21	23	--	--
Nora[a]	--	--	25	28	--	--
Jacob[a]	--	--	21	23	--	--

Table 24 (cont'd):

Jane[a]	--	--	18	20	--	--

[a]Participants who did not complete Time 3 phone interviews

A few parents (Alison, Sarah, Max) and children (Alison, Sarah) described children as having low academic self-efficacy, prior to treatment. For example, Max's mother shared, "He didn't think he could do it [schoolwork] at all." Max's mother elaborated that Max "would make me sit with him and basically do everything for him, because he didn't think he could do it." Max's mother's account demonstrates how she possibly interpreted Max's help-seeking behavior as lack of confidence in his ability to do the work himself. Alison's parents similarly described Alison as having low academic self-efficacy, which affected her willingness to attempt schoolwork. Alison's father shared, "I think she wasn't sure how she was going to do, so she just wouldn't do it." Alison reported that school, and specifically attending to her work, was difficult for her: "I think it was seventh grade, that my grandpa died on my mom's side and I had a lot of trouble, diverting my attention back to school." Alison's response displays how she noticed a shift in her ability to succeed in school after she was faced with a negative life event.

Several participants reported improvements in academic self-efficacy across treatment. Of note, the majority of parent/child dyads who reported noticeable changes in academic self-efficacy were those participants who indicated initially lower levels of academic self-efficacy (Alison, Sarah, Max). Alison, Sarah, and Max's parents, who all initially described their children as having low academic self-efficacy, indicated moderate to substantial improvements across treatment. Sarah and her mother described minimal improvements in her academic self-efficacy. Sarah's mother spoke about Sarah's self-efficacy regarding school assignments and projects that she was working on. Her mother shared, "I would say that generally there were probably more,

more times after therapy where she would have felt proud of some of her work that she had done." Sarah similarly reported improvements: "I was always kind of able to talk myself out of it [negative thoughts]. And give myself a pep talk, before taking tests and everything. So there are definite changes in that." Overall, parents and children who described the child's academic self-efficacy as moderate or low before treatment reported improvements in academic self-efficacy across treatment, to varying degrees.

Quantitative data from the SEQ-C often aligned with children's descriptions of their academic self-efficacy. For instance, the majority of children did not report changes in their academic self-efficacy; similarly, their scores on the academic self-efficacy subscale of the SEQ-C either remained stable or only slightly changed from Time 1 to Time 2. Alison reported substantial improvements in her academic self-efficacy, and her scores on the academic self-efficacy subscale significantly increased from Time 1 to Time 2. In contrast, although both Sarah and her mother described improvements in her academic self-efficacy, her score on the SEQ-C academic self-efficacy subscale slightly decreased across treatment.

Independence of Academic Self-Efficacy from Anxiety. For some participants, one theme that emerged was that academic self-efficacy was not related to anxiety. For parents who described their child as having high academic self-efficacy, they often referred to their child as being "good at school," a "straight A student", or "confident" with their academic skills. For example, Evie's mother said, "She knows she's good at school." Carrie's mother noted, "I think she didn't think that there would be any issues. She, she's, she's an all A student." Lily, Megan, and Bea's mothers described their children as being confident in their ability to complete their work successfully. Megan's mother shared:

> Yeah, I, I feel like she's always been fairly confident. That's one aspect [academics] that hasn't been affected as greatly by it. So I think she's always done pretty well in that respect. (Time 3, Phone Interview)

Megan's mother's report demonstrates how Megan's anxiety did not appear to negatively affect her academic self-efficacy. Her mother alluded to how other aspects of Megan's functioning were affected by her anxiety, by noting that academics were "one aspect that hasn't been affected as greatly by it." Many children (Bea, Lily, Evie, Megan) expressed similar sentiments to their parents. When asked about her ability to succeed in school, Evie shared, "it was pretty easy," but added that math was harder for her: "…not super hard, but the only hard subject for me." When asked how hard it was to succeed in school before treatment, Bea said, "Ten, all the way. Good."

Increase in Motivation to Complete Work. A few participants who reported improvements in academic self-efficacy referenced an increase in the child's motivation to complete academic work. Alison's father shared that, after treatment, "She was actually motivated to get her work done, study for tests, and get good grades." While Alison's father did not directly discuss Alison's perceived ability to succeed in school, his response suggests that Alison's academic self-efficacy may have increased after treatment, given improvements in her academic behaviors. Consistent with her father's perception, Alison also noted improvements in her academic self-efficacy after treatment: "I felt, I kind of fell back into a groove and paid more attention." Max's mother also described specific improvements in Max's academic self-efficacy: "Yeah, he started attempting on his own and I wouldn't have to be sitting right at the table with him while he did his work. So that definitely changed, for the positive."

Emotional Self-Efficacy. All of the parents in the subsample expressed some level of concern with their child's emotional self-efficacy before treatment. The majority of parents (Alison, Sarah, Max, Evie, Megan) described their child as having low self-efficacy at Time 1. However, it is important to note that some parent responses reflected thoughts about the child's emotion regulation skills, rather than the child's perceptions about their emotional self-efficacy For example, when Max's mother was asked about Max's ability to control his emotions, Max's mother responded, "No, no, he couldn't at all," but did not discuss Max's perceptions of his ability to regulate his emotions. The majority of children (Alison, Lily, Sarah, Bea, Evie) also reported that they experienced low emotional self-efficacy before treatment. See Table 25 for a summary of children's emotional self-efficacy at Time 1 and Time 2, based on emotional self-efficacy scores on the SEQ-C and parent and child perceptions of emotional self-efficacy via phone interviews.

Table 25:

Emotional Self-Efficacy: Integrated Results Across Treatment

	Parent				Child	
Child	Time 1	Time 2	SEQ-C	SEQ-C	Time 1	Time 2
Lily	Moderate self-efficacy	**Minimal improvement**	16	15	Low self-efficacy	**Moderate improvement**
Megan	Low self-efficacy	**Substantial improvement**	16	28*	Moderate self-efficacy	**Moderate improvement**
Evie	Low self-efficacy	**Substantial improvement**	19	21	Low self-efficacy	**Moderate improvement**
Max	Low self-efficacy	**Substantial improvement**	18	26*	Moderate self-efficacy	No change
Sarah	Low self-efficacy	**Moderate improvement**	22	22	Low self-efficacy	**Moderate improvement**

Table 25 (cont'd):

Alison	Low self-efficacy	**Minimal improvement**	18	17	Low self-efficacy	**Substantial improvement**
Bea	Moderate self-efficacy	**Moderate improvement**	16	15	Low self-efficacy	**Moderate improvement**
Carrie	Moderate self-efficacy	**Moderate improvement**	17	16	[No child interview]	[No child interview]
Katie[a]	--	**--**	17	19	--	**--**
Nora[a]	--	**--**	25	19	--	**--**
Jacob[a]	--	**--**	25	28	--	**--**
Jane[a]	--	**--**	15	15	--	**--**

[a]Participants who did not complete Time 3 phone interviews

The majority of parents (Sarah, Bea, Carrie, Max, Evie, Megan) and children (Alison, Lily, Sarah, Bea, Evie, Megan) reported moderate to substantial improvements in emotional self-efficacy after treatment. Parents occasionally described changes in the child's emotion regulation skills, as opposed to the child's perception of their skills. For example, Evie's mother described a decreased in the number of "hysterical" or "out of control" emotional moments that Evie experienced. A few participants (Lily and Alison's parents, Max) reported minimal or no improvements in emotional self-efficacy during the phone interviews. When asked about his emotional self-efficacy, before and after treatment, Max reported, "It didn't really change much." Lily's mother indicated that she did not perceive many changes in Lily's emotional self-efficacy, aside from a greater awareness of her emotions: "Now she's becoming more aware of it. So I don't necessarily think, just being more aware of her real feelings, I guess." Both of Alison's parents commented that they did not notice many changes in this area for Alison. When asked if

they noticed changes in Alison's emotional self-efficacy, her father said, "No, not really." Her mother added, "A little bit." However, her parents appeared to consider observable changes in Alison's emotion regulation skills, rather than changes in her perceptions. Alison's father elaborated, "She still, we hear often, you're not listening to me, why do I even bother and just throws her hands up and walks away." Alison's father's account suggests that he did not notice observable changes in Alison's emotion regulation skills.

Children's initial scores on the emotional self-efficacy subscale of the SEQ-C appeared to accurately reflect their descriptions of their own self-efficacy, prior to treatment. In other words, children's scores on this subscale were often lower than the academic and social self-efficacy subscales, which was reflected in how they described their self-efficacy during the phone interviews. However, regarding improvements in emotional self-efficacy, children's SEQ scores on the emotion regulation subscale typically did not align with children's descriptions of the changes in their abilities to control their emotions. Of the Time 3 subsample of participants, while six children described improvements in their emotional self-efficacy, only three children's scores on the SEQ-C subscale increased (Megan, Max, Evie), and only two of these changes were significant (Max, Megan). While Max's score on the emotional self-efficacy subscale on the SEQ-C improved significantly, he did not verbally describe any changes in his emotional self-efficacy during his phone interview, as noted above.

Lack of Confidence in Regulating Emotions. When discussing concerns with emotional self-efficacy, parent/child dyads often described children's lack of confidence with the amount of control they had regulating their emotions. For example, Megan's mother reported, "I don't think she had a lot of confidence in being able to control her emotions before treatment." Similarly, Sarah's mother shared:

> From her perspective, I think she probably felt that she did not control her emotions well. I'm just guessing on that, and that might be that for her, it might be that feeling of kind of bottling up a lot of it and not really processing some of those, those bigger feelings again, but from our perspective, it definitely seemed like she was, you know, holding everything back and trying to keep everything steady. From her perspective. I think that she probably would say that she was not controlling her emotions, because it might have felt like that to her. That's my guess. (Time 3, Phone Interview)

Sarah's mother's report suggests that, based on her perspective, Sarah had low emotional self-efficacy prior to treatment and avoided acknowledging her emotions.

Limited Coping Skills. An additional theme that arose when discussing children's low emotional self-efficacy was children's lack of coping skills prior to treatment, which likely affected their emotional self-efficacy. Alison's parents described her as having limited coping skills before treatment: "She would just say forget it and walk away." When asked how difficult it was to control his or her emotions before treatment, children often responded with it was "hard," "difficult," or "challenging." Evie simply stated, "It was pretty hard." Megan and Sarah both described having low emotional self-efficacy due to limited coping skills. Megan reported:

> Yeah, it was, it was kind of difficult. I didn't really have, I had breathing, like deep breathing was like my really only tool I had to, cope with being anxious or scared. So I didn't really know what to do after I had done that. So I felt like I didn't really have control, after that. (Time 3, Phone Interview)

Megan's response indicates that she previously lacked confidence in her ability to handle her emotions because she didn't know what to do and was unaware of effective coping skills she

could use. Bea also provided a detailed account when asked if it was difficult to control her emotions:

> Yes. Well, I also just think I had no idea what was going on. Before the treatment and, even before the anxiety became kind of, incapacitating for the period of time that it was. I was leading a relatively emotion, controlled life. Just, not pushing sadness or anger away and just being like, well, I'm just going to feel it, I'm sad and angry, I'm just gonna, be sad and angry. And not making a conscious decision after days and weeks and months of that garbage to control that and do something about it…I was a disaster at controlling my emotions. (Time 3, Phone Interview)

Bea's response shows that, before treatment, she had low self-efficacy and minimal coping skills. Her report also displays her ability to reflect on how she was previously experiencing and coping with negative emotions.

Increase in Coping Skills After Treatment. Participants described improvements in emotional self-efficacy due to an increase in coping skills after treatment. For example, Bea's mother stated, "I think she's, you know, bolstered her toolbox, I guess. And I, I think she knows that. That she has more, skills for coping." Bea shared her experience:

> I felt like I had more control I think in, my life and, I don't know, figuring out that I could have some say in what I was thinking, I think was big for me. Or understanding why I was feeling things or thinking things that I was. It was good, I mean, I feel better at controlling my emotions now. (Time 3, Phone Interview)

Bea's response indicates a greater awareness of her thoughts and emotional experiences, as well as an increased sense of control and self-efficacy over her emotions. Megan and Sarah,

who both described a lack of coping skills before treatment, reported an increase in coping skills and improvements in emotional self-efficacy after treatment. Megan shared:

> Yeah I have, more tools…that's something that helped me once I do my deep breathing I'm not just like, 'I don't know what to do.' I have other tools that, that I can use that will help me. (Time 3, Phone Interview)

Megan's response suggests that she now feels more confident with handling negative emotions, because she knows she has tools that she can use to help herself in those moments of distress.

Social Self-Efficacy. The majority of parent/child dyads (Bea, Max, Lily, Evie, Carrie) reported that the child appeared to have moderate or high social self-efficacy before treatment. Megan's mother was unsure of Megan's social self-efficacy: "You know, I'm not really sure." Parents and children who reported moderate or high social self-efficacy typically described the child as being able to "get along pretty well" with others, viewing social relationships positively, or possessing appropriate social skills. For example, Bea's mother shared, "I think that her social skills are strong. I don't think she's ever had trouble making friends or relating to people." Lily's mother stated, "…she was very positive about her friendship with friends." Evie's mother commented on the fact that Evie appears to get along well with a variety of people: "I think she gets along with most everyone." See Table 26 for a summary of children's social self-efficacy at Time 1 and Time 2, based on social self-efficacy scores on the SEQ-C and parent and child perceptions of social self-efficacy via phone interviews.

Table 26:

Social Self-Efficacy: Integrated Results Across Treatment

	Parent			Child		
Child	Time 1	Time 2	SEQ-C	SEQ-C	Time 1	Time 2

Table 26 (cont'd):

Lily	Moderate self-efficacy	**Minimal improvement**	25	22	High self-efficacy	No change
Megan	Parent unsure	Parent unsure	23	25	Moderate self-efficacy	**Moderate improvement**
Evie	Moderate self-efficacy	**Moderate improvement**	30	31	High self-efficacy	No change
Max	Moderate self-efficacy	No change	20	14*	Low self-efficacy	No change
Sarah	Low self-efficacy	**Substantial improvement**	28	29	Moderate self-efficacy	**Moderate improvement**
Alison	Low self-efficacy	**Moderate improvement**	22	24	Low self-efficacy	**Substantial improvement**
Bea	High self-efficacy	No change	25	27	High self-efficacy	**Minimal improvement**
Carrie	Moderate self-efficacy	**Moderate improvement**	20	24*	[No child interview]	[No child interview]
Katie[a]	--	**--**	21	23	--	--
Nora[a]	--	**--**	27	30	--	--
Jacob[a]	--	**--**	23	25	--	--
Jane[a]	--	**--**	21	23	--	--

[a]Participants who did not complete Time 3 phone interviews

The majority of parents (Lily, Evie, Carrie, Alison, Sarah) and children (Megan, Bea, Alison, Sarah) indicated improvements in social self-efficacy across treatment. Megan described an increased confidence in her ability to handle challenging interactions with one peer, in particular:

> There was one girl who was a bully to me and, she would be really mean and I would just, I wouldn't really take that well, I would just kind of cry sometimes because she was really mean and it would really upset me, but yeah. [After treatment] I felt like I had more of an understanding of how to deal with it at, when that happened when she would be mean to me and, ignoring her and problem solving, when those things would happen. (Time 3, Phone Interview)

Megan's response suggests that an increase in Megan's coping skills, that she learned during treatment, possibly corresponded with an increase in her social self-efficacy. While the majority of parent/child dyads reported improvements in social self-efficacy after treatment, neither Max nor his mother noted improvements in this area. Max's mother initially reported low social self-efficacy regarding peers and teachers, but reported no changes after treatment: "School, and teachers and kids at school. I really don't think he cares if he gets along with them or not." Max similarly reported no changes in his social self-efficacy.

Children's scores on the social self-efficacy subscale of the SEQ-C typically aligned with the qualitative results. For children who reported no change in their social self-efficacy, their scores similarly remained stable, or changed slightly, across treatment. Children who indicated improvements also had parents who reported slight changes in their social self-efficacy scores on the SEQ-C. Carrie was the only participant to have a significant increase in her social self-efficacy scores from Time 1 to Time 2. While Max described no changes in his social self-efficacy, his mother's score on the self-efficacy subscale on the SEQ-C decreased significantly from Time 1 to Time 2.

Social Self-Efficacy and Relationship Type. One theme that emerged from participant discussions regarding social self-efficacy was how children's social self-efficacy appeared to be

related to the type of social relationship. For example, four parents (Evie, Lily, Sarah, Carrie) reported that children appeared to have confidence in their ability to get along well with peers and teachers, but had more difficulty getting along with family members. Evie's mother described the conflictual relationship between Evie and her brother: "She does have an older brother who before, they had more, they would kind of get. He's not always the nicest to her. And so she would get really upset." Lily's mother similarly described concerns with Lily's family relationships: "…she was very positive about her friendship with friends. Family, not so much." Sarah's mother described relationship concerns between Sarah and her parents: "But also with family, I think there was, there was conflict here too, with in terms of her being forthcoming about and being truthful about things." In contrast, Max's mother reported the opposite (i.e., he got along well with his family members, but not peers or teachers). These descriptions from parents often were focused on the child's observable interactions or quality of relationships with others, as opposed to the child's perceived ability to manage social situations. Of note, none of these children mentioned difficulty in family relationships when asked to describe their ability to get along with peers, teachers, and family members.

Conflictual Relationships with Others. For parents and children who reported low social self-efficacy before treatment (Alison, Sarah, Max), participants often described the child having conflictual relationships with others. When asked to describe Alison's social self-efficacy, Alison's father described Alison as having strained relationships with others: "…often in conflict. She had a couple close friends and the rest of the people, she would complain about them regularly. That included teachers as well as students." Alison described getting along with her teachers, but having difficulty interacting with her peers: "…if they were someone that was the same age or younger, I had a lot of trouble getting along with them." Alison commented on

her own behavior as affecting her interactions with peers: "…because I became very stand-offish and hard to get along with." Sarah's mother also perceived that Sarah had low social self-efficacy. When asked how she viewed how well she could get along with others, Sarah's mother reported: "I think that she would have said that it was a struggle before [treatment]." In contrast to her mother's report, Sarah described some past difficulties in peer relationships, but overall described positive social relationships before treatment:

> I got along with my teachers, I've loved my teachers, like 6th, 7th, and 8th grade. They're, I loved every single one of them. I never had a problem with them…but in terms of, you know, when everyone in middle school starts choosing their cliques and everything and who they hang out with, and everything, that was a little bit of a problem starting in 6th grade. But right now in 8th grade, I am very happy where I am with my friends and the groups that I associate myself with. So I do not find that a problem right now. (Time 3, Phone Interview)

Max described himself as having low social self-efficacy, prior to treatment: "I didn't get along with kids that well. Cause they'd always bully me and I'd end up, hurting them. And then they never talked to me." Max's report suggests that he experienced peer rejection and in turn, lashed out to his peers.

Observable Improvements in Child's Social Relationships. For parents who reported improvements in children's social self-efficacy, one theme that emerged was observable changes in how the child interacted with others after treatment. For example, Carrie's mother noted that Carrie's relationship with her family improved after treatment: "I think that before she had a difficult time, before treatment, getting along with [sister's name] obviously, and then myself

and my husband, but since treatment now it's much better." Alison's parents described a noticeable shift in Alison's interactions with others. Alison's father shared:

> I've watched her at the forensics competitions that she would go to. And she would talk to other students even from other schools. I mean, I actually watched her reach out to some of them and tell them what they did, or how they did well, and you know, what she liked about the performances and things like that. She never would have done that in the past. (Time 3, Phone Interview)

Alison's father's account shows the connection between a change in Alison's social anxiety symptoms and her interactions with others. When Alison was asked about any changes in her ability to get along with others, she described a change in her own behavior: "Yeah, I stopped being quite so standoffish."

Discussion

Participants in this study provided information about children's academic, emotional, and social self-efficacy, and changes that occurred across treatment. The majority of parent/child dyads did not express concerns with children's academic or social self-efficacy before treatment. In contrast, the majority of parent/child dyads reported that children had low emotional self-efficacy prior to treatment. In fact, none of the participants in the Time 3 subsample initially described children's emotional self-efficacy as high. Across these three domains of self-efficacy, parent/child dyads who initially reported concerns with self-efficacy typically noted improvements across treatment. In contrast, those who had high self-efficacy in a given domain typically observed no improvement, or minimal improvement, after treatment.

Parents had difficulty identifying and describing children's levels of self-efficacy. Instead, parents often described children's behaviors rather than children's perceived ability of

their competence across the various domains (academic, social, and emotional self-efficacy). Given that self-efficacy is an internal experience, parents would not be expected to accurately describe or report on their child's level of self-efficacy. However, this is an important distinction to consider because self-efficacy has been defined as the beliefs about one's abilities to achieve certain outcomes, and may not reflect reality (Muris, 2002). Previous research has typically assessed self-efficacy from the individual's perspective, often via self-report measures (Muris, 2002). It is necessary to consider this distinction when interpreting the findings from the parent interviews. Parent perceptions in the current study are not an accurate representation of children's true self-efficacy beliefs, but rather more closely reflect children's academic, social, and emotional functioning. However, self-efficacy and functioning are related, as research has supported the relation between individual's self-efficacy beliefs and actual behaviors (Bandura, 2012). When describing children's academic self-efficacy, parents in this study often discussed children's attitudes towards school, motivation to complete work, and grades. Similarly, parents described emotion regulation skills when discussing children's emotional self-efficacy, and interactions with others and social skills when discussing children's social self-efficacy. Although not an accurate representation of children's true self-efficacy beliefs, parent perceptions of children's self-efficacy likely are based on their observations of children's behaviors and the thoughts and feelings that parents have heard directly from their children.

Many parents and children discussed self-efficacy in the context of treatment and anxiety symptoms. Participants discussed social anxiety symptoms and school-related fears when describing children's social and academic self-efficacy, respectively. This suggests that the type of anxiety symptoms that participants experienced were differentially related to their social, academic, and emotional self-efficacy, meaning that domain-specific self-efficacy may be

associated with different anxiety disorders or symptomology. Previous research has drawn similar conclusions. Several studies have found stronger negative associations between social self-efficacy and social anxiety, in comparison to generalized anxiety or other types of anxiety (Matsuo & Arai, 1998; Muris, 2002). Muris (2002) found that social self-efficacy was moderately, negatively correlated with all types of anxiety disorders that were assessed by the SCARED, but social self-efficacy was more highly correlated with social phobia, compared to other types of anxiety. Findings from Muris (2002) indicate that anxiety symptoms that are closely related to a self-efficacy domain (i.e., social anxiety and social self-efficacy), have stronger associations. Similarly, research has consistently established a relation between high levels of test anxiety and low levels of academic self-efficacy (Bandalos et al., 1995; Yerdelen et al., 2016). Findings from this study are consistent with previous research that suggests that the type of anxiety symptoms that youth experience may play a role in their self-efficacy beliefs.

Previous theory and research suggest that anxiety may contribute to the maintenance of low self-efficacy beliefs, which could explain low self-efficacy among youth with anxiety or OCD. ACT is one theoretical perspective that can help explain the relation between anxiety and self-efficacy. According to ACT, anxious individuals focus their attention on threatening and emotionally-charged stimuli, more so than non-threatening cues. Anxious individuals may be more likely to focus their attention on times when they faced challenging or novel situations and did not succeed. This attention towards failure may, in turn, be related to lower self-efficacy. Bandura's social cognitive theory can also help explain the association between anxiety and self-efficacy. To develop feelings of competence and self-efficacy beliefs, children must test their capabilities by managing challenging situations they encounter on a daily basis (Bandura, 1994). Successful experiences with managing these situations are critical to children's development of

self-efficacy (Bandura, 1994). For children with anxiety disorders, avoidance is one of the primary symptoms that children may experience. When individuals accommodate youth's avoidance, this removes opportunities for children to practice coping with negative emotions, problems-solve, and navigate challenging tasks (Hannesdottir & Ollendick, 2007). It is possible that the maintenance of these avoidance behaviors hinders youth from developing self-efficacy. This appears to particularly be the case with emotional self-efficacy. For children in this study, all children initially did not perceive themselves as capable to manage their own emotions.

In the present study, several participants explicitly described this association between anxiety and low self-efficacy. For example, Alison's parents described her low academic self-efficacy and avoidance of academic tasks. When asked about Alison's academic self-efficacy, prior to treatment, Alison's father stated, "I think she wasn't sure how she was going to do, so she just wouldn't do it." After treatment, Alison's parents described a noticeable shift in her academic motivation, focus, and willingness to complete tasks. Reductions in Alison's anxiety symptoms were possibly related to an increase in her academic self-efficacy, and as a result, her academic behaviors. Bandura (1994) posited that students' academic self-efficacy is related to academic success: "Students' belief in their capabilities to master academic activities affects their aspirations, their level of interest in academic activities, and their academic accomplishments (p. 12)." Researchers have evaluated the relation between academic self-efficacy and academic behaviors (Haycock et al., 1998). For example, Haycock et al. (1998) examined adolescents' self-efficacy, anxiety, and procrastination as it related to a specific academic project. Findings showed that self-efficacy was negatively related to both anxiety and procrastination (Haycock et al., 1998). Findings from this study suggest that anxiety may interfere with children's self-efficacy.

There was variability in the subsample in regards to initial levels of academic self-efficacy, with the majority of parent/child dyads describing children's academic self-efficacy as moderate or high. These findings are somewhat contrary to previous studies, which have typically shown a negative association between anxiety and academic self-efficacy. For example, among a sample of adolescents, Muris (2002) found that academic self-efficacy was significantly, negatively correlated with school phobia, panic disorder symptoms, generalized anxiety, and social phobia, with the strongest correlation between academic self-efficacy and school phobia (r = -0.34). Of note, Muris (2002) assessed a community sample of adolescents. The majority of research in this area has specifically examined the relations between test anxiety and academic self-efficacy, rather than trait anxiety. Findings from the current study suggest that, across children with anxiety disorders and OCD, there is variability in children's academic self-efficacy.

While research examining anxiety and academic self-efficacy is limited, studies have explored the associations between anxiety and other academic outcomes, such as grades and test scores. The relation between anxiety and academic outcomes appears to depend on the severity of anxiety. Mazzone and colleagues (2007) examined anxiety symptoms and school performance among students in elementary, middle, and high school (N = 478). Mazzone et al. (2007) found that for students who had anxiety scores in the clinically significant range (on a self-report measure of anxiety, the MASC), these students were significantly more likely to have poorer academic grades. However, there was no association between total scores on the MASC and school performance. Mazzone and colleagues (2007) concluded that given this discrepancy, anxiety may only interfere with school functioning when an "abnormal anxiety level is reached" (p. 4). In the current study, all participants were considered to initially have clinical levels of

anxiety, given their clinical diagnoses of anxiety and scores on the SCARED. It is notable that half of this subsample of participants did not report concerns with children's academic self-efficacy. It is possible that students with clinical levels of anxiety are able to maintain good academic grades, but do not feel efficacious in their ability to succeed in school. Lily's description of her experience at school reflects this idea: "Well, I did, I did good, but it was a little harder because I was worrying about it half of the time." Lily's response is one example which suggests that, for some children with anxiety disorders or OCD, anxiety may interfere with students' perceptions of their academic capabilities but does not necessarily affect the quality of the child's academic work. For others, receiving high grades may contribute to feelings of high academic self-efficacy, in spite of anxiety. Mastery experiences are considered one of the primary mechanisms by which self-efficacy is established (Bandura, 1994). A pattern of receiving high grades on tests and assignments may instill feelings of high academic self-efficacy among youth, even those with clinical levels of anxiety or OCD.

Parents and children who reported some concerns with academic self-efficacy noticed an increase in children's academic self-efficacy after treatment. In contrast, those who initially indicated that the child had high academic self-efficacy also expressed minimal to no improvements in this area. Of note, all three children (Lily, Alison, Sarah) who reported low or moderate academic self-efficacy at Time 1 indicated improvements in their academic self-efficacy at Time 2. Furthermore, parent and children perceptions of academic self-efficacy were often in alignment. For example, Sarah's mother hypothesized that Sarah felt more pride in the schoolwork that she was completing after treatment, in comparison to her schoolwork prior to treatment. Sarah shared that after treatment, she was able to talk herself out of negative thoughts that she experienced about school and her academic performance. Alison and Max's parents also

described improvements in their children's academic behaviors, such as an increase in motivation, time spent studying, attempting homework independently, and increase in grades. These data suggest that in order for improvements in academic self-efficacy to occur, there must be some level of pre-existing concern with the child's level of academic self-efficacy.

There has been limited research examining the effects of CBT for anxiety or OCD on youth's self-efficacy, and research exploring treatment effects on academic self-efficacy is particularly limited in number. A recent study by Lewis et al. (2020) called for additional research to understand the nuanced relationship between CBT, anxiety, and changes in self-efficacy. Maric and colleagues (2013) evaluated whether self-efficacy, assessed by the Self-Efficacy Questionnaire for School Situations, mediated treatment outcomes of CBT for school refusal. Findings showed that even small changes in self-efficacy mediated treatment outcomes (Maric et al., 2013). Of note, this study did not specifically assess academic self-efficacy, and the sample size was small ($N = 19$). Findings from the current study, although not causal, suggest a possible association between treatment for anxiety or OCD and improvement in academic self-efficacy.

Among the three self-efficacy domains, parents and children often reported more concerns with children's emotional self-efficacy, compared to academic or social self-efficacy. The majority of parents (Alison, Sarah, Max, Evie, Megan) and children (Alison, Lily, Sarah, Bea, Evie) reported that the child experienced low emotional self-efficacy before treatment. This finding is expected, given that negative emotionality is a cognitive symptom of anxiety disorders (Huberty, 2012). Thus, anxiety is more proximally related to emotional self-efficacy than academic or social self-efficacy. This finding is also consistent with prior research, which has often found that trait anxiety is more highly correlated with emotional self-efficacy, in

comparison to other domains (Landon et al., 2007). Specifically, studies have found higher correlations between emotional self-efficacy and generalized anxiety, compared to social or academic self-efficacy (Muris, 2002). With the subsample of participants who completed Time 3 data in this study, seven of the eight participants had primary diagnoses of GAD. The type of anxiety disorder experienced by youth in this study could also help explain the greater reported concerns with children's emotional self-efficacy, as opposed to social or academic self-efficacy.

Concerns with emotional self-efficacy were also reflected in children's scores on the SEQ-C. On average, youth had the lowest scores on the emotional self-efficacy subscale (M = 18.7) at Time 1, compared to the social (M = 23.8) and academic (M = 23.8) subscales. Compared to normative samples of youth in prior research, participants in the current study had lower scores on the emotional self-efficacy subscale, and comparable scores in the social and academic self-efficacy domains. For example, Suldo and Shaffer (2007) administered the SEQ-C to a large sample (N = 697) of middle and high school students in a rural setting. In this study, average scores were similar among the three domains of self-efficacy: academic self-efficacy (M = 23.65), emotional self-efficacy (M = 24.84), and social self-efficacy (M = 23.51). In fact, youth's highest average score was on the emotional self-efficacy subscale. The comparison of SEQ-C scores in the present study to Suldo and Shaffer's (2007) study with a non-clinical sample of participants provides some context for participants' scores, though direct comparisons cannot be made.

Results from this study suggest that youth with anxiety disorders and OCD may experience low self-efficacy, and specifically low emotional self-efficacy. Research comparing clinical and non-clinical samples has drawn similar conclusions (Lewis et al., 2020; Suveg & Zeman, 2004). For example, Suveg and Zeman (2004) compared children with anxiety disorders

and peers without anxiety disorders. Suveg and Zeman (2004) found that children with anxiety disorders perceived themselves as significantly less efficacious in coping with negative emotions compared to children without anxiety disorders. A recent study by Lewis and colleagues (2020) examined anxiety, emotional self-efficacy, and social self-efficacy among youth with anxiety disorders and healthy volunteers. Findings showed that youth with anxiety disorders had significantly lower scores on the total score of the SEQ-C, emotional self-efficacy subscale, and social self-efficacy subscale compared to their peers without anxiety disorders. These studies provide support for the inverse relationship between anxiety and emotional self-efficacy that was found in the present study.

Notably, the majority of parents (Sarah, Bea, Carrie, Max, Evie, Megan) and children (Alison, Lily, Sarah, Bea, Evie, Megan) reported moderate to substantial improvements in emotional self-efficacy after treatment. These participants were primarily those who were described as having low or moderate emotional self-efficacy before treatment. These findings suggest that children's emotional self-efficacy may change during the course of treatment. Children described improvements in their confidence with regulating their emotions, feeling more in control of their emotions, and utilizing effective coping skills. As mentioned previously, some research has examined the effects of CBT treatment for anxiety on self-efficacy among youth, although many of these studies have not specifically examined emotional self-efficacy (Gaudiano & Herbert, 2007; Kendall et al., 2016; Maric et al., 2013). For example, Kendall and colleagues (2016) used data from the Child/Adolescent Anxiety Multimodal Treatment Study (CAMS) to assess mechanisms of change during CBT for anxiety. Kendall et al. (2016) included a construct similar to emotional self-efficacy, coping efficacy, as assessed by the Coping Questionnaire. Findings showed that improvements in coping efficacy were an important

mechanism of change in children's anxiety symptom reduction. While limited, treatment research suggests that CBT may be associated with improvements in self-efficacy, as found in the current study.

The majority of parents and children did not report substantial concerns with children's social self-efficacy. Two children in the subsample described themselves as having low self-efficacy (Max, Alison), and two parents (Alison, Sarah) described their children as having low self-efficacy. Previous research studying anxiety and social self-efficacy has typically explored the relation between social anxiety and social self-efficacy, finding that these constructs are negatively correlated (Matsuo & Arai, 1998; Rudy et al., 2012; Smári et at., 2001). Muris (2002) found that social self-efficacy was moderately, negatively correlated with all types of anxiety disorders assessed by the SCARED, but social self-efficacy was most highly correlated with social phobia (r = -0.51), compared to other types of anxiety. Previous research has supported the relation between social self-efficacy and social anxiety but has rarely examined the relation between social self-efficacy and generalized anxiety. As noted earlier, the majority of participants in this study had primary diagnoses of GAD. In fact, only one participant in the study (Jacob), who did not complete Time 3 data, had a diagnosis of Social Anxiety Disorder. While none of the participants in this subsample had diagnoses of Social Anxiety Disorder, many of these participants described social anxiety symptoms. Moreover, several parents and children described a connection between children's social anxiety symptoms and their social self-efficacy. Findings from this study indicate that anxiety may affect children's feelings of social self-efficacy, even if social anxiety is not their primary diagnosis. This suggests the importance of a more nuanced approach to studying children and adolescents with anxiety disorders and OCD (e.g., considering children's symptoms and individual factors beyond mental health diagnosis). A

qualitative approach to studying this population can provide additional insight that is lacking in the current literature, which has traditionally focused on treatment outcomes via quantitative measures.

Parents (Lily, Evie, Carrie, Alison, Sarah) and children (Bea, Megan, Alison, Sarah) who reported some concerns with social self-efficacy reported improvements in social self-efficacy after treatment. Of note, more parents than children reported improvements. This suggests that while the majority of children may have experienced improvements in their social relationships after treatment, as noted by parents, some children did not perceive noticeable improvements in their social self-efficacy. This is in contrast to emotional self-efficacy, where almost all children noted moderate or substantial improvements in their self-efficacy after treatment. Consistent with the data on academic self-efficacy, these data suggest that in order for improvements in social self-efficacy to occur, there must be some initial concern with the child's social self-efficacy. Megan, Alison, Bea, and Sarah did perceive improvements in their social self-efficacy, although Bea detected only minimal improvements. Megan's description of changes in her social self-efficacy suggest that broader coping skills learned during treatment may generalize to social situations. For example, Megan described feeling better able to problem-solve a negative situation with a peer after treatment. A few studies have concluded that CBT leads to changes in youth's social self-efficacy. Gaudiano and Herbert (2007) examined social anxiety and social self-efficacy among adolescents who received 12 sessions of CBT. Results showed that improvements in social self-efficacy during treatment were related to a decrease in social anxiety symptoms (Gaudiano & Herbert, 2007). Findings from Gaudiano and Herbert (2007) not only connected improvements in social self-efficacy to treatment, but also specifically to reductions in social anxiety symptoms. Results from this study suggest that youth may experience

improvements in social self-efficacy after CBT, but these changes do not appear to be as consistent or robust as improvements in emotional self-efficacy.

Research Question 5: Changes in School Engagement Across Treatment

Aggregate Results

The CAIS-P and COIS-R measure the effect of anxiety (CAIS-P) or OCD (COIS-R) on school engagement, where higher scores indicate a greater negative influence of symptoms on engagement. For participants with anxiety as a primary diagnosis ($N = 10$), school engagement improved overall from Time 1 to Time 2 (i.e., average scores on the CAIS-P decreased from Time 1 to Time 2; see Table 27). In contrast, for participants with OCD as a primary diagnosis ($N = 2$), school engagement worsened from Time 1 to Time 2. Given the very small sample size for participants with OCD, this descriptive statistic should be interpreted with caution.

Table 27:

School Engagement Across Psychological Treatment

Table 27 (cont'd)

School Engagement	Time 1			Time 2			Change Score
	M	*SD*	Range	*M*	*SD*	Range	
CAIS-P (Anxiety)[a]	9.5	8.9	0-29	7.5	6.3	1-21	-2.0
COIS-R (OCD)[b]	7.0	9.9	0-14	9.5	13.4	0-19	+2.5

[a] $N = 10$
[b] $N = 2$

Individual Results

Quantitative School Engagement Measure. Individual participant scores on the CAIS-P and COIS-R at Time 1 and Time 2 are presented in Table 28. For two participants (Carrie, Bea), parents did not perceive that anxiety had any effect on children's school engagement at Time 1 (i.e., scores of 0). For the other six participants, parents perceived that anxiety negatively

affected children's school engagement, to varying degrees. The majority of parents (Megan, Evie, Max, Sarah, Alison) also reported that the effect of anxiety on school engagement decreased over the course of treatment. Of these participants, only Sarah's scores significantly decreased from Time 1 to Time 2, based on the RCI calculation.

Table 28:

Individual Participant Scores on the CAIS-P and COIS-R

Child	Time 1	Time 2	Change	RCI	Reliable Change? (Y/N)
Lily	9	13	+4	0.82	N
Megan	6	1	-5	-1.03	N
Evie	6	5	-1	-0.21	N
Max	12	11	-4	-0.21	N
Sarah	**20**	**10**	**-10**	**-2.05**	**Y**
Alison	29	21	-8	-1.64	N
Bea	0	2	+2	0.41	N
Carrie (COIS-R)	0	0	0	0	N
Katie[a]	7	3	-4	-0.85	N
Nora[a]	1	2	+1	0.21	N
Jane[a] (COIS-R)	14	19	+5	1.03	N
Jacob[a]	5	7	+2	0.43	N

Note: Bolded scores represent significant scores on the RCI at the $p < .05$ level
[a]Participants who did not complete Time 3 phone interviews

Item analysis of parent responses on the CAIS-P at Time 1 showed that the majority of parents reported that their child's anxiety interfered with taking tests at school. The majority of parents also reported that their child's anxiety affected their child getting to school on time, doing homework, getting good grades, and completing assignments in class. Parents reported less frequently that their child's anxiety interfered with eating lunch with other children, concentrating on work, or writing in class.

Qualitative Results

The following qualitative results are from the phone interviews conducted with parent-child dyads at Time 3. Interview questions related to school engagement asked parents and

children to describe children's emotional, behavioral, and cognitive engagement. Questions that addressed emotional engagement asked participants to describe children's general attitudes towards school and feelings and reactions towards teachers and peers. Questions that addressed behavioral engagement asked participants to describe children's level of participation and involvement in class, as well as children's participation in extracurricular activities. Questions that addressed cognitive engagement asked participants to describe the child's motivation and effort in school, interest in completing work, and persistence when completing challenging tasks. The interviews were examined for patterns in the data to identify themes in how parents and children described initial levels of school engagement and changes in school engagement across treatment. Descriptive results are presented first, followed by themes.

Emotional Engagement. The majority of parent/child dyads in the subsample (Bea, Megan, Carrie, Sarah, Evie, Lily) described children as having moderate or high levels of emotional engagement at school before treatment. Max was the only participant with low emotional engagement at Time 1, as reported by both Max and his mother. See Table 29 for a summary of children's emotional engagement based on parent and child perceptions.

Table 29:

Qualitative Summary of Emotional Engagement Across Treatment

	Parent		Child	
Child	Time 1	Time 2	Time 1	Time 2
Lily	High Engagement	No change	Moderate Engagement	No change
Megan	Moderate Engagement	**Minimal Improvement**	Moderate Engagement	**Moderate Improvement**
Evie	Moderate Engagement	**Moderate Improvement**	Moderate Engagement	No change

Table 29 (cont'd):

Max	Low Engagement	**Minimal Improvement**	Low Engagement	No change
Sarah	High Engagement	No change	High Engagement	No change
Alison	Moderate Engagement	**Substantial Improvement**	Moderate Engagement	**Minimal Improvement**
Bea	High Engagement	No change	High Engagement	No change
Carrie	High Engagement	No change	[No child interview]	[No child interview]

Parents who described their child as having high engagement (Bea, Carrie, Sarah, Lily) referred to their child as forming positive relationships with peers and teachers and having generally positive attitudes towards school (e.g., loving school, enjoying attending school). Carrie's mother described the positive relationships that Carrie had with her teachers, before treatment: "Her teachers say she's a great student. I think she forms good relationships with them." Bea's mother spoke to her daughter's overall positive feelings towards school: "Oh, she loves school. Yeah. She's always loved school." Similarly, Sarah's mother described Sarah's positive attitudes towards school:

> I would say she very much enjoyed going to school. I think I don't know how much of it really was related to the social experience and how much of it was related to the actual school day with academics and extracurriculars. (Time 3, Phone Interview)

In contrast to the parent/child dyads who reported high or moderate emotional engagement, Max and his mother reported that he had low emotional engagement at school. Max's mother shared, "No, he's never enjoyed going to school." She added that his negative

attitudes towards school did not affect his school attendance: “No, he’ll go. Cause he knows he has to.” Max also described his dislike of attending school:

> I feel like, I feel like I’m just a pretty normal kid, I’d rather not go to school but I do anyway…I’d just rather not. And then some subjects I don’t really like that much because it's something that I'm not good at. But that's about it. I mean, I don’t really give anybody issues about me going to school. (Time 3, Phone Interview)

Max’s response suggests that his general attitude towards school has been affected by his school performance in certain subjects and his academic self-efficacy. Feeling unsuccessful with his academic work likely had a negative effect on Max’s emotional engagement.

Several parents (Megan, Evie, Max, Alison) and children (Megan, Alison) reported that the child’s emotional engagement appeared to improve over the course of treatment. Of note, only Max’s mother had initially described her child’s emotional engagement as low at Time 1. This suggests that some participants noticed improvements in children’s emotional engagement at school, despite children initially having moderate levels of engagement. For children with high emotional engagement at Time 1, parents and children did not perceive improvements across treatment. Bea noted how her engagement did not change across treatment, because she was initially highly engaged: “Feelings related to school I don't think changed because I felt like I had pretty positive feelings towards school in general in the first place.”

Connection between Emotional Engagement and Anxiety. One theme that arose from participant responses is the connection between children’s emotional engagement and anxiety. Several parents and children discussed the child’s level of emotional engagement in relation to the child’s anxiety symptoms during the Time 3 phone interviews, without prompting. For example, Megan’s mother discussed how Megan’s anxiety made school less enjoyable for her:

> I think overall, she liked school. It was just, there, there was just a lot of anxiety surrounding going to school and then, you know, even what would happen during the school day, whether it was, presentations that she had to give in class or even how other kids would react to her, worrying about what they would say and what they would think, throughout the day. (Time 3, Phone Interview)

Megan's mother's response demonstrates how Megan's anxiety affected her emotional engagement. However, despite her anxiety symptoms, Megan's mother perceived that she still enjoyed school overall. Megan reported similar feelings: "I mean, I kind of enjoyed it when, my anxiety wouldn't kind of get in the way of it." Additionally, Megan's mother noted improvements in Megan's emotional engagement after treatment, which appeared to be related to decreases in her anxiety symptoms:

> She seemed, you know, more willing to go to school. And, like I said, having those tools to help her through the situations versus always, coming to us with them and saying, what can I do I'm, I'm feeling this way and I have no idea what to do. And then she had the tools and she was able to better get through those times to get to school. (Time 3, Phone Interview)

Megan's mother's response suggests that when Megan's anxiety decreased, she developed more positive attitudes towards school and a greater willingness to attend school. Sarah also discussed how anxiety affected her emotional engagement:

> I did like going to school, it would just be, when it would be announced that we were going to be having a quiz or a test that I would get nervous for a couple of days until it actually happened. And just in that class, no other classes, would give me anxiety, except that class that had the quiz, that we would be taking the quiz. (Time 3, Phone Interview)

Sarah's account suggests that her anxiety interfered slightly with her enjoyment at school but did not affect the school day in its entirety. More specifically, Sarah's anxiety appeared to manifest as test anxiety at school.

Interpersonal Relationships and Increased Emotional Engagement. An additional theme that emerged from the data is how children's improvements in interpersonal relationships after treatment affected their emotional engagement. Before treatment, Megan had difficulty with interactions with one peer in particular: "There was one girl who was like a bully to me and, she would be really mean and I would just, I wouldn't really take that well." Megan noted that coping skills she learned during treatment assisted her with handling this negative interaction:

> I felt like I had, I had more of an understanding of how to deal with it at, when that happened when she would be mean to me and, ignoring her and problem solving, when those things would happen. (Time 3, Phone Interview)

Megan's response suggests that an improvement in her ability to cope with negative peer interactions potentially affected her emotional engagement, as she felt less anxious or unsure of what to do at school when negative peer interactions occurred. Alison's parents discussed how Alison had always enjoyed going to school, but previously had conflictual, negative relationships with others. Alison's parents described a shift in Alison's relationships with both peers and teachers at school:

> Yeah, she's learning to get along with others that she does not agree with or does not normally get along with. So fewer altercations. Never like a fight, but you know, screaming matches, that kind of thing. Those were students, not teachers. So she's learning to get along. Her circle of friends has expanded because of that. And she

is…dealing with the difficult teachers better I think, as well. She's not afraid to talk to them. (Time 3, Phone Interview)

Alison's father's description of the improvements in Alison's relationships with others also suggests a previous connection between Alison's emotional engagement at school and anxiety (i.e., fear of talking to teachers). Her father's account indicates that Alison improved her relationships with both peers and teachers, which likely positively affected her emotional engagement. Alison also described changes in her relationships with peers at school after treatment: "I was more open and wasn't as, blocked off, I guess. Standoffish. I noticed that I got, kinder, I guess is the right word." Her response indicates an awareness of how shifts in her own behavior led to improvements in these relationships.

Behavioral Engagement. Prior to treatment, the majority of parents described children as having moderate (Sarah, Evie, Lily, Alison) or high (Carrie, Bea) levels of behavioral engagement. The majority of children also described themselves as having moderate (Alison) or high (Evie, Bea, Sarah, Lily) engagement. In contrast, two parent/child dyads (Max, Megan) described children as initially having low levels of behavioral engagement. Parents and children were somewhat discrepant in their descriptions of the child's behavioral engagement. For parents who reported their children had moderate engagement, children often did not report any concerns with their own behavioral engagement (i.e., they described themselves as highly engaged). Additionally, several participants perceived changes in behavioral engagement across treatment. Three parents (Sarah, Lily, Alison) and four children (Bea, Sarah, Alison, Max) reported improvements in children's behavioral engagement from Time 1 to Time 2. Of note, neither of the parents who described their child as having low behavioral engagement at Time 1 noted

improvements at Time 2. See Table 30 for a qualitative summary of participant's behavioral engagement at Time 1 and Time 2.

Table 30:

Qualitative Summary of Behavioral Engagement Across Treatment

	Parent		Child	
Child	Time 1	Time 2	Time 1	Time 2
Lily	Moderate Engagement	**Minimal improvement**	High Engagement	No change
Megan	Low Engagement	No change	Low Engagement	No change
Evie	Moderate Engagement	No change	High Engagement	No change
Max	Low Engagement	No change	Low Engagement	**Moderate Improvement**
Sarah	Moderate Engagement	**Moderate Improvement**	High Engagement	**Minimal Improvement**
Alison	Moderate Engagement	**Substantial Improvement**	Moderate Engagement	**Moderate Improvement**
Bea	High Engagement	No change	High Engagement	**Minimal Improvement**
Carrie	High Engagement	No change	[No child interview]	[No child interview]

For parent/child dyads who described the child as initially having high or moderate levels of behavioral engagement, participants reported that children were involved in numerous extracurricular activities, enjoyed participating in those activities, and were actively engaged during class. For example, when asked about Sarah's behavioral engagement, Sarah's mother named a variety of extracurricular activities that Sarah is involved in: "Yeah, she was involved in

a robotics club. Then a swim team and swim, both swim team at school and the cross-country running team." Sarah's mother also described Sarah as an active participant during class, who enjoyed presenting: "That was one of the areas where she tended to shine a little bit more, especially if it was, if it was planned and she had opportunity to prepare." Evie's mother described her as being moderately behaviorally engaged in school; Evie was involved in extracurriculars but showed resistance to attending school. Evie's mother shared, "She does a lot of extra things, she does theater…and she plays volleyball. So she's pretty involved." Regarding school refusal behaviors, her mother added:

> She does really well in school. It's just she doesn't ever want to go. So in the morning, it's always I have a stomachache, my throat hurts, my head hurts. But once she's there, she's fine. (Time 3, Phone Interview)

Evie's mother's report shows that anxiety affected Evie's desire and willingness to attend school, but no difficulty in engaging once there.

For the parent/child dyads who described children as having low levels of behavioral engagement at Time 1 (Max, Megan), parents and children noted that children did not participate in extracurricular activities and/or did not participate during class. Megan's mother simply shared, "I don't think she did any, really extracurricular activities." Megan's mother indicated that, with attending therapy one day per week, "She didn't want to feel more stressed out, so she, I don't think she actually decided to do any sports or extracurricular activities this year." Megan's mother's response suggests that Megan's school-related anxiety was potentially affecting her involvement in extracurricular activities. Similarly, Max's mother reported that Max was not currently involved in extracurriculars: "He doesn't…he, he has tried a few different things and they're just not what he wants to do, so he doesn't continue."

Behavioral Engagement and Anxiety. One theme that emerged was the relation between children's behavioral engagement at school and anxiety. For one participant, Evie, her anxiety symptoms prohibited her from participating in certain extracurricular activities. Evie's mother explained:

> We went to do a sports exam for track and she, we went to five doctors and they couldn't sign off on her forms because her heart rate was so high. And so, we spent three or four months just with cardiologists until they were able to determine it was anxiety. (Time 3, Phone Interview)

This account from Evie's mother is an example of how physical symptoms of anxiety affected Evie's ability to participate in extracurricular activities that she was interested in. Megan's mother also described Megan's anxiety as affecting her involvement in extracurricular activities:

> There were times that she seemed really excited whether to try a sport or group and then she would, and I think this probably centered around her anxiety, she would kind of let that get the best of her and she'd back out and say, no, I don't want to do this anymore. (Time 3, Phone Interview)

This description from Megan's mother suggests that while Megan wanted to be involved at school, and was interested in a variety of activities, anxiety prevented her from taking part in those experiences. Decreases in anxiety also appeared to be connected to improvements in behavioral engagement, as noted above with Max, Sarah, and Bea's experiences.

Increase in Participation. Several youth (Alison, Sarah, Max) and one parent (Sarah) described an increase in participation after treatment. Specifically, youth reported participating in new extracurricular activities after treatment; increasing their participation during class; and

becoming interested in participating in extracurricular activities again. Alison described new extracurricular activities that she joined after treatment: “I went out and auditioned for the musical. And then this past year, I did another play in the spring, auditioned for spring musical, and then I was in that acting class.” Sarah described herself as participating more during class, by asking her teachers questions: “I find myself being able to kind of reach out more with my teachers, especially a math teacher in terms of asking for help.” Max showed an interest in participating in sports next year:

> I was actually, since my anxiety is actually getting better, I'm having good days and then I’m having bad days, before it was just all bad days, but my anxiety seems to get better. So I'm going to try, I'm gonna try baseball again next year. Because before I got anxiety, I used to love baseball. I used to play it, I started playing it when I was like two or something, t-ball, and I played up until I was 11 and then that's when I stopped because of my anxiety. (Time 3, Phone Interview)

Max’s account indicates an increased willingness and interest in participating in extracurricular activities. Max’s response also explicitly shows the connection between his anxiety and behavioral engagement, as he feels motivated to play baseball again now that his anxiety symptoms have remitted. Sarah’s mother shared that Sarah joined various extracurriculars after treatment:

> She really wasn't doing much else before that. She certainly would have not, have. I would say she sought to avoid some of those opportunities around her prior to therapy. I think she probably wouldn't have done much. (Time 3, Phone Interview)

Sarah’s mother’s description indicates that improvements in Sarah’s anxiety corresponded with greater participation in a variety of extracurricular activities.

Shift in Attitude Towards Extracurricular Activities. In addition to an increase in participation, another theme that emerged was participants' shift in attitudes towards extracurricular activities that they were already participating in. Lily's mother described Lily as approaching art in a different way after treatment:

> With her art, she tends to be more of a rigid person doing it, she'd feel, feeling the need to do it right. And so, I saw with the art where it would explore little bit more. Just be a little bit less worried about, her performance on it…just becoming a little bit more free to explore. (Time 3, Phone Interview)

Lily's mother description suggests that, after treatment, Lily approached one of her extracurricular activities in a more flexible way. Bea reported that she participated in theater, both before and after treatment, but noticed an increase in her self-confidence after treatment: "I had a significant upgrade in self confidence in terms of, as a kid I was always scared of singing in front of people. And that fear completely went away this year. Which was cool." Bea's response also indicates that her confidence increased due to a reduction in her anxiety symptoms. Sarah's mother described her daughter as approaching one of her extracurricular activities, the robotics team, differently:

> …the thing that she, that we saw the most growth in and the most connection to was probably the robotics team. She…was oftentimes the group organizer and she found herself in places where she had to speak in front of large volumes of people and she got a lot of very positive feedback for that. So she gained a lot of confidence through that and kind of found that to be one of her strong skills is public speaking, and being in charge, for lack of a better word, or term, of her peers. (Time 3, Phone Interview)

Sarah's mother's description shows that Sarah became more confident after treatment in how she participated in the robotics team. These examples represent the changes that several participants experienced regarding how they approached extracurricular activities that they were already involved in before treatment.

Cognitive Engagement. Half of parents in the subsample described children as having low cognitive engagement (Lily, Sarah, Max, Alison). The remaining half of parents described their child as having moderate (Bea, Evie, Megan) or high engagement (Carrie). Only one parent, Carrie, described her daughter as having high cognitive engagement. Carrie's mother described her as "a very good student," and had no concerns with Carrie's motivation to learn or complete school assignments prior to treatment ("She's a great student, like she's always been…she completes her tasks"). Parent and child reports of cognitive engagement were somewhat discrepant. In contrast to their parents, the majority of children described themselves as having moderate (Bea, Sarah) or high (Megan, Evie, Lily) engagement. Only one child (Alison) described herself as having low cognitive engagement before treatment. See Table 31 for a qualitative summary of participant's cognitive engagement at Time 1 and Time 2.

Table 31:

Qualitative Summary of Cognitive Engagement Across Treatment

	Parent		Child	
Child	Time 1	Time 2	Time 1	Time 2
Lily	Low Engagement	No change	High Engagement	No change
Megan	Moderate Engagement	No change	High Engagement	No change
Evie	Moderate Engagement	No change	High Engagement	No change

Table 31 (cont'd):

Max	Low Engagement	**Moderate Improvement**	Moderate engagement	No change
Sarah	Low Engagement	**Substantial Improvement**	Moderate Engagement	**Moderate Improvement**
Alison	Low Engagement	**Substantial Improvement**	Low Engagement	**Moderate Improvement**
Bea	Moderate Engagement	No change	Moderate Engagement	No change
Carrie	High Engagement	No change	[No child interview]	[No child interview]

While the majority of parent/child dyads did not report changes in cognitive engagement, all parents who initially described their child as having low engagement reported moderate or substantial improvements from Time 1 to Time 2. Additionally, two children (Sarah, Alison) described improvements in their cognitive engagement. For example, Sarah and her mother reported an increase in Sarah's help-seeking behaviors at school. Sarah's mother described the changes she observed in her daughter:

> One thing that maybe was a change is she became more, I guess, driven to, go the extra mile to say get for example, tutoring from her math teacher in the early morning before school hours…and so I think she kind of went as far as she could doing the things that she knew, she could do to get that extra help she needed which, to me felt like a big step in the right direction. (Time 3, Phone Interview)

Sarah's mother's description suggests that rather than writing an incorrect answer if she was not sure how to approach an assignment, Sarah took the initiative to seek help from her

teacher. Sarah also noted an increase in her help-seeking behaviors: “I find myself being able to kind of reach out more with my teachers, especially a math teacher in terms of asking for help.”

Avoiding Challenging Tasks. One theme that emerged from parent descriptions of children having moderate or low cognitive engagement was the child’s avoidance of challenging tasks. Evie’s mother shared:

> …when she would bring homework home, and if she didn't understand something, and we didn't know how to do it, and we’d say you have to go ask your teacher and that just threw her over the edge. She didn't want to ask.” (Time 3, Phone Interview)

Evie’s mother’s account suggests that Evie had learning goals and was motivated to do well in school, but typically avoided challenging tasks and finding solutions to such tasks (i.e., asking her teacher for help). Lily’s mother, who described her daughter as having low cognitive engagement before treatment, reported similar concerns to Evie’s mother:

> …if something was hard, instead of asking for help… she just puts something and hopes that the teacher or I don't catch it…so I feel her kind of avoiding a little bit. If she can get away with it. (Time 3, Phone Interview)

Another form of avoidance that was observed, was to rush through challenging tasks as quickly as possible. Lily’s mother indicated that Lily typically tried to get through challenging tasks quickly, rather than taking the time to try her best to learn the material or problem-solve. Sarah’s mother described similar concerns with avoidance, when Sarah would simply “give up” when faced with challenging tasks:

> When it would get difficult, there would be a tendency to just be like, okay, whatever it is, it is, and she would just give up because it was too difficult to try and come up with a creative solution to find another way to look at the problem. (Time 3, Phone Interview)

Additionally, Sarah's mother described Sarah as fearful and avoidant of challenging tasks:

> So anytime that she would be faced with something difficult, her teachers would even report that they could see it in her face when she was anxious, that she would just kind of freeze and, and it's like, almost like could not take another move, you know, in any direction when, when she would lock it was like immobilizing for her. (Time 3, Phone Interview)

Sarah's mother's description of Sarah's experience also displays the connection between Sarah's anxiety and her cognitive engagement. According to her mother, Sarah's anxiety affected her ability to approach challenging tasks, which affected her cognitive engagement. Alison's father also described Alison as avoiding her work: "I think she wasn't sure how she was going to do, and so she just wouldn't do it."

Low Motivation to Complete Academic Tasks. Parents who reported that their children had low cognitive engagement also described their child as and having low motivation to complete school-related tasks. When asked to describe Alison's motivation, interest, and effort in school, Alison's father simply stated, "Poor." He elaborated that, prior to treatment, Alison was not engaged in the classroom: "…she'd be reading her own books and different things like that instead of paying attention." Sarah's mother similarly described her daughter as disengaged in school and having low motivation to complete work:

> I would say that one of the bigger concerns that we had and to some degree, we still have… she would do the bare minimum, I would say that's a conversation that we had had a number of times where, she would do what she had to, you know, like, as much as she could, and then she'd kind of give up. (Time 3, Phone Interview)

This report from Sarah's mother indicates that Sarah completed as little work as possible and did not persist when faced with more difficult work.

Discrepant Parent and Child Perceptions of Cognitive Engagement. There were discrepancies in parent and child perceptions of cognitive engagement, with children often describing themselves as having moderate or high engagement. This discrepancy is likely because children described their desire to do well in school, whereas parents commented on both children's desire to achieve as well as children's difficulties in reaching those goals (e.g., lack of motivation). In other words, youth participants in the study may have had an inflated sense of how engaged they are, in comparison to parent perceptions. For example, Megan commented on her goals and effort: "I feel like I was working pretty hard…I just really wanted to get good grades." Megan's mother described her daughter as "fairly motivated," but added there were some occasions when parents would need to motivate her to complete work: "…she would have an occasional day that we would realize, she hadn't started homework."

Perfectionism. A few of the parents who reported that their children avoided challenging tasks also described their child as a perfectionist or having perfectionistic qualities. When Evie's mother described Evie as avoiding challenging tasks, she added, "…we talked about it in conferences and the teacher's like Evie, you don't have to do it, you just have to try, it doesn't even have to be right. But it's that, wanting to be perfect." Evie's mother's description suggests that Evie's perfectionism affected her cognitive engagement at school, by keeping her from attempting her work. Lily's mother also described Lily as experiencing perfectionistic qualities; she described her daughter as "scared to be wrong" and rushing through challenging tasks (see "Avoidance of Challenging Tasks"). Megan's mother also mentioned that her daughter has some perfectionistic qualities: "I mean it, the only that might…would be the perfectionistic

quality…she usually seems to complete all her work and be able to pretty much stay on-task while she's at school." Megan's mother noted that her daughter possessed some perfectionistic qualities, but this did not appear to be a primary concern or have a substantial effect on her cognitive engagement. Parent descriptions of their child as a perfectionist or having perfectionistic qualities is consistent with previous research supporting a relation between anxiety and perfectionism (Higa-McMillan et al., 2014; Miloseva & Vukosavljevic-Gvozden, 2014).

Increase in Motivation to Complete Schoolwork. One theme that emerged from parents' descriptions of improvements in cognitive engagement is an increase in the child's motivation to complete schoolwork. Sarah's mother shared: "She still had a little bit of a hard time starting tasks, but when she did, I think she, she was better at managing that time and getting tasks completed." Alison's mother similarly reported improvements in Alison's motivation at school: "She was on track. She was doing her homework, she was doing really well." Max's mother spoke to an increased desire for Max to complete work: "He became much more organized and seemed like he wanted to do his schoolwork. You know, his homework was on point and he was he was doing pretty well."

Discussion

Parents and children were asked to describe children's level of school engagement and whether any changes in school engagement occurred after treatment. The majority of parent/child dyads reported that children's emotional and behavioral engagement was moderate or high prior to treatment. Parents more frequently reported low cognitive engagement before treatment, in comparison to emotional or behavioral engagement. Several parent/child dyads reported improvements in school engagement after treatment; approximately half of the

subsample described improvements across the three dimensions of school engagement from Time 1 to Time 2. Participants typically reported improvements across treatment if they had low or moderate engagement at Time 1, as opposed to initially being highly engaged. Furthermore, parents and children often referenced the child's anxiety when discussing children's school engagement and changes in school engagement. Both qualitative and quantitative findings from this study suggest a potential relation between decreases in anxiety and improvements in school engagement, though causal conclusions cannot be drawn.

When examining each dimension of school engagement, anxiety appeared to have less of a negative effect on youth's emotional engagement, compared to behavioral or cognitive engagement. The majority of parent/child dyads perceived children to have moderate or high emotional engagement at Time 1. Emotional engagement was conceptualized in this study as children's reactions to school, teachers, and classmates, based on the definition of multifaceted school engagement from Fredricks and colleagues (2004). Emotional engagement also encompasses students' emotional reactions to school and identification with school (Fredricks et al., 2004). Results from this study suggest that, overall, youth with anxiety or OCD tend to identify with school, have positive reactions to school, and have positive relationships with peers and teachers. Quantitative results from the CAIS-P align with these qualitative findings. Item analysis on the CAIS-P indicated that parents infrequently reported that anxiety interfered with children's interactions with peers at school, such as when eating lunch together in the cafeteria. Findings from this study also suggest that children with anxiety disorders or OCD are still generally able to maintain moderate or high levels of emotional engagement.

Additionally, findings from this study suggest that emotional engagement may be affected by children's anxiety symptoms. During phone interviews, several participants

discussed the effect of children's anxiety on school engagement, without prompting. For example, participants discussed how school-related anxiety negatively affected children's general enjoyment of, and connection to, school. Some children in this study exhibited school refusal behaviors (Megan, Sarah, Max) due to anxiety surrounding attending school, which certainly affected their school engagement.

Previous research has similarly found a relation between anxiety, OCD, and school engagement, although these studies are very limited (Scanlon et al., 2020; Wilcox et al., 2016). Wilcox and colleagues (2016) is one of few studies to explicitly examine the relation between anxiety and school engagement. Results of this study showed that middle school students with anxiety were less likely to be academically engaged compared to students who did not self-report anxiety (Wilcox et al., 2016). Scanlon et al., (2020) recently studied high school students, social engagement, and student performance in science class. Scanlon and colleagues (2020) defined "social engagement" as students' engagement with their teachers and peers in the classroom, similar to the conceptualization of emotional engagement in the current study. Scanlon et al. (2020) found that social engagement mediated the relationship between anxiety and academic performance. Additionally, adolescents with social anxiety were more likely to report lower social engagement, compared to their peers who did not self-report social anxiety symptoms. These studies, while limited, suggest that anxiety and school engagement are related, such that higher anxiety symptoms correspond with lower school engagement.

Prior studies have more frequently examined the relations between school engagement and mental health or social-emotional functioning more broadly, rather than anxiety or OCD specifically. A limitation of prior research is that previous studies have often examined school engagement as a predictor of mental health functioning, rather than mental health predicting

school engagement. For example, Saeki and Quirk (2015) explored the relations between social-emotional and behavioral functioning, school engagement, and needs satisfaction among upper elementary school students. Results showed that school engagement significantly predicted students' social, emotional, and behavioral functioning (Saeki & Quirk, 2015). Results from the current study add to the limited research examining anxiety disorders and school engagement, suggesting that anxiety symptoms can negatively affect children's engagement.

Half of parents in the subsample reported improvements in children's emotional engagement (Megan, Evie, Alison, Max), while only two children reported improvements in this area (Megan, Alison). However, children were also more likely to describe themselves as having higher emotional engagement at Time 1 than their parents, which could help explain the limited number of children reporting improvements in this area. Given the lack of research on anxiety and school engagement broadly, it is unsurprising that studies have not explored whether changes in anxiety symptoms are related to changes in school engagement. Rather, previous research that has examined changes in school engagement have typically been limited to longitudinal studies examining the developmental trajectory of school engagement over time (Wang & Eccles, 2013), or intervention studies specific to school engagement interventions, such as interventions with families to increase school engagement (Stormshak et al., 2010) or teacher professional development (Gregory et al., 2017). In other words, treatment studies of anxiety and OCD have not used school engagement as an outcome variable. Findings from the current study fill a gap in the research, suggesting that children may experience an increase in school engagement alongside improvements in their mental health.

Several participants described how children's interpersonal relationships improved after treatment, which affected their emotional engagement. Some research has explored how anxiety

influences social relationships, particularly among individuals with social anxiety disorder (Taylor et al., 2017). Anxiety is thought to limit opportunities for establishing relationships with others, due to both avoidance of situations in which relationships could be established and elevated threat perceptions during social interactions (Taylor et al., 2017). Reductions in anxiety may, in turn, allow individuals to have more positive social relationships. In the current study, decreases in participants' anxiety symptoms may have improved their interactions with others, and their emotional engagement as a result.

Prior research has examined the influence of teacher and peer relationships on children's school engagement, with robust findings. For example, Da Laet and colleagues (2015) explored whether teacher and peer relationships could prevent or exacerbate changes in school engagement over the course of elementary school, given the well-established developmental trajectory of school engagement (i.e., school engagement declines as students age). Findings from Da Laet et al. (2015) showed that children who felt more supported by their teacher and who were accepted by peers had initially higher levels of school engagement. While all children experienced declines in engagement over time, those with more positive peer and teacher relationships had less steep declines in school engagement, two years later (Da Laet et al., 2015). This research indicates that positive interpersonal relationships can serve as a "buffer" to the well-established developmental trajectory of school engagement (Wang & Eccles, 2012). While causal conclusions cannot be drawn, findings from the current study suggest that for some children with anxiety or OCD, reductions in symptoms are possibly related to improvements in social relationships and school engagement.

Consistent with emotional engagement, the majority of parent/child dyads described children as having moderate or high behavioral engagement prior to treatment. According to

Fredricks et al. (2004), behavioral engagement includes involvement in academic, social, or extracurricular activities. Behavioral engagement could involve participation in school-related activities, as well as participating during class and asking questions (Fredricks et al., 2004). Parent/child dyads who described children as behaviorally engaged reported that children were involved in a variety of extracurricular activities, enjoyed participating in extracurriculars, and participated during class. Those who described children as having low behavioral engagement before treatment (Max, Megan) indicated that children did not often participate in learning activities in the classroom or extracurricular activities. Several parent/child dyads reported changes, ranging from minimal to substantial improvements, in children's behavioral engagement across treatment. These changes were typically related to an increase in participation, or a shift in attitude towards extracurricular activities. Thus, changes in children's behavioral engagement appeared to be related to improvements in the quality of behavioral engagement, even among participants who were initially described as having moderate or high engagement.

Several participants described a relation between anxiety and behavioral engagement. For example, Evie's physical symptoms of anxiety prevented her from obtaining a signed physical form from a medical doctor and gaining clearance to play sports at school. Megan's mother discussed how Megan's anxiety prevented her from continuing to participate in extracurricular activities that she tried. Examples from participants indicated that anxiety did, in fact, have a negative effect on children's behavioral engagement. More specifically, performance anxiety was common across these participants. Several participants in this study also described how reductions in anxiety symptoms were potentially related to improvements in behavioral engagement. Qualitative reports from Max, Sarah, and Bea indicated that these youth and/or their

parents noticed that decreases in anxiety symptoms appeared to be related to improvements in behavioral engagement at school. For example, Max expressed interest in playing baseball again because his anxiety "is actually getting better." Sarah's mother shared that before therapy, she would have been surprised if Sarah joined extracurricular activities. After therapy, Sarah's mother noted that Sarah sought out opportunities to be involved, such as participating on the robotics team. In addition to these qualitative findings, data from the CAIS-P indicated that, at Time 2, the majority of parents perceived their child's anxiety to interfere less with their school engagement (i.e., the majority of individual's total scores on the CAIS-P decreased from Time 1 to Time 2). Of note, data from the CAIS-P is not disaggregated by the three dimensions of school engagement; thus, conclusions about improvements for each dimension of school engagement cannot be drawn from this measure. Overall, findings suggest that decreases in anxiety symptoms across treatment were possibly related to improvements in school engagement.

Several youth and their parents not only described an increase in participation, but also noted a shift in attitudes or thinking about extracurriculars. Lily's mother described her as thinking and behaving more flexibly about her artwork ("more free to explore"). Parents also described their children feeling more confident, and behaving in ways consistent with an increase in confidence, when participating in extracurriculars. For example, Sarah's mother described her as speaking in front of large groups of people as part of her participation in the school's robotics team, which she did not do prior to treatment. Given the nature of CBT, it is logical that children's thinking changed following treatment, as CBT directly addresses maladaptive thoughts. An underlying assumption of CBT is by changing maladaptive or dysfunctional thoughts, behavior will change as a result (Crowe & McKay, 2017). These examples from

participants suggest that treatment may have contributed to an increase in children's confidence, risk-taking, and resilience, which in turn, increased youth's behavioral engagement.

While parent/child dyads typically reported moderate or high emotional and behavioral engagement before treatment, half of parents in the subsample described children as having low cognitive engagement before treatment. Children tended to describe themselves as having higher cognitive engagement, compared to parent perceptions. Parents who reported that their children had low cognitive engagement described their child as being disengaged from school and learning, or having difficulty motivating themselves to complete school-related tasks.

For participants who reported some concerns with the child's cognitive engagement, one theme that emerged was children's avoidance challenging tasks. Lily's mother described her "just putting something" down on her paper if something was difficult, without thinking through the problem or asking for help. Sarah and Evie's mothers similarly described their children as being fearful and avoidant of difficult tasks. Dweck's research on mindsets, as well as research on achievement goal orientations, can help describe the experience of some of the participants in this study. Children with growth mindsets believe that abilities can be developed through effort, strategies, and help from others (Dweck, 2008). These children have mastery goals, meaning that they are more likely to persist, engage in challenging tasks, are intrinsically motivated, and are interested in learning and understanding new material (Wilson & Kim, 2016). In contrast, individuals with a fixed mindset believe that qualities are stable, meaning that your current abilities are unchanging. Children with fixed mindsets have performance goals, and are more concerned with how they will be judged by others rather than learning. They also may view challenging tasks as insurmountable (Dweck, 2008; Wilson & Kim, 2016). For Lily, Sarah, and

andEvie, these children were described by their parents as afraid of failure, and as children who did not persist independently when faced with difficult tasks.

In addition to avoidance of challenging tasks, some participants in this study described children as perfectionistic or having perfectionistic qualities. A few parents in this study described children's perfectionism as maladaptive, as it interfered with effectively completing academic tasks. Both Evie and Lily's mothers described their children as being highly concerned about making errors ("scared to be wrong," "wanting to be perfect"). These descriptions are also consistent with performance goals, rather than mastery goals. Perfectionism has been described as a multidimensional construct, consisting of excessive concern about making errors, high personal standards, and concerns about evaluation (Shafran et al., 2002). Perfectionism has also been defined in the literature as consisting of both perfectionistic standards directed by oneself towards oneself, and the belief that others have perfectionistic standards towards oneself (Hewitt et al., 2003). Perfectionism can be maladaptive and impairing when high personal standards interact with high evaluation concerns (Shafran et al., 2002). This study showed that for some students, perfectionism was maladaptive and may have interfered with cognitive engagement. However, the majority of participants in the study did not endorse perfectionistic qualities, suggesting that perfectionistic traits are not pervasive across youth with anxiety and OCD. These findings are somewhat consistent with previous research, which has typically found an association between anxiety, OCD, and perfectionism (Flett et al., 2011; Piacentini et al., 2014; Miloseva & Vukosavljevic-Gvozden, 2014).

Limited studies have examined changes in perfectionism after CBT for anxiety or OCD. One study to date has examined how perfectionism changes over the course of CBT for youth with anxiety, and how perfectionism may relate to treatment outcomes (Mitchell et al., 2013).

Mitchell and colleagues (2013) assessed child-reported and parent-reported perfectionism among youth receiving CBT for anxiety. Findings from this study showed that all aspects of child perfectionism significantly reduced over the course of treatment (Mitchell et al., 2013). Additionally, results showed that higher perfectionism predicted poorer treatment outcomes.

CHAPTER 6:

RESULTS AND DISCUSSION PART III

Part III presents the results and discussion section for research question 6, which examines the level and pattern of children's anxiety/OCD symptoms during the COVID-19 pandemic. Aggregate results and individual quantitative results for participants who completed Time 3 data are presented first, followed by themes from the qualitative results. Results are followed by a discussion of findings.

Research Question 6: Anxiety/OCD Symptoms During the COVID-19 Pandemic

Aggregate Results

Descriptive statistics across the 7 participants[14] with anxiety disorders who completed data at Times 1, 2, and 3 indicate that anxiety symptoms decreased from Time 1 to Time 3, based on mean total scores on the SCARED-P, SCARED-C, and MCQ-C (see Table 32). Similarly, anxiety severity decreased from Time 1 to Time 3, based on the average score on the DSM-5 Level 2 Anxiety measure, despite increasing from Time 2 to Time 3. Scores on the MCQ-C decreased from Time 1 to Time 2, and Time 2 to Time 3.

Table 32:

Anxiety Symptoms from Time 1 to Time 3

Anxiety Measure	Time 1[a]		Time 2[a]		Time 3[a]		Change Score[b]	Change Score[c]
	M	*SD*	*M*	*SD*	*M*	*SD*		
SCARED-P								
Total Score	36.6	12.1	30.7	8.2	29.7	12.6	-1.0	-6.9
Panic	7.7	3.8	4.7	2.9	3.6	2.2	-1.1	-4.1
GAD	12.1	4.1	11.1	2.3	11.1	4.0	+0	-1.0
Separation Anxiety	6.7	4.3	5.1	3.1	5.6	4.2	+0.5	-1.1
Social Anxiety	8.0	5.2	7.7	4.9	8.3	4.1	+0.6	+0.3

[14] 8 participants completed all three data points. One of the 8 participants (Carrie) had a diagnosis of OCD. See the "Individual Participants" section for Carrie's scores.

Table 32 (cont'd)

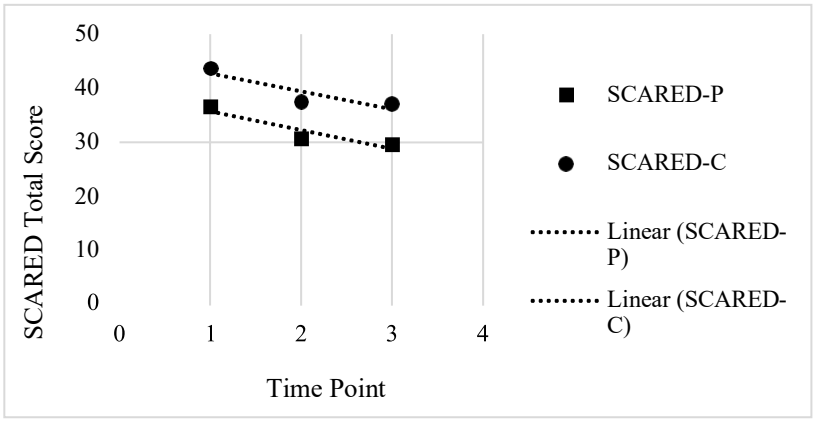
School Refusal	1.9	1.5	1.7	1.0	2.3	2.0	+0.6	+0.4
SCARED-C								
Total Score	43.7	13.6	37.6	16.3	37.1	16.2	-0.5	-6.6
Panic	12.0	6.7	9.7	5.5	11.0	4.9	+1.3	-1.0
GAD	13.0	2.9	12.4	4.1	11.9	4.6	-0.5	-1.1
Separation Anxiety	6.7	3.5	5.9	3.8	5.0	4.3	-0.9	-1.7
Social Anxiety	8.7	3.7	7.6	4.7	8.1	3.8	+0.6	-0.6
School Refusal	3.6	2.6	1.9	1.8	2.4	2.6	+0.6	-1.2
DSM-5 Level 2 Anxiety								
T-Score	68.5	6.2	61.5	6.6	65.8	7.2	+4.3	-2.7
Categorical Score	3.1	0.7	2.6	1.0	3.0	1.0	-0	-0.1
MCQ-C								
Total Score	58.7	11.9	50.4	12.4	49.1	13.3	-8.3	-9.6

[a]Average scores for the subsample of 7 participants
[b]Change score from Time 2 to Time 3
[c]Change score from Time 1 to Time 3

Figure 3 depicts the average scores on the SCARED-C and SCARED-P at Times 1, 2, and 3 for the Time 3 subsample. The slope of the line of the average scores on the SCARED-P is -3.3; the slope of line of the average scores on the SCARED-C is -3.45. This indicates that across the subsample of participants who completed Time 3 measures, there was a greater decrease in scores on the SCARED-C from Time 1 to Time 3.

Figure 3:

Average Total Scores on the SCARED-P and SCARED-C



The discrepancy in parent ratings of anxiety on the SCARED-P and DSM-5 Level 2 Anxiety measure can be explained in a few ways. For one, the anxiety severity measure asks parents to rate their child's anxiety symptoms over the past two weeks, as opposed to the past month on the SCARED. Given that parents completed the Time 3 measures during in-person school closures during the COVID-19 pandemic, the two week time frame could reflect parent's observance of anxiety symptoms during this period of time (rather than the one month time period, which may have also captured the child's anxiety symptoms prior to in-person school closures). Another explanation for this discrepancy could be the differences in items on the SCARED and anxiety severity measure. Items on the anxiety severity measure reflect broader symptoms of anxiety, such as generally feeling nervous, scared or worried. In contrast, items on the SCARED ask parents to reflect on specific symptoms of anxiety, such as school refusal and social anxiety. Given changes in the child's environment during COVID-19 (i.e., limited social interactions, learning from home), some of the items on the SCARED may not have captured the symptoms of anxiety that children may have been experiencing during the pandemic. Thus, parents may have endorsed some of the broader categories of symptoms captured on the anxiety severity measure but did not endorse specific symptoms of anxiety on the SCARED.

Individual Results

At the case level, only one parent (Bea) perceived that their child's anxiety severity decreased from Time 2 to Time 3, but this change was not significant (see Table 33). Five parents indicated that their child's anxiety severity increased from Time 2 to Time 3, and one parent's scores remained stable from Time 2 to Time 3. The increase in Evie's anxiety severity from Time 2 to Time 3 was significant.

Table 33:

DSM-5 Level 2 Anxiety Measure: Changes in Anxiety Across Treatment

Participants	Time 1	Time 2	Time 3	RCI (T1 to T3)	Reliable Change? (T1 to T3)	RCI (T2 to T3)	Reliable Change? (T2 to T3)
Lily	68.9	66.9	68.9	0	N	0.51	N
Megan	67.9	58.2	71.0	0.79	N	**3.26**	**Y**
Evie	75.9	60.4	66.9	**-2.30**	**Y**	1.66	N
Max	67.9	52.6	64.8	-0.79	N	**3.11**	**Y**
Sarah	66.9	61.5	64.8	-0.54	N	0.84	N
Alison	74.9	73.0	73.0	-0.48	N	0	N
Bea	57.1	58.2	51.1	-1.53	N	-1.81	N

Note: The standard deviation of the subsample (N =.7; SD = 7.16) was used to calculate the RCI scores

Five participants showed a decrease in anxiety or OCD symptoms from Time 2 to Time 3, based on parent ratings: Max, Alison, Bea, and Carrie (see Table 34). For four of these participants (Megan, Max, Alison, Carrie), the decrease in parent ratings was clinically and statistically significant from Time 2 to Time 3. The remaining participants demonstrated an increase in anxiety symptoms from Time 2 to Time 3, based on parent ratings on the SCARED: Lily, Megan, Evie, and Sarah. For Megan, her mother perceived an increase in anxiety symptoms from Time 2 to Time 3. For Max and Alison, parents perceived a decrease in anxiety symptoms, based on their ratings on the SCARED.

Table 34:

SCARED-P and CY-BOCS-P: Changes in Total Scores Across Treatment

Participants	Time 1	Time 2	Time 3	RCI (T1 to T3)	Reliable Change? (T1 to T3)	RCI (T2 to T3)	Reliable Change? (T2 to T3)
Lily	34	31	37	0.47	N	0.94	N
Megan	40	28	45	0.78	N	**+2.65**	**Y**
Evie	42	31	33	-1.40	N	0.31	N
Max	40	37	19	**-3.28**	**Y**	**-2.81**	**Y**
Sarah	49	36	41	-1.25	N	0.78	N
Alison	40	38	22	**-2.81**	**Y**	**-2.50**	**Y**
Bea	11	14	11	0	N	-0.47	N

Table 34 (cont'd):

Carrie[a]	29	25	4	**-6.22**	**Y**	**-5.22**	**Y**

[a] CY-BOCS

Note: The standard deviation of the subsample (N =.7; SD = 12.11) was used to calculate the RCI scores

Based on child ratings on the SCARED (anxiety) and CY-BOCS (OCD), no participants demonstrated a clinically or statistically significant change in symptoms from Time 2 to Time 3 (see Table 35). Five participants perceived that they experienced a decrease in anxiety symptoms from Time 2 to Time 3, based on the SCARED-total score: Lily, Megan, Evie, Sarah, and Bea.

Table 35:

SCARED-C: Changes in Total Scores Across Treatment

Participants	Time 1	Time 2	Time 3	RCI (T1 to T3)	Reliable Change? (T2 to T3)	RCI (T2 to T3)	Reliable Change? (T2 to T3)
Lily	37	38	28	-0.76	N	-0.70	N
Megan	65	58	53	-1.01	N	-0.35	N
Evie	21	20	16	-0.42	N	-0.28	N
Max	39	12	26	-1.09	N	0.98	N
Sarah	50	43	35	-1.26	N	-0.56	N
Alison	44	51	63	1.60	N	0.84	N
Bea	50	41	39	-0.93	N	-0.14	N
Carrie[a]	22	21	25	0.60	N	0.80	N

[a]CY-BOCS

Note: The standard deviation of the subsample (N = 7, SD = 13.64) was used to calculate the RCI scores

Table 36 displays changes in the MCQ-C total score across treatment. Results show that total scores decreased from Time 2 to Time 3 for four participants (Lily, Megan, Bea, Carrie), in the expected direction. The change in Carrie's MCQ-C score from Time 2 to Time 3 was significant. For the remaining four participants, scores increased (Evie, Max, Sarah, Alison).

Table 36:

MCQ-C: Changes in Total Scores Across Treatment

Participants	Time 1	Time 2	Time 3	RCI (T1 to T3)	Reliable Change? (T1 to T3)	RCI (T2 to T3)	Reliable Change? (T2 to T3)
Lily	57	48	39	**-3.23**	**Y**	-1.61	N

Table 36 (cont'd):

Megan	66	60	52	**-2.51**	**Y**	-1.43	N
Evie	58	39	44	**-2.51**	**Y**	0.90	N
Max	49	37	45	-0.72	N	1.43	N
Sarah	39	37	40	0.18	N	0.54	N
Alison	69	66	72	0.54	N	1.08	N
Bea	73	67	61	**-2.15**	**Y**	-1.08	N
Carrie	44	47	36	-1.65	N	**-2.27**	**Y**

Qualitative Results

Changes in Anxiety. Participants were asked how their anxiety or OCD symptoms have changed during the COVID-19 pandemic. Four child/parent dyads (Alison, Max, Megan, Carrie) shared that their anxiety or OCD worsened during the pandemic. Participants used phrases such as "backtracked," "reversed," and "reverted" when describing changes in anxiety and OCD symptoms during this time. In contrast to these reports, four child/parent dyads (Evie, Lily, Sarah, Bea) indicated that the child's anxiety generally remained stable, or lessened, during the pandemic. These reports were relatively consistent with the quantitative data; for example, Alison and Max reported higher scores on the SCARED-C at Time 3 than at Time 2.

Reappearance of Previous Symptoms. Four parent/child dyads (Alison, Max, Megan, Carrie) discussed how some symptoms of anxiety or OCD that had improved after treatment appeared to reverse with the pandemic. For example, Alison's mother shared that they were planning to terminate treatment soon, until the pandemic started: "…and they [Alison and therapist] were going to be done. Right before all this started. We were going to have one more session and decide. And then this happened." Alison and her father both noted how she was continuing to experience some of the same anxiety symptoms during the pandemic that she had been addressing during treatment, such as worries about driving. Alison used the word "backtrack" to describe her anxiety symptoms. She shared that, during the pandemic, she was starting to "worry about everything and anything again." Max's mother also indicated that Max

requested to see his therapist again during this time: “He’s, he's told me that he would like to speak to her again. On numerous occasions.” Max shared that he has experienced more anxiety during the pandemic, which was reflected in a common worry he had before treatment (i.e., getting hurt):

> And then it [treatment] was helping and then as soon as, all this corona stuff came out, then I started having more anxiety attacks… like if something’s wrong with me I couldn’t go to the doctor because they’re, they’re only open for patients that have the corona. So that gave me more anxiety attacks that I could…something could be wrong with me and not be able to get help for it. (Time 3, Phone Interview)

Max’s report is an example of how anxiety symptoms that were previously present relapsed or reverted during the pandemic. Similarly, Carrie’s mother used the word “reverting” to describe Carrie’s OCD symptoms during this time. Her mother expressed how the pandemic was challenging for Carrie because she feels more comfortable at school than at home, since her OCD symptoms are related to her sister:

> You know, home is uncomfortable sometimes for her and having to be around her sister all day, without having a break. I think it kind of led to her reverting a little bit, not sitting on the furniture as much, and kind of confining herself to an area of the living room a little bit, when the pandemic started. (Time 3, Phone Interview)

Megan’s mother shared that Megan’s anxiety has worsened during the pandemic as well, with much of her anxiety related to distance learning. Megan similarly endorsed feeling “a lot more anxious” during the pandemic. She shared, “…just like anything that I had kind of gotten past, my worries have kind of come back up.”

Development of New Symptoms. Three of the four participants who endorsed a resurgence of anxiety symptoms during COVID-19 (Alison, Max, Megan) also described new symptoms of anxiety that developed during this time. Max and Megan described the development of symptoms specific to the pandemic. Max's mother indicated that Max "became very aware that the virus is real and, you know, what it does to people. So that did make that made him nervous." She described Max as being "very, very aware of his surroundings" when he did leave the house; he was "extra vigilant" about keeping his mask on and his hands in his pockets. Megan's mother similarly shared that she noticed new symptoms of anxiety arise that were specifically related to the coronavirus. Megan stated that she worried about her parents dying from the coronavirus.

Changes in Mood. Three participants (Alison, Max, Bea) spoke briefly about changes in mood that they experienced during the COVID-19 pandemic beyond anxiety symptoms. Max shared that he noticed himself being "more sensitive" during this time. Alison's father described her as "withdrawing from others":

> I think it's more, there's been withdrawals. It's a variety of things, the COVID pandemic, as well as the political aspects of it, and she doesn't necessarily agree with her friends' politics. And so she's removed herself from her groups, her group texts, her social media, things like that. And she's just basically withdrawn into herself. (Time 3, Phone Interview)

Alison herself did not speak about withdrawing or isolating from others but did note other changes in her mood: "My temper has been a lot shorter…due to my brothers being my brothers." Bea's mother also shared how the spring of her daughter's senior year would have been very busy, if not for the pandemic. She indicated a shift in Bea's mood: "…I think her

emotional field was probably more full of sadness and disappointment than anxiety." Bea's mother's description indicates that, while Bea did not experience a resurgence of anxiety symptoms, the COVID-19 pandemic negatively affected her emotional state in a different way.

Stability or Reductions in Anxiety. In contrast to these reports, four of the participants (Evie, Lily, Sarah, Bea) indicated that their anxiety symptoms were stable or improved during the pandemic. Two parents mentioned feeling surprised that their child's anxiety symptoms did not worsen or escalate. Evie's mother shared:

> It wasn't as, consuming as I think it would have been before [treatment] where she would have been afraid all the time. Like if her throat hurts she would be like, 'Do you think I have it?' Whereas this time, she hasn't done that. (Time 3, Phone Interview)

Evie's description of her own anxiety was consistent with her mother's report: "I've actually been doing super good with not getting anxious and stuff like that." Lily's mother similarly reported feeling surprised that Lily's anxiety did not escalate during the pandemic. She reasoned that Lily's anxiety did not worsen because "everybody is at home and they're safe." Prior to treatment, Lily experienced anxiety related to interactions with her brother; Lily's mother added that they have "been working on the relationship every day" which could also have contributed to Lily's stable anxiety symptoms during the pandemic. Lily initially responded "I don't know" when asked how her emotions or mood have changed during the COVID-19 pandemic. When specifically asked about her anxiety, she reported that her anxiety has gotten better.

Bea and Sarah's mothers also described a lessening of anxiety during the pandemic but did not indicate feeling surprised by this response. When asked if Bea has experienced any new symptoms of anxiety during the pandemic, such as concerns about the virus, her mother replied:

> No, I don't think so. I mean, certainly not any more than our son. I mean, everybody's nervous about the virus. But no, I don't. I think her response to that seems, um, seems typical and maybe even a degree or two calmer than what's typical. (Time 3, Phone Interviews)

Bea's mother's response also speaks to the broader implications of the COVID-19 pandemic on the mental health of individuals in the general population, in which individuals who may not be typically predisposed to anxiety are experiencing some level of nervousness or anxiety about the pandemic. Consistent with her mother's response, Bea did not endorse feeling more anxious during this time, but showed some apprehension about whether her symptoms would return to pre-treatment levels:

> I felt like I handled it fine. I don't think I was increasingly anxious because of COVID-19. I was confused about, going back to washing my hands a lot and using hand sanitizer. And felt confused and nervous, I thought that bringing those patterns back into my life was going to like, restart a lot of anxiety that I worked hard to get over, but I don't think it did, frankly. (Time 3, Phone Interviews)

Sarah and her mother also reported some improvements in anxiety during the pandemic. Sarah's mother reasoned that her anxiety lessened due to the removal of many of her previous stressors:

> I think it's been, you know, less pressure because first of all the, you know, the measure of success as her academic world would kind of, put upon her I think has completely changed because of the fact that there is no testing. (Time 3, Phone Interviews)

This report from Sarah's mother suggests that the type of symptoms that her child was experiencing prior to treatment was likely a contributing factor to how the pandemic affected her

symptomology and mood. Sarah also added that she has not experienced "any big anxiety" at home. However, she did report experiencing some new worries related to the pandemic:

> I'm always worrying, whenever, the occasional time we do go out…There were like still cars out there, but like a lot less, and parking lots. And that's just a little nerve wracking. Like is this going to be how, for the rest of the year? I always have those, a lot of what if questions and when? When we're out there. (Time 3, Phone Interviews)

Sarah also spoke about how it has been easier for her to learn at home than at school, due to the removal of the confines of time at school. Sarah previously experienced anxiety related to timed tasks. She described feeling better and less nervous about being able to work at her own pace on assignments. For youth who experienced anxiety specific to school prior to the pandemic, their anxiety appeared to improve or remain the same. This was likely as a result of the removal of these stressors.

Relief. Some participants (Evie, Sarah, Bea) also reported feeling a sense of relief or comfort as a result of staying at home during the pandemic. Of note, these participants were also the participants who reported a stability or decrease of anxiety symptoms during this time. Evie's mother noted how staying at home has removed some of the stress that Evie was previously experiencing at school: "…we're staying at home and that's where she's comfortable." Bea described how, prior to the pandemic, she was experiencing a rather chaotic end of her senior year in high school: "…my life was just nuts…I had, just like the wildest three months of 2020, like in terms of commitments and next year plans." She elaborated how she felt when schools shut down:

> I think like when it was first happening, it was at a really opportune time, it canceled my show [school play], but I was also, so exhausted. I was just like, okay, it's an opportunity to sleep. 'Cause I was so tired. (Time 3, Phone Interviews)

Bea's report depicts the mixture of emotions that she experienced when schools closed due to the pandemic. Closure of in-person school brought some relief, due to previously feeling exhausted and overworked.

School Concerns. All participants were educated via online schooling during the pandemic due to in-person school closures. Five of the eight child/parent dyads (Megan, Alison, Carrie, Evie, Max) who completed Time 3 surveys reported schooling concerns during the COVID-19 pandemic. Specifically, concerns noted by both parents and children during this time included lack of motivation, distractions and difficulty focusing, and school outcomes. Of note, the majority of these participants also reported an escalation of anxiety symptoms during the pandemic (see "Changes in Anxiety" section above). The remaining three participants (Lily, Sarah, Bea) reported that online school was less difficult, compared to in-person school.

Motivation. Many parents described a lack of motivation from their children (Megan, Alison, Carrie, Evie, Bea) during online schooling, with varying levels of concern. Parents observed a notable shift in their child's motivation to complete school assignments after the pandemic started and in-person schools closed. For example, Alison's father shared that after treatment, Alison was "…motivated to get her work done, study for tests, and get good grades. Then with the pandemic it reversed." Alison reported a similar experience: "I got really lazy…when it came out that schooling would be online for the remainder of the year, and I had a lot of trouble keeping up." Megan's mother similarly discussed that Megan had difficulty motivating herself to begin working. In addition to concerns about school assignments, Carrie's

mother described a lack of motivation with practicing for band: "…she attends all her Zoom meetings without any issues, but practicing outside of that she has not done, very often, if at all." Evie's mother discussed a shift from her daughter previously completing extra reading, to completing the minimum requirements during the pandemic: "She will do what she's required to do…she's not doing extra reading at night or anything like she was before." Bea's mother, a high school teacher, shared that while Bea demonstrated less motivation to complete her schoolwork during the pandemic, she was not concerned or surprised by this behavior:

> I would say sometimes less motivated. But again, it didn't really strike me because, between her and my son and the students I was trying to teach. Her response seemed…better than, you know, most of my students. (Time 3, Phone Interviews)

Bea's mother's response suggests that while her daughter showed less motivation to complete her work during online schooling, this experience was not unique to youth with anxiety disorders.

Attentional Control. Additionally, many participants (Megan, Alison, Max, Carrie) discussed difficulty sustaining attention during the pandemic. Specifically, participants reported an increase in distractions and difficulty focusing on schoolwork. Max's mother shared, "He would sit for a good hour maybe, and work, but after that he was like 'I'm done for the day!' Even though, he had a lot more to do." Megan was one of few participants to explicitly describe a connection between her anxiety and attentional control. Megan described any worries that she previously "had gotten past, coming back up." She stated, "I've had like a lot of trouble focusing. And, yeah, I just can't really get work done. It's just super hard." Megan also described feeling worried about completing her work: "…that also worries me that like, what if I don't get all my

work done? What if my teacher gets mad?" This example indicates that for some children, an increase in anxiety symptoms may have contributed to this difficulty sustaining attention.

Shift in Learning Environment. Participants also discussed the challenges with shifting from in-person school to learning from home. As noted above, some parents and children reasoned that schooling at home contributed to an increase in distractions, and thus difficulty sustaining attention. Carrie's mother indicated that it was difficult for Carrie to focus when she had other fun things to do at home, such as playing on her tablet. Max described the difficulty adjusting to his new learning environment: "It was just kinda hard because I was at home…and I'm used to coming home and knowing that I don't have to do any work." Max's account demonstrates the challenges he faced with adjusting mentally to completing all of his schoolwork from home. These examples indicate that for some children, the shift in learning environment from school to home was likely contributing to their EF difficulties.

School Outcomes. Several parents and children (Alison, Megan, Carrie) described concerns with school outcomes, such as the completion of school assignments and resulting grades. Alison's parents noted that Alison had not been completing her school assignments, to the extent that she has to repeat a class next year. Carrie's mother also shared concerns with her daughter's work completion. She described Carrie as "rushing through her homeschool assignments and missing things." Megan's mother also commented on Megan's lack of work completion. She shared, "…she has a very, very difficult time learning at home," noting that Megan had challenges with completing assignments that need to be done. For the majority of participants, schooling concerns during the pandemic were related to motivation and staying on-task. For several participants, these concerns also appeared to affect their child's school performance and outcomes.

Discussion

There are several conclusions that can be drawn from participants' responses about anxiety and OCD symptoms during the COVID-19 pandemic. For one, the COVID-19 pandemic has a range of effects on anxiety and OCD symptoms. Youth with anxiety disorders and OCD appear to be affected differently by the pandemic. For some participants, COVID-19 and the closure of in-person schools contributed to a resurgence of symptoms that had previously remitted during treatment. For others, the COVID-19 pandemic was associated with the development of new anxiety or OCD symptoms, such as specific worries about the coronavirus and the health of friends and family. The COVID-19 pandemic had the opposite effect for a few participants, where anxiety or OCD symptoms decreased. Data suggest that youth with anxiety and OCD may have different responses and reactions to the COVID-19 pandemic.

Conclusions can also be drawn regarding youth with anxiety disorders and OCD and school outcomes during the COVID-19 pandemic. Overall, the majority of youth reported some school concerns during in-person school closures, such as difficulties with EF skills such as attentional control and lack of motivation. These concerns could be attributed, at least in part, to environmental changes in youth's environment, such as the abrupt shift and transition from in-person school to learning from home and the increase of distractions when learning from home. A few participants also discussed difficulty focusing due to an increase in anxiety symptoms or changes in mood as a result of the pandemic. For a few participants, these concerns negatively affected school outcomes (e.g., declines in grades). For others, these changes were noticeable to the individual and/or his or her parent; however, school performance was not negatively affected.

Some patterns emerged with regard to differences in youth responses to the pandemic. Different responses appeared to be due to: 1) the specific symptoms of anxiety or OCD that

youth were experiencing prior to the pandemic (i.e., health anxiety, school-related symptoms), 2) youth's school engagement prior to in-person school closures, and 3) the family's responses and behaviors during the pandemic. For example, for some youth who experienced anxiety symptoms that were primarily related to school, the pandemic and closure of in-person school provided relief from an environment that typically caused anxiety. For some youth, specific stressors were removed when schools closed (e.g., timed tests, participating during class). For youth whose anxiety was previously worse at home than at school, the pandemic was more likely to exacerbate anxiety symptoms due to the increase of time spent at home. Furthermore, family responses to the pandemic also appeared to affect children's anxiety. Several parents commented on how their child felt less anxious due to the family sheltering in place and family members staying healthy.

These patterns show the nuances of the effect of the COVID-19 pandemic, and how the pandemic affects youth with anxiety in different ways depending on both individual and environmental factors. Previous research that has examined children and adolescent responses to large-scale events has often compared the responses of anxious versus non-anxious youth, rather than exploring responses within a group of youth with anxiety disorders (Caporino et al., 2020). Findings from the current study indicate the importance of refraining from generalizations about how youth with anxiety disorders and OCD may respond to a large-scale crisis such as COVID-19, given vast differences within this small sample.

For half of the sample, COVID-19 did not appear to negatively affect anxiety symptoms. There are a few potential explanations for the stability in anxiety symptoms among some youth in this study during the pandemic. For one, youth had either completed treatment, or completed a substantial number of treatment sessions, during the onset of the COVID-19 pandemic. Research

has found that CBT has long-term effectiveness on youth's mental health (Kodal et al., 2018). The long-term effectiveness of CBT suggests that several youth in the current study were able to maintain the benefits of treatment, even when faced with the onset of a global pandemic. For example, Bea, who experienced compulsions such as excessive use of hand sanitizer and handwashing prior to the pandemic, was concerned that she would revert to these compulsions due to the pandemic and backtrack on all of the progress she made. However, Bea spoke about her own surprise that she did not experience an increased desire to engage in these behaviors during the pandemic, suggesting a lasting effect of treatment.

Additionally, for some participants, anxiety symptoms were likely stable due to the type of anxiety and worries that youth experienced prior to treatment. Previous research that has been conducted during pandemics and outbreaks has shown that health anxiety uniquely predicts high levels of fear and worry, as opposed to general anxiety and worry (Blakely & Abramowitz, 2017; Wheaton et al., 2012). For example, research conducted during the 2009-2010 Swine flu pandemic and 2015-2016 Zika virus outbreak showed that health anxiety specifically was related to increased fear of the pandemics (Blakely & Abramowitz, 2017; Wheaton et al., 2012). Consistent with this prior research, a recent study on COVID-19 similarly found that health anxiety, but not generalized anxiety, was associated with increased fear of the coronavirus pandemic (Mertens et al., 2020). This previous research suggests that, for youth with anxiety symptoms unrelated to health anxiety, anxiety symptoms may not increase above and beyond the typical worry response among the general population during this unprecedented time.

CHAPTER 7:

RESULTS AND DISCUSSION PART IV

Part IV presents the results and discussion section for research question 7. This research question explores how levels and patterns of anxiety/OCD symptoms across treatment align with patterns of EF, self-efficacy, and school engagement. First, aggregate data exploring patterns are discussed. Next, a selection of individual case studies are presented to depict the experiences of individual participants. A summary of findings follows to examine patterns across treatment. Given the unprecedented nature of COVID-19 and variability of participant responses to the pandemic, Part IV examines patterns in anxiety and school functioning prior to the pandemic.

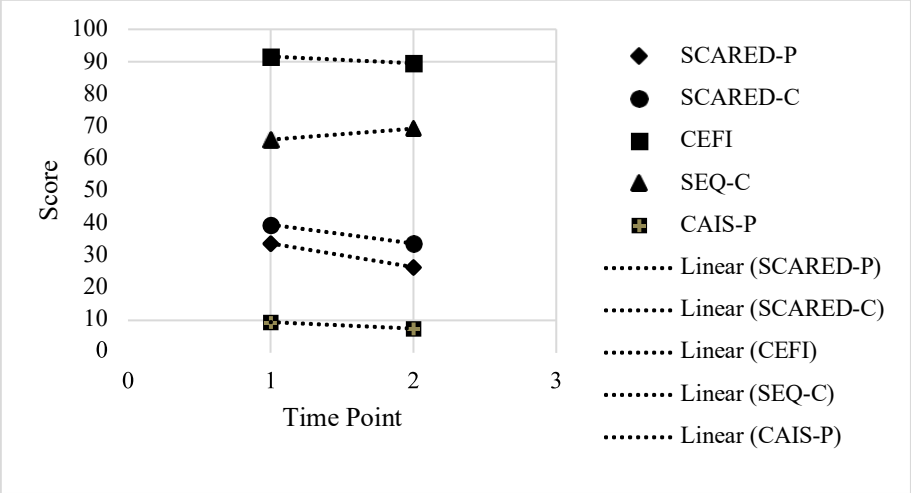
Research Question 7: Patterns Across Treatment

Aggregate Results

Average total scores across measures of anxiety (SCARED-P, SCARED total score), EF (CEFI total score), self-efficacy (SEQ-C total score), and school engagement (CAIS-P) were plotted to examine patterns in the data. Figure 4 displays the total scores on these measures at Time 1 and Time 2 for all participants in the study ($N = 12$).

Figure 4:

Average Total Scores on Key Variables Across All Participants

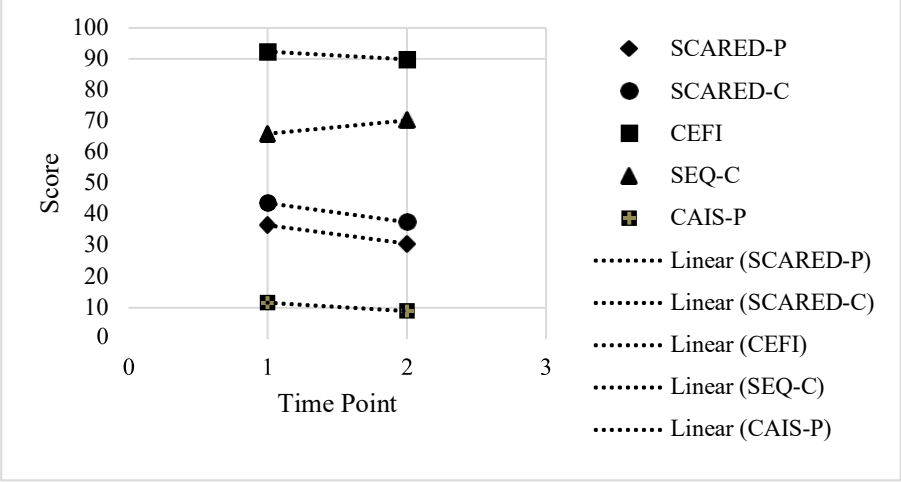


These data indicate that from Time 1 to Time 2, scores on the measures of anxiety, self-efficacy, and school engagement were in the expected direction, based on hypotheses. Scores on the SCARED-C (slope = -5.8) and SCARED-P decreased (slope = -7.3) from Time 1 to Time 2. Total scores on the SEQ-C increased, in the expected direction (slope = 3.4), and scores on the CAIS-P decreased, in the expected direction (slope = -2). The decrease in scores on the CAIS-P indicate that anxiety had less of a negative effect on children's school engagement from Time 1 to Time 2. In contrast to hypotheses, scores on the measure of EF decreased (slope = -2.1). Overall, data indicate that anxiety, self-efficacy, and school engagement demonstrated similar patterns, while scores on the EF measure unexpectedly decreased.

Data were also examined for the subsample of participants who completed Time 3 data (see Figure 5 for plotted Time 1 and Time 2 data of the subsample).

Figure 5:

Average Total Scores on Key Variables Across Time 3 Participants



Among this subsample, patterns in the Time 1 and Time 2 data aligned with the findings across all participants in the study (see Figure 5 for plotted data for the subsample). Scores on the SCARED-C (slope = -6.1), SCARED-P (slope = -5.9), and CAIS-P (slope = -2.7) decreased, in

the expected direction. Scores on the SEQ-C increased (slope = 4.3), in the expected direction, indicating that self-efficacy among the subsample of participants increased across treatment. Scores on the CEFI decreased, in an unexpected direction (slope = -2.5), that was consistent with the total sample. In sum, aggregate data of the Time 3 subsample indicate that this subsample of participants demonstrated patterns consistent with the total sample.

Individual Case Studies

To more closely examine patterns across these variables, findings from a selection of individual case studies are presented. Three case studies were selected from the subsample of Time 3 participants to represent: 1) participants with different initial presenting concerns and 2) different patterns that emerged across participants over the course of treatment. For each case study, quantitative results and a summary of qualitative results on the school functioning variables are first presented. An integrated discussion of changes that occurred during treatment across quantitative and qualitative variables are presented next. A summary of patterns across the anxiety and school functioning variables follow.

Case studies are presented for Megan, Max, and Carrie. Megan is 10-year-old female, diagnosed with GAD at intake. Megan's primary anxiety symptoms were related to school; she was also experiencing some symptoms of depression. Max is a 12-year-old male who was assigned a diagnosis of GAD at intake, with secondary diagnoses of Separation Anxiety and Unspecified Disruptive Behavior Disorder. Max's mother initially sought treatment for Max due to behavior concerns. He primarily presented with health anxiety and social anxiety symptoms, and experienced minimal school-related anxiety. Carrie is an 11-year-old female who was diagnosed with OCD. Carrie's OCD symptoms were primarily related to contamination by her sister; her symptoms were unrelated to school.

Megan

Megan's quantitative scores on all measures at Time 1 and Time 2 are presented (see Table 37). A summary of the qualitative data regarding the school functioning variables is also presented (see Table 38).

Table 37:

Megan's Scores on All Measures Across Psychological Treatment

Measures	Time 1	Time 2	Change	RCI	Reliable Change?
SCARED-P					
Total Score	**40**	**28**	**-12**	**-1.96**	**Y**
Panic	**8**	**1**	**-7**	**-2.42**	**Y**
GAD	10	10	0	0	N
Separation Anxiety	9	8	-1	-0.45	N
Social Anxiety	9	7	-2	-0.72	N
School Refusal	**4**	**2**	**-2**	**-1.98**	**Y**
SCARED-C					
Total Score	65	58	-7	-0.59	N
Panic	20	13	-7	-1.22	N
GAD	14	15	+1	0.37	N
Separation Anxiety	13	13	0	0	N
Social Anxiety	10	12	+2	0.50	N
School Refusal	8	5	-3	-1.28	N
DSM-5 Level 2 Anxiety					
T-Score	67.9	58.2	9.7	-1.89	N
Categorical Score	Moderate (3)	Mild (2)	-1.0	-	-
MCQ-C Total Score	66	60	-6	-1.24	N
School Engagement (CAIS-P)	6	1	+5	-1.03	N
Self-Efficacy (SEQ-C)					
Total Score	**65**	**81**	**+16**	**3.87**	**Y**
Academic Self-Efficacy	26	28	+2	0.74	N
Emotional Self-Efficacy	**16**	**28**	**+12**	**6.54**	**Y**
Social Self-Efficacy	23	25	+2	1.08	N
Executive Functioning (CEFI)					
Total Score	91	94	+3	0.53	N
Attention	98	101	+3	0.71	N
Emotion Regulation	80	78	-2	-0.26	N
Cognitive Flexibility	89	86	-3	-0.42	N
Inhibitory Control	86	86	+0	0	N
Working Memory*	92	108	+16	-	-

*RCI scores were not calculated for the Working Memory scale of the CEFI because reliability information was not provided by the CEFI authors (Naglieri & Goldstein, 2013)

Table 38:

Megan's Summary of Qualitative Results

	Parent		Child	
Construct	Time 1	Time 2	Time 1	Time 2
Executive Functioning				
Attentional Control	Minimal concern	No change	Moderate concern	**Moderate improvement**
Emotion Regulation	Substantial concern	**Substantial improvement**	Minimal concern	**Minimal improvement**
Self-Efficacy				
Academic Self-Efficacy	Moderate self-efficacy	No improvement	High self-efficacy	No improvement
Emotional Self-Efficacy	Low self-efficacy	**Substantial improvement**	Moderate self-efficacy	**Moderate improvement**
Social Self-Efficacy	Parent unsure	Parent unsure	Moderate self-efficacy	**Moderate improvement**
School Engagement				
Emotional Engagement	Moderate engagement	**Minimal improvement**	Moderate engagement	**Moderate improvement**
Behavioral Engagement	Low engagement	No change	Low engagement	No change
Cognitive Engagement	Moderate Engagement	No change	High engagement	No change

Anxiety Symptoms Before Treatment. Prior to treatment, Megan's anxiety symptoms were related to worries about school and social anxiety. Megan reported feeling nervous about getting called on during class if she did not know the answer to her teacher's question ("…if I really didn't know it, and she called on me I'd get kind of nervous, if I get it wrong"). Megan also endorsed worrying about completing school assignments and her grades. Megan reported

that she would always choose to work on easier assignments before difficult assignments, because "I'd get, nervous that I couldn't complete the hard assignments or that I'd get it wrong." Furthermore, Megan noted that her grades affected her mood and self-esteem: "…if I didn't get a good grade I would feel bad, I wouldn't feel good about myself." Megan's mother reported that Megan experienced anxiety symptoms related to attending school, particularly after a break: "…leading up to, the day of school, or school starting back up after a break."

Some of Megan's anxiety symptoms were also related to social anxiety. Megan's mother reported that Megan worried about "…how other kids would react to her, worrying about what they would say and what they would think, throughout the day." Megan attended a religious school, and she would often feel anxious on days that she had to attend chapel. Megan elaborated that she often felt anxious going into chapel because students were assigned to different "chapel families," where she could be in a group of students from a variety of grades ("…cause I'd be in a chapel family with people I didn't really know").

Changes After Treatment. ***Anxiety Symptoms.*** Megan reported that after treatment, she felt generally less anxious ("…it got better"). Her total score on the SCARED decreased across treatment. Megan's mother indicated during the interview that Megan's symptoms of anxiety are still present. For example, her mother shared, "I'm not sure if the symptoms have changed as much as…she seems to be getting more confident in, in handling them." However, her ratings on the SCARED and DSM-5 Level 2 Anxiety measure (see Table 37) suggest that she saw noticeable improvements in Megan's anxiety across treatment.

Megan and her mother also reported a decrease in school-related anxiety symptoms and an increase in Megan's ability to handle her anxiety symptoms. Megan stated, "I felt like I was more, confident going to school and I was less anxious." Megan shared that, after treatment, she

became less anxious about her grades. Megan noted that she learned in treatment "…it's ok to not always succeed." Megan and her mother's scores on the School Refusal subscale of the SCARED decreased slightly from Time 1 to Time 2 (see Table 37). Megan's mother also shared that Megan has more tools to cope with the symptoms when they do arise. Megan's mother reported that her school days "went a lot smoother because she knew how to handle the situations when they did come up." Similar to her mother, Megan stated that she had more tools to cope with her anxiety.

Executive Functioning. Reports from Megan during the phone interview indicated that she perceived improvements in her attentional control; she noticed "a little bit" of change in her ability to focus after treatment. Megan elaborated that the strategies she has learned during therapy helped her to "not be so alert, and like get distracted as easily." In contrast to Megan's report, her mother did not notice any changes after treatment with Megan's attention ("No, I don't think it did [change]"). Both Megan and her mother reported improvements in Megan's emotion regulation skills. Megan's mother reported that Megan now seems to "have more control over her emotions and reactions to situations." Megan similarly shared that she has noticed improvements in this area. Her mother's description of Megan's emotion regulation did not align with her ratings on the Emotion Regulation subscale of the CEFI, which slightly decreased.

Self-Efficacy. Megan and her mother both reported improvements in her emotional and social self-efficacy. Megan's mother stated, "I do think she's gained a lot more confidence in that area [controlling her emotions]." Megan similarly shared that she now feels more in control of her emotions and reactions: "Yeah I have like…more tools, that's something that's helped me." Her score on the emotional self-efficacy subscale of the SEQ-C significantly increased

across treatment. Megan shared that she learned how to cope better with social situations after treatment. Megan stated that, after treatment, she was better able to cope with a situation with a peer who was mean to her: "I felt like I had, more of an understanding of how to deal with it, when that happened when she would be mean to me and, ignoring her and problem solving, when those things would happen." Megan's score on the social subscale of the SEQ-C increased slightly, but this change was not significant. Based on the phone interviews, neither Megan nor her mother perceived any changes in her academic self-efficacy after treatment. For example, when asked if she noticed any changes, Megan said, "No, not really." Megan's scores on the academic subscale of the SEQ-C increased slightly, but this change was not significant.

School Engagement. Megan's mother's scores on the CAIS-P suggested that Megan's school engagement increased. Her mother's ratings indicated that Megan's anxiety affected her school engagement substantially less from Time 1 to Time 2. Item analysis of the CAIS-P indicated that, at Time 2, Megan's mother perceived that Megan's anxiety had less of an effect on her anxiety related to: getting to school on time, completing assignments, eating lunch with other kids, giving oral reports or reading out loud, and taking tests and exams. Megan's mother explained that Megan was more willing to go to school after treatment. Additionally, Megan described improvements in her emotional engagement due to changes in her peer relationships. Before treatment, Megan had difficulty with interactions with one peer in particular. Megan noted that coping skills she learned during treatment assisted her with handling this negative interaction. Neither Megan nor her mother reported improvements in Megan's behavioral or cognitive engagement after treatment.

Patterns Across Anxiety and School Functioning Variables. When examining Megan's quantitative and qualitative data, results suggest similar patterns across anxiety and

school functioning variables. Consistent with the average data across the sample of participants, Megan's anxiety symptoms decreased across treatment. Megan's self-efficacy increased, indicated by a significant increase in the total score on the SEQ-C and a significant increase in the emotional self-efficacy subscale. The negative influence of anxiety on Megan's school engagement decreased, indicated by the reduced score on the CAIS-P from Time 1 to Time 2. Though causal conclusions cannot be drawn, data suggest that as Megan's anxiety symptoms and severity decreased, her self-efficacy and school engagement also increased. Of note, some of the qualitative responses from the phone interviews did not align with the quantitative data. Specifically, although both Megan and her mother reported perceived increases in her emotion regulation, Megan's mother's ratings on the emotion regulation subscale of the CEFI did not increase. In sum, data indicate that anxiety and school functioning variables showed similar, expected patterns across treatment.

Max

Max's quantitative scores on all measures at Time 1 and Time 2 are presented in Table 39. A summary of his qualitative data regarding the school functioning variables is also presented in Table 40.

Table 39:

Max's Scores on All Measures Across Psychological Treatment

Measure	Time 1	Time 2	Change	RCI	Reliable Change?
SCARED-P					
Total Score	40	37	-3	-0.49	N
Panic	3	2	-1	-0.35	N
GAD	11	13	+2	0.90	N
Separation Anxiety	10	7	-3	-1.34	N
Social Anxiety	2	2	+0	0	N
School Refusal	2	1	-1	-0.99	N
SCARED-C					

Table 39 (cont'd):

Total Score	**39**	**12**	**-27**	**-2.26**	**Y**
Panic	4	0	-4	-0.70	N
GAD	**12**	**6**	**-6**	**-2.24**	**Y**
Separation Anxiety	**9**	**1**	**-8**	**-2.62**	**Y**
Social Anxiety	**13**	**5**	**-8**	**-2.0**	**Y**
School Refusal	**3**	0	-3	-1.28	N
DSM-5 Level 2 Anxiety					
T-Score	**67.9**	**52.6**	**-15.3**	**-2.98**	**Y**
Categorical Score	3	1	-2	-	-
MCQ-C					
Total Score	**49**	**39**	**-10**	**-2.06**	**Y**
CAIS-P	12	11	-1	-0.21	N
SEQ-C					
Total Score	56	58	+2	0.48	N
Academic Self-Efficacy	18	18	+0	0	N
Emotional Self-Efficacy	**18**	**26**	**+8**	**4.36**	**Y**
Social Self-Efficacy	**20**	**14**	**-6**	**-3.24**	**Y**
CEFI					
Total Score	74	74	+0	0	N
Attention	73	79	+6	1.41	N
Emotion Regulation	78	66	-12	-1.57	N
Cognitive Flexibility	80	78	-2	-0.28	N
Inhibitory Control	79	67	-12	-1.87	N
Working Memory	79	82	+3	-	-

*RCI scores were not calculated for the Working Memory scale of the CEFI because reliability information was not provided by the CEFI authors (Naglieri & Goldstein, 2013)

Table 40:

Max's Summary of Qualitative Results

	Parent		Child	
Construct	Time 1	Time 2	Time 1	Time 2
Executive Functioning				
Attentional Control	Minimal concern	**Substantial improvement**	Minimal concern	No improvement
Emotion Regulation	Substantial concern	**Substantial improvement**	Minimal concern	No improvement
Self-Efficacy				

Table 40 (cont'd):

Academic Self-Efficacy	Low self-efficacy	**Substantial improvement**	Unsure	No improvement
Emotional Self-Efficacy	Low self-efficacy	**Substantial improvement**	Moderate self-efficacy	No improvement
Social Self-Efficacy	Moderate self-efficacy	No improvement	Low self-efficacy	No improvement
School Engagement				
Emotional Engagement	Low Engagement	**Minimal Improvement**	Low Engagement	No improvement
Behavioral Engagement	Low Engagement	No improvement	Low Engagement	**Moderate Improvement**
Cognitive Engagement	Low Engagement	**Moderate Improvement**	Moderate engagement	No improvement

Anxiety Symptoms Before Treatment. Phone interviews indicated that Max's anxiety symptoms prior to treatment were primarily related to health anxiety, social anxiety, somatic symptoms, and some school-related anxiety symptoms. Both Max and his mother reported that Max experienced worries related to his health. Specifically, Max's mother indicated that Max experiences worries related to getting hurt and going to the doctor. She noted that he "asks a million questions about what they're [the doctor] going to do and everything else weeks beforehand, for every single day until that appointment." Max shared that he felt anxious if he felt sore in his body: "…if I'm sore from doing something then I get worried that it's not, soreness, it's something else, and I'd have an anxiety attack about it." Regarding social anxiety, Max's mother shared that Max often asked questions about upcoming social events, such as if his

family is going camping: "…he always wants to know who's there…he asked me every day leading up to it, who is going to be there, who he can play with." When prompted with various examples of worries children might experience at school, Max endorsed feeling anxious about volunteering or participating during class, because he was worried that other students might not like him.

Max and his mother also reported somatic symptoms. Max shared that he has experienced anxiety attack, which he described as his heart "pumping real fast." Max's mother also reported that Max experienced some somatic symptoms, sharing that Max complained of stomachaches "once in a while." Max, but not his mother, reported anxiety symptoms related to school. Max stated that he could not concentrate at school because he was "always thinking about" worries. Max additionally mentioned feeling nervous about being an 8th grader next year: "I'm kinda nervous that I'm not going to pass, since 8th grade's the hardest grade in middle school." In contrast, Max's mother said that Max did not appear to be worried or anxious about completing school assignments, his grades, taking tests, or participating during class. Max's mother did share that Max avoids difficult tasks and chooses to work on easier tasks first.

Changes After Treatment. ***Anxiety Symptoms.*** Max's mother's total score on the anxiety severity measure (DSM-5 Level 2 Anxiety Severity) significantly decreased from Time 1 to Time 2. Her score on the SCARED also decreased slightly across treatment. Max's ratings on quantitative measures of anxiety (i.e., SCARED, MCQ-C) decreased across treatment as well; his total score on the SCARED significantly decreased. The decrease in these scores suggest that Max's anxiety symptoms were less severe after treatment. Neither Max nor his mother, however, described a change in anxiety severity during the phone interviews. After treatment, Max's mother shared that Max seemed to be more successful at coping with his anxiety internally: "He

seemed to…be okay dealing with it internally in his own mind." Additionally, she observed that Max "was not asking me as many questions leading up to appointments or anything."

Max also described experiencing increased emotional awareness. Max stated that during treatment, it was helpful to initially learn that he was experiencing anxiety, because he was previously unsure of what he was feeling. Max shared, "…after I learned that I did have anxiety, then I really tried as best I could to get rid of it. And it did help." Max stated that he learned to "talk himself out of" the worries he experiences. Max indicated that his anxiety is definitely getting better, and described how his mood and functioning has changed as a result of treatment:

> I'd have an anxiety attack about having anxiety, because I'd get scared that it wasn't anxiety, that it was something else. So I'd get scared about that, I'd get worried that it wasn't anxiety. But then after I learned that it really is anxiety, and that other kids go through it too. After I realized that, it started getting better to where I can…I'm happier than I used to be like before. I don't want to say that I was depressed, but I was always sad and worried about everything. But now, I'm actually happy about stuff. (Time 3, Phone Interview)

Max's responses reflect an increase in his understanding of his own emotions and an increase in mood that occurred along with a reduction in his anxiety symptoms.

Executive Functioning. Max's mother reported improvements in both Max's attentional control and emotion regulation after treatment. In contrast, Max did not report changes in his executive functioning. According to Max's mother, after treatment, she noticed improvements in his ability to pay attention ("He definitely…has gotten better with paying attention since treatment started"). Max's scores on the attention subscale of the CEFI increased from Time 1 to Time 2, although this change was not significant. Max's mother also reported improvements in

Max's emotion regulation. When asked about changes in Max's ability to calm himself down, Max's mother said, "Yeah, he seems to be better with that. And has better control over that." Of note, Max did not perceive any changes in his ability to pay attention or control his emotions or behavior, specifically his anger: "Every time I get angry, it would always be the same. Nothing ever changed."

Self-Efficacy. Max's total score on the self-efficacy measure increased slightly from Time 1 to Time 2; however, this increase was not significant. Max did not perceive any changes in his academic self-efficacy, noting that "it was all really the same." This perception aligned with his quantitative scores on the academic self-efficacy measure. In contrast, Max's mother perceived improvements in Max's academic self-efficacy after treatment. She noted that Max started to attempt his work by himself, and she did not have to be sitting right next to him while he worked: "…so that definitely changed, for the positive." Max did not verbally describe perceived changes in his ability to control his emotions, before or after treatment. However, on the SEQ-C, Max's scores on the emotional self-efficacy measure significantly increased from Time 1 to Time 2. Max's mother indicated that she thought Max's ability to control his emotions and behavior improved, although she was unsure of Max's perception. Max did not indicate that he noticed changes in his social self-efficacy after treatment: "…no, not really. I was, I was still one of those kids to be scared of" (Time 3 Phone Interview). However, his scores on the social self-efficacy subscale decreased significantly from Time 1 to Time 2. In contrast, Max's mother commented on improvements in Max's relationships with others but was unsure of whether Max's perception of how he gets along with others changed.

School Engagement. Max's mother's scores on the CAIS-P demonstrated that she did not perceive that Max's anxiety affected his school engagement substantially less from Time 1 to

Time 2. Additionally, Max's mother reported that she did not notice any changes regarding his general attitude towards school. Max's mother indicated that there were some improvements in Max's relationships with peers, although she was hesitant to attribute those improvements to treatment ("they're…growing up a little bit and just getting more mature. And that's probably why some relationships have gotten better"). Max did not perceive changes in his interactions with others. Max shared that his therapist would talk to him about his interactions with teachers and try to help him handle the situations better. He described trying to implement what she talked to him about the next time he went to school, with little success. Max's mother did not report any changes in Max's behavioral engagement. Max commented that since his anxiety has improved, he would like to try baseball again next year ("Because before I got anxiety, I used to love baseball"). Max's mother reported improvements in his cognitive engagement (i.e., motivation and work completion). Specifically, he "became much more organized and seemed like he wanted to do his schoolwork," and "he definitely worked harder." In contrast, Max reported no changes in his attitude toward school or his motivation to complete work.

Patterns Across Anxiety and School Functioning Variables. Max's quantitative and qualitative data reveal similar patterns across the anxiety and school functioning variables, although perceptions between Max and his mother were rather discrepant. Max's anxiety decreased after treatment, as indicated by qualitative reports, the total score on the SCARED-C, and the DSM-5 Level 2 Anxiety Measure. According to Max's mother, Max experienced improvements in his EF and self-efficacy, although Max did not verbally report these same changes. Of note, Max's scores on the SEQ-C did increase, especially on the emotional self-efficacy subscale. Minimal to moderate improvements were indicated for Max's school engagement, though the score on the CAIS-P did not reflect these improvements. Although

reports across the different variables were discrepant between Max and his mother, an examination of the quantitative and qualitative data indicated similar patterns regarding the changes in anxiety and school functioning variables after treatment.

Carrie

Carrie's quantitative scores on all measures at Time 1 and Time 2 are presented in Table 41. A summary of her qualitative data regarding the school functioning variables is also presented in Table 42. Carrie did not participate in the phone interviews; all qualitative data is reported by Carrie's mother from the phone interviews.

Table 41:

Carrie's Scores on All Measures Across Psychological Treatment

Measure	Time 1	Time 2	Change	RCI	Reliable Change?
CY-BOCS-PR					
Total Score	29	25	-4	-0.99	N
Obsessions	13	12	-1	-0.37	N
Compulsions	16	13	-3	-1.05	N
CY-BOCS-CR					
Total Score	22	21	-1		
Obsessions	12	9	-3	-0.89	N
Compulsions	10	12	+2	0.76	N
Checklist (Parent)					
Total Score	12	6	-6	--	--
Obsessions	3	2	-1	--	--
Compulsions	9	4	-5	--	--
Checklist (Child)					
Total Score	21	9	-12	--	--
Obsessions	11	5	-6	--	--
Compulsions	10	4	-6	--	--
MCQ-C	44	47	+3	0.62	N
COIS-R	0	0	0	0	N
SEQ-C					
Total Score	70	75	+5	1.21	N
Academic Self-Efficacy	33	35	+2	0.74	N
Emotional Self-Efficacy	17	16	-1	-0.55	N
Social Self-Efficacy	20	24	+4	**2.16**	**Y**
CEFI					

Table 41 (cont'd):

	Total Score	89	96	+7	1.21	N
	Attention	92	95	+3	0.71	N
CEFI						
	Emotion Regulation	89	98	+9	1.18	N
	Cognitive Flexibility	80	83	+3	0.42	N
	Inhibitory Control	97	105	+8	1.25	N
	Working Memory*	97	104	+7	--	--

*RCI scores were not calculated for the Working Memory scale of the CEFI because reliability information was not provided by the CEFI authors (Naglieri & Goldstein, 2013)

Table 42:

Carrie's Summary of Qualitative Results

	Parent	
Construct	Time 1	Time 2
Executive Functioning		
Attentional Control	Minimal concern	No change
Emotion Regulation	Moderate concern	Moderate improvement
Self-Efficacy		
Academic Self-Efficacy	High self-efficacy	No change
Emotional Self-Efficacy	Moderate self-efficacy	**Moderate improvement**
Social Self-Efficacy	Moderate self-efficacy	**Moderate improvement**
School Engagement		
Emotional Engagement	High engagement	No change
Behavioral Engagement	High engagement	No change
Cognitive Engagement	High engagement	No change

OCD Symptoms Before Treatment. Carrie's OCD symptoms were primary related to fear of contamination from her younger sister, and the influence of these symptoms on her family

relationships. Carrie's mother reported that prior to treatment, Carrie refused to touch anything that her sister had potentially touched, including sitting on furniture in the home. Carrie also avoided sitting close to her sister or walking near her. Her mother noted that if Carrie and her sister walked past each other, "She used to jump out of the way, like she was scared." Carrie's mother shared that "it got so bad that she wouldn't even get in the car." If she did get in the car, she sat on a towel, sanitized the seat belt, and used large quantities of hand sanitizer.

Carrie's mother shared that these symptoms were greatly affecting her life and the lives of her family members, with tension and arguing in the home. Carrie's mother was also concerned about the relationship between Carrie and her sister, since her sister was a large component of her OCD. Her mother shared, "I worry about [her sister's] well-being just as much as Carrie's because she's the target. And I worry about her mental health and their relationship together."

Changes After Treatment. ***OCD Symptoms.*** Carrie's mother reported that Carrie's OCD symptoms improved "dramatically" after treatment. Changes that were noted in Carrie's OCD symptoms included a reduction in contamination compulsions. For example, Carrie's mother shared that after treatment, Carrie has had an easier time riding in the car. Carrie's mother also reported a reduction in the use of hand sanitizer ("She is not using hand sanitizer obsessively like she was before"). Carrie's mother's scores on the CY-BOCS-PR decreased slightly from Time 1 to Time 2; Carrie's score decreased by 1 point. Carrie and her mother's scores on the CY-BOCS Symptom Checklist also both decreased across treatment. Additionally, Carrie's mother shared that Carrie's reduction in OCD symptoms were also related to improvements in her family relationships. Her mother stated that "there's not nearly as much fighting" between Carrie and her sister. Carrie's mother indicated that there "is more harmony in

the family" and the family is able to do more things together. Carrie's mother also reported improvements in her own mental health ("I'm not nearly as anxious and sad").

Executive Functioning. Carrie's total score on the EF measure (CEFI) increased from Time 1 to Time 2, but the improvement was not clinically or statistically significant. Carrie's subscale scores on the CEFI also did not significantly change from Time 1 to Time 2, though all subscale scores increased slightly. Reports from Carrie's mother during the phone interview indicated a perceived stability in Carrie's attentional control. She noted that there "continues to not be any issues" related to her attention at school. Her mother described some improvements in emotional regulation, such as Carrie being "much more even tempered now, for the most part."

Self-Efficacy. Carrie's total score on the self-efficacy measure (SEQ-C) increased from Time 1 to Time 2, although this increase was not statistically or clinically significant. Carrie's mother did not perceive any changes in Carrie's academic self-efficacy across treatment. Carrie's mother expressed that Carrie's emotional self-efficacy appeared to improve after treatment; she described her as "more even tempered." In contrast, Carrie's score on the emotional self-efficacy subscale decreased slightly from Time 1 to Time 2. Carrie's mother reported improvements in Carrie's relationships with her family after treatment, although she did not address whether Carrie's perceptions of her ability to get along with family members changed. Carrie's score on the social self-efficacy subscale increased significantly across treatment. Carrie's scores on this measure suggest that she perceived improvements in her social self-efficacy.

School Engagement. Carrie's mother's scores on the COIS demonstrated that Carrie's OCD symptoms did not affect her school engagement, before or after treatment. During the phone interview, Carrie's mother did not perceive any changes in Carrie's school engagement after treatment, when asked about her general attitudes towards school and motivation to

complete work, participation in extracurriculars, and relationships with peers and teachers. Of note, Carrie's mother did not report any concerns with Carrie's school engagement before treatment. In fact, her mother shared that Carrie liked school, and "felt it was a relief to be at school" because Carrie and her sister attended different schools.

Patterns Across OCD and School Functioning Variables. Carrie's OCD symptoms, EF, self-efficacy, and school engagement showed different patterns across treatment. According to Carrie's mother, Carrie's OCD symptoms decreased from Time 1 to Time 2. Scores on the CY-BOCS Symptom Checklists that Carrie and her mother completed also indicated a reduction in obsessions and compulsions across treatment, although total scores on the CY-BOCS remained relatively stable. Regarding EF, Carrie's mother reported some improvements with her emotion regulation skills but did not indicate many other changes in Carrie's EF. Of note, Carrie's mother also did not have EF concerns prior to treatment. Some improvements were noted in Carrie's self-efficacy, particularly her emotional self-efficacy (based on an increase on the SEQ-C emotional self-efficacy subscale and her mother's report). Carrie's mother reported that Carrie enjoys attending school and did not report any changes in Carrie's school engagement across treatment. Overall, Carrie experienced a reduction in OCD symptoms; her self-efficacy moderately increased; and her emotion regulation slightly increased. Carrie' other EF skills and school engagement appeared to remain stable.

Summary

In sum, aggregate data across all participants in the sample indicate that youth experienced similar patterns regarding changes in symptomology, self-efficacy, and school engagement. On average, participants experienced a decrease in anxiety symptoms, and an increase in self-efficacy and school engagement. Aggregate data across all participants in the

study indicated that EF scores decreased, contrary to hypotheses. However, as discussed in Chapter 5, many parents and children reported during the phone interviews some improvements in youth's attentional control and emotion regulation skills after treatment. These data indicate that while there may have been some improvements in specific EF skills, this was not a primary change that youth and families perceived after treatment. Additionally, participants typically perceived the most change in children's emotion regulation, compared to other EF skills.

Among the selected case studies, the two youth with anxiety disorders (Megan, Max) demonstrated patterns consistent with the aggregate data. In other words, Megan and Max's anxiety symptoms decreased, along with an increase in self-efficacy and school engagement, and stability in total EF. Of note, Megan and Max had similar patterns across treatment, despite the fact that Megan and Max experienced different symptoms of GAD. Megan's anxiety symptoms were primarily related to school, and Max's anxiety symptoms were primarily related to health anxiety and social anxiety. This suggests that youth with GAD may experience both reductions in anxiety symptoms and improvements in school engagement and self-efficacy after a course of CBT for anxiety, regardless of the specific type of anxiety symptoms they may face. In contrast, while Carrie's OCD symptoms declined and her self-efficacy increased, her school engagement and EF appeared to remain stable.

When examining aggregate findings prior to the onset of the COVID-19 pandemic, coupled with patterns indicated in the selected case studies and the themes across qualitative phone interview data, results from this study suggest that decreases in anxiety during treatment occur alongside increases in youth's specific EF skills (i.e., emotion regulation), self-efficacy, and school engagement. For the two participants in the study with OCD as a primary diagnosis,

the connection among these variables, and changes in these variables across treatment, was not as convincing.

Although data from the CEFI did not indicate improvements in EF across treatment, participants spoke about the connection between their anxiety and EF difficulties, as well as improvements in EF when anxiety symptoms reduced. For example, some participants described having difficulty attending when anxiety levels are high and noticed improvements in their attention when anxiety decreased. Some participants noted how when they were less focused on their internal body states, they were better able to pay attention during school. Participants, especially parents, also described challenges with their children's emotional awareness and emotion regulation prior to treatment, and improvements that they noticed in these areas after treatment. These data indicate that certain EF skills, such as emotion regulation, may be more likely to improve as a result of CBT for pediatric anxiety or OCD than other skills. Also of note, parent ratings of their child's EF on the CEFI fell in the average range prior to treatment. It is possible that in a sample of participants with lower initial levels of EF, CBT for anxiety or OCD could lead to improvements in EF skills.

Findings from this study also support the connection between anxiety and domain-specific self-efficacy, particularly emotional self-efficacy. Total self-efficacy scores on the SEQ-C increased, on average, after treatment. Although causal conclusions cannot be drawn, findings from this study suggest that reductions in anxiety or OCD symptoms may be related to improvements in children's self-efficacy, beyond coping efficacy. Findings suggest that youth may be able to generalize the coping skills they learn during treatment to other areas of lives, increasing their perceived competence in these areas. Participants discussed connections between self-efficacy and anxiety, particularly in the context of their anxiety symptoms. For example,

participants spontaneously discussed their social anxiety symptoms and school-related fears when asked about their social and academic self-efficacy, respectively. Regarding emotional self-efficacy, parents and children both reported perceived interests in this area. For example, Megan's case study revealed that Megan felt more confident in her ability to handle her emotions, and her mother similarly noticed this increased confidence.

Finally, results from this study support a relation between youth's anxiety and school engagement. Aggregate data revealed that, according to parents, anxiety had less of a negative effect on children's school engagement after treatment. For some, improvements in anxiety appeared to affect their ability to effectively navigate relationships, including those at school. Megan discussed how she felt more confident in her ability to cope with a conflictual peer relationship at school and felt less bothered by this relationship. Although Max himself did not recognize changes in his school engagement, his mother indicated that Max's cognitive engagement appeared to increase, as he exerted more motivation and effort in school after treatment.

CHAPTER 8:

IMPLICATIONS AND LIMITATIONS

Findings from this study have important implications for youth with anxiety disorders and OCD, as well as parents, educators, and researchers. An overarching implication of this study is the importance of treatment for youth who are facing heightened levels of anxiety or OCD symptoms. In this study, many youth and their parents reported improvements not only in the child's symptomology, but executive functioning, self-efficacy, and school engagement. Moreover, youth and parents in this study often described improvements in the lives of the child and their families, as a result of treatment. These results indicate the importance of mental health treatment for the overall well-being of children, adolescents, and families.

Implications for Parents and Educators

Results of this study provide implications for parents and educators who are involved in the lives of youth with anxiety and OCD. Implications for parents and educators regarding youth's executive functioning, self-efficacy, and school engagement are discussed. Additionally, implications are discussed in relation to the COVID-19 pandemic.

Executive Functioning

Findings from this study suggest that for children with anxiety disorders, inattention may occur in the classroom when children are experiencing moments of heightened anxiety. In other words, difficulty focusing, particularly for those children who typically do not display attention concerns, may signify that the child's anxiety is elevated. An additional finding from this study, consistent with previous research, is that children with anxiety disorders may display a lack of emotional awareness and difficulty modulating their emotions.

Parents and educators are well-equipped to assist children who are experiencing executive functioning difficulties. In regards to emotion regulation, Gottman et al.'s (1997) research on parenting and emotions suggests that parents who adhere to an "emotion coaching" philosophy are more likely to label and validate their child's emotions, support children with strategies to cope during emotionally-charged situations, and view negative emotions as an opportunity for teaching (Gottman et al., 1996). Studies have found that children of parents who use emotion coaching strategies have better emotion regulation skills, fewer internalizing symptoms, and more positive peer relations, compared to children of parents who dismiss emotions (Hurrell et al., 2017; Gottman et al., 1997). Emotion coaching strategies can be helpful, particularly for youth with anxiety and OCD, at home and at school to improve children's emotional awareness and emotion regulation skills.

Furthermore, findings from this study showed that several parents and children discussed an increased used of effective coping strategies in relation to the child's emotion regulation skills. While causality cannot be concluded from this study, it is possible that an increase in participants' use of coping strategies was associated with improvements in their emotion regulation skills. This finding suggests the need for awareness among school staff and educators of coping strategies that are effective for children with anxiety disorders and OCD. Communication and collaboration between parents and schools, as well as schools and outside treatment providers, is critical. Educators could prompt students to use their coping strategies in the classroom prior to the student escalating. For example, teachers may notice that their student is having difficulty focusing. A brief check-in with the student could alert the teacher that the student is having difficulty coping with their anxiety symptoms, and the teacher could prompt the student to use a coping strategy.

Self-Efficacy

Results from this study suggest that youth with anxiety disorders and OCD may experience low self-efficacy, especially low emotional self-efficacy. Findings also indicate that both children and parents perceived improvements in children's self-efficacy, across various self-efficacy domains, after treatment. These findings have implications for how to best help children with anxiety disorders or OCD, during treatment and in the home and school settings.

Addressing youth's avoidance of feared situations is a potential method for increasing self-efficacy. Given that avoidance limits children's opportunities for mastery experiences, clinicians, parents, and educators should support youth by reducing this avoidance. For example, during treatment, clinicians can process with children before, during, and after completing exposure exercises. These processing experiences can help to increase youth's confidence and sense of mastery. Similarly, parents can support children by encouraging them to face their fears. Rather than permitting children to completely avoid a feared situation, parents should engage in active listening, validate children's feelings, and remind children of coping skills to use during moments of distress. Similar techniques can also be used in the classroom. Teachers may use modifications of assignments to decrease the severity of youth's anxiety, without eliminating the task in its entirety. For example, a child who experiences severe anxiety related to giving presentations during class could be asked to complete a similar, but alternative, assignment (i.e., presenting to the teacher or a small group of students, rather than the entire class). Engaging in these exposure exercises, while providing support and encouraging children to use their coping skills, can help increase youth's self-efficacy.

Additionally, conclusions from this study suggest that regardless of the type of anxiety diagnosis, children with anxiety or OCD may experience low social self-efficacy (i.e., children in

this study who had generalized anxiety, rather than social anxiety disorder, experienced low social self-efficacy). In other words, the type of anxiety disorder that a child has does not directly correspond with the child's self-efficacy. This suggests that other factors, such as children's emotion regulation skills, may affect children's self-efficacy.

School Engagement

Findings from this study add to the sparse literature on childhood anxiety disorders and school engagement. Results showed that the majority of participants, particularly children, did not initially express substantial concerns with children's emotional or behavioral engagement. While participants did not initially report substantial concerns with behavioral engagement, many children and parents noted improvements in behavioral engagement across treatment, suggesting that anxiety (and improvements in anxiety after treatment) does affect youth's behavioral engagement. Prior to treatment, parents reported concerns with children's cognitive engagement more often than behavioral or emotional engagement. In fact, only one parent described their child as having high cognitive engagement before treatment. This suggests that anxiety symptoms may negatively affect cognitive and behavioral engagement for some youth, more so than emotional engagement.

Additionally, findings study showed that for approximately half of the subsample, parents and/or children noticed improvements across the various dimensions of school engagement from Time 1 to Time 2. This suggests that school engagement may improve after treatment for some youth with anxiety disorders or OCD, although causal statements cannot be made. This is an important finding, given the paucity of anxiety and OCD treatment research examining school-specific outcomes, as well as the limited research that has specifically explored anxiety and school engagement.

These results have implications for both parents and educators working with this population. For one, results demonstrate the importance of positive relationships with peers and teachers for students' emotional engagement. While many participants experienced anxiety symptoms specifically related to school, the majority of children continued to enjoy going to school, despite these fears. This demonstrates the importance of relationships, feeling connected to peers, and positive experiences at school to maintain children's school engagement.

Children with anxiety in the current study were most likely to have concerns in the area of cognitive engagement, as reported by their parents. For children who have lower levels of cognitive engagement, it is important to consider how teaching practices can facilitate mastery goals and growth mindsets, rather than performance goals and fixed mindsets (Filippello et al., 2019). Teachers who promote critical and independent thinking, encourage autonomy, and balance academic activities and student needs are successful at fostering mastery goals in their students (Filippello et al., 2019). For youth with anxiety disorders, findings from this study suggest that engaging in these teaching practices may be particularly important for their school engagement and resulting school success.

Parents can similarly engage in practices that promote school engagement in a variety of ways. Parents can encourage children to participate in extracurricular activities and events at school. Given that children with anxiety may experience anxiety symptoms related to these events, parents may need to employ the use of strategies that the child learned during CBT, such as framing these experiences as exposure practices. Parents can also praise effort, rather than successes, to help support the development of their child's mastery goals and growth mindsets. It is important to recognize that their child may have developed performance goals due to the

anxiety that they experience. Parents can frame mistakes, risk-taking, and persistence as a normal and celebrated part of development, in order to foster the development of mastery goals.

COVID-19 Pandemic

This study also explored the effects of the COVID-19 pandemic for youth with anxiety or OCD, due to the timing of this study's Time 3 data collection. Results showed that there were a range of effects of the COVID-19 pandemic on anxiety and OCD symptoms. As found in this study, youth with anxiety disorders or OCD may not necessarily display increased fears or worries specific to the coronavirus, above and beyond their peers. However, for others, the pandemic could have exacerbated prior symptoms or created new symptoms, which could affect the child's functioning when transitioning to in-person school. Parents and educators should be aware that youth may respond differently to the pandemic, and refrain from generalizations or assumptions about youth's functioning due to a mental health diagnosis of anxiety or OCD.

For youth whose anxiety or OCD symptoms had improved, parents and educators should be aware that some of this progress may regress when in-person school returns, and youth could experience a resurgence of symptoms. This could particularly be the case for those children who perceive school as a source of anxiety, and who felt a sense of relief when learning at home during the onset of the COVID-19 pandemic. For children with school-related anxiety symptoms, the transition back to in-person school in the future could be challenging. It will be important for school and educators to consider how to support children who are experiencing a resurgence in anxiety symptoms upon returning to school. Accommodations may be needed to support these students, such as extended time on tests and assignments to lessen the anxiety symptoms associated with fears specific to school.

Implications for Research and Future Directions

This study also provides implications for research and future directions. This study was one of few studies with youth with anxiety or OCD to feature qualitative data. Often, qualitative studies with children and adolescents with anxiety or OCD are limited to individual case studies. The design of this study provided a unique account of children and parent's lived experiences, in addition to scores on quantitative measures of anxiety, OCD, EF, self-efficacy, and school engagement. Future studies should similarly include qualitative components to their research design, in order to continue to hear directly about the experiences of children and their families.

Given that the majority of participants in the current study had GAD as a primary diagnosis, it will be important for future research to include youth with a variety of anxiety disorders and OCD. Findings from this study suggest that youth with OCD have smaller reductions in their symptomology in approximately the same amount of treatment sessions as youth with anxiety. Future research should examine whether, when youth experience significant reductions in OCD symptoms, they display similar patterns in school functioning variables as the youth with anxiety in the current study.

Finally, future research should also explore the lasting effects of the COVID-19 pandemic on youth's anxiety and OCD. It will be important to explore how youth's symptomology changes as we continue to navigate a post-COVID-19 world, to understand how to best support these children at home and at school.

Limitations

As with all research, there were many limitations to the current study. These limitations were largely related to the methodology and recruitment difficulties that were faced. The study's original methodological design was altered during the course of the study, due to challenges with

recruitment. This study was originally designed with a much larger sample size ($N = 80$), without a qualitative component. A larger sample size would have allowed for more complex statistical analyses, beyond the examination of descriptive statistics. A larger sample and more complex statistical analyses would also have allowed for stronger claims regarding the association and relation between changes in anxiety/OCD symptoms and EF, self-efficacy, and school engagement.

Additional methodological limitations of the present study include recruitment procedures, the nature of treatment, and coding. One limitation with recruitment was that participants started treatment at slightly different time points. For example, some participants completed the Time 1 measures prior to completing any treatment sessions, while others completed Time 1 data after completing multiple sessions. Similarly, participants completed the Time 2 and Time 3 data points at different times. This indicates that participants did not receive the same amount of treatment. Although treatment fidelity was established through a review of medical records or clinician report of treatment details, the modular nature of treatment, and the use of different clinicians, indicates that participants did not receive identical treatments. Moreover, the primary researcher was the only coder of the qualitative data. An additional coder to establish inter-coder agreement would have been a beneficial addition to the study.

Furthermore, given the addition of a Time 3 data point, participants were asked to retrospectively recall their mental health and school functioning prior to starting treatment and prior to the onset of the COVID-19 pandemic. The retrospective nature of the phone interview indicates that all qualitative data was relying on past events.

Due to the community-based partnership nature of the study, the age, sex, race/ethnicity, and type of diagnosis of participants were unable to be pre-determined. This limits the

generalizability of the current study. Future research should strive to include participants who represent different demographic backgrounds as well as present with different types of anxiety diagnoses and OCD. Additionally, participants were recruited from private practice clinics which typically treat youth and families from high socio-economic status backgrounds. Future research should recruit families from additional mental health provider locations, such as community-based mental health clinics and schools, in order to reach youth and families from a variety of economic backgrounds.

APPENDICES

APPENDIX A

Inclusionary Criteria Checklist (Anxiety)

INCLUSIONARY CRITERIA CHECKLIST

Step 1: Determine if the client is eligible to participate in the study

	CIRCLE ONE:	
1. Is the client between the ages of 8 and 17 years old?	YES	NO
2. Does the client have a **primary diagnosis** of at least **one** of the following anxiety disorders? *Presence of a secondary diagnosis or comorbidity is also acceptable for study inclusion.*	YES	NO
3. Does the client have Autism Spectrum Disorder or an Intellectual Disability?	YES	NO
4. If the client is currently taking medication for anxiety, have they consistently taken medication for **at least 6 weeks?**	YES (no anxiety med medication or for at least 6 weeks)	NO

IF ALL STUDY CRITERIA ARE MET (ALL SHADED RESPONSES), continue with Step 2.

Step 2: Distribute the Participant Information Packet

"Our clinic is supporting the research of a doctoral student in School Psychology at Michigan State University by providing information to clients about how to participate in her dissertation study. Her study is about anxiety treatment and school functioning. To participate, you and your child would complete online surveys that take about 20-30 minutes for parents and 10-20 minutes for children. Parents receive a total of $45 in Amazon gift cards for participating, and children will receive a total of [**$10 if ages 8-10, $20 if ages 11-17].** If you decide to participate, the researcher will also be able to share the total scores with me on the surveys that you fill out, which could be helpful to have for additional data.

Here is the Participant Information Packet [**Give correct folder based on the child's age: Blue Folder: Children Ages 8-10**, **Green Folder: Children Ages 11-17**]. This packet has two copies of a consent form, a HIPAA Authorization Form, and a Participant Information Handout, which explains how to access the online surveys. Everything that you need to know in order to participate is found in this packet, and you can get started right away. Ideally you will decide whether or not you would like to participate before treatment starts, but if your child has completed 1-7 treatment sessions, you are still eligible to participate. It's important that you complete the surveys AND mail back the necessary forms in order for you to receive your gift cards. Since I am not engaged in this research, I cannot answer any specific questions that you might have, but the doctoral student provided her email address and phone number in this packet so you can contact her if you have any questions."

APPENDIX B

Sample Participant Information Handout

Participant Information Handout

My name is Rachel Ogle and I am a doctoral student in the School Psychology Program at Michigan State University. Thank you for your willingness to participate in this research study! If you have any questions about this study, you can contact me directly at oglerach@msu.edu or 317-460-3436. You may also contact Dr. Evelyn Oka at evoka@msu.edu or 517-432-9615.

What do I need to do as a participant?

- You (the parent) and your child will complete an online survey twice (Time 1, Time 2).
- **Time 1** = before your child has completed 7 treatment sessions. Ideally, you would complete the Time 1 surveys as soon as possible.
- **Time 2** = 10 weeks after the completion of the Time 1 surveys.

I want to participate! Now what?

- **Place ONE copy of the signed Consent Form and the signed HIPAA Authorization Form in the provided envelope.** Put in the mail as soon as possible.
- Please keep the other copy of the consent form for your records.

How do I complete the Time 1 surveys?

- You will need to enter your **Research ID Number: XXXXXXX**
- **All of the Time 1 surveys should be completed as soon as possible. You can go ahead and complete them now – you don't need to hear directly from me first.**
- The surveys will likely take you 15-30 minutes to complete, and your child 10-20 minutes to complete. If you need to, you can exit the surveys and come back to finish them later.

Parent Surveys (Required):
1. https://bit.ly/XXXXX
2. http://s.mhs.com/XXXXX

Child Survey (Required):
1. https://bit.ly/XXXXX

How do I receive the gift cards?

- I will email you electronic gift cards after you and your child complete the Time 1 surveys. Look for an email from oglerach@msu.edu.

What happens next?

- I will send you an email 9 weeks from the date that you completed the Time 1 surveys, with links to the Time 2 surveys. I will email you gift cards again after the completion of the Time 2 surveys.

Thank you for your participation!

APPENDIX C

Consent Form (Children Ages 8-10)

Research Participant Information and Consent Form

You and your child are being asked to participate in a research project. "You" refers to "you and/or your child." Researchers are required to provide a consent form to inform about the study, to convey that participation is voluntary, to explain risks and benefits of participation, and to empower you to make an informed decision. You should feel free to ask the researchers any questions you may have.

Study Title: Executive Function, Self-Efficacy, and School Engagement Among Youth in Clinical Treatment For Anxiety and OCD

Researchers: Rachel Ogle, M.A., Doctoral Candidate, School Psychology
Contact information: oglerach@msu.edu; (317) 460-3436

Evelyn Oka, Ph.D., NCSP, Associate Professor, School Psychology and Educational Psychology
Contact information: evoka@msu.edu; (517) 432-9615

Address: Department of Counseling, Educational Psychology, and Special Education, College of Education, Michigan State University, 620 Farm Lane, East Lansing, MI 48824

1. PURPOSE OF RESEARCH:
We would like to invite you to participate in a research project that aims to better understand how anxiety and OCD are related to children's cognition and motivation. You and your child have been invited for participation in this study because your child is diagnosed with one or more anxiety disorders, or OCD, and will be receiving treatment in a clinical setting. In the entire study, 100 people (50 children and their parents) are being asked to participate.

The purpose of this project is to determine whether changes in anxiety or OCD, following clinical treatment, relate to changes in children and adolescents' self-efficacy, executive functioning, and school engagement. Ultimately, researchers are hoping to learn how anxiety and OCD, and clinical treatment of these mental health disorders, affects processes that are important for youth's functioning in school.

This study has a pre-test/post-test design, where participants complete online measures at the beginning of treatment (Time 1; prior to completing 7 treatment sessions) and Time 2 (10 weeks later). The Time 2 survey will be distributed after 10 treatment sessions, even if your child is continuing to receive treatment. You and your child's participation in this study will take approximately 30 minutes to 1 hour to complete the Time 1 and Time 2 measures.

2. WHAT YOU WILL DO:
In consenting to participate in this project, you and your child would be agreeing to:

- Complete online questionnaires on two separate occasions (Time 1 and Time 2) for parents and children. For parents, questionnaires will take approximately 15-30 minutes to complete on each occasion. For children, questionnaires will take approximately 10-20 minutes to complete at Time 1 and Time 2. Parents and children will be asked to assent to participate in the study online, prior to filling out the questionnaires.
    - Parents are asked to complete a brief demographic survey and 3-4 questionnaires (number of questionnaires is dependent on the child's diagnosis of an anxiety disorder or

OCD). These questionnaires ask parents to respond to items related to their child's anxiety or OCD, planning and problem-solving skills (executive functioning), and school engagement. Parents are asked to complete the same questionnaires at Time 1 and Time 2.

- Youth are asked to complete 3-4 questionnaires, again dependent on whether the child has a primary diagnosis of an anxiety disorder or OCD. These questionnaires ask children to respond to items related to their anxiety or OCD, understanding (metacognition) about their anxiety/OCD, and self-efficacy. Youth are asked to complete the same questionnaires at Time 1 and Time 2.

- If your child is 12 years old or younger, or has difficulty reading, you are asked to assist your child with completing questionnaire items. You are also asked to assist your child in navigating the online survey form.
- If you consent for you and your child to participate in this study, you are asked to provide an email address for two reasons:

  1) The researcher, Rachel Ogle, will email you reminders to complete the online measures. You do not need to reply to this email unless you have questions.
  2) You will receive your incentives (electronic gift cards) via the email address you provide.
- If you consent for you and your child to participate in this study, you are asked to provide your phone number. Your phone number will only be used for reminder phone calls from the researcher if you have consented to participate but have not completed study components.
- The researcher's email address (oglerach@msu.edu) is not encrypted or HIPPA compliant. The researcher has signed a HIPAA consent form with your clinic.
- In addition to signing this consent form, you are asked to sign a HIPAA Authorization Form. This form will allow the researchers to access selected data concerning diagnosis and nature of treatment from your child's medical records (see the HIPAA Authorization Form for complete list of data to be collected).
- If you consent for you and your child to participate in this study, you are also asked to provide your mailing address. The researcher will mail you a signed copy of the HIPAA Authorization Form.
- These consent forms with your name, email address, phone number, and mailing address will be stored in a sealed envelope in a secure location at all times.
- The primary researcher will score all completed measures and return scores that are relevant to anxiety or OCD to your child's therapist as soon as possible. It is up to the discretion of your therapist if the measures will be used to inform treatment.

3. POTENTIAL BENEFITS:

You may not directly benefit from this research, but your participation will help us to learn how improvements in anxiety and OCD may be important for school success. We hope that this study will demonstrate the importance of mental health treatment to improve children's functioning in schools, and add to the clinical treatment literature by showing additional benefits to treatment. The potential benefits to you and your child taking part in this study include self-reflection about your child's anxiety or OCD, cognition, and motivation.

4. POTENTIAL RISKS:

The study involves minimal risk, but questions about your child's mental health and well-being may cause discomfort as you think about these experiences. You and your child's participation in this study will not be anonymous from the researcher, who will securely store this signed consent form and communicate with you via email.

5. PRIVACY AND CONFIDENTALITY:
Your confidentiality will be protected to the maximum extent allowable by law. You and your child will be assigned one Research ID number, which you will use when completing the online questionnaires. You will not be asked to record your name or your child's name on any of the questionnaires; however, you will be asked to include your email address. Your data will be collected using Research ID codes, which is linked to your name but no other identifying information. The Research ID number that is linked to your name will be kept separately and securely from the measures that you will complete. Only the appointed researchers and the Human Research Protection Program (HRPP) will have access to this information. Once the study has completed, clinicians will destroy these records that link your name to your Research ID Number. The de-identified data will then be kept by Michigan State University for a minimum of three years after the close of the project. Only the appointed researchers and the HRPP will have access to the research data. The results of this study may be published or presented at professional conferences, but the results will be aggregated, and the identities of all research participants will remain anonymous. Information collected about participants, even if identifiers are removed, will not be used or distributed for future research studies. Clinically relevant research results will not be disclosed directly to participants; however, scores on measures that are relevant to your child's anxiety or OCD will be shared with your child's therapist (see "What You Will Do" section of this consent form). Additionally, if you are interested, you can consent to receive aggregate findings from the study upon its conclusion.

6. YOUR RIGHTS TO PARTICIPATE, SAY NO, OR WITHDRAW
Participation in this research project is completely voluntary. You have the right to say no. You and your child are also free to change your minds, and withdraw from the study, or any portion of the study, at any time. You also may choose not to answer specific items on the questionnaires. Choosing not to participate or withdrawing from this study will not make any difference in the quality of services you will receive.

7. COSTS AND COMPENSATION FOR BEING IN THE STUDY:
If you participate in the entirety of this study, you will commit to 30 minutes to 1 hour of your time over the course of your child's treatment. You and your child will both be compensated for your participation in this study with gift cards. You will receive a total of $45 in electronic Amazon gift cards, and your child will receive a total of $15 in electronic Target gift cards. You will receive a $20 electronic Amazon gift card after completing the Time 1 measures, and your child will receive a $5 electronic Target gift card. You will receive a $20 Amazon gift card after completing the Time 2 measures, and your child will receive a $10 Target gift card for completing the Time 2 measures.

8. CONTACT INFORMATION FOR QUESTIONS OR CONCERNS
If you have any questions about this study or your participation in it, please contact:

Rachel Ogle, M.A., Doctoral Candidate
620 Farm Lane, 435 Erickson Hall, East Lansing, MI, 48824
Email: oglerach@msu.edu. Phone: (317) 460-3436.

You may also contact Dr. Evelyn Oka, 620 Farm Lane, 439 Erickson Hall, Michigan State University, East Lansing, MI, 48824. Email: evoka@msu.edu. Phone: (517) 432-9615.

If you have any questions about your role and rights as a research participant, or would like to register a complaint about this study, you may contact, anonymously if you wish, the Michigan State University's Human Research Protection Program at 517-355-2180, FAX 517-432-4503, or email irb@msu.edu, or regular mail at: 4000 Collins Road, Suite 136, Lansing, MI 48910.

9. DOCUMENTATION OF INFORMED CONSENT
Your signature below means that you have voluntarily agreed to participate in this research study.

I agree to participate in the research, which includes:

- Time 1 questionnaires (consent form given online)
- Time 2 questionnaires

I agree to provide my email address and phone number in order to receive reminder emails or phone calls from the researcher if necessary, and compensation. I agree to provide my mailing address in order to receive a copy of the signed HIPAA Authorization Form. I have the right to withdraw from participation in this study at any time.

☐Yes ☐No Initials___
(Checking No will disqualify your participation in the study.)

I would like to receive aggregate findings from this study, upon its conclusion.
☐Yes ☐No Initials___

_____ _____
Signature (Parent) Date

_____ _____
Email Address Phone Number

_____

_____

_____
Mailing Address

Your signature below means that you have given permission for your child to participate in this research study.

I agree for my child to complete the requested questionnaires at Time 1 and Time 2.

☐Yes ☐No Initials___
(Checking No will disqualify your child's participation in the study.)

_____ _____
Signature (Parent) Date

_____
Child's Name
Please sign this form and place in the addressed envelope to mail to the researcher. You have an extra copy of this form to keep for your records.

APPENDIX D

Sample HIPAA Authorization Form

AUTHORIZATION TO USE OR DISCLOSE HEALTH INFORMATION FOR RESEARCH

Child's Name: _____

Date of Birth: _____

If you sign this document, you give permission to all health care providers at CLINIC NAME to use or disclose (release) your child's health information that identifies you and your child for the research study described below.

Title: Executive Function, Self-Efficacy, and School Engagement Among Youth in Clinical Treatment for Anxiety and OCD

Purpose of Research: The purpose of this research is to examine the intersection between anxiety, OCD, cognition, and motivation. This study will evaluate how changes in anxiety or OCD among children and adolescents, following treatment in a clinical setting, are related to changes in their cognitive and motivational processes. Given increasing recognition of the importance of schools addressing mental health needs, results of this study have the potential to demonstrate the value of mental health interventions to improve children and adolescents' functioning in schools. This study also adds to research with clinical populations by examining whether treatment for anxiety or OCD is accompanied by changes in executive functioning, self-efficacy, and school engagement.

DESCRIPTION OF INFORMATION TO BE USED OR DISCLOSED (RELEASED) FOR THIS RESEARCH INCLUDES: The following information would be disclosed from your child's medical records for this research project: 1) Medical diagnoses, 2) Medications, 3) Type of treatment received (e.g., Cognitive-Behavioral Therapy, Exposure Therapy), 4) Treatment components that were used (e.g., psychoeducation, relaxation training), 5) Number of treatment sessions completed, 6) If any intensive sessions were used during the course of treatment, and 7) How termination of treatment was determined (e.g., met treatment goals).

THE HEALTH INFORMATION LISTED ABOVE MAY BE USED AND/OR DISCLOSED (RELEASED) TO: The researchers at Michigan State University (Principal Investigator: Evelyn Oka, PhD, Primary Contact: Rachel Ogle, MA).

The researchers and/or employees at CLINIC NAME will receive and process PHI, and as such, will have access to the data.

You may refuse to sign this authorization and your refusal will not affect your child's ability to obtain treatment, however, it may affect your and your child's ability to participate in this research study.

You may change your mind and revoke (take back) this Authorization at any time, except to the extent that CLINIC NAME has already acted based on this Authorization. To revoke this Authorization, you must write to: CLINIC NAME & ADDRESS.

CLINIC NAME is required by law to protect your health information. By signing this document, you authorize CLINIC NAME to use and/or disclose (release) your child's health information for this research. Those persons who receive your child's health information may not be required by Federal privacy laws (such as the Privacy Rule) to protect it and may share your information with others without your permission, if permitted by laws governing them.

EXPIRATION: Your Authorization to disclose the above information expires at the end of the research study.

_____

Signature of individual participant or personal representative Date

_____

Printed name of individual participant or personal representative

_____

If applicable, a description of personal representative's authority to act for the individual participant

YOU WILL BE PROVIDED A COPY OF THE SIGNED FORM

A COPY OF THE SIGNED FORM MUST BE PROVIDED TO THE COVERED ENTITY

APPENDIX E

Sample Child Assent Form (Anxiety, Ages 8-10)

Anxiety Treatment and Motivation to Learn Study

Person leading the study: Rachel Ogle, M.A., Doctoral Candidate, School Psychology, Michigan State University

Why are we doing this research?

We are doing this research to learn more about how it feels when you're worried, scared, or anxious, and how those feelings possibly make school harder for you. We want to see if treatment for anxiety helps you handle feeling anxious, and if school gets better too!

Why are you being asked to participate in this research study?

You are asked to participate because you have completed fewer than 7 treatment sessions with a therapist to help you get better a feeling anxious.

What will happen during the study?

If you want to participate, you will check a box at the end of this form, and then you will answer questions about your anxiety and how you think. You will answer these questions now and 10 weeks from now. You can ask your parent to help you read the questions if you want. You can always take a break if you feel tired and come back to finish the questions later. There are no right or wrong answers.

Risks and Benefits?

Some of the questions that you are asked to answer could make you feel uncomfortable, but we'd really like to know what you think. You can always choose to skip a question that you don't want to answer.

Who will be told the things we learn about you in this study?

Only the researcher (me, Rachel) will see the answers that you give to the questions. We give you an ID code, so your name will not be on the surveys. There are no right or wrong answers. I will give your therapist the total scores on the surveys you fill out, but he or she will not see how you answered each question.

Will there be any money or gifts for participating?

Yes! You will get a $5 electronic Target gift card after you complete this survey as a thank you for participating. When you complete the survey again 10 weeks from now, you will receive a $10 electronic Target gift card for participating.

What if you or your parents do not want you to be in this study?

You can only participate if both you and your parents agree for you to be in the study. Nobody will be upset if you do not want to be in the study. It is your decision. If you decide to be in the study, and later change your mind that is okay too. You can stop being in the study anytime you like.

What if you have any questions about the study?

If you have any questions about the study, you can tell your parents and have them talk to me, or talk to me yourself. Here is my phone number and email address: 317-460-3436, oglerach@msu.edu.

Documentation of Assent

Would you like to participate in the study? (check a box, yes or no).

APPENDIX F

Sample Online Consent Form (OCD)

You are being asked to participate in a research study. The purpose of the study is to understand how treatment for OCD affects processes that are important for youth's school success. You will be asked to complete online surveys now (Time 1) and 10 weeks from now (Time 2). Your participation is voluntary. We encourage you to complete all the items as best as you can. This will allow us to get the most information from these surveys. You can skip any question you do not wish to answer or withdraw at any time. Your confidentiality will be protected to the maximum extent allowable by law. Data will be kept by Michigan State University for a minimum of three years after the close of the project. Only the appointed researchers and the Human Research Protection Program (HRPP) will have access to the research data. If you have any questions please contact Rachel Ogle, M.A., Doctoral Candidate, by phone at 317-460-3436 or by email at oglerach@msu.edu. You may also contact Dr. Evelyn Oka by phone at 517-432-9615 or by email at evoka@msu.edu. You indicate that you voluntarily agree to participate in this research study by submitting the survey.

APPENDIX G

Interview Protocol

Parent Interview Questions

- Background/Questions about Symptoms
    - **Before Treatment**
        - What led you to initially seek treatment for your child?
        - What symptoms was your child experiencing? How long had your child experienced these symptoms?
            - How did those symptoms affect your child's life? Your family's life?
            - Before starting treatment, how did your child's anxiety interfere with their school day?
                - *After giving parent a chance to answer this open-ended question*: For example, how did your child's anxiety affect their life at school, such as experiencing worries about school, their behavior at school, or physical symptoms of anxiety that they experienced at school?
                - *Again after giving parent the opportunity to answer:* Some children have worries about…
                    - Going to school
                    - Completing school assignments (at school or homework)
                    - Grades
                    - Taking tests
                    - Participating during class
                    - Talking or presenting to the class
                    - Talking to other students at school
                    - Asking questions about something that they don't understand
                    - What worries related to school did your child experience before treatment?
                - Anxiety can also interfere with children's behavior at school. For example, some children with anxiety may…
                    - Avoid difficult tasks
                    - Not volunteer or participate during class
                    - Have difficulty starting or completing work
                    - Be perfectionistic
                    - Before treatment, how did anxiety interfere with your child's behavior at or related to school?
                - Children also might experience physical symptoms of anxiety at school, such as racing heartbeat, stomachaches, or headaches, to name just a few examples.

        - Before treatment, what physical symptoms of anxiety did your child experience at or related to school? How did these physical symptoms interfere with their school day?
    - What other concerns, if any, did you have for your child that you wanted to be addressed during treatment, aside from anxiety or OCD symptoms?
- **After Treatment**
    - How did your child's anxiety symptoms or OCD-related behaviors change as a result of treatment?
        - How do you think those changes affected your child's life? Your family's life?
    - After treatment, what changes did you notice in how your child's anxiety interfered with their school day?
        - [*If applicable based on answers to questions in "before treatment" section]:* How did your child's worries related to school change after treatment?
        - What changes occurred in your child's behavior at school? Was this related to their anxiety?
        - What changes occurred in the physical symptoms of anxiety that your child experienced at school?
    - What changes occurred regarding X [concerns outside of anxiety/OCD]? [repeat parent concerns from question above]
- It is difficult to talk about anxiety without acknowledging the existence of the COVID-19 pandemic and the national state of emergency. As I mentioned earlier, I also would like to ask you about your child's functioning in the context of the changes that have occurred due to the COVID-19 pandemic.
    - Is [child's name] still attending school in-person?
    - How has your child's anxiety symptoms and behavior changed during this time? (Has your child's anxiety been affected by the COVID-19 pandemic?)
        - If so, how?
        - [if need further prompting] In light of COVID-19, has your child's anxiety improved, stayed the same, or worsened?
    - Have you seen new symptoms of anxiety in your child since the COVID-19 crisis started?
    - What has helped your child's anxiety during this crisis?
    - Have you noticed any changes in your child's learning behaviors? If so, how? [for example: attention span, more distracted, less motivated, disinterested, doesn't want to do work, lack of interest, takes longer]
    - Do you have any new concerns with your child's emotional or behavioral functioning?
    - Have you observed any other changes in your child since the COVID-19 crisis began?

- Questions that align with RQs
    - **School Engagement**
        - Before treatment, how would you describe your child's feelings towards school?

        - What changes did you notice since participating/completing treatment?
    - Before treatment began, how would you describe your child's involvement at school, such as in extracurricular activities?
        - What changes did you notice after participating in/completing treatment?
    - Before treatment, how would you describe your child's motivation and interest in school, such as their engagement in school activities and effort to complete work?
        - What changes did you notice during/after treatment?
    - Before treatment, how would you describe your child's relationships with peers and teachers?
        - What changes did you notice after participating in/completing treatment?
        - And now, since the pandemic began?

- **Self-Efficacy**
    - Academic: Before treatment, how do you think your child viewed their ability to successfully complete their schoolwork?
        - What changes did you notice after treatment?
    - Emotional: Before treatment, how do you think your child viewed their ability to control their emotions? [for example, did they believe that they were able to calm themselves down if they became very angry?]
        What changes did you notice after treatment?
    - Social: Before treatment, how do you think your child viewed how well they could get along with other people, like other students in their class, their teachers, and your family?
        - What changes did you notice after treatment?
        - And now, since the pandemic began?

- **Executive Functioning**
    - Before treatment, how would you describe your child's ability to pay attention? (*provide examples if needed* – complete homework, read books, sit down at table for dinner)
        - What changes did you notice as a result of treatment?
    - How would you describe your child's ability to control their emotions?
        - What changes did you notice as a result of treatment?
    - How would you describe your child's ability to control his or her behavior?
        - What changes did you notice as a result of treatment?
        - And now, since the pandemic began?

Student Interview Questions

- <u>Background/Questions about Symptoms</u>
    - **Before Treatment**

- *Remind child or adolescent of month/year they started treatment:* "I want you to think back to X month when you started treatment at X clinic with [clinician name]. Can you remember what else was going on during that time? (e.g., you had just recently started school, that was around Thanksgiving, etc.).
- Before you started working with [clinician name], can you describe how you felt most of the day, most days of the week? For example, did you typically feel happy, normal, sad, anxious, upset, frustrated?
    - How often did you feel nervous/worried?
    - What types of things did you feel nervous or worried about?
    - Did you feel like you got nervous, anxious, or worried more than other students?
- How did your worries or anxiety interfere with your school day?
    - *Allow the child/adolescent to answer the open-ended question first, then provide the prompt:* For example, some children have worries about…
        - Going to school
        - Completing assignments/homework
        - Grades
        - Taking tests
        - Participating during class
        - Talking or presenting to the class
        - Talking to other students at school
        - <u>Before you started working with [clinician name], what worries about school did you have?</u>
    - Feeling nervous or worried can also affect how children act in different situations, like at school. For example, some children with anxiety may…
        - Choose to work on easier assignments and not want to work on homework or assignments that are really hard.
        - Avoid volunteering or participating during class.
        - Feel like their work needs to be perfect.
        - <u>Do any of these examples sound like you? How do you think feeling nervous or worried affected how you acted at school?</u>
    - Some children also might feel anxiety in their body when they're at school, such as racing heartbeat, stomachaches, or headaches, to name a few.
        - <u>Before treatment, what physical symptoms of anxiety did you experience at school? How did these interfere with your school day?</u>

- **After Treatment**
    - What changed after working with [clinician name]? How did your emotions or mood change?

        - *If child does not specifically mention anxiety/OCD*] What changes did you notice in your anxiety or OCD as a result of treatment?
        - How did your life change because of that change in your emotions and mood?
    - After treatment, what changes did you notice about your feelings related to school or how you acted at school?
        - *If applicable based on answers to questions in "before treatment" section:* What changed about the school worries that you used to have?
        - What changed about your behavior at school? For example, you mentioned that…
        - What changed about [name physical symptoms they identified above]?
  - As you know, there are a lot of changes going on right now due to COVID-19. We are reminded to wash our hands a lot, wave instead of shaking hands…[let them add] Also, many people are asked to stay at home to stay safe and many schools are closed.
    - What is changed for you?
        - How are you attending school right now? (in person, online, with activities at home, none)
    - How have you been doing during these changes? Have you noticed any changes in your emotions/mood?
    - What changes in your anxiety/OCD have you noticed since you've had to stay at home?
        - For example, during this time, do you think your anxiety has gotten better, stayed the same, or worsened?
    - Since staying at home, have you noticed any new symptoms of anxiety, such as worries that you didn't previously have?
    - What has helped you cope with anxiety during this crisis?
    - Has staying at home affected your learning?
        - For example, has it been easy or difficult to do schoolwork at home compared to at school?
        - How do you connect/see people? How has it been to see teachers and peers online instead of in-person?
- <u>Questions that align with RQs</u>
  - **School Engagement**
    - Again thinking about before you started treatment, how did you feel about school in general? Did you like going to school? What did you like about school? What didn't you like about school?
        - How did this change after working with [clinician name]?
    - Before treatment, how involved were you in school activities? For example, did you play sports at school or participate in any clubs?
        - How did this change after treatment?
    - Before treatment, how much did you care about school? How important was school? How hard did you work in your classes and on your assignments? Did you do homework or study at home?

        - What changes did you notice during/after treatment?
    - Before treatment, how well did you get along with other students at school and your teachers?
        - What changes did you notice after participating in treatment?
        - And now, since staying at home?
- **Self-Efficacy**
    - Academic: Before treatment, how easy or difficult was it for you to succeed in school? (e.g., complete your school work, participate?)
        - What changes did you notice after treatment?
    - Emotional: Before treatment, how easy or hard was it for you to control your emotions? For example, if you felt scared, was it easy or hard for you to calm down? To not worry about things?
        - What changes did you notice after treatment?
    - Social: Before treatment, how well could you get along with other people, like other students in your class, your teachers, and your family?
        - What changes did you notice after participating in treatment?
        - And now, since staying at home?
- **Executive Functioning**
    - Before treatment, how easy or hard was it for you to ignore distractions when you were doing schoolwork?
        - *Allow child to answer open ended question, and then prompt* – For example, how easy or hard was it for you to focus on completing homework? Reading books? Sitting down at table for dinner?
        - What changes did you notice after treatment with [clinician name]?
    - Before treatment, how would you describe how easy or hard it was for you to control your emotions?
        - What changes did you notice after treatment?
    - Before treatment, how easy or hard was it for you to control your behavior?
        - What changes did you notice after participating in treatment?
        - And now, since staying at home?

APPENDIX H

Clinician Survey/Medical Records Data

1. Research ID Number:

2. What primary diagnosis was assigned to the client by CLINIC NAME?

☐ GAD

☐ Separation Anxiety

☐ Specific Phobia

☐ Social Anxiety Disorder

☐ Selective Mutism

☐ Panic Disorder

☐ Agoraphobia

☐ OCD

☐ Other

3. What secondary diagnosis (or diagnoses), if any, were assigned to the client by CLINIC NAME?

☐ GAD

☐ Separation Anxiety

☐ Specific Phobia

☐ Social Anxiety Disorder

☐ Selective Mutism

☐ Panic Disorder

☐ Agoraphobia

☐ OCD

☐ Other

4. Does the client take any medication for anxiety or OCD? YES NO

5. Which of the following best describes the type of treatment that was used (mark one)?

- ☐ Cognitive-Behavioral Therapy
- ☐ Cognitive-Behavioral Therapy/Exposure with Response Prevention
- ☐ Exposure Therapy
- ☐ Acceptance and Commitment Therapy
- ☐ Schema Therapy
- ☐ Mindfulness-Based Cognitive Therapy
- ☐ Habit Reversal Training
- ☐ Dialectical Behavior Therapy
- ☐ Psychodynamic
- ☐ Other:

6. Mark all treatment components that were used:

- ☐ Psychoeducation
- ☐ Mindfulness
- ☐ Relaxation training
- ☐ Symptom Hierarchy Development
- ☐ Exposure
- ☐ Exposure with Response Prevention
- ☐ Cognitive Techniques
- ☐ Parent Training
- ☐ Other:

7. How many sessions did the client complete?

8. Were there any intensive sessions used with this client? YES NO

9. How was termination of treatment determined?

- ☐ Client met treatment goals
- ☐ Clinician recommended a transfer to a different clinician or type of treatment
- ☐ Client ended treatment prematurely against clinician recommendations
- ☐ Other:

APPENDIX I

Supplemental Tables

Table 43: *RCI Calculations*

Variable	Measure	Statistics used in RCI Calculation		Characteristics of the Study's Sample
		Standard Deviation	Reliability	
Anxiety	DSM-5 Level 2 Anxiety Measure	SD from this study's sample *SD* =	Internal Consistency: Cronbach's alpha = 0.85 (Irwin et al., 2010)	Parents and children ages 8 to 12 years old (N = 1,529)
	MCQ-C	SD from this study's sample (*M* = 55.08, SD = 10.34	Internal Consistency: Cronbach's alpha = 0.89 (Bacow et al., 2009)	
OCD	CY-BOCS-CR	SD of the sample from Storch et al. 2004 (*M* = 21.87, S.D. = 7.69)	Test-Retest Reliability (ICC = 0.79), Storch et al., 2004	Children (*N* = 61), ages 4 to 18 years old (*M* = 10.33 years)

	CY-BOCS-PR	SD of the sample from Storch et al., 2006 (*M* = 19.1, *SD* = 7.6)	Internal consistency of the total score (Cronbach's alpha = 0.86)	
	CY-BOCS-CR Obsession Severity Scale Score	SD of the sample from Storch et al. 2004 (*M* = 10.43, SD = 4.34)	Test-Retest Reliability (ICC = 0.70)	Children and adolescents diagnosed with OCD (*N* = 53), ages to 17 years old (*M* = 11.3, *SD* = 2.4 years)
	CY-BOCS-CR Compulsion Severity Scale Score	SD of the sample from Storch et al. 2004 (*M* = 11.43, SD = 3.81)	Test-Retest Reliability (ICC = 0.76) (Storch et al., 2004)	Parents of children and adolescents diagnosed with OCD (*N* = 53), ages to 17 years old (*M* = 11.3, *SD* = 2.4 years)
	CY-BOCS-PR Obsession Severity Scale Score	SD of the sample from Storch et al. 2006 (*M* = 9.4, *SD* = 4.6)	Internal Consistency (Cronbach's alpha = 0.83)	Parents of children and adolescents diagnosed with OCD (*N* = 53), ages to 17 years old (*M* = 11.3, *SD* = 2.4 years)

	CY-BOCS-PR Compulsion Severity Scale Score	SD of the sample from Storch et al. 2006 (*M* = 9.7, *SD* = 3.7)	Internal Consistency (Cronbach's alpha = 0.70)	Parents of children and adolescents diagnosed with OCD (*N* = 53), ages to 17 years old (*M* = 11.3, *SD* = 2.4 years)
Executive Functioning	CEFI; Total Score		Internal Consistency: Cronbach's alpha = 0.99, (Naglieri & Goldstein, 2013)	Normative sample; parent raters (*N* = 1,396) of youth ages 5 to 18 years old
Attentional Control	CEFI; Attention subscale score	SD from this study's sample *SD* = 11.37	Internal Consistency: Cronbach's alpha = 0.93, (Naglieri & Goldstein, 2013)	Normative sample; parent raters (*N* = 1,396) of youth ages 5 to 18 years old
Emotional Regulation	CEFI; Emotion Regulation subscale score	SD from this study's sample *SD* = 16.3	Internal Consistency: Cronbach's alpha = 0.89, (Naglieri & Goldstein, 2013)	Normative sample; parent raters (*N* = 1,396) of youth ages 5 to 18 years old

Cognitive Flexibility	CEFI; Flexibility subscale score	SD from this study's sample *SD* = 12.95	Internal Consistency: Cronbach's alpha = 0.85, (Naglieri & Goldstein, 2013)	Normative sample; parent raters (*N* = 1,396) of youth ages 5 to 18 years old
Inhibitory Control	CEFI; Inhibitory Control subscale score	SD from this study's sample *SD* = 14.35	Internal Consistency: Cronbach's alpha = 0.90 (Naglieri & Goldstein, 2013)	Normative sample; parent raters (*N* = 1,396) of youth ages 5 to 18 years old
Self-Efficacy	SEQ-C; Total Score	SD from this study's sample *SD* = 8.81	Test-Retest Reliability: ICC = 0.89 (Tahmassian & Moghadam, 2011)	Non-clinical sample; high school students (*N* = 549) ages 14-20 years old (*M* = 16.5 years, *SD* = 1.17)
Emotional Self-Efficacy	SEQ-C; Emotional Self-Efficacy Subscale	SD from this study's sample *SD* = 3.47	Internal Consistency: Cronbach's alpha = 0.86 (Muris, 2001)	Non-clinical sample; youth ages 14-17 years old (*M* = 15.3 years, *SD* = 1.0)
Social Self-Efficacy	SEQ-C; Social Self-Efficacy Subscale	SD from this study's sample *SD* = 3.38	Test-Retest Reliability: ICC = 0.85 (Tahmassian & Moghadam, 2011)	Non-clinical sample; high school students (*N* = 549) ages 14-20 years old (*M* = 16.5 years, *SD* = 1.17)
Academic Self-Efficacy	SEQ-C; Academic Self-Efficacy Subscale	SD from this study's sample *SD* = 5.50	Internal Consistency: Cronbach's alpha = 0.88 (Muris, 2001)	Non-clinical sample; youth ages 14-17 years old (*M* = 15.3 years, *SD* = 1.0)

School Engagement				
CAIS-P, School Subscale		SD from this study's sample *SD* = 8.89	Internal Consistency: Cronbach's alpha = 0.86 (Langley et al., 2004)	Clinical sample of youth ages 4-17 years old (*M* = 9.5 years, *SD* = 3.5 years)
COIS-R, School Subscale		SD from this study's sample *SD* = 9.90	Test-Retest Reliability: ICC = 0.88 (Piacentini et al., 2007)	Clinical sample of youth with OCD (*M* = 11.7 years old)

Table 44: *Individual Participant Change in Scores from Time 1 to Time 2*

Child	Anxiety/OCD Measures				Executive Functioning			Self-Efficacy				School Eng.
	1	2	3	4	5	6	7	8	9	10	11	12
Lily	Dec.	Inc.	Dec.	Dec.	Dec.	**Dec.**	No change	Dec.	Dec.	Inc.	Dec.	Inc.
Megan	**Dec.**	Dec.	Dec.	Dec.	Dec.	Inc.	Dec.	**Inc.**	**Inc.**	Inc.	Inc.	Dec.
Evie	Dec.	Dec.	**Dec.**	**Dec.**	Dec.	**Dec.**	Inc.	Inc.	Inc.	Dec.	Inc.	Dec.
Max	Dec.	**Dec.**	**Dec.**	**Dec.**	No change	Inc.	Dec.	Inc.	**Inc.**	No change	**Dec.**	Dec.
Sarah	**Dec.**	Dec.	Dec.	Dec.	**Dec.**	**Dec.**	**Dec.**	Dec.	No change	Dec.	Inc.	**Dec.**
Alison	Dec.	Inc.	Dec.	Dec.	**Inc.**	Inc.	Inc.	**Inc.**	Dec.	**Inc.**	Inc.	Dec.
Bea	Inc.	Dec.	Inc.	Dec.	Inc.	Inc.	Inc.	Inc.	Dec.	Inc.	Inc.	Inc.
Carrie	Dec.	Dec.	--	Inc.	Inc.	Inc.	Inc.	Dec.	Dec.	Inc.	**Inc.**	No change
Katie[1]	**Dec.**	Dec.	Dec.	Inc.	Inc.	Inc.	Inc.	Inc.	Inc.	Inc.	Inc.	Dec.
Nora[1]	Dec.	Inc.	Dec.	Inc.	Inc.	Inc.	Inc.	No change	Dec.	Inc.	Inc.	Inc.
Jane[1]	No change	Dec.	--	Inc.	**Dec.**	**Dec.**	Dec.	Inc.	No change	Inc.	Inc.	Inc.
Jacob[1]	Dec.	Dec.	Inc.	No change	Dec.	Dec.	Dec.	Inc.	Inc.	Inc.	Inc.	Inc.

1) SCARED-P [CY-BOCS-PR], 2) SCARED-C [CY-BOCS-CR], 3) DSM-5 Level 2 Anxiety, 4) MCQ-C, 5) CEFI Total Score, 6) CEFI Attention, 7) CEFI Emotion Regulation, 8) SEQ-C Total, 9) Emotional Self-Efficacy, 10) Academic Self-Efficacy, 11) Social Self-Efficacy, 12) CAIS-P [COIS-R]
[1] Participants who did not complete Time 3 Data Collection. *Note:* "Dec" for decrease; "Inc" for increase

Key: Green = Change in score (*expected direction*; Darker shade is significant based on the RCI calculation; Blue = Change in score (*unexpected direction*); Darker shade is significant based on the RCI calculation; White = No change

Table 45: *Participant Scores on the CEFI Subscales*

Participant	Cognitive Flexibility			Inhibitory Control			Working Memory[a]	
	Time 1	Time 2	RCI	Time 1	Time 2	RCI	Time 1	Time 2
Lily	80	77	-0.42	77	71	-0.94	79	75
Megan	89	86	-0.42	86	86	0	92	108
Evie	92	88	-0.56	**105**	**86**	**-2.96***	100	101
Max	80	78	-0.28	79	67	-1.87	79	82
Sarah	**113**	**78**	**-4.93***	114	112	-0.31	111	86
Alison	**69**	**102**	**4.65***	86	87	0.16	106	108
Bea	100	102	0.28	**107**	**121**	**2.18***	116	114
Carrie	80	83	0.42	97	105	1.25	97	104
Katie	**77**	**92**	**2.12***	102	113	1.71	100	94
Nora	103	113	1.41	118	114	-0.62	114	111
Jane	**75**	**56**	**-2.70***	**79**	**65**	**-2.18***	74	59
Jacob	86	86	0	86	79	-1.09	84	72

***** Significant RCI score

[a] Goldstein & Naglieri (2014) did not provide reliability psychometrics for the Working Memory subscale; thus, RCI scores were not calculated.

Table 46: *Qualitative Summary Codes: Changes from Time 1 to Time 2*

Participant	Executive Functioning		Self-Efficacy			School Engagement		
	Attention	Emotion Regulation	Academic	Emotional	Social	Emotional	Behavioral	Cognitive
Lily	Increase	Increase	Increase	Increase	No change	No change	No change	No change
Lily's mother	Increase	Increase	No change	Increase	Increase	No change	Increase	No change
Megan	Increase	Increase	No change	Increase	Increase	Increase	No change	No change
Megan's mother	No change	Increase	No change	Increase	Unsure	Increase	No change	No change
Evie	No change	Increase	No change	Increase	No change	No change	No change	No change
Evie's mother	Increase	Increase	Increase	Increase	Increase	Increase	No change	No change
Max	No change	No change	No change	No change	No change	No change	Increase	No change
Max's mother	Increase	Increase	Increase	Increase	No change	Increase	No change	Increase
Sarah	Increase	Increase	Increase	Increase	Increase	No change	Increase	Increase
Sarah's mother	No change	Increase	Increase	Increase	Increase	No change	Increase	Increase
Alison	Increase	Increase	Increase	Increase	Increase	Increase	Increase	Increase
Alison's parents	Increase	Increase	Increase	Increase	Increase	Increase	Increase	Increase
Bea	Increase	Increase	Increase	Increase	Increase	No change	Increase	No change
Bea's mother	No change	Increase	Increase	Increase	No change	No change	No change	No change
Carrie's mother	No change	Increase	No change	Increase	Increase	No change	No change	No change

Note: Information adapted from Tables 20, 21, 24, 25, 26, 29, 30, and 31
Key: Green = Change in score (*expected direction*), White = No change

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