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Jennifer Yardley
Utah State University

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TREATMENT OF PEDIATRIC OBSESSIVE-COMPULSIVE DISORDER: UTILIZING PARENT-FACILITATED ACCEPTANCE AND COMMITMENT THERAPY

by

Jennifer Yardley

A thesis submitted in partial fulfillment
of the requirements for the degree

of

EDUCATIONAL SPECIALIST

in

School Psychology

Approved:

Clint E. Field, Ph.D. Major Professor	Michael P. Twohig, Ph.D. Committee Member
David M. Stein, Ph.D. Committee Member	Mark R. McLellan, Ph.D. Vice President for Research and Dean of the School of Graduate Studies

UTAH STATE UNIVERSITY
Logan, Utah

2012

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ABSTRACT

Treatment of Pediatric Obsessive-Compulsive Disorder: Utilizing Parent-Facilitated Acceptance and Commitment Therapy

by

Jennifer Yardley, Educational Specialist

Utah State University, 2012

Major Professor: Dr. Clinton E. Field
Department: Psychology

Acceptance and commitment therapy (ACT) has been used with promising results for adults with obsessive-compulsive disorder (OCD). There are currently no published studies utilizing ACT for pediatric OCD. An investigative pilot study utilizing a nonconcurrent multiple baseline design examined the extent of treatment effects when ACT is employed for pediatric OCD. Three children under the age of 12 were enrolled in a nine-session ACT treatment protocol. The primary dependent variable was number of obsessive cognitions as recorded by participants within a participant-observer framework. Treatment response was also evaluated using the Children's Yale-Brown Obsessive Compulsive Scale (CY-BOCS). Results indicated that two of three participants successfully responded to treatment as evidenced by significant reductions in self-observed frequency of obsessive cognitions. Results further indicated large reductions for all participants on the CY-BOCS with a mean score decrease of 47.26%. Implications

and future directions were considered. The research yielded results that indicated that ACT may be useful in the treatment of pediatric OCD and that further research is warranted.

(112 pages)

PUBLIC ABSTRACT

Treatment of Pediatric Obsessive-Compulsive Disorder: Utilizing

Parent-Facilitated Acceptance and Commitment Therapy

by

Jennifer Yardley, Educational Specialist

Utah State University, 2012

Pediatric obsessive-compulsive disorder (OCD) affects as many as 2.7% of children. Pediatric OCD is associated with significant distress for both families and children in multiple domains. Unfortunately, the majority of children with OCD do not receive adequate treatment. Without treatment pediatric OCD often persists into adulthood.

The current primary psychological treatment for pediatric OCD is cognitive behavioral therapy (CBT) with exposure and response prevention (ERP). However, there are multiple limitations of this treatment. Some children either do not respond to current treatments or respond only minimally, while others drop out or refuse treatment. Exposure-based treatments yield problems with treatment adherence, time restraints, access to exposure situations, and client engagement in treatment. Additionally, current treatment protocols rarely utilize parents despite research-based evidence that involvement of parents in treatment can benefit both child and family. Other treatment options are needed to address these limitations. The current study investigated the effects of Acceptance and Commitment Therapy (ACT) in the treatment of pediatric OCD. It also investigated the effects of ACT in decreasing both the child's and parent's avoidance of unpleasant experiences.

Three children with pediatric OCD attended nine weekly ACT treatment sessions. Parents accompanied children to sessions and participated in discussions and activities. Treatment sessions focused on helping children to increase acceptance of their own thoughts and feelings while viewing them less literally. Children were encouraged to use values to guide their actions. Results showed that children had reduced OCD symptoms following the conclusion of treatment. Both parents and children were less avoidant and more accepting of unpleasant experiences following treatment.

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I am grateful for my graduate school cohort members who inspired me with their incredible examples throughout this process. My friends have been a constant source of support throughout. Andrew Barney helped to soothe thesis-induced anxiety and frustrations through his ever-patient listening and reassurance. He made the long hours tolerable. My family has been a tremendous blessing. They listened, encouraged, and tolerated almost daily updates as I worked on this project. They now know more than they ever intended about psychological research.

Jennifer Yardley

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CHAPTER I

INTRODUCTION

Pediatric obsessive-compulsive disorder (OCD) has been cited as affecting as many as 2.7% of children (Heyman et al., 2003; Rapoport et al., 2000; Zohar, 1999), yet there are large gaps in the existing literature on evidence-based treatments for OCD, particularly for prepubescent children (Barrett, Farrell, Pina, Peris, & Piacentini, 2008). Pediatric OCD is associated with high levels of comorbidity (Heyman et al., 2003; Rapoport et al., 2000), significant distress for families (March, 1995), and high levels of persistence into adulthood if left untreated (Bloch et al., 2009; Rasmussen & Eisen, 1990).

The current best practice or primary psychological treatment for pediatric OCD is cognitive behavioral therapy (CBT) with exposure and response prevention (ERP; Barrett et al., 2008; American Psychological Association [APA], 2007). CBT and medication are each categorized as "probably efficacious" treatments for OCD and appear to yield moderate treatment effects (Barrett et al., 2008).

However, limitations are apparent within the extant research. Few prepubescent children have been utilized in clinical trials of CBT and research suggests that treatments for adolescents may not generalize well to younger children (Martin & Thienemann, 2005). Further, the generality of the current literature on pediatric CBT has been questioned (Barrett et al., 2008) with the majority of research utilizing very homogeneous populations and excluding participants with comorbidities.

There are multiple limitations of current treatment practices. For example, some

children either do not respond to current treatments or respond only minimally (Thienemann, Martin, Cregger, Thompson, & Dyer-Friedman, 2001). Dropout and refusal rates appear to present a challenge with average rates falling between 17% and 22% in adult studies (Foa et al., 2005; Kobak, Greist, Jefferson, Katzelnick, & Henk, 1998; van Oppen et al., 1995). In addition, exposure-based treatments yield problems with treatment adherence, time restraints, access to exposure situations, and client engagement in treatment (Olatunji, Deacon, & Abramowitz, 2009; Treadwell & Tolin, 2007).

Parental involvement for youth populations has varied from minimal to extensive (Barrett, Healy-Farrell, & March, 2004; March & Mulle, 1998); however, the majority of protocols utilize parents in a minimal role. Research has suggested that children and adolescents benefit when parents are involved in treatment (Barrett et al., 2004; Holmbeck, Greenley, & Franks, 2003), especially in the role of treatment-facilitators (Barrett et al., 2008; Martin & Thienemann, 2005). To summarize, these limitations have indicated a need for development of treatment options that may be more effective in treating pediatric OCD.

Acceptance and Commitment Therapy (ACT) represents an alternative approach to treatment that emphasizes psychological flexibility in the service of moving towards valued directions and living a life with meaning. ACT has been used with success for adults with OCD (Twohig, Hayes, & Masuda, 2006b; Twohig et al., 2010). Although not yet utilized in published studies with childhood OCD, ACT has been applied with positive results to adolescents with conditions including chronic pain and anorexia

nervosa (Heffner, Sperry, Eiftert, & Detweiler, 2002; Wicksell, Melin, Olsson, 2007).

The current project was designed to answer the following research questions.

1. To what extent does a protocol for pediatric OCD treatment utilizing parent involvement and ACT yield successful treatment via reduced symptoms?

2. To what degree do children under age 12 exhibit change in psychological flexibility with an ACT-based treatment?

3. To what extent does parent involvement in a pediatric OCD treatment have indirect influence for the parent in improving functioning via increasing experiential willingness?

CHAPTER II

REVIEW OF LITERATURE

Overview of OCD

Diagnostic Information

OCD is categorized in the DSM-IV (APA, 2000) as an anxiety disorder. DSM-IV diagnostic criteria require obsessions or compulsions that cause distress or otherwise interfere in the child's functioning. Children often display OCD-like characteristics as part of normal developmental stages, so it is important to distinguish more severe, excessive, and stress-provoking symptoms from those that would be developmentally expected (Moore, Mariaskin, March, & Franklin, 2007). In addition, the disorder cannot be due to a general medical condition or substance, or accounted for by another Axis I disorder (APA, 2000).

Obsessions are recurrent cognitions or impulses that are anxiety provoking or followed by other negative mood states (APA, 2000). These are generally experienced as being outside of the child's control. Among children, the most common obsessions revolve around contamination fears, fear for the safety of self or loved ones, and an extreme desire that things be ordered, exact or symmetrical (Swedo, Rapoport, Leonard, Lenane, & Cheslow, 1989). In contrast, compulsions are behaviors or rituals conducted to reduce anxiety or prevent a feared event from occurring. Generally the compulsion is enacted following the obsessive cognition in order to reduce or escape negative internal or external experiences. The most common compulsions for children involve washing,

cleaning, or reassurance seeking from parents.

It is not uncommon for parents and family to become entangled in the compulsive rituals of children as a result of participating with and assisting the child in their struggles (Barrett, Rasmussen, Healy, 2001). Although the majority of pediatric cases involve both obsessions and compulsions, it is not necessary for both to be present and a number of children will only present with a dominant concern (APA, 2000; Swedo et al., 1989). Also, obsessions and compulsions change across time and it is not unusual for a child to progress through displays of symptoms.

Prevalence Rates

Reported lifetime prevalence rates for pediatric OCD range from 0.25% to 2.7% (Heyman et al., 2003; Rapoport et al., 2000; Zohar, 1999). Retrospective reports have suggested that the mean age of pediatric OCD onset occurs between 7.18 and 10.78 years (Rapoport et al., 2000; Thienemann et al., 2001) and that more than half of OCD cases exhibit onset prior to the age of 15 (Rapoport, 1986). Unfortunately, most of these cases are not diagnosed until much later, with one study reporting an average age of diagnosis as 12.7 years of age (Thienemann et al., 2001). Pediatric OCD occurs more frequently among males yielding a greater ratio of diagnosed males to females (approximately 60% males; Geller et al., 1998). OCD appears to emerge earlier in males (prepubescent) than in females (often adolescence or even young adulthood; Tukel et al., 2005), which likely contributes to the disproportionate numbers of males included in youth studies.

Some studies have suggested that pediatric OCD is only diagnosed in the most severe cases or after a lengthy period of symptom display (Heyman et al., 2003;

Rapoport, 1986; Swedo et al., 1989) resulting in underdiagnosis and inaccurate prevalence rates. One factor that may contribute to this problem is limited parental acknowledgement of symptom display. In one study (Rapoport et al., 2000) when diagnosis was based solely on parent interviews, only 4 of 35 OCD cases were identified. The remaining 31 cases were diagnosed using child report, suggesting that parents were unaware or failed to acknowledge symptoms in their children.

Comorbidity

OCD is often accompanied by additional concerns, with lifetime comorbid diagnostic rates noted to be as high as 77% (Heyman et al., 2003; Rapoport et al., 2000). The most commonly reported comorbid disorders are other anxiety disorders, with rates for generalized anxiety disorder and separation anxiety disorder as high as 50% to 60% (Geller et al., 2001; Zohar, 1999). A disproportionately large number of individuals, as many as 30%, have reported current or past tics (APA, 2000). One study found that up to 80% of those diagnosed with a tic disorder had also been diagnosed with OCD. In children, disruptive behavior disorders and learning disorders are also common comorbid concerns (APA, 2000; Heyman et al., 2003).

Etiology

A natural progression of fears and anxieties among youth is developmentally appropriate and well-documented (Schroeder & Gordon, 2002). However, children with OCD exhibit fears and anxieties beyond those typically observed. Fears of younger children are often different from those of adolescents. They seem to focus on more

concrete and sensory stimuli, whereas adolescent fears center on social contexts and dangers to loved ones and self. These changes in feared stimuli correspond to cognitive development and increased ability to think abstractly. Documented differences in type and number of fears exist based on sex, socioeconomic status, and culture.

Etiological explanations of anxieties and fears in children are varied and not well developed (Schroeder & Gordon, 2002). Theories of etiology for childhood OCD include pathology of the brain, attentional biases, genetics, and learning history. One supported theory is that OCD has a genetic basis. Family members of those with OCD have higher rates of anxiety and depression than those of controls (Nestadt et al., 2001). Over half of participants in one study had first-degree relatives with a psychiatric diagnosis (Toro, Cervera, Oseja, & Salamero, 1992). However, the degree to which inheritance contributes directly to OCD development is unclear as a positive family history does not reliably predict the development of OCD and OCD has also been observed to develop among individuals who have family members with a psychiatric diagnosis other than OCD. Further, in such cases, heritability is confounded with family-based experience and learning processes.

Other prominent etiological theories for OCD include behavioral learning theories. Behavioral explanations of OCD (Dollard & Miller, 1950) theorize that anxiety and fear develop through classical conditioning processes wherein a feared stimulus (unconditioned stimulus) is paired with neutral stimuli that eventually become feared (conditioned stimulus). Children may use compulsions to manage this fear, thereby establishing negatively reinforced responses.

Impairment

The distress and anxiety associated with pediatric OCD can impact many domains of functioning for all involved. It is not uncommon for academic performance to be negatively impacted (Toro et al., 1992). Family relationships are especially affected, as families of children with OCD may express more criticism and display lower levels of warmth and emotional support (Hibbs et al., 1991; Valleni-Basile et al., 1995). In addition, parents of children with OCD may encourage overdependence through excessive involvement in their child's life (Barrett, Shortt, & Healy, 2002; Hibbs et al., 1991). Relationships between the child and family members are often strained, and rates of marital problems are higher in families of children with OCD (Barrett et al., 2001). Indeed, research has suggested that family factors both contribute to and are affected by pediatric OCD (March, 1995).

Prognosis

Research related to childhood OCD has lagged behind that of adults (Barrett et al., 2008; Stewart et al., 2004). Stewart et al. (2004) reported that little is known about the progression of OCD in childhood because of the lack of long-term studies. Storch and colleagues (2007) reported that as many as 70% of children either do not receive treatment or receive treatment that is not supported by research. Many of these children enter adulthood with OCD. It is estimated that as many as half of adults with OCD displayed childhood symptoms (Rasmussen & Eisen, 1990). One study followed youth treated for OCD and found 44% of the sample continued to display subclinical symptoms of OCD in adulthood (Bloch et al., 2009).

A number of factors can affect outcomes for children who do receive treatment. Greater severity, earlier onset (Barrett, Farrell, Dadds, & Boulter, 2005; Bloch et al., 2009; Stewart et al., 2004), and level of family dysfunction (Barrett et al., 2005), are each associated with differential outcomes. While some factors seem to be logically related to outcomes, it is unclear how other factors contribute. For example, being female seems to be a risk factor for persistent OCD symptom display (Bloch et al., 2009). In addition, comorbid conditions often affect long-term outcomes. For example, comorbid oppositional defiant disorder (ODD) was associated with poorer long-term outcomes, whereas comorbid display of tics has predicted better outcomes (Bloch et al., 2009).

Current Treatment

Treatment Recommendations

As research with OCD populations has become more prevalent, practice guidelines and recommendations have been developed. The American Psychological Association developed criteria (Chambless et al., 1998; Chambless & Hollon, 1998) for identifying evidence-based practices for psychopathologies. These criteria classify treatments into categories of well-established, probably efficacious, possibly efficacious, or experimental based on the strength of the empirical evidence supporting it.

Using this criteria, Barrett and colleagues (2008) conducted a review of the literature for pediatric OCD and concluded that there are no well-established treatments for pediatric OCD. Individual CBT (Pediatric OCD Treatment Study [POTS], 2004) both alone and in conjunction with sertaline medication was classified as probably efficacious.

Family-focused CBT (Barrett et al., 2004), in group and individual formats was also classified as a possibly efficacious treatment. This type of CBT employs a separate parent protocol in addition to the child therapy sessions. Finally, group CBT (Asbahr et al., 2005; Himle, Fischer, Van Etten, Janeck, & Hanna, 2003; Martin & Thienemann, 2005; Thienemann et al., 2001) was identified as an experimental treatment.

The APA (2007) published practice guidelines that recommended CBT, specifically with ERP procedures, for treating OCD in children. Likewise, the American Academy of Child and Adolescent Psychiatry (1998) recommended CBT with ERP in the treatment of pediatric OCD.

CBT Theory and Conceptualization

Cognitive behavioral theory is built upon the premise that our mood, behavior, and cognitions are interdependent (Persons, 1989). Each component may contribute to and maintain psychopathology, providing multiple points at which the clinician can intervene. Clients are taught to recognize the relationships among the three components, and to implement practical and psychological skills to manipulate components. Treatment for OCD within a CBT framework generally focuses on anxiety management with progress measured by symptom reduction (Greco, Blackledge, Coyne, & Ehrenreich, 2005).

Cognitive dimensions of CBT maintain that cognitive biases contribute to the experience of OCD. For example, Rachman (1993) has described two cognitive biases conceptualized to be associated with OCD. These are that thoughts of an aversive event increase the likelihood of that event occurring, while thoughts about immoral behavior

are equivalent to engaging in the behavior. This concept, called thought-action fusion (TAF), has been found to be significantly correlated to OCD (Rachman, Thordarson, Shafran, & Woody, 1995; Shafran, Thordarson, & Rachman, 1996). Children with OCD report significantly higher rates of TAF than children without (Barrett & Healy, 2003).

Research has indicated that TAF can lead to thought suppression, which may yield increases in obsessive-compulsive behaviors (Rassin, Muris, Schmidt, & Merckelbach, 2000). Thought suppression refers to deliberate attempts to stop certain thoughts and may mediate the relationship between TAF and obsessive-compulsive symptoms (Marcks & Woods, 2007). Research has indicated that thought suppression may be effective for short amounts of time, but may ultimately yield greater intrusive thoughts (Abramowitz, Tolin, & Street, 2001), particularly among individuals with OCD (Tolin, Abramowitz, Przeworski, & Foa, 2002). Thus, attempts to suppress and avoid intrusive thoughts eventually give way to increased intrusive thoughts requiring rituals and compulsions to be employed more often, creating a problematic self-perpetuating cycle (Moore et al., 2007).

CBT combines cognitive treatment strategies with behavioral treatment strategies such as exposure and response prevention (ERP). Using this technique, a client is exposed to a feared stimulus and prevented from responding with escape and avoidance behaviors that have been negatively reinforced in the past. As the client is exposed to the feared stimulus, habituation yields diminished fears (Foa & Kozak, 1986). ERP is generally conducted in conjunction with a fear hierarchy in which clients are exposed to increasingly feared stimuli. Often conducted initially in-session and subsequently via

independent practice, ERP is considered a key component of CBT treatment for OCD (Emmelkamp, van Linden-van den Heuvell, Ruphan, & Sanderman, 1989). Some evidence suggests that ERP by itself may be just as effective as CBT as a whole (Emmelkamp & Beens, 1991).

CBT Implementation

March and Mulle's (1998) treatment manual, *OCD in Children and Adolescents: A Cognitive-Behavioral Treatment Manual*, has been utilized extensively in the research literature (e.g. Barrett et al., 2004; Thienemann et al., 2001; Waters, Barrett, & March, 2001). March and Mulle (1998) conceptualized OCD from a CBT standpoint as a problem of maladaptive cognitions that cause anxiety and distress. The child behaves in maladaptive ways to manage this distress. The maladaptive cognitions may be described as brain "hiccups" or "short circuits" because the child is not considered able to cause or control them, but they still affect the child.

Children are first taught constructive self-talk which may include affirming their abilities and self-reassurance. Children identify maladaptive cognitions and challenge them, altering them to be more realistic and manageable or replacing them with more adaptive cognitions. Symptoms are mapped on a fear hierarchy and are carefully rated using "subjective units of distress" (SUDS). The key component of treatment is ERP as described above. During exposure tasks, children are taught to use constructive self-talk and to "boss back" the OCD by challenging related cognitions.

March and Mulle (1998) utilized minimal parental involvement. They suggested that the therapist check in with parents at the beginning and end of treatment, but conduct

the remainder of treatment solely with the child. They also incorporate special parent sessions every five to seven sessions where the child and parents meet jointly with the therapist.

In contrast, other researchers have modified March and Mulle's (1998) protocol for use with parents and siblings (Barrett et al., 2004; Martin & Thienemann, 2005). In one such adapted protocol (Barrett et al., 2004) therapy sessions are divided into 50 minutes of child therapy, 30 minutes of parent training or sibling sessions, and 10 minutes of joint meeting at the end of the session. Parent sessions include topics such as parental anxiety management and mapping parental involvement in the child's OCD.

Still other protocols have specified a moderate role for parents that have included attending all therapy sessions with the child and being conceptualized as an at-home coach to the child (Freeman et al., 2003; Storch et al., 2007). One such protocol was used by Storch and colleagues (2007) in comparing intensive and weekly CBT formats. They described having parents present at each session in order to assist their child at home while avoiding accidental accommodation of their child's symptoms.

Outcome Studies

In general, studies examining CBT for the treatment of pediatric OCD have found statistically significant reductions in OCD symptoms and moderate to high percentages of clinical remission (Barrett et al., 2004; Martin & Thienemann, 2005; Storch et al., 2007; Thienemann et al., 2001; Waters et al., 2001). However, despite the large number of studies examining the applicability and effectiveness of CBT for children with a diagnosis of OCD, many lack robust methodology (Barrett et al., 2008).

Barrett and colleagues (2004) compared CBT in individual (ICBT) and group (GCBT) formats with a waitlist control group for 77 children ages 7 to 17. This approach to CBT utilized an adapted version of the March and Mulle (1998) protocol with an additional protocol for parents and siblings. They found a mean reduction of 65% on the Children's Yale-Brown Obsessive Compulsive Scale (CY-BOCS) for ICBT (pre = 23.64, post = 8.36) and 61% for GCBT (pre = 21.38, post = 8.28). Participants on the waitlist continued to meet OCD criteria. In contrast, 88% of children in the ICBT group and 76% in the GCBT group no longer met diagnostic criteria at the end of treatment. These results were maintained at 3- and 6-month follow-up. At 12- and 18-month follow-up, treatment gains were still maintained with 70% of ICBT participants and 84% of GCBT participants being diagnosis free (Barrett et al., 2005).

Another study (POTS, 2004) compared four treatment groups: individual CBT, SSRI medication, combined treatment (ICBT and SSRI medication), and a placebo medication. CBT was again adapted from March and Mulle (1998). Treatment lasted 12 weeks and participants were 112 youth aged 7 to 17. All treatment conditions proved superior to the placebo control condition, with clinical remission rates (using CY-BOCS scores) of 53.6% for the combined condition, 39.3% for CBT only, 21.4% for SSRI medication, and 3.6% for placebo. Although these outcomes appear to be poorer than the previous study by Barrett and colleagues (2004), this study was an intent-to-treat study and, consequently, data was included for all participants who began treatment. The team concluded that under certain conditions, CBT alone may be as effective as combined treatment.

Smaller studies have yielded similarly positive results. For example, one study (Franklin et al., 1998) treated children in either intensive or weekly CBT sessions and reported a combined mean reduction of 67% on the Y-BOCS. Eighty-six percent of participants were considered treatment responders (defined as having reductions of 50% or more on the Y-BOCS). Another study of intensive and weekly CBT sessions (Storch et al., 2007) reported rates of symptom remission of 50% for the intensive condition and 75% for the weekly condition. Finally, an additional study (de Haan, Hoodgum, Buitelaar, & Keijsers, 1998) compared ERP to medication and found significantly greater reduction for the ERP.

Limitations of Research

Current research on OCD treatment for youth has limitations. The generalizability of findings related to CBT has been questioned (Barrett et al., 2008). The vast majority of studies have included primarily Caucasian participants. Furthermore, those studies that attempt to employ more rigorous methodology generally have strict exclusion criteria that exclude cases with comorbid conditions. With over 77% (Heyman et al., 2003; Rapoport et al., 2000) of children with OCD simultaneously meeting criteria for another DSM diagnosis, observed outcomes may not apply to the majority of cases.

Further, studies have focused mainly on adolescent youth (Heyman et al., 2003), which is problematic given that the average age of symptom onset is 7 to 11 years of age (Rapoport et al., 2000; Thinenmann et al., 2001), and research on treatment for adolescent OCD may not generalize well to children because of the differences in developmental level (Holmbeck et al., 2003; Martin & Thienemann, 2005). For example,

children's cognitive skills, required for CBT, may not be adequately developed. Children also may require treatment that utilizes simpler language and more engaging activities. These differences in child characteristics may necessitate treatments developed specifically for children.

Limitation of Current Treatment Practices

Despite the positive results observed for CBT and ERP in the treatment of pediatric OCD, there are several limitations to current treatment practices. In particular, although studies report remission rates ranging from 39% to as high as 75% (POTS, 2004; Storch et al., 2007) at least a fourth of children continue to meet clinical criteria for a diagnosis of OCD after the termination of treatment. In fact, there may be some children for whom CBT treatment does not work at all. For example, in one study (Thienemann et al., 2001) 4 of the 18 participants exhibited little change on the CY-BOCS or worsened.

Dropout and refusal rates present a problem for OCD treatment. Although rates of dropout or refusal youth have not often been reported, average dropout rates in adult ERP studies are reported as 17% to 22% (Foa et al., 2005; Kobak et al., 1998; van Oppen et al., 1995). ERP treatment may be particularly difficult for children who are less invested in treatment than a referring parent. Freeman and colleagues (2009) reported that higher rates of children drop out of community-based CBT treatment and Thienemann and colleagues (2001) suggested that engagement in ERP treatment may be more difficult for children than adults.

Difficulties in conducting exposure with youth include noncompliance with homework, accidental undermining of treatment efforts by family members, and difficulties engaging parents and children in a challenging treatment process (Treadwell & Tolin, 2007). Exposure-based treatments also yield problems with access to exposure situations and time restraints (Olatunji et al., 2009).

A final limitation to current treatment practices pertains to parental involvement in therapy. Very few of the reviewed studies made regular use of parents as treatment facilitators or at-home coaches. However, there appear to be research-based reasons for regular utilization of parents in treatment. Martin and Thienemann (2005) suggested that involving parents creates a "round-the-clock lay therapist" that can assist the child in applying skills learned in therapy in other settings. Research (Weisz, Weiss, Han, Granger, & Morton, 1995) may support the "lay therapist" theory. Weisz and colleagues suggested that treatment for children is often more effective when delivered by paraprofessionals trained by psychologists than by psychologists delivering treatment directly. Minimal use of parents in treatment may mean missed opportunities for additional therapeutic benefits and efficient treatment.

Holmbeck and colleagues (2003) indicated that children, more than adolescents, do better with more parent involvement. Barrett and colleagues (2004) suggested that there are many reasons to involve families in OCD treatment including reduction of parental accommodations to rituals and indirect therapeutic effects for family members exposed to treatment (Nesadt et al, 2001). Parental accommodation of rituals is common in pediatric OCD (Barrett et al., 2001); however, when parents are involved in treatment

they may understand the need to resist accommodation and may receive support to do so. Additionally, as indicated previously, family members of those with OCD have higher rates of anxiety and depression. Family-based experience and learning processes are likely to have some contribution to this finding. Parents attending therapy with their child, although not the targets of treatment, may still be exposed to treatment and experience improvements in psychological well-being. This in turn, may positively affect the child through parental modeling of positive skills and more functional home environments.

Given these limitations, additional treatment options warrant investigation. Acceptance-based treatment may provide an effective option for children and families affected by pediatric OCD, as many of the limitations of CBT and ERP may not pertain.

Acceptance and Commitment Therapy

Theory and Conceptualization

Acceptance and Commitment Therapy (ACT) is an emerging acceptance-based approach to treatment that is built upon a philosophy of contextual functionalism (Luoma, Hayes, & Walser, 2007). Relational frame theory (RFT) provides the theoretical basis for ACT and emphasizes the consequences of language-environment interactions. As a therapy, ACT emphasizes context-based intervention strategies that promote flexible relating to challenging circumstances and situations, while undermining our tendency to respond to language and thoughts as if they are literal and accurate.

The core treatment goal in ACT is to increase psychological flexibility or the

ability to be flexible in relation to life circumstances while promoting reactions guided by one's values. Rather than targeting the content of cognitive experiences (as is generally done with CBT techniques), ACT targets the function of these experiences (Greco et al., 2005). As Hannan and Tolin (2005) indicated, the goal is "essentially, to *live* better, rather than to *think and feel* better" (p. 275).

Considered from an ACT perspective, OCD reflects attempts made to avoid, modify, and control cognitions and anxiety associated with obsessions. Thus, compulsions are considered to be the target of treatment more so than the obsessions themselves. Such attempts are often termed experiential avoidance and are key to the conceptualization of OCD. Individuals with OCD are conceptualized to experience thoughts and feelings as literally being true rather than as internal events (just thoughts and feelings). In ACT this belief that thoughts and feelings are literally true and dangerous is called fusion. Individuals with OCD view undesirable cognitive experiences as potentially harmful and as something that must be controlled or avoided (Hannan & Tolin, 2005; Twohig, 2009). Abramowitz, Lackey, and Wheaton (2009) found an increased amount of experiential avoidance in a group of participants with high obsessive-compulsive symptoms versus a group with low obsessive-compulsive symptoms. Another study (Kelly & Forsyth, 2009) found emotional avoidance to correlate strongly with anxiety sensitivity.

Thought suppression is a form of experiential avoidance associated with OCD pathology. As discussed previously, thought suppression may be effective for limited intervals, however, studies indicate that these thoughts will paradoxically increase in time

(Abramowitz et al., 2001). Freeston and Ladouceur (1997) indicated that OCD patients exhibit an excessive use of thought suppression.

Acceptance-based strategies have shown positive outcomes in regards to intrusive thoughts. One study found that OCD patients experienced more anxiety when asked to suppress unwanted, intrusive thoughts for a 5-minute period than when asked to "watch" their thoughts go by in an acceptance condition (Najmi, Riemann, & Wegner, 2009). Another study (Marcks & Woods, 2005) found that subjects were not only unable to suppress personal intrusive thoughts, but experienced increased levels of distress after attempts to do so. Subjects that utilized an acceptance-based strategy continued to experience the same frequency of intrusive thoughts, but reported a decrease in level of discomfort.

ACT clinicians target six core processes throughout treatment to help clients disengage in experiential avoidance and fused patterns of behavior, while seeking psychological flexibility in the service of valued action. These processes are employed fluidly throughout treatment with multiple processes targeted during a typical session. The specific processes include: contact with the present moment, values, committed action, self as context, defusion, and acceptance (Hayes, Luoma, Bond, Masuda, & Lillis, 2006). Contact with the present moment is the process through which clients are taught to refocus on present sensations rather than constantly residing in the past and future. During values work, clients are guided to choose what they really want and value in life. The client can then use these values throughout sessions to guide and add significance to actions. In self as context, the client learns to separate the observing and experiencing self

from thoughts and feelings while being aware of and experiencing their occurrence. Cognitive defusion is learning to view thoughts and feelings less literally and treating them with flexibility. For acceptance, clients are encouraged to be willing and present to come into contact with their experiences (Hayes et al., 2006; Luoma et al., 2007).

ACT has been utilized as a treatment for depression, social phobia, chronic pain management (Hayes et al., 2006), anxiety, OCD, and OC spectrum disorders (e.g. Twohig et al., 2006b, 2010). Applications of ACT for OCD (Hayes, Barlow, & Nelson-Gray, 1999; Twohig, 2009) first focus on instilling creative hopelessness. Through metaphors and exercises the client comes to the realization that attempts to fix the problem have been fruitless and that maybe there is no way to fix the problem. Instead the client is encouraged to change the agenda from curing themselves to living a vital life. Clients are then introduced to the concept that their efforts to control or alter internal events actually confine and limit them. As an alternative, clients are asked to choose willingness towards internal events and to practice this willingness towards internal events throughout their daily lives.

The next phase of treatment has clients make behavioral commitments, where they choose to willingly accept internal events while still committing to act in a way that they are consciously choosing (Twohig, 2009). As a help in doing this, clients are given experiential and meditation exercises that assist in “defusion” from language and cognitions. In ACT, “defusion” is described as taking language less literally; thoughts are just thoughts and nothing more. Meditation and exercises are also used to help clients learn to view themselves as the context for which events occur rather than feeling the

need to engage with these cognitions. Last, as reason for making a behavioral commitment, clients are asked to assess their values and use these as a guide to their actions rather than internal events.

ACT with Children and Adolescents

Researchers have indicated that ACT may be more efficient with youth than adults because pathological patterns of thinking are less developed (Greco et al., 2005; Murrell, Coyne, & Wilson, 2005). Older children and adolescents are developmentally in a period of values exploration and increased abstract thinking, which may be well-suited for ACT (Greco et al., 2005). Research on RFT has indicated that children learn relational frames in the same manner as adults (Lipkens, Hayes, & Hayes, 1993). Thus, children may acquire many of the pathological rules seen in adults (Murrell et al., 2005).

Clinicians working with children should tailor content to be developmentally appropriate. Greco and colleagues (2005) suggested that this can be done by making activities interactive and experiential. They suggested selecting metaphors that are more concrete and using props when possible. Some researchers have suggested that the abstract nature of “self-as-context” and “contact with the present moment” may prove difficult for children (Murrell & Scherbarth, 2006). Barker (1996) suggested that metaphors, through indirect instructions, may increase compliance and rapport with youth.

Outcome Studies

The body of research testing the theoretical tenets of ACT and evaluating

associated clinical practices may best be described as a work in progress. Nonetheless, available data appears promising. Several investigations have examined the use of ACT for adult OCD with promising results.

Twohig and colleagues (2010) compared the use of ACT to progressive relaxation training (PRT) for treatment of OCD in a randomized clinical trial. Seventy-nine adult participants were randomly assigned to 8 weeks of either ACT or PRT without exposure. ACT was found to have significantly greater improvement than PRT for severity, both posttreatment and at a 3-month follow-up, as measured by Y-BOCS scores. Higher response rates were seen for the ACT condition than PRT. The ACT condition had response rates of 46%-56% at posttreatment and 46%-66% at follow-up, whereas the PRT condition had 13%-18% for posttreament and 16%-18% for follow-up. Treatment refusal and drop-out rates were low for both conditions. For the ACT condition, only one participant refused treatment (indicated by not attending the first session) and only 9.8% dropped out of treatment. Treatment acceptability was rated as high for the ACT group with a mean of 4.38 out of a possible 5.

Twohig and colleagues (2006b) applied an eight-session ACT protocol to the treatment of OCD with four adults in a multiple baseline study design. They found a 68% improvement on the Obsessive Compulsive Inventory from pretreatment to post-treatment. These gains were not only maintained, but increased to an 81% improvement from pretreatment to follow-up 3 months later. Additionally, all participants showed reductions on the Beck Anxiety Inventory, the Beck Depression Inventory, and the Acceptance and Action Questionnaire, with gains maintained at 3 months. Participants

viewed ACT as a highly acceptable treatment with high scores on the Treatment Acceptability subscale of the Treatment Evaluation Inventory—Short Form. All four participants had significant reductions in mean numbers of self-reported compulsions from pretreatment to posttreatment and follow-up.

ACT has also been used with adults for obsessive-compulsive spectrum disorders such as trichotillomania and chronic skin picking. One study (Twohig & Woods, 2004) investigated the use of ACT and habit reversal (HR) for trichotillomania with six adults. Hair pulling was reduced to near extinction at post-treatment for four of the six adults with gains maintained for three. All of the participants found treatment acceptable. Likewise, a randomized controlled trial compared the use of ACT and HR for 12 adults with trichotillomania to a wait-list control group of 13 adults (Woods, Wetterneck, & Flessner, 2006). Statistically significant decreases in hair pulling and severity were found for the treatment group, along with significant reductions in experiential avoidance, depression, and anxiety compared to the control group. The majority of the treatment group maintained gains. Another study (Twohig, Hayes, & Masuda, 2006a) found that four of five adults in an ACT treatment group for chronic skin picking experienced reductions to near zero levels. Although gains were not maintained for the majority of these participants, the authors suggested that certain factors, such as including Habit Reversal, may assist in maintenance for future applications.

Although there are no published studies utilizing ACT with children or adolescents with OCD, some studies have utilized ACT for treatment of youth with other disorders. One group of researchers (Hayes, Boyd, & Sewell, 2011) randomly assigned

30 depressed adolescents to either an ACT treatment group or a treatment as usual (TAU) group that included manualized CBT. The ACT group had significantly greater numbers of treatment responders (d = 0.38) on a measure of depression than the TAU group, with 58% treatment responders in the ACT group and 36% in the TAU group. This represented a response ratio of 1.59 in favor of ACT. Reliable improvements on a measure of global functioning were only found for the ACT group, with 26% of participants in the ACT group and no participants in the TAU reliably responding.

Similarly a pilot study (Wicksell et al., 2007) examined the affects of an ACT protocol with 14 adolescents experiencing chronic idiopathic pain. Statistically significant changes were found at posttreatment and follow-up for functional disability (d = 1.05), school absence (d = 1.05), internalizing/catastrophizing (d = .90), and self ratings of pain intensity (d = 1.53), and pain interference with daily activities (d = 1.27). Statistically significant changes were not found for medication use.

One case study (Heffner et al., 2002) described the successful use of ACT techniques with an adolescent diagnosed with anorexia nervosa. After 18 sessions the authors reported that the client exceeded her target weight and experienced reductions to non-clinical levels on all Eating Disorder Inventory-2 subscales except for body dissatisfaction. Another case study (Wicksell, Dahl, Magnusson, & Olsson, 2005) described using ACT with an adolescent with idiopathic chronic pain. After 10 individual sessions and three parent sessions, the client had substantial decreases in client-rated measures of pain and pain interference with daily activities. The client had previously dropped out of school due to pain interference and was able to resume attending school

with no pain-related absences.

Given the positive results of ACT treatment for adult OCD and the limitations of current treatment approaches for children, an examination of ACT for pediatric OCD appears warranted. Although research utilizing ACT treatment for youth is just emerging, the results appear promising. However, additional empirical data is needed to establish ACT as a viable treatment for pediatric conditions.

Summary

Pediatric OCD affects as many as 2.7% of children, causing distress and impairment for both families and children. Current treatment recommendations consistently call for CBT and more specifically ERP. Parents are often incorporated only minimally in these treatments. Current treatment limitations include difficulties with drop-out rates, access to exposure situations, treatment adherence, and client engagement in treatment. In addition, some children fail to respond to current treatments or respond only minimally. Other treatment options appear to be warranted. Acceptance and Commitment Therapy has been used successfully in the treatment of OCD with adults. ACT has also been used in several investigations with youth struggling with a variety of problems with promising results. However, no study has examined the use of ACT with pediatric OCD.

Current Project Proposal

The current study seeks to further our knowledge of effective pediatric OCD

treatments by utilizing an ACT treatment protocol specifically intended for children under the age of 12 with parents as treatment-facilitators. Specific questions that will be examined in the proposed study include the following.

1. To what extent does a protocol for pediatric OCD treatment utilizing parent involvement and ACT yield successful treatment via reduced symptoms?

2. To what degree do children under age 12 exhibit change in psychological flexibility with an ACT-based treatment?

3. To what extent does parent involvement in a pediatric OCD treatment have indirect influence for the parent in improving functioning via increasing experiential willingness?

CHAPTER III

METHODS

Participants

Children between the ages of 7 and 12 who met diagnostic criteria for pediatric OCD were recruited as participants for this study. Children were recruited through multiple methods. Recruitment information was provided to local pediatricians and mental health providers for referrals. Community announcements and ads were placed in local and campus newspapers, and on the radio station. Fliers were placed throughout the community and in locations on campus (see Appendix A). Links to recruitment ads were placed online on the USU email homepage and the USU calendar. In addition to these methods, IRB approval was obtained to recruit through Alpine School District and school psychologists at elementary schools were contacted and provided study details.

A parent was required to attend all sessions with participating children. Participants were also required to have OCD as a primary diagnosis, which was determined using the Anxiety Disorders Interview Schedule for Children—Fourth Edition (ADIS-IV; Silverman & Albano, 1996). Primary caregivers were administered the Brief Symptom Inventory (BSI; Derogatis, 1993). Exclusion criteria included primary caregivers with BSI scores above clinical cutoffs (with the exception of the anxiety subscale). Children with a primary diagnosis other than OCD were also excluded.

Setting

All sessions with participants took place at the USU Community Clinic on campus. This clinic offered standard features including a reception area and therapy rooms with seating for up to six people.

Measures

Diagnostic Screening

Anxiety Disorders Interview Schedule for Children-Fourth Edition (ADIS-IV). The ADIS-IV (Silverman & Albano, 1996) is a semi-structured interview with both a child and parent version administered to diagnose anxiety disorders in children and adolescents. The child version has excellent test-retest reliabilities throughout all disorders and age ranges (r = .81 to .99; Silverman, Saavedra, & Pina, 2001). The ADIS-IV has been used in many other studies on pediatric OCD to establish a diagnosis and comorbid disorders (Barrett et al., 2004; Storch et al., 2007; Waters et al., 2001).

Brief Symptom Inventory (BSI). The BSI (Derogatis, 1993) is a self-report measure used to assess a broad range of psychological symptoms containing 53-items. On this measure, parents are asked to rank on a 5-point scale how well each feeling item characterizes their level of distress during the past seven days. This measure yields three global index scores (Global severity index, positive symptom total, and positive symptom distress index), as well as nine primary symptom scales (depression, anxiety, somatization, obsessive-compulsive, interpersonal sensitivity, hostility, phobic anxiety, paranoid ideation, and psychoticism). Research has consistently attested to the validity of

the BSI (Derogatis, 1993) and has been shown to have high levels of reliability, with the Global Severity Index reliability being reported at $r = .96$ (Shahar, Soffer, & Gilboa-Shechtman, 2008). The BSI was used in this study to exclude families with high scores.

Outcome Measures

In this study, the primary outcome measure was participant-observer daily frequency of obsessive thoughts or obsessions. Participants reported obsessions by recording instances on a daily home record card (HRC). Participants and parents were asked to add to the record card as often as possible. Parents were additionally asked to remind and assist with HRC completion. Cards were brought to weekly sessions where they were reviewed and participants received a new card to complete for the next week. Participants also recorded the intensity of the anxiety associated with the obsession on the record card.

Children's Yale-Brown Obsessive Compulsive Scale (CY-BOCS). The CY-BOCS (Scahill et al., 1997) is a widely-used measure of pediatric OCD adapted from the adult version. The CY-BOCS consists of a symptom checklist and a 10-item Likert scale that measures the severity of obsessions and compulsions during the most recent week. Items are clinician-administered to a child, parent, or both jointly. Scores are obtained for obsession severity (range from 0 to 20), compulsion severity (range from 0 to 20), and a total severity score (range from 0 to 40). The scale uses a cutoff point system for determining whether symptoms are subclinical, mild, moderate, severe, or extreme. A sensitivity of 90% for OCD diagnoses in youth has been found using a cut-off score of 14 (Stewart, Ceranoglu, O'Hanley, & Geller, 2005). The CY-BOCS is considered a reliable

and valid instrument for assessing pediatric OCD symptoms. High internal consistency reliabilities are reported within the CY-BOCS for the Total Score (α = 0.87-0.90; Scahill et al., 1997; Storch et al., 2007) and also for the obsession and compulsion severity scores (α = 0.80 and 0.82; Storch et al., 2007). In addition, the scale has been found to have high convergent and divergent validity with high correlations between the CY-BOCS and the Clinical Global Impression Scale (*r* = .75; Storch et al., 2007) and the Tourette's Disorder Scale-Parent Rated OCD Factor (*r* = .70; Storch et al., 2007). The CY-BOCS was completed pre and post by both the clinician and a blind rater.

National Institute of Mental Health Global Obsessive Compulsive Scale (NIMH-GOCS). The GOCS (Insel, Hoover, & Murphy, 1983; see Appendix B) is a single rating of present OCD severity given by the clinician from 1 (minimal or very mild symptoms) to 15 (very severe behavior). Studies have shown the scale to have adequate psychometric properties with good correlations with the CY-BOCS (Taylor, 1998), good test-retest reliability over a 2-week period (Kim, Dysken, Kuskowski, & Hoover, 1993), and good sensitivity to treatment affects (Piacentini, Bergman, Jacobs, McCracken, & Kretchman, 2002).

The Clinical Global Impressions Scale (CGI). The CGI Scale (Guy, 1976; see Appendix C) includes three global subscales: improvement, severity, and efficacy. One or more of the global subscales has been used in many clinical trials for OCD treatment, particularly the Improvement subscale (Piacentini et al., 2002; Storch et al., 2007). Only the improvement (CGI-I) and severity (CGI-S) subscale were be used in this study. The CGI-I is a single clinician rating of change in the patient's condition from the beginning

of treatment on a Likert scale of 1 (very much improved) to 7 (very much worse). The CGI-S is a single clinician-rating of the current level of mental illness on a Likert scale of 1 (normal, not at all ill) to 7 (among the most extremely ill). This scale has been found to have good sensitivity and concurrent validity in a study on patients with panic disorder and depression (Leon et al., 1993).

Process Measures

Avoidance and Fusion Questionnaire for Youth (AFQ-Y). The AFQ-Y (Greco, Lambert, & Baer, 2008; see Appendix D) is a 17-item child-report measure developed to measure experiential avoidance and cognitive fusion. The scale has adequate psychometrics properties including internal consistency ($\alpha = .90$). Good concurrent validity is indicated by correlations on various measures in the expected direction including the Multidimensional Anxiety Scale for Children ($r = .58$, $p < .001$) and the Children's Acceptance and Mindfulness Measure ($r = .53$, $p < .001$).

Parental Acceptance and Action Questionnaire (PAAQ). The PAAQ (Cheron, Ehrenreich, & Pincus, 2009; see Appendix E) is a 15-item measure for parent's acceptance of their child's emotions and commitment to acting in a valued way. The measure yields a total score, as well as an inaction subscale and unwillingness subscale. The PAAQ has demonstrated moderate test-retest reliability on the total score ($r = .72$) and reliabilities on the subscales all reached at least adequate levels ($r = .68$ for inaction, $r = .74$ for unwillingness). Adequate concurrent validity was found with the acceptance and action questionnaire for both mothers and fathers ($r = .240$, $p < .01$, $r = .283$, $p < .01$) and with Child Behavior Checklist total score ($r = .185$, $p < .05$, $r = .236$, $p < .05$).

Experimental Design

A nonconcurrent multiple baseline design was used to evaluate treatment effects of the pediatric OCD protocol while controlling for temporal confounds. The three participants were treated identically with the exception of length of baseline period. P1 and P2 began treatment after 7 and 13 days of baseline, respectively. Treatment began for P3 after 58 days of baseline and after P1 and P2 had experienced treatment gains.

Procedure

Assessment

After informed consent (see Appendix F) was obtained, children and caregivers participated in an intake interview. Children and parents were administered the ADIS-IV and CY-BOCS in a joint interview with the clinician, and parents and participants completed the self-rated BSI, AFQ-Y, and PAAQ. Following the conclusion of treatment, initial assessments were readministered. The clinician gave NIMH-GOCS and CGI ratings for participants following each treatment and assessment session.

Treatment

Treatment consisted of nine therapy sessions. Sessions occurred on a once weekly basis with both parent and child present for the entire session. Sessions were conducted in a traditional parent training format with parents conceptualized as serving a supportive treatment-facilitator role at home and during sessions. Sessions consisted of approximately 50 minutes utilizing a standardized session format which is illustrated in

below in Table 1.

Conceptually the protocol followed an ACT framework with control over obsessions deemphasized. Treatment sessions focused on promoting acceptance, flexibility, and values-oriented actions. Session activities included the use of developmentally informed exercises and metaphors employed strategically, as well as teaching specific mindfulness techniques and practicing behavioral commitment. A large proportion of treatment focused on committed action in the context of exposure to obsessions without employing compulsive behaviors. Treatment sessions were primarily adapted from an 8-week ACT protocol for children (Murrell & Wilson, 2002) and the adult OCD protocol (Twohig, 2004) utilized in previous studies (Twohig et al., 2006a, 2010).

Treatment components were drawn from the six ACT processes. In order to be sensitive and flexible with the needs of the participants, a session-by-session flow was not rigidly held. A general session-by-session order of component introduction was followed, but components were used with flexibility when therapeutic needs arose during therapy sessions. A summary of treatment session is described in Table 2. The full

Table 1

General Session Format

Time	Activity
10 minutes	Review of homework and experience during past week
30 minutes	Primary treatment agenda including experiential and learning tasks
10 minutes	Review of session and homework for upcoming session

Table 2

Summary of Treatment Sessions

Session	Treatment components
1	Discuss anxiety, where we feel it in our body, what our body does in response Homework: Record obsessions and what was done in response
2	"Computer reset" metaphor Teach and practice mindful breathing Willingness - "bear" metaphor Homework: Practice mindful breathing
3	"Anxiety is like a wave" metaphor Control as the problem - "chocolate cake" exercise Introduce acceptance - "finger trap" exercise and "quicksand" metaphor Homework: Use "anxiety is like a wave" metaphor at home
4	Acceptance - "passengers on the bus" metaphor and activity Homework: Recognize thoughts - "passengers on the bus"
5	Defusion - "take your mind for a walk" exercise Willingness - "petting a dog" and "rollercoaster" metaphor Homework: Listen to mind without acting on it, make behavioral commitment
6	Defusion - "holding a candy/pen" metaphor Present moment - "listening for sounds" mindfulness exercise Homework: "Holding a candy/pen" metaphor with behavioral commitments
7	Values - "heart shaped box" exercise Homework: Keeping values in mind, behavioral commitment
8	Acceptance - "remembering directions to house" exercise Defusion - color, shape of feelings, sing thoughts, funny voices Review "passengers on the bus" and other helpful metaphors Homework: Pick defusion exercise to use during week, behavioral commitment
9	Review defusion exercises Present moment - "movie screen" mindfulness exercise Discuss end of treatment

treatment protocol created and used for this investigation is included as Appendix G. Following is a description of treatment components.

Conceptualization of OCD from an ACT perspective. OCD is characterized from an ACT perspective as a problem with psychological flexibility (Twohig, 2009; Murrell et al., 2005). Through activities and metaphors children and parents were taught that there is no need to "cure" the obsessions and that attempts to control and fix obsessions have simply escalated the problem.

Self as context and defusion. Activities and metaphors were used to assist parents and children in seeing that cognitions are not to be automatically "taken seriously." Parents and participants were taught that they are able to take action regardless of cognitions and affect. Participants were taught the skills to be more aware of when they experience negative affect and cognitions and to view these as an observer instead of an active participant.

Willingness and acceptance. Throughout therapy sessions, children and parents were encouraged to feel willingness towards internal experiences. Willingness was presented as an alternative to the parental need to fix their child, as well as a replacement for the control and avoidance of fear experienced in both children and parents.

Present moment and mindfulness. Participants were taught mindful breathing and taught to notice anxiety in the body. Participants learned through mindfulness practices to be mindful of thoughts and to focus on the present moment.

Behavioral commitment. Using child-appropriate language, the characteristics of a commitment were described. The importance of doing something after making a commitment was emphasized. The therapist guided children and parents in selecting an area for commitment to confront obsessions or refrain from compulsions. Behavioral commitments were expanded and adjusted as participants proceeded throughout treatment.

Identifying values. Children reflected on things of importance and their own values. Parents shared values and modeled values-thinking for their child. Behavioral commitment was discussed in conjunction with values.

Homework

Homework was given each week to enhance skills and reinforce session-based content. Every week, children and parents were asked to complete the daily home record form. After behavioral commitment strategies were introduced, children were asked to practice commitments with parental guidance; essentially exposure to feared stimuli with commitment not to act upon the compulsion. Lastly, parents and children were asked to reflect on values at home. Caregivers were considered an integral part of the homework sessions in their role as treatment-facilitators. During treatment they were coached to provide assistance to their child during the week with homework, using the skills learned in session.

Supervision

Treatment was supervised via one-hour weekly supervision sessions with faculty experienced in working within an ACT framework. During supervision, daily record cards were reviewed and discussed, and video of treatment sessions was viewed.

Treatment Integrity

An independent graduate student researcher viewed session footage and scored sessions by adherence to the ACT model and therapist competence. The student researcher coded sessions in one minute intervals using a partial-interval recording method for processes utilized during that interval. Overall, three sessions per participant were coded for 33% of total sessions (P1: sessions two, five, and eight; P2: sessions three, six, and nine; P3: sessions one, four, and seven). Across all scored sessions,

adherence to the ACT model was rated as *M* = 4.4 on a scale of 1 “not at all adherent” to 5 “extremely adherent.” Mean therapist competency across scored sessions was *M* = 4.2 on a scale of 1 “not at all competent” to 5 “extremely competent.” Mean competency and adherence obtained in this study are similar to other studies which have used the same treatment integrity procedure (i.e., Twohig & Crosby, 2010; Twohig et al., 2006a, 2010).

Across coded sessions, percentages of session time utilized for each process were calculated as: acceptance (31.3%), defusion (6.6%), self as context (8.7%), present moment (9.5%), values clarification (10.7%), committed action (18.0%), and general assessment (36.9%). Cognitive challenging and stimulus management were not covered during any of the coded sessions.

Data Analysis

HRC data was displayed graphically and then visually analyzed for data characteristics of trend, variability, level, and course (Hayes et al., 1999). Trend refers to observed patterns in the data that may be increasing, decreasing, cyclical, or curvilinear in nature. Variability indicates the range in which scores occur within a condition. Level refers to the magnitude or frequency of a target variable within a condition. Finally, course indicates the overall nature of the data including unusual characteristics. Descriptive statistics including slope were calculated to assist in evaluating the characteristics of the data. Slope refers to the gradient of the regression line that best fits collected data. Pre and post scores on CY-BOCS, NIMH-GOCS, CGI-I, CGI-S, AFQ-Y,

and PAAQ were compared to determine the extent of change observed following the conclusion of treatment.

CHAPTER IV

RESULTS

Participants

Fourteen parents contacted the researcher and participated in an initial telephone screening. Of the 14 families, three had a primary diagnosis other than OCD (ADHD, autism, eating disorder). Three had no indications of OCD and one family was invited for an intake session, but had a family crisis and declined participation. The remaining seven children were scheduled for intake sessions. Of these children, three met criteria for inclusion in the study and were enrolled as the participants described below. Of those who were not enrolled as participants, two children did not meet OCD diagnosis criteria on the ADIS and an additional two families were invited to enroll, but declined because of improvement of symptoms after the intake. Children and families who did not choose to participate or who did not qualify were given referrals to other services. A participant flowchart is shown in Figure 1.

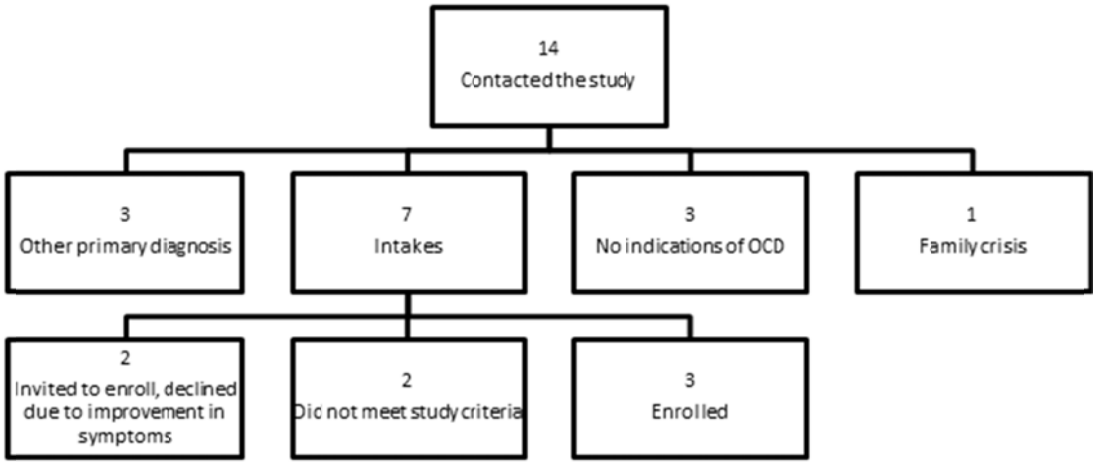


Figure 1. Participant flowchart.

Three participants completed the study and their demographic characteristics are summarized in Table 3. Participant 1 (P1) reported scrupulosity obsessions characterized by excessive concern with right and wrong. He reported obsessing about whether he had done the right thing and obsessing about "wrongs" he may have performed. For example, he had reoccurring feelings of "badness" after reading a book depicting a baby's diaper falling off. He frequently worried that his clothing might be immodest. Associated compulsions consisted of checking with his mother to see if his thoughts or actions were "bad" and excessively asking for reassurance from his mother. At times, these compulsions resembled more of a confession. P1 compulsively avoided things that might be "contaminated" by moral wrongs. For example, after obsessing about having read a "bad" word in a popular book, he was unable to read the book, watch a movie-version of the book, or associate with children who had watched the movie.

Participant 2 (P2) had varied obsessions and compulsions, many with religious overtones. She had extreme compulsions to get something "just right" and often felt that

Table 3

Participants

P	Sex	Age	Ethnicity	Compulsion(s)	Parental education	Medication	Comorbid condition
1	Male	10	Caucasian	Reassurance seeking, confessing, praying	Doctoral	None	None
2	Female	10	Caucasian	Reassurance seeking, repeating actions, praying, cleaning	Bachelors	Zoloft	None
3	Male	11	Caucasian	Checking, reassurance seeking, questioning	Masters	None	None

if she did not, something bad would happen. For example, she had to pray “just right” or the devil would get her. She obsessed about possibly communicating with the devil by writing assignments wrong, thus her compulsive behaviors included writing and erasing and then rewriting assignments. She worried that if she did something wrong that “dark spirits” would hurt her. She had multiple compulsions related to these obsessions, including checking with mom, keeping doors open, and praying. She also had recurrent intrusions of sexual images. She avoided touching the cat, because she associated it with some of her sexual thoughts, fearing she may accidently touch private parts. P2 also had contamination obsessions, worrying that the toilet and soap bowl weren’t clean enough, accompanied by associated cleaning compulsions.

Partway through treatment, P2’s mom became sick. P2 developed obsessive concerns about something happening to her family. P2 also began to obsess about her own health, that she might get cancer or that she was sick. She compulsively checked with mom for reassurance.

Participant 3 (P3) reported obsessions about recycling and harming the environment to the extent that he would compulsively spend hours waiting for the recycling to be picked up. Other compulsive behaviors associated with his obsessive cognitions included going through the recycling boxes at both his home and public places to make sure they were only filled with recyclables. He also had obsessive concerns that something might happen to himself or his family members. His associated compulsions were repeated checking and reassurance seeking from mom. P3 often had thoughts get “stuck” in his head, ranging from when something would happen or about something not

feeling right. When P3 had obsessive thoughts that would not dissipate, he would compulsively question his mother repeating the same question over 20 times in a row.

Data

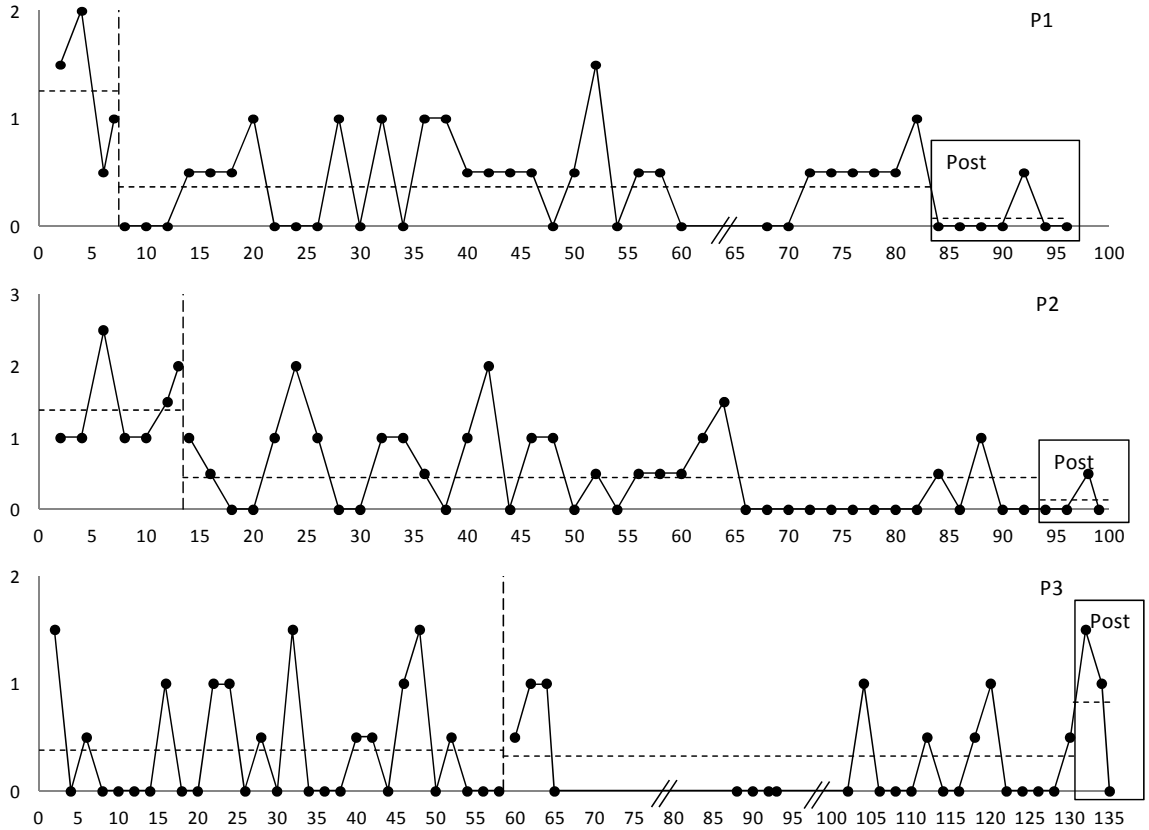
Multiple Baseline Design

Participants had differing baseline lengths. Baseline for P1 and P2 lasted less than two weeks (7 and 13 days, respectively). Treatment for P3 started after 58 days of baseline and after P1 and P2 had experienced treatment gains. Condition changes were enacted only after treatment effects were observed for preceeding participants. Stable trends in baseline data were observed prior to condition shifts, allowing for interpretation of treatment effects; however, P1 had a less than desirable number of data points in the upward trend.

P1 and P3 had missing data. P1 missed an appointment due to illness and did not collect data the week following the missed appointment (days 61 to 67). P3's record cards were not brought for Sessions 3, 4, and 6 resulting in missing data for days 66 through 86 and 94 through 100. His mother indicated that the cards had been lost, destroyed, or that they had forgotten to complete them.

Obsession Frequencies

Obsession frequencies for participants are displayed in Figure 2. Two-day averages were employed to aid in data inspection and interpretation, thus each point represents the average of two days' data. Barlow, Nock, and Hersen (2009) described this method of displaying data for identifying trends in cases of high variability. (An example



Note. Dots represent the average of two days of data. A span without dots indicates missing data.

Figure 2. Obsession frequencies reported in averages for pairs of days.

of utilizing 2-day means can be found in Agras, Barlow, Chapin, Abel, & Leitenberg, 1974.) Missing data has been indicated by hash lines on the x-axis. Mean frequency levels are represented by dotted lines for baseline, treatment and posttreatment.

Two of three participants (P1 and P2) had large reductions in frequency of reported obsessions. The average percent reduction in frequency of obsessions for all participants was 21.95%.

P1 showed the greatest treatment effect when considering condition mean rates or average level across conditions. A large decrease was seen in levels from baseline mean

to treatment and post means. During P1's baseline his rate of obsession frequency was 9 with an average of 1.25 per day (*SD* = 0.65). P1's reported obsession frequency decreased by 94.29%, for a mean of 0.07 (*SD* = 0.19) at posttreatment (based on ratings from the day pairs following treatment). Average daily rate of obsession frequency after baseline period and during treatment was 0.37 (*SD* = 0.40)

Treatment effects were somewhat lesser demonstrated by slope and variability in data. A trendline for the data from baseline through posttreatment had a negative slope of -0.0054. Variability in data was persistent throughout baseline and treatment; however, variability and range during posttreatment decreased. Frequency of obsessions ranged from an average of 0.5 to 2 per day during baseline representing a 1.5 point span. No data points fell at 0 during baseline. During treatment data ranged from 0 to 1.5 also representing a range of 1.5. Data points were observed at 0 on 13 out of 35 days. Posttreatment data ranged from frequencies of 0 to 0.5, representing a much smaller span of only 0.5. Posttreatment also had little variability with five of the six points reported as 0. P1 also showed treatment effects when considering trend. Baseline ended with an upward trend in data, which reversed immediately with treatment onset.

Treatment effects for P2 were most apparent when considering mean levels across conditions. P2 also exhibited significant reductions in mean levels from baseline to treatment and posttreatment. P2 had a baseline mean level of 1.43 (*SD* = 0.61) with a total frequency of obsessive cognitions of 18 during baseline. P2's average daily frequency level following baseline was 0.44 (*SD* = 0.56). P2's frequencies declined overall with a 91.25% reduction in average frequency during posttreatment (*M* = 0.13, *SD*

= 0.25).

Treatment effects were also found for the variables of slope and variability. The trendline for data from baseline to posttreatment had a slope of -0.0123. Levels of obsessive thoughts during baseline ranged from 1 to 2.5 with a 1.5 span. During treatment, data ranged from 0 to 2 representing a 2.0 span; however, only two of 40 points reached 2. The ratio of data points at 0 during treatment were 20 out of 40 with no 0 data points observed during baseline. Posttreatment data ranged from frequencies of 0 to 0.5, representing much less variability and a range of just 0.5. Variability in data was persistent throughout baseline. Posttreatment had little variability with three of four points reported as 0.

P2's treatment effects were also apparent when considering trend. P2's baseline ended with an upward slope. Treatment data started with an immediate downward trend reflecting the abrupt shift also noted with P1. This trend continued into posttreatment.

Treatment effects for P3 were not apparent when considering mean levels. P3 had a mean frequency level of 0.38 (*SD* =0.53) during baseline with a total frequency of 22 obsessions. Mean level of frequency only slightly decreased during treatment to a mean of 0.33 (*SD* = 0.47). At posttreatment, P3's mean rate of anxious thoughts was 0.83 (*SD* = 0.76), representing an increase from baseline.

Treatment effects were also not apparent when considering slope. The slope of the trendline for frequency was -0.0008. Baseline frequency varied from 0 to 1.5 per day without a consistent pattern, reflecting a span of 1.5 points. Seventeen out of 29 data points (59%) were at 0. Variability during treatment was somewhat smaller with a range

of 0 to 1. Fifteen out of 26 points (58%) were at 0 during treatment. Range during posttreatment was from 0 to 1.5, which mimicked the span observed at baseline.

Treatment effects were also not apparent when considering trend. P3's baseline ended with data stable at a frequency of 0. Treatment started with an immediate increase in obsessions. Data remained variable across treatment and posttreatment and failed to replicate the treatment effects observed for P1 and P2.

Intensity of Obsessions

Intensity of obsessions associated with HRC data are displayed as baseline, treatment, and posttreatment means in Table 4.

Two of the three participants experienced a reduction for intensity of obsessions with an average reduction across all participants of 25.02% from baseline to posttreatment. P1's intensity ratings failed to exhibit change in a positive direction. Average intensity for baseline was 3.95 (*SD* = 1.26) and this increased to 4.12 (*SD* = 1.29) during treatment. P1 reported only one instance of obsessive cognition during posttreatment. The severity was recorded as 4, representing a 1.32% increase in reported severity of obsession from baseline average.

Table 4

Intensity of Obsessions

	Baseline		Treatment		Post	
Participants	*M*	*SD*	*M*	*SD*	*M*	*SD*
P1	3.95	1.66	4.12	1.29	4	
P2	6.35	2.33	6.50	2.07	4	
P3	8.39	1.59	7.32	2.45	5.08	.82

Intensity ratings for P2 were variable across conditions with a considerable decrease noted at the end of treatment. Intensity average was 6.35 for baseline (*SD* = 2.33) and 6.50 (*SD* = 2.07) during treatment. The single instance of obsession observed during posttreatment was rated 4, representing a 36.96% reduction in reported severity.

Intensity was high for P3 during baseline, 8.39 (*SD* = 1.59), and decreased during treatment to 7.32 (*SD* = 2.45). An additional decrease to 5.08 (*SD* = 0.82) was observed at posttreatment, representing a 39.40% reduction in reported intensity of obsession from baseline average. Thus, unlike with rates of obsession, P3 exhibited the most apparent treatment effect when considering obsession intensity.

CY-BOCS Scores

The clinician gave participants CY-BOCS ratings during intake and posttreatment sessions. A blind rater viewed intake and posttreatment video administrations of the CY-BOCS and gave blind ratings. Overall, significant agreement was observed across raters, the clinician and independent rater were within three points in their scoring on all participants. However, high agreement was expected as the independent rater developed ratings from the recordings of the clinician-conducted interview. The independent rater did not conduct an independent interview of participants for CY-BOCS ratings, which may have provided a better estimate of reliability between raters. Both the clinician's and independent rater's CY-BOCS scores for each participant are displayed in Figure 3.

Significant reductions in CY-BOCS scores were observed for all participants, with one participant (P1) falling below the clinical cutoff posttreatment and two

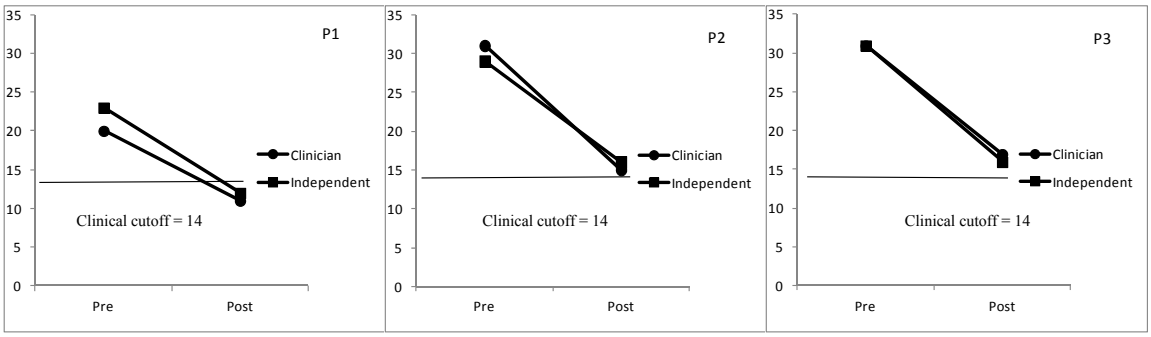


Figure 3. Children's Yale-Brown Obsessive Compulsive Scale.

exhibiting significant decreases despite falling just above the clinical cutoff. Average CY-BOCS reduction across participants was 47.26%.

Improvements in P1's obsession rates were reflected by his 45.00% improvement in CY-BOCS scores from baseline to posttreatment (using clinician ratings). His pretreatment CY-BOCS score (raw score = 20) was in the clinical range, whereas his score at posttreatment (raw score = 11) fell below the clinical range (the clinical cutoff of 14 has been used in child studies).

P2's pretreatment CY-BOCS score (raw score = 31) represents considerable impairment. P2's posttreatment CY-BOCS score (raw score = 15) fell just above the clinical cutoff, representing a 51.61% improvement compared to pretreatment despite remaining above the clinical cutoff.

Although reductions were not seen on the frequency data, P3's CY-BOCS score improved 45.16% from pre- (raw score = 31) to posttreatment (raw score = 17), yet also remained above the clinical cutoff.

NIMH-GOCS

The clinician completed ratings on the NIMH-GOCS rating scale following each

session. NIMH-GOCS ratings are reported in Figure 4.

OCD symptoms are shown as improving throughout treatment for all three participants by ratings on the NIMH-GOCS. P1 started with a GOCS score of 9, P2 of 10, and P3 of 8 pretreatment. Two of the three participants (P1 and P2) ended with ratings of 2 and P3 ended with a rating of 4. Mean reduction across participants was 69.26%.

CGI Ratings

The CGI-I ratings were completed after each session, with the exception of intake because it measured improvement following intake. The CGI-S was completed after every session including intake assessment. CGI-I ratings and CGI-S ratings are shown below in Figures 5 and 6, respectively.

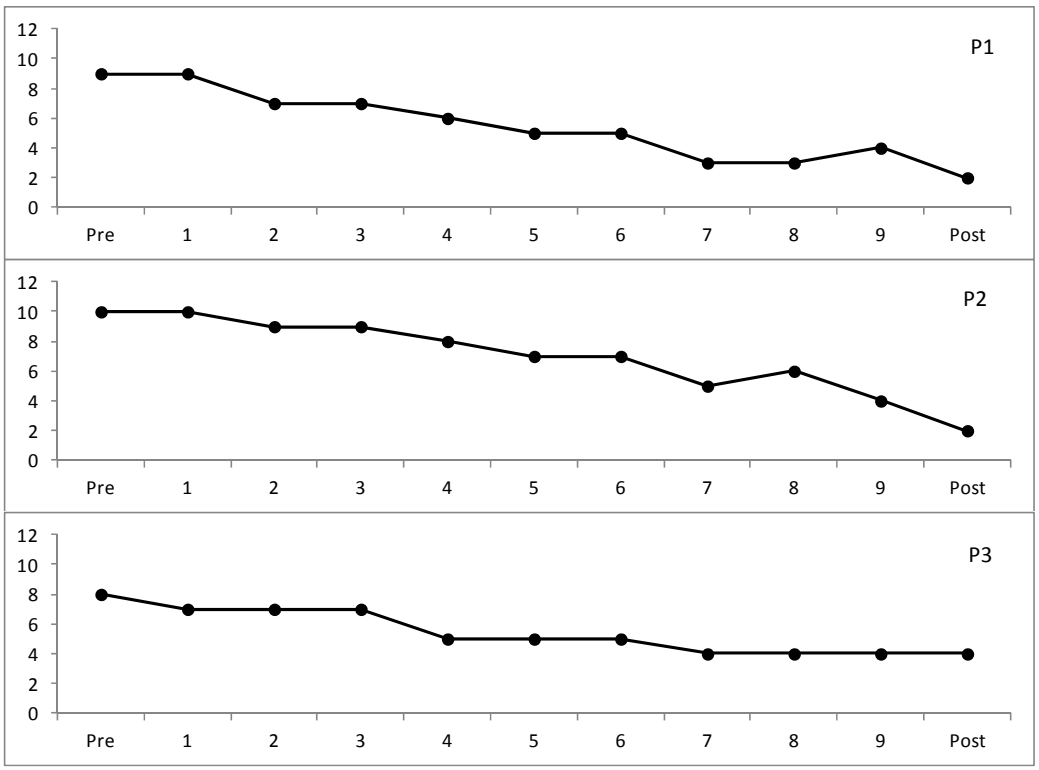


Figure 4. The National Institute of Mental Health Global Obsessive Compulsive Scale.

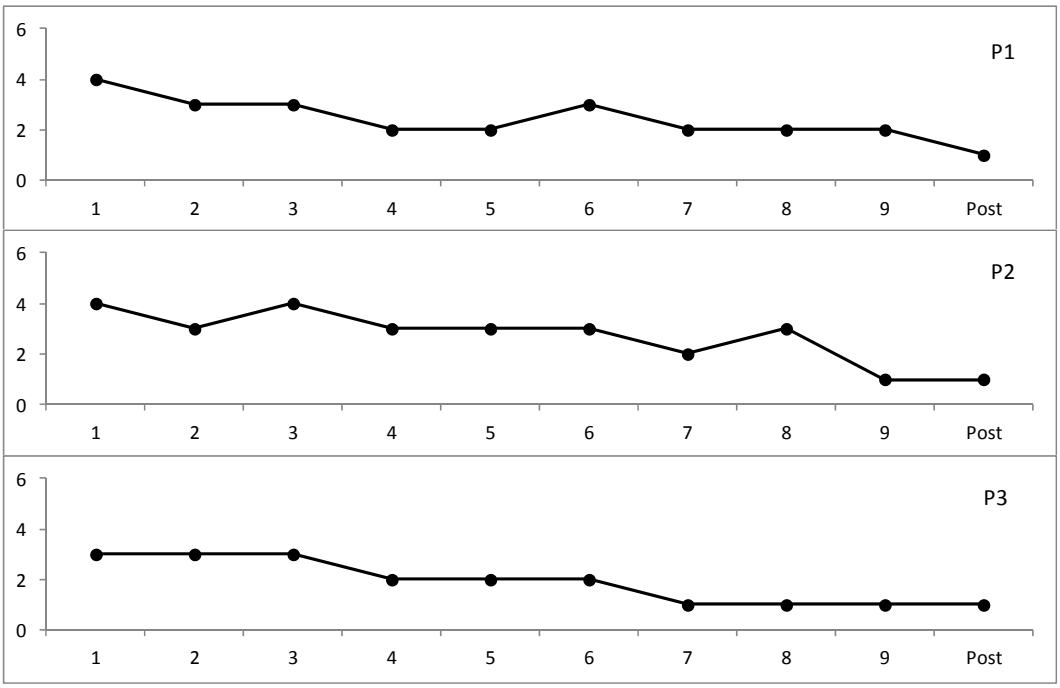


Figure 5. The Clinical Global Impressions Scale: Improvement.

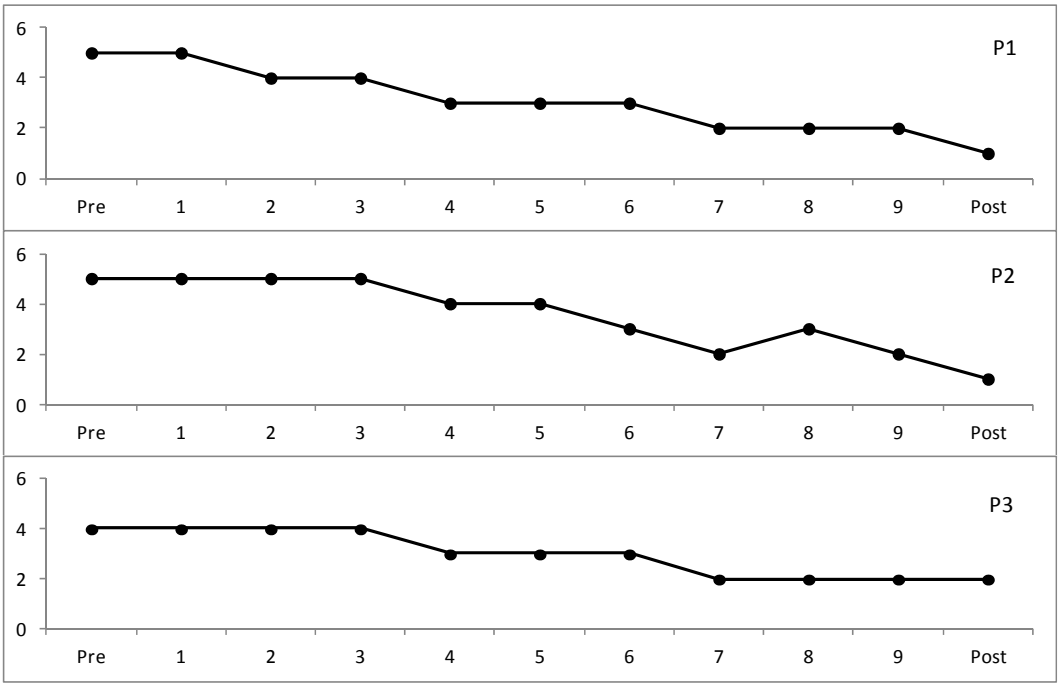


Figure 6. The Clinical Global Impressions Scale: Severity.

Improvement from pretreatment was reflected by CGI-I scores for all three participants with ratings ranging from 4 (No change) and ending at 1 (Very much improved). All three participants were rated “very much improved” at posttreatment.

Pretreatment CGI-S ratings were at 5 for P1 and P2 (Markedly ill) and at 4 (Moderately ill) for P3. Ratings reflect improvement in severity of symptoms from pretreatment to posttreatment. All three participants saw continuous gains in severity ratings throughout treatment with the exception of session 8 for P2. All participants had ratings of 2 (borderline mentally ill) or below at the end of treatment. Overall mean reduction was 70.00%.

Process Scores

Participants completed AFQ-Y questionnaires pre- and posttreatment. Results are shown in Figure 7. Parents completed PAAQ questionnaires pre- and posttreatment. Results are shown in Figure 8.

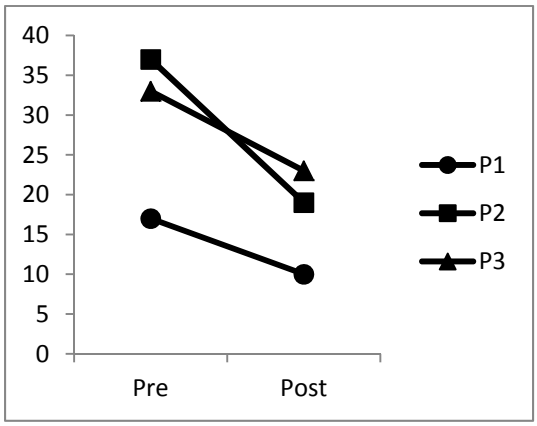


Figure 7. Avoidance and Fusion Questionnaire for Youth.

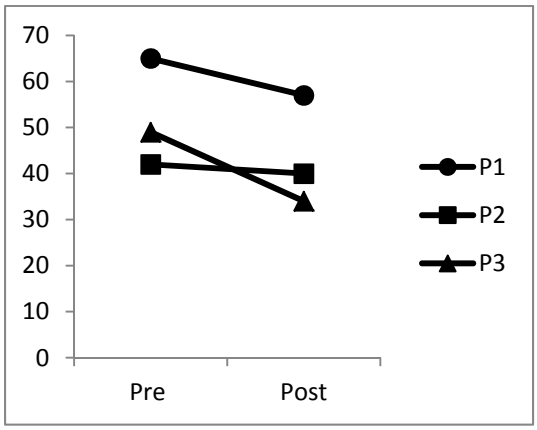


Figure 8. Parental Acceptance and Action Questionnaire.

AFQ-Y scores were substantially decreased with an average reduction of 40.04%. All three participants saw moderate to large reductions in AFQ-Y scores. Average PAAQ reduction was 15.89%. All parents exhibited at least minimal reductions on PAAQ scores.

P1's AFQ-Y scores declined during the treatment process. His AFQ-Y score was 17 and in the 41st percentile at pretreatment. His AFQ-Y score was reduced by 41.18% to a score of 10 in the 23rd percentile at posttreatment. P1's PAAQ score declined from a 65 at pretreatment to a 57 posttreatment for a 12.31% reduction.

P2's AFQ-Y scores declined 48.65% during the treatment process. Her pretreatment AFQ-Y score was 37 and in the 84th percentile. Her posttreatment AFQ-Y score was 19 and in the 46th percentile. P2's PAAQ score decreased minimally following treatment. Her pretreatment PAAQ score was a 42 and posttreatment score was a 40 for a 4.76% decrease.

P3's AFQ-Y scores were reduced from a score of 33 in the 75th percentile to a score of 23 in the 58th percentile, with an overall reduction of 30.30%. P3 had a decrease of 30.61% in PAAQ scores with a pretreatment PAAQ of 49 and posttreatment score of 34.

CHAPTER V

DISCUSSION

Overview

ACT has been employed as a treatment for adult OCD and has yielded positive outcomes. However, while there has been speculation that ACT may also be useful with children, there is an obvious lack of research in this area. No study currently exists that has examined the effects of ACT with children under the age of 12. Additionally, no studies examining the use of ACT for OCD with youth of any age have been published at this time. The current study was designed to address these research gaps by utilizing a parent-facilitated ACT protocol in the treatment of pediatric OCD. The results yielded positive outcomes and are considered here in relation to the empirical questions that constituted the focus of the study.

Empirical Questions

Study Question #1

Study Question #1 asked, "*To what extent does a protocol for pediatric OCD treatment utilizing parent involvement and ACT yield successful treatment via reduced symptoms?*" All three participants appear to have benefited from treatment through reduced symptomology. Aspects of successful treatment are evidenced with mixed results by HRC frequency data with two of three participants clearly demonstrating reduced symptoms. Two of three participants also demonstrated reduced intensity of symptoms on

HRC data. Successful treatment for all three participants was also supported by significant reductions in CY-BOCS scores and clinician-rated GOCS, CGI-S, and CGI-I scores.

According to HRC frequency data, two of the three participants clearly benefited from treatment. This is best evidenced by decreases in mean levels for the two participants. In addition, each of these participants had no zero-occurrence days during baseline compared to their combined zero-occurrence of 41 days after baseline. Downward slope and decreased variability from baseline to posttreatment also demonstrated treatment gains for the same participants (P1, P2).

It should be noted that P3 struggled in this study more than the other participants, particularly in the collection of participant observer data. It was unclear if this was due to the nature of the treatment or characteristics of the family. There are some indications that even though the focus of treatment was to help him, P3 viewed himself as "in trouble" when HRC data was collected. This was demonstrated by mother's report that he ripped-up record cards and on one occasion termed the HRC a "tattle card." In contrast, P1 and P2 seem to have viewed the process as a collaborative and helpful effort with parent and clinician.

P3 also demonstrated an unexpected increase in frequency data at the end of treatment. Towards the end of treatment, pretermination discussions were held and it is possible that P3 may have been reactive to this. However, this trend was not seen with P1 and P2. The last week of treatment for P3 incidentally occurred within the holiday season. His family was out of their normal routine and there are indications that this

caused additional anxiety for P3. Although P3 struggled with HRC data, none of these difficulties were reflected on the other measures used in this study.

The treatment protocol also reduced the intensity of symptoms for two of the three participants (P2 and P3). This was demonstrated by decreased ratings of intensity on the HRC. There are multiple ways that participants can respond to treatment and intensity of symptoms is one dimension that may suggest a treatment effect. This pertains to P3 who, unlike with rates of obsession, exhibited a treatment effect when considering obsession intensity. Taken together, the study results suggested that ACT can positively affect both frequency and intensity of symptoms for pediatric OCD.

Treatment was also effective at reducing obsessive and compulsive symptoms in this study as evidenced by reductions in CY-BOCS scores for all three participants. Although only one of the three participants fell below a diagnostic cutoff at posttreatment, the other two participants were within three points of the cutoff. Treatment was limited to nine sessions; had treatment continued or been more intense these scores might have been reduced further. From a clinical standpoint it would be difficult to say that these participants did not respond to treatment as all three participants had significant reductions in CY-BOCS scores.

The reductions observed on the CY-BOCS were smaller than many treatment studies conducted utilizing ERP/CBT (Barrett et al., 2004; de Haan et al., 1998; Franklin et al., 1998; Storch et al., 2007), though it should be noted that each of these studies consisted of 12 or more sessions of treatment. Average CY-BOCS reductions in this study were noted to be larger than the CBT-only group of a well-regarded intent-to-treat

study (POTS, 2004).

ACT further demonstrated effective symptom reduction via NIMH-GOCS results. Reductions in global obsessive-compulsive symptoms were observed throughout treatment for all three participants. The observed mean reduction across participants exceeded those reported in CBT studies (Piacentini et al., 2002; Waters et al., 2001). That NIMH-GOCS reductions exceed those of CBT studies, whereas CY-BOCS reductions do not, may be indicative of a difference between clinician and child perceptions of improvement. Children may be less sensitive to incremental improvements or possess limited capacity for introspection into symptom changes. However, interpretation should be cautious as clinician-rated measures may be influenced by assessor-bias.

ACT effectiveness was also demonstrated on both scales of the CGI. CGI-I scores posttreatment were “very much improved” for all three participants. Some CBT studies have defined treatment responders as those having “much improved” or “very much improved” ratings on the CGI-I posttreatment. CBT studies utilizing this criterion have reported lower rates of treatment responders than was observed in this study (Piacentini et al., 2002; Storch et al., 2007). However, because of the sample size of the current study these comparisons should only be taken to indicate that ACT may produce results on the CGI similar to those observed with CBT.

Taken together, data collected across dependent variables consistently suggested the presence of moderate treatment effects for participants. These results reflect the positive treatment effects reported in adolescent studies of ACT and suggest that further child studies may yield similar results. Although comparisons of obtained results to CBT

studies produced mixed results, ACT had larger effects on some measures indicating that ACT has promise as a viable alternative to CBT in the treatment of pediatric OCD. Further research is warranted to extend the utilization of ACT for childhood conditions including OCD.

Study Question #2

Study Question #2 asked, "*To what degree do children under age 12 exhibit changes in psychological flexibility using an ACT-based treatment?*" All three participants exhibited improved psychological flexibility following the conclusion of treatment. This is demonstrated by scores on the AFQ-Y, which decreased indicating diminished fusion and avoidance, and consequently increased experiential willingness and defusion. This was an expected outcome as ACT has been theorized to directly target these processes. Decreases for all three participants on the AFQ-Y correspond with decreases on the CY-BOCS suggesting a possible association shared by increased psychological flexibility and decreased symptomology. While this outcome is not necessarily predicted given the underlying theoretical principles of ACT, it reflects a noteworthy outcome of this study.

Session reviews by supervisors and session content ratings by a trained observer suggest that session content was consistent with previously established ACT protocols. Changes in ACT-specific processes, in hypothesized directions, support that the treatment protocol possessed internal validity. Published research has yet to demonstrate that ACT can be successfully modified for children; however, decreases on this measure concurrent with demonstrated symptom reductions imply that ACT can be adapted and utilized

beneficially with children.

Additionally, although studies with adolescents have demonstrated similar positive results in symptom reduction, these studies have not included ACT-specific measures to indicate whether proposed mechanism of change (i.e. increased psychological flexibility) is correlated with results. This is one of the first ACT treatment studies with youth to imply a potential association between decreased symptomology and increased psychological flexibility.

Study Question #3

Study Question #3 asked, "*To what extent does parent involvement in a pediatric OCD treatment have indirect influence for the parent in improving functioning via increasing experiential willingness?*" Data indicated that parents who attended treatment sessions with their child also developed increased experiential willingness. This is evidenced by decreases in parent-rated PAAQ scores for all three parents. Although this was a treatment for pediatric OCD, parents were present and exposed to ACT-based interventions in each session. A number of specific elements of treatment may have impacted parental willingness. For example, strategies specifically designed to promote acceptance and flexibility were presented frequently during sessions. In addition, it is likely that parental conceptualization and knowledge of OCD evolved through exposure to ACT metaphors and concepts. Each of these factors may have initiated changes in parental response to their child's condition, as well as associated anxiety and negative emotions. It appears that parents benefited from such exposure and that effects generalized to promote increased experiential willingness in parenting expectations and

practices.

Effects of ACT treatment on parents, who were not the intended targets of treatment, but were exposed via attendance with their child, have not been previously measured. This has implications for treatment of pediatric OCD, as children may benefit from parental modeling of experiential willingness. As experiential unwillingness is a key component in ACT conceptualization of OCD, parental demonstration of experiential willingness may be particularly effectual in promoting similar behavior in children. Heritability, family-based experience, and learning processes have all been suggested as contributing or etiologic factors to pediatric OCD. It is possible that these factors might be mitigated by increased family-flexibility and experiential willingness. Additionally, parents with increased experiential willingness may be able to better withstand enabling OCD behaviors or requests to assist in rituals, which is a common problem in families of OCD children.

Some studies have looked at the effects on child psychopathology when parents were treated for psychological disorders. One study (Weissman et al., 2006) found that children of mothers who were successfully treated for depression had larger decreases in rates of diagnoses than those whose mothers were not. This suggests that children may benefit from the successful treatment of a parent. In the current study, parents appeared to have positive treatment effects. It is possible that these effects contributed to their children's reduction of symptoms. Thus, credit for child symptom reduction may have resided partially in the direct treatment of children, as well as in the treatment effects exhibited by parents.

Limitations

There are likely limitations to the generalizability of these results, owing to the small number of participants enrolled in the study. Sampling was not conducted randomly and the resulting sample of three was likely not representative of the population. Due to the nature of recruitment, it is possible that there are shared attributes of those who volunteered to participate that differentiate the sample from the target population. As a pilot study these results are an exploration of whether ACT has the potential for treatment of pediatric OCD. Results demonstrate ACT treatment was effective for the sample obtained; however, as a pilot study there are implicit threats to external validity and generalizability should not be assumed

Another limitation of this study is that HRC data was not stable or did not present a consistent trend before phase change for P1. Greater baseline stability allows for confidence in attributing results to treatment rather than confounding variables. Control over potential confounding variables in a multiple baseline design is derived by demonstration that treatment effects occur only when condition change is initiated. Although the data for P1 was trending upwards when the phase shift occurred and there were distinct mean level difference between baseline and treatment, the observed trend was not long enough to ensure strong confidence in the attribution of treatment effects.

An additional limitation noted in the methodology was that HRC data collection was not assigned specifically to the child or parent. This allowed for differing methods of data collection across participants. Differentiations between parental data collection, child data collection, and possible parent-child collaboration were likely and were not

controlled or assessed. HRC data, therefore, represents an uncontrolled variable in the sense that participants may have perceived or approached data collection differently. In a multiple baseline design, control over potential confounding variables is demonstrated by changes in a dependent variable that reliably correlates with condition change. In an instance in which data collection strategies maybe have differed, repeated demonstration of change on the same variable may be challenged and conclusions that can be made regarding treatment effects may be limited.

The lack of specification of data collection responsibility may have had some bearing on P3's data. P1 and P2 appeared to collect data in a collaborative manner with parent and child both initiating data collection as needed. However, P3 did not collect data and his mother appeared to assume full responsibility for data collection. This represents a potential explanation for the divergent results observed on HRC data and the much more consistent results observed on the other dependent measures.

In addition, because the HRC data was based on self-report, the reliability of the data cannot be ensured and not every instance may have been recorded. Researchers have reported that children and adolescents can be trained to accurately record behavioral data (Cole, Marder, & McCann, 2000); however, research has not sufficiently investigated whether internalizing behaviors are likewise accurately recorded.

Another difficulty with the interpretation of HRC data is the reactive effects of self-monitoring. Research has shown that simply monitoring problem behavior can reduce the frequency (Kazdin, 1974). This effect can make it difficult to determine the extent of change due to treatment and not simply self-monitoring. Self-monitoring is a

common element in ERP, CBT, and ACT (Tolin, 2009). Thus this limitation is not specific to ACT, but is one that researchers acknowledge anytime self-monitoring is utilized. Longer baselines assist in determining change due to reactive self-monitoring effects, as researchers can see decreases before treatment is initiated and wait for stabilization of the data. In this study, P1 and P2 had somewhat brief baseline periods and it is possible that some of the decreases seen after baseline were due to self-monitoring effects.

Finally, a limitation of this study was that for various reasons data was missing for two of the three participants. Ideally this would have been prevented. Missing data reduces the representativeness of an individual participant's experience and potentially attenuates understanding of emerging treatment effects. With increasing amounts of omitted data, a participants' existent data becomes more heavily weighted. If this data was representative of the whole, this may not be a concern; however, it cannot be assured that omitted data would have been similar to existing data. Circumstances associated with the omitting of data may have instigated differences in data had it been reported. Thus, missing data has implications for limiting the interpretation of data and reduces the confidence with which conclusions are made.

Future Directions

The current study sought to further knowledge of effective pediatric OCD treatments by utilizing an ACT treatment protocol specifically intended for children under the age of 12 with parents as treatment facilitators. Overall, results suggested that

ACT holds promise as a potential treatment for pediatric OCD. However, further research is needed to replicate and extend the current results. This study provides a basis for further developing research that could strengthen or modify the outcomes observed.

In contrast to the current study, future studies should emphasize increased generalizability of research findings. To accomplish this, researchers could employ a larger sample size. Population characteristics are more likely to be represented in the sample when large samples are utilized. Alternatively, researchers could utilize recruitment and sampling techniques that emphasize random selection and ordering or assignment to condition in developing a study with greater external validity. Any of these methods would possess merit and likely enhance generalizability and the strength of study conclusions.

When utilizing a small sample design, such as the multiple baseline design employed in this study, control over potential confounding or extraneous variables is critical in establishing treatment effects. Similar future studies would benefit from more extensive control over variables such as the parent-child approach to data collection which appeared to be a problem in this study.

Future research could also directly examine the implications of parent involvement in treatment. The current study found positive results utilizing a parent-facilitated protocol. It also suggested that parents may benefit from treatment involvement. However, it is not known if parent involvement enhanced treatment outcomes for children or whether similar results may be obtained without parent involvement. Also, the degree of parent involvement required for parents to benefit from

their participation is unknown. Further investigation should examine treatment by controlling parental involvement to a greater degree or by manipulating this factor as an independent variable.

Finally, research on ACT with youth would benefit from investigation of the maintenance of treatment effects. This could be accomplished via data collection at predetermined intervals following the conclusion of treatment and effects could be analyzed in relation to maintenance or deterioration over time. This would provide valuable information for clinicians regarding expectations for maintenance of treatment, as well as yield implications for relapse prevention.

Conclusion

This investigation examined the use of a parent-facilitated ACT protocol in the treatment of children under the age of 12 with OCD. All three participants had positive treatment effects. Participants tracked daily obsessions throughout baseline, treatment, and posttreatment. Two of three participants had significant reductions in frequency of obsessions after baseline. All three participants showed changes in desired directions on all pre and post measures. As a first investigation utilizing ACT in the treatment of children, these positive results provide encouragement for the continued investigation of ACT protocols with children. Additional research is needed to further assess treatment effects of an ACT protocol for pediatric OCD.

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APPENDICES

Appendix A

Recruitment Materials

Newspaper Ad
Research Study

The Psychology Department at Utah State University is seeking individuals ages 7 to 17 with symptoms of **obsessive-compulsive disorder** to participate in a study assessing the effectiveness of a psychological intervention for these problems. The study will involve 14 hours of your time. There will be no compensation for participation, but you will receive a free psychological intervention. If you are interested or have questions please contact Jennifer Yardley at (435) 770-1931 or j.yardley@aggiemail.usu.edu.

Is your child struggling with anxiety?

If your child is 7 to 12 and does any of the following:

- Exhibits signs of anxiety
- Has a need for things to be "just right"
- Displays repetitive behaviors such as handwashing, hoarding, or praying
- Spends an excessive amount of time obsessing or worrying

You may be eligible for a study focusing on techniques and exercises to reduce symptoms and help with anxiety. Treatment is free!

For more information contact Jennifer Yardley at (435) 770-1931 or j.yardley@aggiemail.usu.edu.

Appendix B

National Institute of Mental Health Global Obsessive-Compulsive Scale

(NIMH-GOCS) NIMH Global Obsessive-Compulsive Scale

National Institute of Mental Health Global Obsessive-Compulsive Scale

(NIMH-GOCS)NIMH Global Obsessive-Compulsive Scale

Directions: Circle the number (1 to 15) that best describes the present clinical state of the patient based on the guidelines below:

1 Minimal within range of normal or very mild symptoms. Person sends little time
2 resisting them. Almost no or no interference in daily activity.
3

4 Subclinical obsessive-compulsive behavior. Mild symptoms that are noticeable to
5 patient and observer, cause mild interference in patient's life and which he may resist
6 for a minimal period of time. Easily tolerated by others.

7 Clinical obsessive-compulsive behavior. Symptoms that cause significant
8 interference in patient's life and which he spends a great deal of conscious energy
9 resisting. Requires some help from others to function in daily activity.

10 Severe obsessive-compulsive behavior. Symptoms that are crippling to the patient,
11 interfering so that daily activity is "an active struggle." Patient may spend full time
12 resisting symptoms. Requires much help from others to function.

13 Very severe obsessive-compulsive behavior. Symptoms that completely cripple
14 patient so that he requires close staff supervision over eating, sleeping, and so forth.
15 Very minor decision making or minimal activity require staff support, "worst I've
ever seen."

Appendix C

Clinical Global Impression (CGI)

Clinical Global Impression - Severity Scale

Considering your total clinical experience with this particular problem, how mentally ill is the patient at this time? Circle one (most appropriate).

1 = Normal, not at all ill
2 = Borderline mentally ill
3 = Mildly ill
4 = Moderately ill
5 = Markedly ill
6 = Severely ill
7 = Among the most extremely ill

Clinical Global Impression - Improvement Scale

Compared to the patient's condition at the beginning of treatment, how much has he/she changed? Circle one (most appropriate).

1 = Very much improved
2 = Much improved
3 = Minimally improved
4 = No change
5 = Minimally worse
6 = Much worse
7 = Very much worse

Appendix D

Acceptance and Fusion Questionnaire for Youth (AFQ-Y)

We want to know more about what you think, how you feel, and what you do. Read each sentence. Then, circle a number between 0-4 that tells how true each sentence is for you.

	Not at all True	A little True	Pretty True	True	Very True
1. My life won't be good until I feel happy.	0	1	2	3	4
2. My thoughts and feelings mess up my life.	0	1	2	3	4
3. If I feel sad or afraid, then something must be wrong with me.	0	1	2	3	4
4. The bad things I think about myself must be true.	0	1	2	3	4
5. I don't try out new things if I'm afraid of messing up.	0	1	2	3	4
6. I must get rid of my worries and fears so I can have a good life.	0	1	2	3	4
7. I do all I can to make sure I don't look dumb in front of other people.	0	1	2	3	4
8. I try hard to erase hurtful memories from my mind.	0	1	2	3	4
9. I can't stand to feel pain or hurt in my body.	0	1	2	3	4
10. If my heart beats fast, there must be something wrong with me.	0	1	2	3	4
11. I push away thoughts and feelings that I don't like.	0	1	2	3	4
12. I stop doing things that are important to me whenever I feel bad.	0	1	2	3	4
13. I do worse in school when I have thoughts that make me feel sad.	0	1	2	3	4
14. I say things to make me sound cool.	0	1	2	3	4
15. I wish I could wave a magic wand to make all my sadness go away.	0	1	2	3	4
16. I am afraid of my feelings.	0	1	2	3	4
17. I can't be a good friend when I feel upset.	0	1	2	3	4

Appendix E

Parental Acceptance and Action Questionnaire (PAAQ)

Parental Acceptance and Action Questionnaire

Below you will find a list of statements. Please rate the truth of each statement as it applies to you. Use the following scale to make your choices.

1----------2----------3----------4----------5----------6----------7
Never True Very Seldom True Seldom True Sometimes True Frequently True Almost Always True Always True

_____ 1. I am able to take action about my child's fears, worries, and feelings even if I am uncertain what the right thing is to do.

_____ 2. When I feel depressed or anxious, I am unable to help my child manage their fears, worries, or feelings.

_____ 3. I try to suppress thoughts and feelings about my child that I don't like by just not thinking about them.

_____ 4. It's OK for my child to feel depressed or anxious.

_____ 5. I rarely worry about getting my child's anxieties, worries, and feelings under control.

_____ 6. In order for my child to do something important, I have to have all my doubts about it worked out.

_____ 7. I'm not afraid of my child's feelings.

_____ 8. I try hard to avoid having my child feel depressed or anxious.

_____ 9. It is bad if my child feels anxious.

_____ 10. Despite my doubts, I feel as though I can set a plan for managing my child's feelings.

_____ 11. If I could magically remove all the painful experiences my child has had in his or her life, I would do so.

_____ 12. If I get frustrated with my child, then I can still help him or her.

_____ 13. Worries can get in the way of my child's success.

_____ 14. I often catch myself daydreaming about things I've done with my child and what I would do differently next time.

_____ 15. When I compare myself to other parents, it seems that most of them are handling their lives better than I do.

Appendix F

Informed Consent

Informed Consent

Introduction/ Purpose: Professor Clint Field, Ph.D., and a graduate student, Jennifer Yardley, in the Department of Psychology at Utah State University are conducting a study to find out more about the treatment of pediatric obsessive compulsive disorder. The goal of this study is to look at a specific type of therapy for this problem. The therapy sessions will involve talking with you and your child about his or her problem and doing exercises aimed at helping him or her gain greater control over this problem. There will be no medication or other devices used in this treatment.

You and your child have been asked to take part in this study because your child is between the ages of 7 and 12 and has shown an interest in pursuing treatment for OCD. There will be up to seven participants enrolled in this study.

Procedures: If you consent and your child agrees to participate, the following will happen:

1) You and your child will attend a pretreatment interview and be asked to complete a packet of paper/pencil surveys to help us understand your child's problems and your views of it and to track how well the treatment works. You and your child will be asked to provide information in the form of interview and surveys. Some of this information will be used to make sure you and your child meet criteria for participation in this study. Some participants may not meet these criteria and will not be included in the intervention portion of the study. Those participants will be referred to alternative services, if desired.

2) Your child will be randomly placed in a treatment or wait list group. The treatment group will begin treatment immediately. The wait list group will begin treatment after 3 - 7 weeks have passed.

3) When treatment begins, you and your child will be asked to attend 10 weekly sessions (50 minutes each) of therapy that targets these issues. Therapy will be about the way that your child handles the urges to engage in his or her compulsive behavior and will end with some exercises aimed at helping him or her stop the behavior.

4) You (the parent) will be asked to attend all therapy sessions with your child. You will be taught the same topics that your child is taught and be asked to assist the child in practicing the material taught in session while at home.

5) You and your child will be asked to keep a log of symptoms on a daily basis during each week to help indicate how well he or she is doing in treatment.

6) All of the treatment sessions will be recorded by video to allow us to make sure that the treatment is being done correctly. These videotapes will be stored in locked filing

cabinet which only the investigators will have access to. Only the investigators will ever view these tapes. They will be destroyed at the conclusion of the investigation.

7) You and your child will be asked to complete the same assessments at the last treatment session that were completed during the first visit.

8) You and your child will be asked to return and complete these assessments again, 12 weeks after treatment is completed.

Alternative Procedures Instead of participating in this research, an alternative for you to consider would be: receiving mental health services from a psychologist or psychiatrist, reading a self-help book on this topic, or from the website ocfoundation.org or if you wish to explore other treatment options such as medical or other forms of therapy, we can provide referrals.

New Findings: You and your child will be told of any important new findings (either good or bad), such as changes in the risks or benefits of being part of this study, or if there are different options to participating in this study that might cause you or your child to change your minds about continuing in the study. If we learn new things about the study that is useful to you or your child, or if the study changes at any time, you and your child will be informed and we will ask you to complete a new consent form that will include the new information.

Risks: Every effort will be made to keep physical, medical, psychological, social, legal, or other risks as low as possible. You and/or your child could possibly feel mild discomfort from answering some of the questions or discussing his or her problem. Some components of therapy may cause distress for you or your child, as the source of your child's anxiety is faced in treatment. The researchers will strive to minimize potential risks by keeping you well informed about the therapy process and debriefing as necessary. You will also be informed of alternative procedures or courses of treatment, if any, that might be advantageous for your child. Further, you and/or your child are welcome to stop being part of the study at any time or to not do any part of the study that you choose not to. Finally, while all precautions are being taken to keep information collected in this study confidential, the possibility exists that confidentiality may fail or have to be broken and information collected in this study could be seen by individuals not involved in this study.

Benefits: It is possible that this treatment will help your child get control of this problem, and the findings from this study may help us treat other people with similar problems who are not part of this study. Although benefits are likely, research does not yet support this and positive benefits are not assured. There is also a slight risk of loss of confidentiality; however, the researcher has provided information below (under 'Confidentiality') on how to minimize this risk.

Explanation & offer to answer questions: Professor Field or Jennifer Yardley has explained this research study to you and answered your questions. If you have other questions or research-related problems, you may reach Clint Field at (435)760-4132 or Jennifer Yardley at (435)770-1931.

Extra Cost(s): There are no extra costs to participating in this study.

Voluntary nature of participation and right to withdraw without consequence: Participation in research is completely up to you and your child. You and your child may stop at any time, or may skip any part of the study that you or your child does not want to do. You may also decide to withdraw your child from this study. You are free to stop coming or to skip parts but if you skip too many parts, you will be un-enrolled from this study and provided with other referrals.

Confidentiality: All information that we collect on you and your child will be kept confidential, consistent with federal and state regulations. Only the investigators will have access to the data that will be kept in a locked file cabinet in a locked room and kept on a password-protected computer in a locked office. Any information that could be used to identify your child will be kept separate from your survey material. To protect privacy, all material (DVD, assessements, treatment notes) will be under code numbers that have no relation to participants' identifying information, all material will be locked in filing cabinets in a locked room, and the master list linking the coded files to participants' names will be stored in a separate locked file. DVDs and personal, identifiable information will be destroyed after the study is completed (approximately May 2011).

As professional therapists, we are legally mandated to report to an appropriate agency (Divisions of Child and Family Services) suspected child abuse or neglect and are legally obligated to release information learned during treatment that would result in clear harm to the child or others in order to protect the youth or others from the harm.

IRB Approval Statement: The Institutional Review Board for the protection of human participants at USU has approved this research study. If you have any pertinent questions or concerns about your rights or a research-related injury, you may contact the IRB Administrator at (435) 797-0567 or email irb@usu.edu. If you have a concern or complaint about the research and you would like to contact someone other than the research team, you may contact the IRB Administrator to obtain information or to offer input.

Copy of consent: You have been given two copies of this Informed Consent. Please sign both copies and keep one copy for your files.

Investigator Statement: "I certify that the research study has been explained to the individual, by me or my research staff, and that the individual understands the nature and purpose, the possible risks and benefits associated with taking part in this research study.

Any questions that have been raised have been answered."

Clint E. Field, Ph.D. Principal Investigator (435)760-4132	Jennifer Yardley, M.S. Co-Investigator (435)770-1931

Signature of Participant: By signing below, I agree to participate.

Participant's signature	Date

Child/Youth Assent: I understand that my parent(s)/guardian is/are aware of this research study and that permission has been given for me to participate. I understand that it is up to me to participate even if my parents say yes. If I do not want to be in this study, I do not have to and no one will be upset if I don't want to participate or if I change my mind later and want to stop. I can ask any questions that I have about this study now or later. By signing below, I agree to participate.

Name	Date

Appendix G

Treatment Manual

Parent Facilitated ACT for Pediatric OCD: Treatment Manual

Yardley, J., & Field, C.

Adapted from

Hayes, S. C., Batten, S., Gifford, E., Wilson, K. G., Afairi, N., & McCurry, S. (1999). *Acceptance and commitment therapy: An individual psychotherapy manual for the treatment of experiential avoidance, Second Edition.* Reno, NV: Context Press.

Hayes, S. C. Strosahl, K. D., & Wilson, K. G. (1999). *Acceptance and commitment Therapy: An experiential approach to behavior change.* New York: Guilford Press.

Murrell, A., & Wilson, K. (2002). *ACT for kids: Acceptance and commitment therapy adapted for children.* University, MS: University of Mississippi, Department of Psychology.

Twohig, M. P. (2004). *Acceptance and commitment therapy for obsessive compulsive disorder: Treatment manual.* Reno, NV.

Summary of Treatment Sessions

Session	Treatment Components
1	Discuss anxiety, where we feel it in our body, what our body does in response
	Homework: Record obsessions and what was done in response
2	“Computer reset” metaphor
	Teach and practice mindful breathing
	Willingness - “bear” metaphor
	Homework: Practice mindful breathing
3	“Anxiety is like a wave” metaphor
	Control as the problem - “chocolate cake” exercise
	Introduce acceptance - “finger trap” exercise and “quicksand” metaphor
	Homework: Use “anxiety is like a wave” metaphor at home
4	Acceptance - “passengers on the bus” metaphor and activity
	Homework: Recognize thoughts - “passengers on the bus”
5	Defusion - “take your mind for a walk” exercise
	Willingness - “petting a dog” and “rollercoaster” metaphor
	Homework: Listen to mind without acting on it, make behavioral commitment
6	Defusion - “holding a candy/pen” metaphor
	Present moment - “listening for sounds” mindfulness exercise
	Homework: “Holding a candy/pen” metaphor with behavioral commitments
7	Values - “heart shaped box” exercise
	Homework: Keeping values in mind, behavioral commitment
8	Acceptance - “remembering directions to house” exercise
	Defusion - color, shape of feelings, sing thoughts, funny voices
	Review “passengers on the bus” and other helpful metaphors
	Homework: Pick defusion exercise to use during week, behavioral commitment
10	Review defusion exercises
	Present moment - “movie screen” mindfulness exercise
	Discuss end of treatment

Session 1:
Session Overview:

1. Discuss anxiety, where we feel it in our body, what our body does in response
2. Homework: Record obsessions and what was done in response

The therapist discusses the "fight or flight" response with parent and child. Fight or flight is described as your body getting ready for action. The therapist gives examples of physical symptoms (heart pounding, sweat increasing, trembling, etc.) and these are described as ways your body can help you if you need to run, work, or fight. Children are given an example of how their "great-great-great-great grandma/grandpa caveman" might have been picking berries when a Tyrannosaurus rex emerges from the bushes. *What would you do?* The therapist describes how "fight or flight" symptoms start and links to how they help the caveman get away.

The therapist then discusses anxiety. *What is anxiety? How is it different from being afraid of a T-rex?* Parents may need to help answer these questions. *Sometimes our bodies act like we need to get ready for fight or flight when there isn't a threat. What are some things that make you anxious? Where do you feel anxiety?* Therapist and parents may need to help children identify physical symptoms that they may be experiencing in response to anxiety.

The therapist helps children to understand that their body's response is useful. *What would you do if a rattlesnake came into the room? What if you didn't get scared? What might happen then?* The therapist explains that the goal is not to get rid of these responses, but to learn how to accept thoughts and feelings while still doing the things we deem important.

The therapist gives examples of how to complete the home record card by writing down obsessions. Children and parents are asked to commit to record obsessions anytime they occur and to bring back record cards next session.

Session 2:
Session Overview:

1. "Computer reset" metaphor
2. Teach and practice mindful breathing
3. Willingness - "bear" metaphor
4. Homework: Practice mindful breathing

Therapist, child, and parent review the record card. Recorded incidences are briefly discussed.

Therapist introduces the "computer reset" metaphor to illustrate importance of mindful breathing. *Do you have a computer at home? Have you ever been working on it and had it freeze? Why does that happen? What do you do?* Parents may help with these

questions. *You have a reset button too. It's your breathing. Breathing is the best way to help reset when you get stuck.*

Children are then taught to breathe in slowly while paying attention to how their breath feels. They are taught to feel the air make their belly rise and fall again. Parent, child, and therapist practice attending to their breath. *Have you ever seen someone sleeping? How do they look? How are they breathing? That is how we want to breathe when we are paying attention to our breathing.* To emphasize the importance of this simple exercise, children are given examples of Olympic stars that have been able to use their breathing to help them perform better.

Willingness to be in contact with undesirable emotions is discussed using a "bear" metaphor. *Have you heard of playing dead in response to an angry bear? What kind of thoughts do you think you might be having while you are playing dead? Would you be able to play dead and still have thoughts of running away? Could your thoughts be different than your actions?*

In a manner similar to the bear analogy, children are encouraged to use mindful breathing when they have obsessive thoughts instead of acting compulsively. Children are also asked to practice mindful breathing at least once a day. Parents are asked to coach children in mindful breathing and remind them to practice.

<u>Session 3:</u>

Session Overview:

1. "Anxiety is like a wave" metaphor
2. Control as the problem - "chocolate cake" exercise
3. Introduce acceptance - "finger trap" exercise and "quicksand" metaphor
4. Homework: Use "anxiety is like a wave" metaphor at home

After reviewing record card and checking in with homework, the clinician describes the "anxiety is like a wave" metaphor. *Have you ever seen someone surfing on television or in a movie? What do the waves do?* Parents, children, and therapist discuss how surfers ride waves that get bigger and bigger, but that eventually crest and break. Children are compared to surfers riding the wave of anxiety. They are encouraged to attend to anxiety as it rises and to watch for it to crest and eventually dissipate.

"Control as the problem" is introduced using the "chocolate cake" exercise. *For the next minute whatever you do, do not think about chocolate cake. Don't think about how good it tastes or how sweet it is. Don't think about how you want a huge piece with yummy chocolate frosting on top and how good that cup of milk would be with it.* Therapist continues to describe how good this piece of chocolate cake is throughout the minute. When the minute is up children and parents are asked if they thought about chocolate cake. *But you were told not to think about it. What happened?* The therapist helps

children and parents to understand that unwanted thoughts can be much like the chocolate cake thoughts; you cannot keep them out and sometimes trying to makes it worse.

The therapist introduces a finger trap. Children and parents are encouraged to try it out. A discussion is held about how pulling away from a problem makes it worse - instead we need to push into the problem. *Have you ever heard of quicksand? What happens when someone falls into quicksand? How do they get out?* Therapist relates how getting stuck in quicksand can be made worse by fighting to get out.

As homework, children are asked to use the "anxiety is like a wave" metaphor when they find themselves getting anxious. They are asked to attend to their increasing anxiety, rather than fighting it, and to notice when it begins to dissipate. Parents are asked to remind children about the metaphor when they see their child becoming anxious.

Session 4:

Session Overview:

1. Acceptance - "passengers on the bus" metaphor and activity
2. Homework: Recognize thoughts - "passengers on the bus"

Time is spent reviewing metaphors from previous weeks. Record card is reviewed and use of wave analogy is discussed.

"Passengers on the bus" metaphor is used to describe acceptance. *Have you ever ridden on a bus? What are some of the rules for the passengers on a bus? Are passengers allowed to drive? What would happen if a passenger decided to drive? What are the rules for the driver? Can the bus driver decide he doesn't want to drive anymore and stop just anywhere? Can the bus driver yell at the passengers? Can he throw someone off of the bus?* The therapist helps parent and child understand that the child is the bus driver and his thoughts are like passengers. When the child is having happy thoughts it is like having happy passengers. When there are anxious or obsessive thoughts, these are like passengers that are out of their seats or trying to drive the bus. Remind children and parents that they should drive the bus, not the passengers.

In order to practice, therapist, parent, and child line up chairs to pretend they are on a bus. Therapist goes first, pretending to drive the bus while parent and child try to distract the "driver" therapist or tell him where to go. Then the child practices driving to a destination while parent and therapist try to distract the driver or dictate where to drive the bus. After some practice, parent and therapist can use the child's own obsessive thoughts during this activity to help draw the analogy. Parent also takes a turn trying to drive the bus, giving the child another turn to play the part of the rowdy passenger on the bus.

As homework, children are asked to recognize obsessive thoughts as rowdy passengers on their bus and to remember that they are the driver of the bus.

Session 5:

Session Overview:

1. Defusion - “take your mind for a walk” exercise
2. Willingness - “petting a dog” and “rollercoaster” metaphor
3. Homework: Listen to mind without acting on it, make behavioral commitment

Weekly record cards are reviewed and homework is discussed. Previous metaphors and exercises are utilized in context of weekly record cards.

Children and parents begin to learn to defuse from their thoughts during the “take your mind for a walk” exercise. The therapist provides some blocks for the child to build with. They discuss how the therapist will play the part of the child’s thoughts and vocalize them out loud as the child builds for the next few minutes. As the child builds, the therapist carries on a stream of vocalizations as if from the child’s “mind”. These vocalizations describe what the child is doing, urge the child to do something else, give directions, muse on random things, criticize, and express worries and concerns. This activity may be done a second time with the “mind” bringing up issues that the child is dealing with from the home record card. Afterwards, parent, child, and therapist discuss the activity. *Why did you continue to build with the blocks even when your “mind” told you to do something else? How were you able to build when your “mind” was talking about things that worry you?* Therapist and parents help child relate this activity to thoughts and actions of the child during the day. They help the child to understand that though the mind is constantly “talking,” the child can choose behaviors; the child “drives the bus.”

Additional metaphors for willingness are provided. Children are given a metaphor of willingness described as approaching a dog that is barking, even if they are intimidated. Willingness does not mean that you are not scared or that you are looking forward to doing something. Children are also given the “rollercoaster” metaphor. *Have you or mom/dad ever ridden on a rollercoaster? Was it scary? Why did you ride on it?* The therapist helps children to understand that sometimes we do things that are hard if we have a good reason to do them.

For homework, children are asked to remember the “taking your mind for a walk” metaphor and apply it. They are asked to practice listening to their mind “talking” similar to listening to the therapist playing the part of the “mind.” Children are encouraged to choose a particular obsession or compulsion that they can practice this on. With the help of the therapist, a small behavioral commitment is made to just listen to the mind talk without needing to act on thoughts. Parents are asked to discuss the “taking your mind for a walk” metaphor with their child throughout the week and help with the behavioral commitment.

Session 6:

Session Overview:
1. Defusion - “holding a candy/pen” metaphor
2. Present moment - “listening for sounds” mindfulness exercise
3. Homework: “Holding a candy/pen” metaphor with behavioral commitment

Weekly record cards are reviewed and homework is discussed. Previous metaphors and exercises are practiced in context of weekly record cards.

“Holding a candy/pen” metaphor is used to further help children and parents with defusion. The child is given a candy (or pen) to hold. *Are you a piece candy? You’re holding a candy, so why do we not call you a candy? Can you let go of the candy anytime you want?* Eventually the candy is related to cognitive experiences we have. *If you have a thought or feeling, it is like you are holding a piece of candy again. Are you the thought/feeling? But there is one difference - can you let go of the candy anytime you want? Can you let go of the thought or feeling anytime you want?* Using examples from the home record card the therapist, parent and child can discuss this in context. *When you were having a feeling that you were a bad person, were you a “bad person” or were you having a feeling? If we looked in the dictionary under “bad person” would we see a picture of you?*

Parents, children, and therapist practice mindfulness to encourage present moment awareness. The therapist tells the child that they are going to play a game. Everyone is to close their eyes for the next few minutes and listen for the ambient noise they can hear in the room. The therapist directs the parent and child to expand the listening to sounds outside the room in the rest of the building. Then they are directed to listen for sounds just outside the building, down the street, then a few blocks away, until they are listening for sounds across the city. When the activity is done, parents, children and therapist discuss what they heard. *What was the quietest noise you heard? Did you hear sounds outside? Did you hear sounds across the city?*

Children are once again asked to choose a behavior to target for a behavioral commitment and to use what they have learned to help them meet that commitment. Parents are asked to discuss the candy/pen metaphor with their child and remind him/her about it throughout the week. Children and parents are also asked to practice mindful listening or another mindfulness activity throughout the week.

Session 7:

Session Overview:
1. Values - “heart shaped box” exercise
2. Homework: Keeping values in mind, behavioral commitment

Weekly record cards are reviewed and homework is discussed. Previous metaphors and exercises are utilized in context of weekly record cards.

Therapist displays a heart-shaped box. Parent, child, and therapist discuss hearts, what they do for us, and how they keep us alive. They discuss why we use a heart shape to represent things that are important to us, i.e., they make us feel alive. The therapist interviews child and parent, asking questions about: what they like about themselves, what the child wants to do in the future, what the child's friends like about him/her, what the parent likes most about the child, what activities and things are most important to the child, who is the child's hero and why. Afterward, therapist and parents utilize the answers to these questions to help the child to identify: important values, traits that are notable, valued activities, and goals. These are written on separate sheets of paper and put into the box to represent things that make the child feel alive. These are described as values.

For the second part of this activity, the therapist selects values from the box and has the child tape them on the wall. For each value, parent, child and therapist discuss how compulsive behaviors can get in the way of moving towards these. The child is given pictures of buses to tape on the wall to represent where they feel they are driving their bus. The therapist helps the child recognize that the destination of the buses is towards his/her values.

As homework, children are asked to make another behavioral commitment with help of parent and therapist. Child is asked to identify "important things" (values) to help them keep this behavioral commitment.

<u>Session 8:</u>

Session Overview:

1. Acceptance - "remembering directions to house" exercise
2. Defusion - color, shape of feelings, sing thoughts, funny voices,
3. Review "passengers on the bus" and other helpful metaphors
4. Homework: Pick defusion exercise to use during week, behavioral commitment

Weekly record cards are reviewed and homework is discussed. Previous metaphors and exercises are utilized in context of weekly record cards.

The "house directions" exercise is used to help children understand acceptance. *Do you ever walk home from school? Can you tell me directions on how to get to your home from your school? What if I asked you to forget the way home now, could you do it?* Therapist, parents, and child discuss that just like they cannot forget the way home when they follow it every day, children cannot just stop unwanted thoughts. This activity is used with examples from the home record card.

Children and parents are given a variety of defusion activities. Children are asked to talk about some of the undesirable feelings and cognitions that they have. *What color would they be? What kind of shape would the thoughts or feelings have? Would it be hard or soft?* Children and parents are told that they can use this activity to stay in the moment with unwanted thoughts or feelings.

As an additional defusion technique, children are asked to sing their most common intrusive thoughts or feelings (such as "I'm a bad person") to the tune of a familiar song such as "Happy Birthday" or "The Alphabet Song." They can also practice saying them in a funny voice. A discussion is held on how they feel afterward.

Therapist, parent, and child review the "passengers on the bus" metaphor and how this relates to values. *Are you driving towards important things? Are you driving the bus, or are you letting passengers dictate where you go?* Other useful metaphors can be reviewed at this time.

As homework, children are asked to pick one of the defusion activities taught during the session to use throughout the week. Parents are asked to coach the child in using defusion activities and to remind child as needed. Children are asked to choose an area in which they can make a behavioral commitment.

<u>Session 9:</u>
Session Overview:

1. Review defusion exercises
2. Present moment - "movie screen" mindfulness exercise
3. Discuss end of treatment

Weekly record cards are reviewed and homework is discussed.

Defusion exercises are reviewed in the context of weekly record card data. Parent and child practice defusion in-session.

The "movie screen" exercise is presented as a mindfulness exercise. Children are asked to remember a time they were in a movie theater. Parents and child close their eyes and pay attention to their breathing. They are then asked to picture the movie screen. Then they are instructed to picture their own thoughts and feelings appearing on the screen as images. They are encouraged to let the thoughts and feelings come and go. Afterwards, the activity is discussed.

Therapist, parent, and child discuss conclusion of treatment. Child and parent discuss concepts and strategies that have been helpful. They commit to continue working towards value-driven actions.