SAFETY BEHAVIORS, COMPULSIVE BEHAVIORS, AND THERAPIST EXTENSIVENESS AS PREDICTORS OF OUTCOME IN BEHAVIOR THERAPY FOR YOUTH OCD

A DISSERTATION

SUBMITTED TO THE FACULTY

OF

THE GRADUATE SCHOOL OF APPLIED AND PROFESSIONAL PSYCHOLOGY

OF

RUTGERS

THE STATE UNIVERSITY OF NEW JERSEY

BY

DANIELA COLOGNORI

IN PARTIAL FULFILLMENT OF THE

REQUIREMENTS FOR THE DEGREE

OF

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APPROVED: _____
Brian C. Chu, Ph.D.

_____
Lori Rockmore, Psy.D.

DEAN: _____
Stanley Messer, Ph.D.

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ABSTRACT

The efficacy of behavior therapy in treating adult OCD is well-documented and early trials in youth populations are encouraging (March et al., 1994; Piacentini et al., 2002; POTS Team, 2004), however, residual symptoms often persist. The study of process variables can provide suggestions for improving the development, delivery, and outcomes of psychological therapies (Kazdin & Nock, 2003). One potentially important variant in exposure procedures identified by the literature has been the use of safety behaviors. However, it has been difficult to draw conclusions regarding the effect of safety behaviors on OCD treatment because the term has been interpreted broadly across studies and results have been mixed. The current study uses observational coding of existing data to assess three predictors of outcome within two early exposure sessions and two late exposure sessions of a manualized exposure and response prevention program. Participants include 43 youth (ages 8 – 17 years) diagnosed with a principal OCD diagnosis who received a 12-week exposure and response prevention program. Predictors assessed via observational coding include safety behaviors (avoidance and escape), compulsive behaviors, and therapist extensiveness (therapist ability to engage the client in difficult exposures). Outcome was measured by symptom report (CY-BOCS) at mid-treatment and post-treatment. It was hypothesized that higher average occurrence of safety and compulsive behaviors during exposure tasks would predict higher OCD symptoms while lower ratings of therapist extensiveness would predict higher OCD symptoms at mid-treatment and post-treatment. Interaction effects were also investigated. Multiple regression analyses demonstrated a significant relationship between safety behaviors exhibited during the early exposure phase and OCD symptoms at mid-

treatment in the expected direction, $B = 0.31$, $t = 2.09$, $p<.05$, $R^2=.25$. However, safety behavior in the late phase was not related to OCD symptoms at post-treatment nor was safety behavior throughout treatment significantly related to OCD symptoms at post-treatment. Significant findings involving compulsive behaviors, therapist extensiveness, and interaction effects did not emerge. Methodological limitations, such as restricted range of the independent variables and the need for a more frequently administered dependent variable, and recommendations for future studies are discussed.

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INTRODUCTION

According to the *Diagnostic and Statistical Manual of Mental Disorders, fourth edition* (*DSM-IV-TR*; American Psychiatric Association, 2000), Obsessive Compulsive Disorder (OCD) is characterized by recurrent obsessions or compulsions that cause marked distress which are time consuming or significantly interfere with the person's normal routine, occupational or academic functioning, or relationships. Obsessions are unwanted, anxiety-provoking, and persistent ideas, thoughts, impulses, or images. Compulsions are defined as repetitive behaviors or mental acts that prevent or reduce anxiety or distress. Obsessions and compulsions are functionally related such that obsessions cause anxiety while compulsions are performed in an attempt to reduce the distress brought on by the obsessions (Foa & Franklin, 2001). From a behavioral perspective, the compulsion is negatively reinforced over time by its ability to reduce the anxiety created by the obsession (Piacentini & Langley, 2004).

The phenomenology of childhood OCD is understood to be broadly similar to that of adult OCD. However, children and adolescents may not possess insight into the senseless or excessive nature of the symptoms, and this difference is reflected in the DSM criteria. Another difference between adult and children with OCD is the stability of the symptoms. While adults are often classified by their compulsions (e.g. "checkers" or "washers"), childhood symptoms tend to vary greatly, with many young people endorsing a number of the common obsessions and compulsions at some point (Hanna, 1995; Rettew, Swedo, Leonard, Lenane, & Rapoport, 1992). The most common obsessions in children have themes of contamination, aggression (harm or death), symmetry and exactness, while in adolescence, religious and sexual obsessions are common.

Compulsions most common in young people are excessive washing, repeating or undoing, checking, touching, counting, ordering/arranging, and hoarding (Swedo, Rapoport, Leonard, Lenane, & Cheslow, 1989).

Once believed to be extremely rare, OCD is now recognized as fairly common in children and adolescents. Epidemiological data suggest that approximately 1 in 200 young people are affected by OCD (Flament et al., 1988; Valleni-Basille et al., 1994). Estimates of the mean age of onset for childhood OCD vary, but most center on age 10 (Hanna, 1995; Swedo et al., 1989). A large NIMH study has also shown a modal age at onset of 6 or 7 years, suggesting both an early onset group and a group with onset at adolescence (Swedo et al., 1989). The *DSM-IV-TR* also describes different modal ages at onset for males (6-15 years) and females (20-29 years). This earlier age of onset for males may account for the 3:2 male-to-female ratio that has been observed in several pediatric clinical samples (Hanna, 1995; Swedo et al., 1989).

Psychopharmacological Treatment of OCD

At the current time, controlled treatment trials have demonstrated the efficacy of clomipramine (DeVeaugh-Geiss et al., 1992) and SRI medication such as fluvoxamine (Riddle et al., 2001), sertraline (March et al., 1998), and fluoxetine (Geller et al., 2001) for pediatric OCD. Overall, these studies show a 30% to 40% reduction in OCD symptoms using psychopharmacology. This leaves the majority of patients with clinically significant residual symptoms (Pediatric OCD Treatment Study [POTS], 2004) and approximately one-third of patients who fail to respond at all (DeVeaugh-Geiss et al., 1992). Given these statistics, pharmacotherapy does not represent a complete or universal

treatment for pediatric OCD and establishing effective alternative treatments remains necessary (Franklin, Rynn, Foa, & March, 2003).

Exposure and Response Prevention Treatment for OCD in Adults

As early as 1966, Victor Meyer reported some encouraging results from a newly developed treatment for OCD. His program involved preventing rituals while patients were exposed to circumstances that would normally provoke anxiety and compulsive behavior. This particular cognitive-behavioral approach became known as exposure and response prevention (ERP). The exposure principle relies on the fact that anxiety usually attenuates after sufficient duration of contact with a feared stimulus (or obsession). Repeated exposure is associated with decreased anxiety across trials until the patient no longer fears contact with the stimulus. The key for patients with OCD, however, is in blocking rituals or avoidance behavior in order to remove the negative reinforcement effect of the rituals. Exposure is usually implemented in a gradual fashion and uses both imaginal and real life (*in vivo*) stimuli and situations. It is believed that repeated, prolonged exposure to feared thoughts and situations along with the prevention of rituals provides information that disconfirms mistaken associations and thereby promotes habituation and extinction (Foa & Kozak, 1986).

Cognitive behavioral therapy (CBT), specifically ERP, is well-documented as an efficacious treatment for adults with OCD (Franklin & Foa, 2002) and is considered by most experts as the treatment of choice (March, Frances, Carpenter, & Kahn, 1997). Randomized controlled trials have indicated that ERP is superior to a variety of control treatments, including placebo medication (Marks, Stern, Mawson, Cobb, & MacDonald,

1980), relaxation (Fals-Stewart, Marks, & Schafer, 1993), and anxiety management training (Lindsay, Crino, & Andrews, 1997). Importantly, in the study comparing ERP to anxiety management training, participants in both conditions rated their therapists as equally supportive and understanding, underscoring the fact that ERP procedures yield results that are above and beyond what can be expected from nonspecific factors such as good therapeutic alliance. Randomized controlled studies comparing ERP to pharmacotherapy with SRIs to a combined treatment in adult samples have yielded mixed results and information about their relative efficacy is scarce because of design and procedural flaws (Franklin & Foa, 2002). However, the fact that ERP is beneficial for many people suffering from OCD is well-accepted. In a meta-analysis study that reviewed 12 outcome studies that reported treatment responder rates in an adult OCD sample, the authors found that 83% of patients completing ERP were improved to varying degrees (Foa & Kozak, 1996).

One study also examined the effectiveness of ERP outside the context of a randomized controlled trial (RCT). The authors found that adult OCD patients receiving outpatient ERP on a fee-for-service basis achieved mean OCD symptom reductions comparable with those observed in several RCTs (Franklin, Abramowitz, Kozak, Levitt, & Foa, 2000). The finding that ERP developed and tested in research settings can be delivered effectively in routine clinical practice is an important development.

Developmental Considerations for ERP with Children and Adolescents

As is often the case with pediatric psychology, the literature regarding the use of ERP with children has lagged behind that of the adult literature. As mentioned

previously, the phenomenology of OCD is very similar across the lifespan and when ERP was first introduced as a treatment for children, it was largely based on adult models. Recently, however, some developmentally sensitive treatment packages have been developed to better suit this population (Barrett, Healy-Farrell, & March, 2004; March & Mulle, 1998; Piacentini, 1999). These programs include increased emphasis on psychoeducation and cognitive restructuring, behavioral reward systems to help with treatment compliance, and greater family involvement.

Efficacy of ERP with Children and Adolescents

For quite some time, the treatment outcome literature for OCD with children and adolescents was comprised of case studies and small open trials involving samples that were receiving concomitant pharmacotherapy with SRIs. The first randomized controlled trial conducted with a pediatric sample compared ERP to clomipramine (CMI) (de Haan, Hoogduin, Buitelaar, & Keijsers, 1998). Participants in the group that received ERP showed reductions in OCD symptoms that were significantly different from those in the clomipramine treatment group, indicating that ERP was the more effective treatment. Another important development in the literature was the completion of the POTS study (2004), which sought to evaluate the relative efficacy of CBT alone, medical management with the SRI sertraline alone, and CBT and sertraline combined. Participants were randomly assigned to one of these three active treatments or a pill placebo for a twelve week period. Results indicated a statistically significant advantage for CBT alone, sertraline alone, and combined treatment when compared to placebo. Combined treatment also proved superior to CBT alone and to sertraline alone, which did

not differ from each other. The rate of clinical remission was 53.6% for the combined condition, 39.3% for CBT alone, 21.4% for sertraline alone, and 3.6% for placebo. The conclusion drawn from this study is that children and adolescents with OCD should begin treatment with either the combination of CBT plus SRI or CBT alone.

Possible Mechanisms of ERP

Despite this growing literature on the efficacy of ERP, there has been very little research conducted regarding why or how it works. There is a general lack of definitive conclusions that can be drawn regarding the relative efficacy of variants of ERP (Abramowitz, 1996). Understanding why treatment works is an important area of research because it can help us to maximize treatment effects and ensure that critical components are used in clinical practice (Kazdin & Nock, 2003). There has been some research that has investigated variables such as dosage of exposure (flooding versus gradual exposure; e.g. Boersma, Den Hengst, Dekker, & Emmelkamp, 1976), and the evocative medium of exposure (imaginal versus *in vivo*; e.g. Foa, Steketee, & Grayson, 1985), but one important area that has been neglected is the processes by which the exposure is conducted and completed. Three processes hypothesized to impact the effectiveness of exposures will be discussed below.

Safety Behaviors

The use of safety behaviors has been identified in the anxiety disorders literature as a potentially important variant in exposure procedures. The majority of the literature, however, has been focused on panic, agoraphobic, and specific phobic samples. Another

difficulty in interpreting this literature is that the term safety behavior is a very broad one and has been utilized differently across studies in the literature.

Safety behaviors are defined as actions, either overt or covert, designed to avoid or cope with a perceived threat (Salkovskis, Clark, & Gelder, 1996). The broadest and most common class of safety behaviors is avoidance, which may take the form of situational avoidance or cognitive avoidance (e.g. mental distraction; Kamphuis & Telch, 1999). Other safety behaviors may be more subtle and anxiety-disorder specific. For example, panic patients might check their pulse or carry safety aids such as water or medication, people with social anxiety with a fear of tripping might hold on to things or walk close to walls while someone with generalized anxiety disorder might repeatedly seek reassurance from others, insist on frequent contact with loved ones, or avoid risks. Disorder-specific safety behaviors utilized by people with OCD will likely be related to idiosyncratic obsessions and compulsions.

It has been theorized that safety-behavior utilization may play a prominent role in the maintenance of anxiety disorders, although different researchers present several differing theories as to how this process occurs. Salkovskis (1991) suggests that safety behaviors maintain pathological anxiety by interfering with disconfirming evidence that safety is attributed to the innocuous nature of the stimulus or situation. Instead, the person can attribute safety in the situation to the safety behavior that was undertaken. An alternative theory posits that safety behaviors interfere with treatment by redirecting attentional resources away from the threat, thereby reducing the processing of threat relevant information (Sloan and Telch, 2002).

A host of clinical trials and laboratory studies indicate that exposure treatment for patients with panic, agoraphobia, and specific phobias is more effective when patients are encouraged to prevent themselves from engaging in disorder-specific safety behaviors (Salkovskis, Clark, Hackman, Wells, & Gelder, 1999; Wells et al., 1995; Williams, Dooseman, & Kleifield, 1984). In one such study supporting this hypothesis, participants with claustrophobic fear were randomly assigned to three exposure conditions: guided threat focus and reappraisal, safety-behavior utilization, and exposure only control (Sloan & Telch, 2002). Results showed significantly more fear at post-treatment and follow-up for the safety-behavior utilization group relative to those encouraged to focus and reevaluate their core threat during exposure. Process analysis showed that safety-behavior utilization interfered with between-trial habituation. Interestingly, the authors noted that only 60% of participants in the safety-behavior utilization group actually utilized the safety aids, indicating that the availability of safety behaviors, and not their actual use that may be detrimental to fear reduction during exposure.

In a direct investigation of the availability hypothesis, a similar study manipulated use of safety behaviors versus availability of safety aids compared to placebo and wait list conditions (Powers, Smits, & Telch, 2004). Results again showed that making safety behaviors available to claustrophobic individuals during exposure had a disruptive effect on fear reduction (94% in the standard exposure condition versus 45% in the two conditions containing access to safety behaviors). Furthermore, no additional fear reduction was exhibited by the safety-behavior utilization group relative to the safety-behavior accessible group.

Distraction and Attention Focusing

A specific class of safety behaviors that has received a lot of attention in the literature is distraction during exposure. Several major anxiety models exist, most of which predict that distraction will interfere with fear reduction during exposure by preventing attentional focus toward the phobic stimulus. If that occurs, stimulus representations of the phobic object will be improperly encoded into memory and then retrieval of stimulus representations from memory may be impeded by their poor match with actual stimulus in future situations. Habituation models (Watts, 1971) suggest that the poorer match between phobic objects and their representations, the less likely that habituation will occur. The Emotional Processing model (Foa & Kozak, 1986) proposes that inadequate stimulus encoding prevents full elicitation of the fear response, as well as acquisition and integration of safety information into memory, both of which are necessary processes in achieving meaningful fear reduction. The Anxious Apprehension model (Barlow, 1988) posits that distraction interferes with attentional shifts from a self-directed and negative focus to a mechanical and objective focus on the phobic object, which is necessary in order to reduce fear.

Five studies have examined the effects of distraction during exposure, yielding inconsistent results. Results in accordance to the aforementioned anxiety models were shown in three studies. The first study used a cross-over design with obsessive-compulsive disorder patients undergoing two exposure sessions on two separate days (Grayson, Foa, & Steketee, 1982). One session was conducted under the attention-focused condition, which consisted of conversation between the participant and the experimenter regarding aspects of the phobic stimulus. The other exposure session was

conducted in the distraction condition, during which the therapist and participant played video games. Results showed within-session decreases in self-reported fear ratings in both conditions, however, the group completing the distracted condition first reported greater fear at the start of the second exposure session.

Similar results were obtained in a long-term treatment study that compared focused or distracted self-directed exposure for patients with panic and agoraphobia (Craske, Street, & Barlow, 1989). Patients in the focused condition were instructed to monitor bodily sensations and to use thought stopping and self-focusing statements to interrupt distraction and remain focused on the physical sensations and thoughts associated with the exposure stimulus. The distracted condition asked patients to engage in cognitive distraction tasks while using thought stopping and self-focusing statements to interrupt internal focusing of attention. The authors reported a trend for improvement in both conditions at post-treatment, with the distracted group showing greater improvement in functioning. However, the trend reversed at a six-month follow-up, with the focused group showing greater improvement. An important limitation of this study was that there was no control over the use of distraction or attention during the two conditions. Measures of attentional focus and cognitive process were not available. A third study reported similar trends in a small sample for return of fear to be more likely in those who underwent distracted exposure (Rose & McGlynn, 1997).

Results contradictory to the anxiety models described above were found by two studies. Grayson and colleagues attempted to extend their initial findings (Grayson, Foa, & Steketee, 1982) using the same procedures for focused and distracted exposures in a between-subject design (Grayson, Foa, & Steketee, 1986). While reduction in heart-rate

response was shown for the focused group and elevated heart-rate response was observed in the distracted group, the opposite pattern emerged when self-rated anxiety was used as the dependent variable. Results showed greater within-session reduction in fear ratings in the distracted exposure group in comparison to the focused exposure group. Furthermore, neither group showed between-session habituation. The authors do not discuss this discrepancy at length, although they briefly mention differences in anxiety levels between the focused group across the two studies.

Using a sample of animal phobics, another study manipulated characteristics of the distracter as well as aspects of the exposure situation (Rodriguez & Craske, 1995). Distracters of high and low attentional demand along with a no distraction condition were implemented during exposures of either high or low intensity in a between-subjects design. The distracter in this study was slides of positive and negative valence (high attentional demand) or neutral valence (low attentional demand) that were projected onto the wall behind the phobic stimulus (live animal in a cage). Slides were absent in the no distraction condition. Participants in the high intensity exposure condition were instructed to approach the stimulus until they experienced strong fear (subjective units of distress (SUDS) of 70-80 on a scale of 100) while the low intensity exposure condition allowed participants to approach the stimulus only until they experienced moderate fear (SUDS of 40-50). Participants were randomly assigned to one of the six conditions and completed one exposure session. Importantly, manipulation checks showed that participants did not report differences between the high and low distraction conditions. The main finding that emerged from this study was that distraction impeded self-reported fear reduction only during high intensity exposure. Distraction had no impact under low intensity exposure

conditions, suggesting that distraction may act as an inhibitor of exposure effects only when a threshold of fear intensity has been reached (Rodriguez & Craske, 1993).

The literature has produced contradictory findings regarding the effects of distraction on reduction of fear during exposures. Researchers in the field point to poor operational definitions of distraction and extreme variations in the quality of distracters that have been used across studies as a possible explanation for the inconsistent findings (Rodriguez & Craske, 1993). Rodriguez and Craske (1993) identify several of these qualitative dimensions of distracters that have been used across studies. The first is perceptual versus cognitive distraction, as some studies have utilized slides or visual probes while other researchers have conceptualized distracters as mental tasks or conversation. Grayson et al. (1982; 1986) used video games as the distracter, which can be classified as both a perceptual and cognitive task. Another dimension is whether the distraction is away from the stimulus itself or from the person's fearful response to the stimulus. The affective quality (negative, positive, or neutral) of the distracter may also be an important qualitative dimension.

Assessment of fear may also play a role in this type of research, as distracted exposure that is frequently interrupted in order to engage in the distraction may inadvertently result in a series of brief exposure trials. If this is the case, results may be attributable to shorter exposure duration rather than the effects of distraction. Finally, the intensity of fear experienced by the participant during exposure may determine when tendencies to distract are greatest. In fact, Rachman (1983) proposes that the pairing of safety cues with feared stimuli can be used therapeutically to enhance motivation for regular exposure practice, thus facilitating long-term reductions in fear and avoidance.

As evidenced by the above discussion, the safety-behavior literature is mixed at best, and numerous confounding variables could provide possible alternative explanations for the contradictory findings. This study will differ from this literature base in a variety of ways. The quality of the safety behaviors will be different in this OCD sample in contrast to the panic and phobic samples that have been studied in previous investigations of general safety behaviors. Also, it will be the first to investigate these variables on a pediatric sample. Finally, this study will record and rate naturally occurring and patient-initiated safety behaviors rather than safety behaviors that are imposed or inherent in the structure of the exposure tasks.

Implementation of Ritual Prevention

The degree to which rituals are prevented during exposure is another variant of ERP treatment that might have implications for treatment outcome. Within the ERP literature, studies have varied in the instructions therapists have given to participants regarding abstaining from rituals. Some research has employed complete ritual prevention, while others have used gradual or partial methods. Other studies have neglected ritual prevention altogether.

To better understand the separate components of exposure and response prevention, one study (Foa, Steketee, Grayson, Turner, & Latimer, 1984) randomly assigned adult patients with washing rituals to treatment by exposure only, ritual prevention only, or their combination. While participants in all three conditions showed improvement at post-treatment and at follow-up, the combination treatment was superior to almost every symptom measure at post-treatment and follow-up. This finding was also

supported by the meta-analysis mentioned previously (Abramowitz, 1996), which showed that the degree of response prevention produced significant differences at both post-treatment and follow-up. Greater improvement occurred for patients who completely abstained from compulsive rituals during the treatment period, in contrast to those who were not told to stop ritualizing.

Taken together, these findings suggest that the prevention of rituals during exposure is important for maximizing the effect of the exposure. However, these studies have only examined the instructions given or implied by the therapist. Research has yet to examine whether the patient is successful in abstaining from rituals during exposures and how that would affect treatment outcome. One would expect, given the demonstrated importance of ritual prevention, that a patient who is able to resist the urge to ritualize during an exposure task would achieve greater gains in treatment compared to individuals who are unable to, or resist refraining from engaging in compulsions.

Therapist-directed Exposures

Another variable of exposure therapy that has been studied is the effects of a therapist's presence during exposure. There has been some indication that therapist-directed exposures are superior to self-directed exposures. In a sample of people with specific phobias undergoing a single three hour exposure session, therapist presence yielded superior outcomes when compared to self-exposure (Ost, 1989). In an adult OCD sample, patients receiving therapist-assisted exposure were more improved at post-treatment than those receiving a combination of psychopharmacological treatment (CMI) and self-assisted exposures (Marks et al., 1988). However, gains were not maintained at

follow-up. A second study utilizing an OCD sample yielded contradictory results that showed that therapist-assisted exposure was not superior to self-exposure at post-treatment or at follow-up (Emmelkamp & van Kraanen, 1977). However, methodologies were inconsistent and the sample size in this study was not large enough for findings to be considered conclusive, calling for additional research in this area (Franklin & Foa, 2002).

This variable was also included in a meta-analysis study focusing on variants of exposure and response prevention (Abramowitz, 1996). The meta-analysis reviewed 24 studies with 38 ERP treatment groups consisting of adult participants. Analyses showed a significant effect for the control of exposure at both post-treatment and follow-up. The mean effect sizes suggest that the reduction in OCD symptoms was significantly larger when exposure was conducted in session and under the control of the therapist as compared to when patients were expected to conduct exposure on their own.

Abramowitz (1996) suggests that the integrity of the treatment is likely maintained by a therapist who can ensure that exposure continues until the individual's anxiety decreases. The therapist may also help to maintain focused attention on the anxiety-provoking stimulus, which might add to the effectiveness of ERP (Grayson, Foa, & Steketee, 1982; 1986). While it is unclear what specific role the therapist plays in exposure treatment, the literature suggests that therapist presence may be an important component of successful ERP treatment. Possible rationales include focusing the patient and intensifying the exposure task. Further investigation is necessary to better understand the role of the therapist during exposure.

DESCRIPTION AND AIMS OF THE PRESENT STUDY

The treatment and client factors reviewed above have been shown to affect treatment success during exposure tasks in a host of experimental studies across many different types of anxiety disorders. However, no research to date has used observational coding in order to investigate these variables as they naturally occur in exposure treatment of OCD. Observational studies of treatment processes and mechanisms can help confirm findings of experimental studies and have the potential to help identify underlying mechanisms of change. Examining process variables, such as intra-session client and therapist behaviors, may also provide some of the most direct suggestions for improving the development, delivery, and outcomes of psychological therapies (Kazdin & Nock, 2003; Kraemer, Wilson, Fairburn, & Agras, 2002).

The present study used independent-rater coding of videotaped ERP sessions in a pediatric OCD sample. The parent study was a controlled evaluation of a standardized multi-component CBT treatment program for child and adolescent OCD. The treatment program consisted of individual ERP for the OCD child plus a concurrent family intervention designed to reduce OCD-related family conflict (ERP/F). Relaxation Training (RT) was used as the control condition. Participants with unmedicated OCD were randomly assigned to either ERP/F or RT, conducted at a large medical center outpatient anxiety clinic. Exposure was based on an individualized OCD hierarchy and the participants were encouraged to resist their urges to ritualize.

The purpose of this exploratory study is to better understand the client and therapist characteristics that predict optimal treatment outcome in ERP treatment for pediatric OCD. Observational coding was used in order to assess predictors of outcome

within the exposure and response prevention treatment portion of the ERP/F treatment condition. Independent variables of interest were divided into three main categories, safety behaviors (including child avoidance and escape) during the exposure, presence of child compulsive acts during the exposure, and the extent to which the therapist pushes the child to engage the exposure task. Assessment of child safety behavior measures the degree to which the child initiates avoidance or escape behaviors as the therapist plans and conducts an exposure task. The second category focuses on compulsive behaviors. To what degree does the child demonstrate compulsive acts (which indicates a failure to prevent rituals) as the child is exposed to the anxiety-provoking stimulus? The final category is "therapist extensiveness in exposures," which assesses the degree to which the therapist encourages and "pushes" the child to engage an exposure and the extent to which the therapist designs the exposure to maximize intensity. Another way to conceptualize exposure extensiveness is that it measures the degree to which a therapist allows the child to back out of exposures versus pushes the child to continue on through challenging tasks. The degree of safety behaviors and compulsive behaviors exhibited by the child, as well as therapist extensiveness for exposures were rated according to guidelines and anchors developed specifically for the current study.

The study investigated whether these variables predict outcome, as indexed by severity of OC symptoms at mid-treatment and post-treatment. Specifically, does the amount of the child's safety behaviors, compulsive behaviors, and the way in which the therapist responds (i.e., their interaction) predict treatment outcome at mid-treatement and post-treatment? It is hypothesized that increased safety and compulsive behaviors during exposure tasks will be associated with poorer treatment outcomes at mid-treatment

and post-treatment. Lower therapist extensiveness, the degree to which therapists push child clients to engage in difficult exposures, is also hypothesized to be associated with poorer outcomes.

In addition to examining main effects associated with safety behavior and therapist extensiveness in their relation to treatment outcome, it is also important to examine possible interaction effects. For example, if a child exhibits a great deal of safety behavior by saying the task is too difficult and the therapist displays low extensiveness by allowing the child to escape, one would predict that this interaction would lead to little symptom change. On the other hand, if the same child that employs significant safety behaviors is paired with a therapist that exhibits high exposure extensiveness by encouraging and convincing the child to engage in the task, one might expect that this type of exchange would produce more successful outcomes (greater change in OCD symptoms). Finally, if the child utilizes few or no escape behaviors, therapist extensiveness may be less important than it might have been in the previous two scenarios. It is hypothesized that higher extensiveness would still predict more OCD symptom change.

Similarly, if a child exhibits a great deal of compulsive behavior during exposure (e.g., consistently wiping his hand clean during a contamination exposure) and the therapist does not intervene (i.e., demonstrating low therapist extensiveness by failing to focus the child on the exposure, including preventing compulsions), it is hypothesized that this interaction would lead to little symptom change. On the other hand, if the same child employing significant compulsive behaviors is paired with a therapist that exhibits high exposure extensiveness by encouraging and convincing the child to complete the

task a second time without engaging in the compulsion, it is hypothesized that this exchange would predict more change in OCD symptoms. Finally, if the child is able to resist the urge to ritualize and exhibits few or no compulsive behaviors, therapist extensiveness would be less important than in the previous two scenarios. It is hypothesized that higher therapist extensiveness would still predict more OCD symptom change.

METHOD

Videotaped therapy sessions were obtained from the parent study (PI: Piacentini, MH58459), which randomly assigned youth and their families to manual-based exposure and response prevention therapy (ERP/F) or manual-based relaxation therapy (RT). Four independent coders were trained to reliability and then rated within-session predictors of outcome within the exposure and response prevention treatment (ERP/F). Predictors included client behaviors hypothesized to moderate exposure success, specifically safety behaviors (avoidance, escape) and the degree to which the client resists the urge to perform compulsive behaviors. Therapist exposure extensiveness, a characteristic of the therapist, was the final predictor hypothesized to moderate exposure success.

Coders observed DVDs of sessions from varying phases of treatment for each subject assigned to the 12 session ERP program. For the purposes of the current study, the sessions were divided into three phases. Phase one (sessions 1-3) was excluded due to the psychoeducational nature of these sessions and typical absence of exposures. The remaining two phases were classified as early exposure (sessions 4-7) and late exposure (sessions 8-12). Coders rated two sessions from the early exposure phase and another two sessions during the late exposure phase. Coders viewed the entire session in order to locate active preparation for exposures and exposure tasks, which were then coded for safety behaviors, compulsive behaviors, and therapist extensiveness.

Participants

Seventy-one children (ages 8-17) diagnosed with a clinically significant *Diagnostic and Statistical Manual of Mental Disorders* (*DSM-III*; American Psychiatric

Association, 1987) diagnosis of OCD as determined by the *Anxiety Disorder Interview Schedule* (*ADIS-P/C*; Silverman & Albano, 1996) participated in the original randomized clinical trial. Additional eligibility criteria for the parent study included a *Child Yale-Brown Obsessive Compulsive Scale* (*CY-BOCS*; Goodman, Price, Rasmussen, Riddle, & Rappoport, 1991) score of 16 or higher, a NIMH Global score of 7 or higher, IQ of 70 or higher, English-speaking parent and child, and the absence of anti-OCD medication. Children with medical conditions or comorbid psychiatric conditions (ie. psychosis, prominent suicidality) contraindicating study participation were excluded.

Recruitment, assessment, and treatment were conducted within the context of a controlled evaluation of a standardized multicomponent cognitive behavioral treatment program for child and adolescent OCD (Piacentini, 2003) conducted at a large medical center outpatient anxiety clinic. Therapy video tapes were transferred to DVDs at the original research cite and transferred to Rutgers University with IRB approval for coding.

The current study included the forty-three participants assigned to the ERP condition of the original research study only. Of the 43 children, 27 (62.8%) were boys and 16 (37.2%) were girls; 33 (76.7%) were Caucasian, 1 (2.3%) was African American, 5 (11.6%) were Latino, 1 (2.3%) was Asian/Pacific Islander, and 3 (7.0%) described themselves as other. In addition, the mean age of the participants was 12.6 years, with 1 (2.3%) child under 9 years old, 12 (27.9%) were 9–11 years old, 9 (20.9%) were 11–13 years old, and 21 (48.8%) were 13-17 years old. At baseline, all 43 participants met clinical criteria for OCD with a *CY-BOCS* score over 15, with scores ranging from 17 – 36 (mean=24.6, SD=4.89).

Dependent Measures

Symptom Change. Independent evaluator (IE) ratings were used biweekly to measure outcome in the parent study. For the purposes of the current study, the *CY-BOCS* (Goodman, Price, Rasmussen, Riddle, & Rappoport, 1991) was used as the primary dependent variable. The *CY-BOCS* is a semi-structured clinical interview assessing OCD symptoms, severity, and response to treatment. It is a standard instrument that has been widely recognized and utilized in OCD research. The first portion includes separate comprehensive checklists covering numerous obsessions and compulsions. The second part of the *CY-BOCS* consists of 10 items assessing core features of OCD. The interviewer rates five dimensions (time spent, distress, resistance, interference, degree of control) of obsessions and compulsions separately on a 5-point scale (0=none, 4=extreme). The ratings are then summed to obtain the total score, ranging from 0 to 40. A score of 16 or higher is indicative of a clinical diagnosis of OCD.

Predictors

Safety Behaviors. Coders viewed videotaped sessions and rated the presence of several different types of avoidance and escape behaviors while approaching or engaging in exposure exercises (coding manual adapted from Hedtke, 2007). The first is avoidance or escape, which was characterized by fleeing, delaying, partial participation, oppositionality, or distraction. The code of avoidance versus escape depended entirely on the timing of the behavior. Avoidance was coded when the behavior occurred during the preparation phase of the exposure while escape was recorded when the behavior occurred during the exposure itself. Examples of avoidance or escape are changing the subject

while the therapist tries to give instructions for the exposure, engaging in subtle avoidance by avoiding eye contact or hurrying through a task, or telling the therapist the exposures will not work but not providing helpful information to improve exposure task.

Compulsive behaviors. Compulsive behavior was coded when a child engaged in the compulsion or ritual that is meant to be prevented during the present exposure. This code was given either before or during an exposure. An example of compulsive behavior is the child wiping his hands on his shirt as the therapist is preparing an exposure that will have the child touch a contaminant and then prevent his hand wiping ritual. Compulsive behavior was also coded if the child is unable to avoid wiping his hands during the actual exposure.

Therapist Extensiveness. Using a similar rating system as described above, coders also assigned a therapist extensiveness score for each exposure. This category is defined as the degree to which the therapist pushes the child in the exposure by providing instructions, structure, helpful strategies, and encouragement. For example, a therapist who provides a great deal of prompts and encouragement, such as, “you can do this, think of what you accomplished during the last exposure, this is only a little bit more difficult,” without which the child would likely discontinue the task, would receive a high rating for therapist extensiveness. Alternatively, a therapist who does not provide clear instructions to the child about what is expected or does not offer much assistance during the exposure would receive a low rating.

Usage of safety behaviors, compulsive behaviors, and therapist extensiveness were rated based on frequency and significance of these behaviors. Usage was rated by the coders on a 6-point Likert scale ranging from 0 (a little usage) to 5 (a great deal of

usage). Lengthier descriptions of the anchor points for each of the categories is included in the coding manual (see Appendix A). An example data coding sheet is provided in Appendix B.

Procedure

Manual Development: "The Safety Seeking and Coping Behavior Scale for OCD" (SSCBS-OCD). The *SSCBS-OCD* is an independent rater scale designed to assess: (a) exposure characteristics, (b) presence of safety behaviors, and (c) coping thoughts and behaviors. This manual was adapted from Hedtke (2007), whose original coding system was developed for exposure therapy with non-OCD anxiety disorders. The manual includes definitions of all variables, guidelines for determining start and stop times of the exposure preparation phase and the exposure itself, definitions and examples of each type of safety behavior, definitions and examples of coping behaviors, and individual rating anchors for each variable. Coders participated in extensive training on the usage of the manual.

Reliability Training. Four coders who were undergraduate psychology students or possessed an undergraduate degree in psychology received three months of training. Training included didactic training on OCD, CBT, ERP, and safety behaviors. Coders also observed video of sessions to familiarize themselves with typical exposure and response prevention procedures. Practice codes were completed independently and discussed during research meetings. Following the training period, trainees rated eight sets of three therapy sessions and compared ratings with a consensus expert rating (the author and Brian C. Chu) in order to establish reliability. All coders achieved a single

point intraclass correlation demonstrating excellent reliability (ICC > .80) on each coded variable to be considered reliable during this training phase.

Coding. Coders were each assigned independent lists of cases and all sessions of a given case were assigned to a single coder. Coders worked independently of other raters but were encouraged to use their coding manuals as references while coding. They were instructed to watch the entire session and record all attempted exposures. If no exposures are attempted in a given session, a secondary session from the same treatment phase (early or late exposure) was utilized. Whenever possible, two sessions with at least one attempted exposure where coded from each phase in an attempt to code four sessions from each case.

In order to increase reliability, all exposures were double coded. Following the completion of the first set, coders received a list of cases and sessions for which they served as the second coder. They received information regarding start and stop times for preparation and exposure only and coded all other categories independently. Final ratings for all categories were determined using the average ratings of the two independent coders.

In addition to achieving initial reliability against the expert consensus, interrater reliability was assessed on data collected during the main coding phase. This provided an index of rater reliability for data used in analysis. To assess this, three universal cases (9 total sessions, 21 exposures) were assigned to each coder and randomly distributed within each coder's list of cases. Coders achieved a single point intraclass correlation demonstrating excellent reliability on the data included in the principal analyses (ICC for

avoidance behaviors = 0.82, ICC for escape behaviors = 0.73, ICC for compulsive behaviors = 0.77, ICC for therapist extensiveness = 0.76).

RESULTS

The *CY-BOCS*, which was administered at baseline, at the beginning of session 8, and at post-treatment during the parent study, was used as the dependent variable. The assessment timeline is presented in Table 1. Out of the 43 participants that began ERP treatment, 25 (58%) were characterized as treatment responders (post-treatment *CY-BOCS*<16), 12 (27.9%) were characterized as treatment nonresponders (post-treatment *CY-BOCS*≥16), and 6 participants (14%) terminated treatment prematurely. Descriptive information about *CY-BOCS* scores is presented in Table 2.

Several steps were taken in order to summarize the independent variables (safety behaviors, compulsive behaviors, and therapist extensiveness) rated during each exposure trial. As mentioned previously, the ratings of the two independent coders were averaged in order to increase reliability. Next, ratings of avoidance behaviors (those occurring during exposure preparation) and ratings of escape behaviors (those occurring during exposure) were added to create a summary safety behavior rating (ranging from 0-10).

A session score of each predictor variable (safety behavior, compulsive behavior, and therapist extensiveness) was then calculated for each participant by averaging ratings across exposures within session. The number of exposures conducted per session ranged from 1 to 7 (M=2.5, SD=1.6). Session scores from the two sessions that occurred during the same phase (early or late) were then averaged together, so that each participant received a single phase score on each variable (safety behavior, compulsive behavior, therapist extensiveness). Safety behavior early phase scores ranged from 0.00 to 4.88 (M=1.50, SD=1.36) and safety behavior late phase scores ranged from 0.00 to 3.50 (M=1.24, SD=1.05). Compulsive behavior early phase scores ranged from 0.00 to 2.00

(M=0.32, SD=0.43) while late phase scores ranged from 0.00 to 0.58 (M=0.14, SD=0.19). Therapist extensiveness early phase scores ranged from 0.75 to 3.50 (M=2.42, SD=0.74) and late phase scores ranged from 0.25 to 3.92 (M=2.25, SD=0.78).

Finally, a case composite score was calculated for each participant by adding the early and late phase average scores for each of the three predictor variables. Case composite safety behavior rating scores had a potential range of 0.00 to 20.00 (because we added avoidance and escape ratings), while case composite compulsive behavior and therapist extensiveness scores could range from 0.00 to 10.00. Results showed that case composite safety behavior scores for this sample ranged from 0.00 to 8.38 (M=2.54, SD=2.12), case composite compulsive behavior scores ranged from 0.00 to 2.25 (M=0.43, SD=0.48), and case composite therapist extensiveness scores ranged from 1.25 to 6.50 (M=4.29, SD=1.48). Due to the early termination of 6 participants and some missing recordings, an average of 3.68 sessions was coded for each case. Participants who completed two sessions during the early phase of treatment were included in analyses involving the early phase but were excluded from all other analyses. Minimum and maximum scores, as well as means and standard deviations for session, phase, and case composite scores on each of the independent variables are presented in Table 3.

Separate multiple regression analyses were conducted to investigate the relationship between the three predictors (safety behavior, compulsive behavior, and therapist extensiveness) and *CY-BOCS* scores. Early phase safety behavior, compulsive behavior, and therapist extensiveness were used to predict *CY-BOCS* scores collected at mid-treatment, controlling for baseline *CY-BOCS* scores. Similarly, variables in the late phase were used to predict post-treatment *CY-BOCS* scores, controlling for mid-treatment

CY-BOCS scores. Finally, the total participant composite of each predictor variable was used to predict post-treatment *CY-BOCS* controlling for the baseline.

It was hypothesized that higher safety behaviors during exposures would predict higher OCD symptoms. Multiple regression analyses were used to test whether composite safety behavior ratings from the early exposure phase (4-7) predicted OCD symptoms at mid-treatment (*CY-BOCS*), controlling for OCD symptom ratings (*CY-BOCS*) at baseline. Results suggested a significant relationship, $B = 0.31$, $t = 2.09$, $p<.05$, $R^2=.25$. Identical analyses were conducted to determine whether composite safety ratings during the late exposure phase (8-12) would predict OCD symptoms (*CY-BOCS*) at post-treatment, controlling for mid-treatment *CY-BOCS* scores. Results suggested a nonsignificant relationship, $B = -0.07$, $t = -0.48$, p= n.s. Similar findings emerged when case composite safety ratings were used to predict post-treatment OCD symptoms controlling for baseline symptom ratings, $B = 0.24$, $t = 1.37$, p= n.s. Results of the multiple regression analyses described above are presented in Table 4.

Higher rating of compulsive behaviors occurring during exposures was also hypothesized to predict higher OCD symptoms. Multiple regression analyses were used to test whether composite compulsive behavior ratings from the early exposure phase (4-7) predicted OCD symptoms at mid-treatment, controlling for OCD symptom ratings at baseline. Results suggested a nonsignificant relationship, $B = 0.22$, $t = 1.41$, p= n.s. Identical analyses were conducted to determine whether composite compulsive ratings during the late exposure phase (8-12) would predict OCD symptoms at post-treatment, controlling for mid-treatment symptom scores. Results suggested a nonsignificant relationship, $B = 0.07$, $t = 0.46$, p= n.s. Similar findings emerged when case composite

compulsive ratings were used to predict post-treatment OCD symptoms controlling for baseline symptom ratings, $B = 0.12$, $t = 0.68$, p= n.s. Results of the multiple regression analyses described above are presented in Table 5.

It was hypothesized that lower therapist extensiveness during exposures would predict higher OCD symptoms. The approach described in the previous hypotheses was used in order to test whether composite therapist extensiveness ratings from the early exposure phase (4-7) predicted OCD symptoms at mid-treatment, controlling for OCD symptom ratings at baseline. Results suggested a nonsignificant relationship, $B = -0.19$, $t = -1.27$, p= n.s. Similarly, composite therapist extensiveness ratings during the late exposure phase (8-12) did not predict OCD symptoms at post-treatment, controlling for mid-treatment symptom scores, $B = 0.20$, $t = 1.40$, p= n.s. Case composite therapist extensiveness ratings were used to predict post-treatment OCD symptoms controlling for baseline symptom ratings, yielding another nonsignificant relationship, $B = 0.01$, $t = 0.06$, p= n.s. Results of the multiple regression analyses are presented in Table 6.

The interaction of high safety behavior and low therapist extensiveness was hypothesized to predict high OCD symptoms. Interaction terms were created for session scores, phase scores, and case composite scores. Multiple regression analyses were used to test whether safety behavior X therapist extensiveness in the early exposure phase (4-7) predicted OCD symptoms at mid-treatment (*CY-BOCS*), controlling for OCD symptom ratings (*CY-BOCS*) at baseline. Results suggested a nonsignificant relationship, $B = 0.18$, $t = 1.17$, p= n.s. Similar findings emerged when safety behavior X therapist extensiveness during the late exposure phase (8-12) was used to predict OCD symptoms (*CY-BOCS*) at post-treatment, controlling for mid-treatment *CY-BOCS* scores, $B = 0.08$, t

= 0.55, p= n.s. In order to test if the interaction was related to overall treatment outcome, case composite safety behavior X therapist extensiveness scores was entered into a regression analysis to test whether it would predict post-treatment OCD symptoms, controlling for baseline symptom ratings. Results suggested a nonsignificant relationship, $B = 0.24$, $t = 1.29$, p= n.s. Results of the multiple regression analyses described above are presented in Table 7.

The interaction of high compulsive behavior and low therapist extensiveness was hypothesized to predict higher OCD symptoms. Interaction terms were created for session scores, phase scores, and case composite scores. Multiple regression analyses were used to test whether compulsive behavior X therapist extensiveness in the early exposure phase (4-7) predicted OCD symptoms at mid-treatment, controlling for OCD symptom ratings at baseline. Results suggested a nonsignificant relationship, $B = 0.21$, $t = 1.35$, p= n.s. Similar findings emerged when compulsive behavior X therapist extensiveness during the late exposure phase (8-12) was used to predict OCD symptoms at post-treatment, controlling for mid-treatment symptom scores, $B = 0.08$, $t = 0.52$, p= n.s. In order to test if the interaction was related to overall treatment outcome, case composite compulsive behavior X therapist extensiveness was entered into a regression analysis to test whether it would predict post-treatment OCD symptoms, controlling for baseline symptom ratings. Results suggested a nonsignificant relationship, $B = 0.09$, $t = 0.51$, p= n.s. Results of the multiple regression analyses described above are presented in Table 8.

DISCUSSION

In an effort to identify underlying mechanisms of change in a twelve-session ERP treatment for youth OCD, this observational study examined the effect of three process variables on symptom change. Regression analyses showed that participants exhibiting more avoidance and escape behaviors during exposure preparation and exposure trials in the early exposure phase (sessions 4-7) reported more OC symptoms at mid-treatment, as indexed by higher *CY-BOCS* scores. This finding supports the first hypothesis, suggesting that safety behavior initiated by the client during the first exposure sessions may be detrimental to symptom reduction. However, late phase safety behavior did not predict post-treatment OC symptoms, nor did case composite safety behavior predict post-treatment OC symptoms.

It seems plausible that more frequent and significant safety behaviors would be present in the early phase of treatment, when participants are encountering exposure tasks for the first time. In order to test whether the degree of safety behavior exhibited in the early phase was significantly higher than the degree shown during the late phase, a paired t-test was conducted. Results showed that mean safety behavior in the early phase (M=1.50) was not statistically different from the mean safety behavior displayed in the late phase of treatment (M=1.24), $t(32)=.83$, p=ns.

This pattern of findings suggests that, although safety behaviors occurred at a statistically similar rate across treatment, safety behaviors in early sessions were particularly influential to treatment outcome. Therapy processes occurring in early sessions have been shown to be crucial to treatment outcome by several studies in the depression literature. Ilardi and Craighead (1994) showed that 60% to 70% of total

improvement on measures of depression symptom severity in many CBT efficacy studies occurred in the first 4 weeks of therapy. This finding was replicated by Tang and DeRubeis (1999b), who reported sudden large improvements in depression symptoms accounting for 51% of total symptom reduction, with the median gain occurring between session 5 and 6. Similarly, other studies have shown correlations between the amount of "concrete" cognitive methods utilized in early sessions and significant subsequent symptom change (DeRubeis & Feeley, 1990; Feeley, DeRubeis, & Gelfand, 1999). Taken together, these studies lend support to the hypothesis that theory-specific techniques delivered early in treatment are influential to treatment success.

This hypothesis has been less studied in anxiety disorders, but there is some evidence suggesting that a similar phenomenon exists. A study conducted by Hofmann and colleagues (Hofmann, Schulz, Meuret, Moscovitch, & Suvak, 2006) utilized guidelines from Tang and DeRubeis (1999b) to replicate their findings with a socially phobic population. Results showed that sudden gains existed at a similar rate, with most gains occurring after session 5. Studies of cognitive-behavioral treatment for panic disorder found substantial reductions in panic attack frequency during the first few weeks of treatment (Clark, 1986; Clark, Salkovskis, & Chalkley, 1985). Reductions were more common in participants who perceived a similarity between stress-induced hyperventilation and panic attack sensations, which validated the hyperventilation explanation given to participants for sensations experienced during panic.

Interestingly, the hypothesized mechanism responsible for sudden gains is cognitive change, including belief changes, schema changes, and the learning of new cognitive techniques (Hollon, 1999; Tang and DeRubeis, 1999a). This theory is

consistent with Salkovskis' model (1991) of how safety behaviors maintain pathological anxiety: they interfere with disconfirming evidence that safety is attributed to the innocuous nature of the stimulus or situation by allowing the client to attribute safety in the situation to the safety behavior that was undertaken. It seems plausible that clients in the current study who could not abstain from using safety behaviors during the early phase of treatment may have been inhibited from changing their cognitive attributions of safety during anxiety-provoking exposures. In this way, the use of safety behaviors during the early phase of treatment may have inhibited learning. Since this finding did not extend to post-treatment, perhaps the increasing dosage of exposures across sessions was able to override the client's use of safety behaviors and create cognitive change. Unfortunately, this hypothesis could not be tested in the current study because cognitive beliefs were not assessed. Future studies could replicate the findings presented here and lend support to this hypothesis by assessing for cognitive beliefs about safety behaviors, including weekly symptom measures, and examining individual treatment courses.

Hypotheses predicting that compulsive behaviors and the interaction of compulsive behavior and therapist extensiveness would be associated with OC symptoms were not supported. A surprising finding related to these hypotheses was the low occurrence rate of compulsive behaviors observed during exposures. Compulsive behavior ratings for session and phase scores had a potential range of 0.00 to 5.00, however, mean scores were all below 0.40 with a maximum score of 2.50. Case compulsive behavior rating scores had a potential range of 0.00 to 10.00 but the mean score was 0.43 while the maximum score was only 2.25. The restricted range of these

variables likely made it difficult for significant relationships to emerge from the regression analyses.

One explanation for this restricted range is that our coding scheme was not sensitive enough to identify compulsions in this sample. It is important to note the idiosyncratic functional relationship between obsessions and compulsions, which makes it difficult for an observer unfamiliar with a client's particular symptoms to pick up on the potential meaning behind certain subtle behaviors. In addition, the OCD literature has recently devoted more attention to the existence and role of mental compulsions, which are performed voluntarily to reduce discomfort and are thought to be functionally equivalent to physical compulsions (Abramowitz, Franklin, Schwartz, & Furr, 2003; Rachman, Shafran, Mitchell, Trant, & Teachman, 1996). Common mental compulsions include praying, replacing "bad" thoughts with "good" thoughts, or using imagery to neutralize obsessions (Rowa, Antony, & Swinson, 2007). Mental acts such as these would be impossible for an observer to identify and rate.

Another potential reason for the restricted range of both safety and compulsive behavior is that these behaviors simply did not occur at high rates during the sessions that were coded. Safety and compulsive behaviors were utilized at a much lower rate by child and adolescent clients during in-session exposures than expected. Perhaps clients' desire to please the therapist and adhere to instructions contributes to the low occurrence of these behaviors. It is also possible that clients are much more capable of preventing safety and compulsive behaviors than commonly thought.

A more likely explanation is that the participants in this sample may not have been faced with particularly difficult exposure tasks, and therefore were not compelled to

use safety and compulsive behavior to lower anxiety. An important limitation of the current study is that we were not able to assess the difficulty of the exposures completed by participants in order to test the hypothesis that safety and compulsive behaviors are more likely to occur during high difficulty exposures. We did not have access to information regarding the participants' fear hierarchies and subjective fear ratings (SUDS) were not consistently elicited by the therapists conducting exposure. Future studies should include this information in order to investigate the relationship between safety/compulsive behaviors and difficulty of exposure.

Another possibility is that participants in this sample were faced with high difficulty exposures, but that they were not captured on film and were therefore inaccessible to the current study. Exposures that occurred outside of the therapy room were not recorded, so coders were only privy to exposures that occurred in the room, preparation for exposures that would be conducted outside of the room, and post-exposure processing after they returned to the therapy room. Several opportunities to code safety behaviors and compulsive behaviors were lost during exposures that occurred outside of the therapy room, which were likely higher in difficulty due to increased *in vivo* experience with feared stimuli.

The hypotheses predicting that therapist extensiveness, along with its interaction with safety and compulsive behaviors, would be associated with symptoms at mid-treatment and post-treatment were not supported. It is possible that our coding scheme did not accurately capture our intended concept of therapist extensiveness. The literature reviewed above suggests that therapists' presence during exposures is helpful because they uphold the integrity of treatment by ensuring that exposure continues until anxiety

decreases and by maintaining the client's focused attention on the anxiety-provoking stimulus (Abramowitz, 1996; Grayson, Foa, & Steketee, 1982; 1986). However, our coders were not able to objectively assess whether the therapist was continuing exposure long enough to reduce anxiety because SUDS ratings were not consistently elicited. Additionally, this construct was likely affected by the restricted range of safety and compulsive behaviors. Specifically, there was no need for the therapist to maintain the client's focused attention on the stimulus because they were not exhibiting distraction or other avoidance behaviors.

Future observational studies would greatly benefit from being involved with the design of the treatment study that will be coded. It will be important to carefully consider the dependent variable and at what time points it should be administered. The *CY-BOCS* is an excellent measure of OC symptoms severity and interference. However, it was only administered at mid-treatment and post-treatment, and may not have been sensitive enough to account for small changes in OC symptoms from session to session. A dependent variable administered at the beginning of each session would reduce dependence on aggregated ratings across sessions, which likely diluted some of the rich information that was collected. Administering a weekly measure of target symptoms would also allow for investigation of individual treatment courses and the hypothesis that sudden gains in symptom reduction may have been made between sessions in the early phase of treatment. Additionally, a weekly measure of cognitive beliefs about safety during exposures would provide the necessary information to examine the relationship between safety behaviors, cognitive change, and sudden gains in symptom reduction. Future observational studies should also ensure that subjective fear ratings (SUDS) are

elicited consistently and that participants' fear hierarchies are accessible. This information will be extremely helpful in understanding the relationship between safety/compulsive behaviors and exposure difficulty. Consistent SUDS ratings would also inform the rater's understanding of therapist extensiveness. Finally, future studies should ensure that all exposures, even those that occur outside of the therapy room, can be observed or accounted for in some way.

Although the current study was methodologically limited in several ways, it was the first study to use observational methods to examine the role of safety behaviors, compulsive behaviors, and therapist response as they naturally occur in a cognitive-behavioral treatment for youth OCD. We were able to develop a unique coding scheme, train objective coders to reliably rate the independent variables, and successfully produce categories with some range. This study offers support for the feasibility of using observational methods to evaluate meaningful client and therapist behaviors in exposure and response prevention treatment. Utilizing the *SSCBS-OCD* manual in future studies to improve and validate the coding scheme is an important next step in this line of research.

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List of Tables

Table 1
Assessment Timeline

Session	0	4	Coded	Coded	8	Coded	Coded	12
Safety Behavior	-	-	X	X	-	X	X	-
Compulsive Behavior	-	-	X	X	-	X	X	-
Therapist Extensiveness	-	-	X	X	-	X	X	-
CY-BOCS	X	X	-	-	X	-	-	X

Table 2
Descriptive Information for Dependent Variable (*CY-BOCS*)

CY-BOCS Score	N	Min	Max	Mean	SD
Baseline	43	17.0	36.0	24.6	4.9
Mid-Treatment (wk 8)	38	2.0	34.0	18.1	6.7
Post-Treatment	37	0	37.0	13.1	8.5

Note. CY-BOCS scores ≥16 reflects a clinical diagnosis of OCD

Table 3
Descriptive Information for Independent Variables

	Min	Max	Mean	SD
Safety Behavior				
First Early Phase Session	0.00	5.50	1.23	1.47
Second Early Phase Session	0.00	5.25	1.79	1.61
Early Phase Score	0.00	4.88	1.50	1.36
First Late Phase Session	0.00	5.50	1.37	1.38
Second Late Phase Session	0.00	4.00	1.24	1.09
Late Phase Score	0.00	3.50	1.24	1.05
Case Composite Score	0.00	8.38	2.54	2.12
Compulsive Behavior				
First Early Phase Session	0.00	2.50	0.32	0.54
Second Early Phase Session	0.00	2.25	0.37	0.54
Early Phase Score	0.00	2.00	0.32	0.43
First Late Phase Session	0.00	1.00	0.17	0.29
Second Late Phase Session	0.00	1.00	0.16	0.30
Late Phase Score	0.00	0.58	0.14	0.19
Case Composite Score	0.00	2.25	0.43	0.48
Therapist Extensiveness				
First Early Phase Session	0.00	4.00	2.51	0.84
Second Early Phase Session	0.50	3.50	2.63	0.76
Early Phase Score	0.75	3.50	2.42	0.74
First Late Phase Session	1.50	3.50	2.54	0.61
Second Late Phase Session	0.00	3.50	2.17	1.06
Late Phase Score	0.25	3.92	2.25	0.78
Case Composite Score	1.25	6.50	4.29	1.48

Table 4
Summary of Regression Analyses with Safety Behavior Predicting *CY-BOCS* Scores at Various Phases of Treatment

Phase of Treatment	*B*	*T*	p
Early Phase	0.31	2.09	.04*
Late Phase	-0.07	-0.48	ns
Case Composite	0.24	1.37	ns

Note. *p<.05

Table 5
Summary of Regression Analyses with Compulsive Behavior Predicting *CY-BOCS* Scores at Various Phases of Treatment

Phase of Treatment	*B*	*T*	p
Early Phase	0.22	1.41	ns
Late Phase	0.07	0.46	ns
Case Composite	0.12	0.68	ns

Table 6
Summary of Regression Analyses with Therapist Extensiveness Predicting *CY-BOCS* Scores at Various Phases of Treatment

Variable	*B*	*T*	p
Early Phase	-0.19	-1.27	ns
Late Phase	0.20	1.40	ns
Case Composite	0.01	0.06	ns

Table 7
Summary of Regression Analyses with Safety Behavior X Therapist Extensiveness Interaction Predicting *CY-BOCS* Scores at Various Phases of Treatment

Phase of Treatment	*B*	*T*	p
Early Phase	0.18	1.17	ns
Late Phase	0.08	0.55	ns
Case Composite	0.24	1.29	ns

Table 8
Summary of Regression Analyses with Compulsive Behavior X Therapist Extensiveness Interaction Predicting *CY-BOCS* Scores at Various Phases of Treatment

Phase of Treatment	*B*	*T*	p
Early Phase	0.21	1.35	ns
Late Phase	0.08	0.52	ns
Case Composite	0.09	0.51	ns

Appendix A

Safety Seeking and Coping Behavior Scale for OCD: Coding Manual

Brian Chu, Daniela Colognori, and Kristina A. Hedtke

Exposure Characteristics

1. Viewing Time: You will watch the entire time that the child and therapist are alone, usually starting after review of homework and symptom hierarchy and ending when parents come in.

2. # of exposures: Total number of imaginal or in-vivo exposures occurring during the session. Count each *theme* as a single exposure. For example, a series of imaginal exposures that target a child's fear of walking in-and-out of a room without checking the switch.
    a. If the therapist conducts 5 imaginal exposures on the same theme, then # of exposures = 1 exposure (with 5 tasks).
    b. If the therapist follows the 5 imaginal exposures with 1 in vivo exposure, then you would generally count this as 2 exposures.
    c. If the therapist follows the 5 imaginal exposures with a new imaginal exposure on food contamination, then # of exposures = 2 exposures.

3. Description: Provide a basic description of the exposure. Be brief but note the most relevant details about the set-up and the obsession and compulsion targeted (e.g., "read a book page without re-reading").

4. Type of exposure:
    a. Imaginal exposure (IM): Any task in which the child is asked to imagine the anxiety provoking stimulus/situation/obsession. Child does not come in contact with actual stimulus, but is asked to imagine it by looking at pictures, writing a story, through guided imagery by the therapist, or role-playing with the therapist. The child is then encouraged to resist the urge to perform a compulsion in order to lower anxiety.

    b. In-vivo exposure (IV): Any task in which the child is asked to enact or physically perform actions that lead the child to come in contact with the anxiety provoking stimulus/situation. In other words, the child is in the "live" feared situation and is then encouraged to resist the urge to perform a compulsion in order to lower anxiety.

    c. Practice (P): Relaxation exercises the child does to remind him/her how to do them. Count initial training of relaxation as (P) too. Count all trials of practice relaxation as 1 exposure (with multiple tasks). When they start pairing the relaxation with imaginal exposures, it becomes (IM).

5. Location of exposure:
    a. In-the-office exposure (IN): Any exposure task, imaginal or in-vivo, occurring within the therapy room/office. For exposures where the child is both inside and outside the room, make a judgment about where the majority of the exposure occurred.

b. Out-of-the-office exposure (OUT): Any exposure task, imaginal or in-vivo, occurring outside the therapy room/office.

6. Parental Presence: Mark "Y" if at least one parent/guardian is physically present during the planning and/or implementation of the exposure task.

7. Start-Stop of Prep Time: Record time where therapist and child are "setting up" (i.e., start talking about) the exposure. Often times, you will have to go back and check the time. Use the time stamp on DVD/screen: hr:min:sec. For example:
   a. 1:14:34 = 1st hour, 14th min, and 34th sec.
   b. 57:34 = 57th minute and 34 seconds.
   c. Prep time starts when the therapist begins discussing exposure (e.g., "Today I want to talk about the exposure…" "That brings us to what I wanted to do today;" "Are you ready to plan for the exposure").
   d. It's often the brainstorming part of the exposure. Begin coding prep time when therapist (or child) begins discussing the upcoming exposure.
   e. Prep time ends (a) when the exposure starts or (b) if the therapist and child get distracted into talking about something else.

8. Start-Stop Time of the exposure: Record time where the formal exposure starts according to time stamp on DVD/screen: hr:min:sec.
   a. Exposure time starts when (a) the child starts doing the exposure or (b) when the therapist gives an imperative command to start the exposure. For example, "Okay, so imagine…", "Okay, now touch…" This allows for the child to hesitate, hem and haw, and get escape points.
   b. Exposure time ends when (a) the child physically stops the activity or (b) the therapist acknowledges exposure has stopped (e.g., "Okay, let's stop;" "Okay, what did you think?" "So, this is too hard to continue?"). If therapist is still pushing the child to continue, don't stop the time yet (e.g., "I know it's hard, but give it another try…")
   c. Don't include "post-processing" as part of official exposure time (e.g., questions about how the child did, or his/her experience).

9. # of Tasks Completed/Expected: Sometimes, the exposure may be goal focused (e.g., eating an undesirable food; asking a confederate for something). In these cases, record:
   a. *# of tasks completed*
   b. *# of tasks expected*
   c. Record like: 1/5 (one out of five); 4/6 (four out of 6).
   d. Definition of TASK: Asking for SUDS does not necessarily mean a new task. Look for an actual break and re-start of new trial. Or it may be an alteration of a previous task within the same theme of the exposure.

10. SUDS: Therapists are expected to ask the child's *Subjective Units of Distress (SUDS)* at the start and end of each exposure. Record any SUDS that the child reports.

a. Record SUDS reported before exposure.
b. Record SUDS reported at end of exposure.
c. Record the peak SUDS reported (highest number reported; may be SUDS at start).
d. If no SUDS reported: code "NR"
e. If only SUDS available is from their weekly fear hierarchy, use that but only if it was reported reasonably near the start of exposure. Record these SUDS in parentheses ( ).
f. Include ratings given during post-processing (this happens often if an exposure took place out of the office).

Safety-Seeking Behaviors

Safety-Seeking Behavior - behavior used to prevent perceived danger or end/stop aversive condition. Code will depend on type of behavior and timing of behavior.

A = Avoidance behavior: Used to PREVENT or DELAY perceived danger BEFORE engaging in exposure task. Behavior occurs during PREP time.
E = Escape behavior: Used to FLEE perceived danger DURING exposure.
C = Compulsive behavior: Evidence of compulsions or rituals before or during the exposure
R = Reassurance behavior: Reassurance-seeking during exposure or use of safety object to make exposure more manageable

Avoidance (Prep Time) or Escape (During Exposure):

Fleeing:
- Child leaves the room, looks for an exit, lies on the floor, cries, or throws tantrum.

Avoidance/Delays:
- Child verbalizes desire to not engage in exposure task or makes excuses why he/she cannot engage in exposure task (e.g., expressing the need to use the bathroom, get a drink of water, get some air, or talk to his/her parents).
- Child makes excuses without offering constructive solutions. "This isn't how it happens…" "I don't think this'll work;" "I can't explain it"). Child changes the subject or interrupts.
- Child negotiates with the therapist after agreeing to participate in task.

Partial participation:
- Child reluctantly engages in exposure task or is resentful about engaging in exposure task (e.g., saying "fine, I'll do it if I have to").
- Child engages in "subtle" avoidance during exposure such as speaking in a low voice, avoiding eye contact, moving slowly, or engaging in the task hurriedly.
- Child closes or hides eyes when presented with anxiety stimulus.

Oppositionality:
- Child refuses outright to engage exposure or does not complete task as presented by therapist.
- Child intentionally picks a non-anxiety provoking exposure.

Distraction: Behavior to take mind off task

- Child attempts to distract self, for example, by singing, walking around the room, playing with toys, fidgeting with objects in the room, changing the subject of conversation with the therapist.
- Child seems like they're actively planning the exposure, but are really distracting (e.g., child says, "I'll play with my toys to keep my mind off my worries… No? How about if I do this…).

Compulsive Behavior

- Child attempts to engage in a ritual that is meant to be prevented during the exposure.
- Behavior has to be the compulsion targeted in THAT exposure (not just any compulsion).

Reassurance Seeking/Use of Safety Objects

- Child seeks reassurance before or during exposure task.
- Child holds onto, grasps, or grabs therapist or another person during the exposure.
- Child carries object(s) for "good luck" or "in case of emergency" such as a parent's keys, a cell phone, a blanket, a doll, or a watch.

Coping Behavior (behavior used to manage anxiety)

CC = Cognitive Coping: Self-statements or coping thoughts used to help enter or get through exposure. Can be rated during PREP time or DURING exposure.

BC = Behavioral Coping: Behaviors or strategies used to help get through exposure. Can be rated during PREP time or DURING exposure.

** Can code these if reported during the "post-processing" as long as it was evident they were used during exposure.

Can either be prompted by therapist or spontaneously offered by child

Cognitive Coping Strategies

- Child verbalizes coping self-talk:
  - Child builds confidence: "I can do it," "I'll be ok," "I've done this before."
- Child verbally challenges thoughts:
  - Child questions negativity of outcomes: "It's not that bad;" "What's the worst that could happen?"
  - Child questions probability of outcomes:
    - "Has this ever happened before?" "How likely is it that I will _____?"
    - "Nothing bad will happen if I don't check that lock;" "I do it every day."
    - "What are the chances I will get sick if I touched the door handle?"
    - "Have others gotten sick when they touched the door handle?"
- Child re-labels obsessive thoughts:
  - "It's just my OCD talking."
- Child tries to "fight" OCD:

    - "That's just my OCD talking. If I check the lock, my OCD will become more powerful and win.
- Therapist can elicit these thoughts by giving the child examples. At a minimum (score = 1), child has to agree and say something like, "that could work," in response to therapist's examples of coping thoughts.

Behavioral Coping Strategies

- Child uses breathing and/or relaxation techniques
- Child and therapist problem solve together and generate alternative actions to anxious behavior (i.e., child and therapist develop a plan to cope).
    - Note: "Problem solving" that is mostly used as avoidance or escape (e.g., delay, distraction) should not be considered a coping strategy.
- Child and therapist discuss reward/contingency for completion of exposure
- Child uses a ritual-preventing alternate behavior or strategy.
    - This can be any physical or mental activity meant to slow, delay, disrupt, or compete with the intended compulsion.
    - For example, if the child's ritual is to touch both hands to the table, the child says he will put his hands on his lap instead. Or if the child is to prevent a mental ritual, he will envision an alternate vision.

Rating Anchors

Use of Safety-Seeking Behavior (behavior used to prevent perceived danger or end/stop aversive condition)

NOTE: Degree of use of safety-seeking behavior is not necessarily related to the child's anxiety level during the exposure, only attempts to distract, escape, or avoid anxiety.

0) No usage: No safety behaviors. Full participation in exposure.

1) Little-to-no usage: One or two isolated instances of safety behaviors. Child is mostly engaged.

> Child displays 1 or 2 safety behaviors, usually at the beginning of the exposure. Child may ask "can my parents stay with me while I do this" or "can I carry my mom's cell phone," but then completes the exposure with almost no difficulty. Child barely distracts, avoids, or escapes.

2) Mild usage: Multiple examples of safety behavior. Child mostly engaged with mild disruptions.

> Not enough to disrupt the exposure but shows the exposure is a challenge. For instance, child may speak in a low voice only in the beginning of the exposure or may hold parent's hand but let go and complete exposure. Child distracts, avoids, and/or escapes exposure minimally.

3) Moderate usage: Moderate, sustained safety behaviors.

> Multiple, sustained safety behaviors. For instance, child engages in entire task hurriedly or needs to hold parent's hand throughout entire exposure. Child distracts, avoids, and/or escapes exposure to a moderate degree.

4) Large amount of usage: Safety behaviors present throughout. Significant disruption in exposure. Near termination of exposure.

> Safety seeking behavior is present to a high degree or during most of the exposure. Child agrees to do task, but safety behaviors significantly interfere with task almost so that it can't be done, or only with significant disruption. For instance, child cries throughout while giving a speech and/or does not continue. Child may not fully complete the exposure or completes exposure with great amount of difficulty. Child distracts, avoids, and/or escapes exposure to a large extent.

5) A great deal of usage: Terminating disruption of exposure.

> Safety behaviors are so frequent or significant that exposure can't be started or completed (total refusal; "I can't do this"). For example child throws a tantrum, lies on floor, or cries when discussing the exposure and may refuse to attempt exposure.

Use of Coping Behavior (behavior used to manage anxiety)

NOTE: Degree of use of coping behavior is not necessarily related to child's anxiety level during the exposure, only attempt to manage anxiety. SEE PAGE 4-5 for examples of Cognitive and Behavioral Coping.

Child Initiated Coping Behavior

0) No coping displayed.

1) Little-to-no usage: One or two isolated instances.

Child uses 1 or 2 isolated examples of coping, usually at beginning. For example, child reluctantly or hurriedly takes deep breaths before exposure. Child quickly offers a thought w/o thinking.

For Coping Thoughts: Therapist can elicit these thoughts by giving the child examples. At a minimum (score = 1), child has to agree and say something like, "that could work," in response to therapist examples of coping thoughts.

2) Mild usage: Minor use or for brief portion.

Coping behavior is present to a minor degree or for a brief portion of the exposure. For instance, child says "I can do this" or uses relaxation techniques appropriately but not often. Child attempts to manage anxiety only minimally.

3) Moderate usage: Multiple, significant examples; coping helps get child through.

Coping behavior is present to a moderate degree or during a fair amount of the exposure. For instance, child takes deep breaths throughout the exposure and/or fully implements coping plan that therapist suggests (e.g., recalling coping thoughts and using multiple times in exposure). Child attempts to manage anxiety to a moderate degree.

4) Large amount of usage: Coping significant part of staying in/continuing exposure.

Coping behavior is present to a high degree or during most of the exposure. For instance, child and therapist consider a number of coping thoughts before the exposure and then use it throughout the exposure. Child repeats it often with minimal prompting by the therapist. Child attempts to manage anxiety to a large extent. [For Beh Coping: 4 is baseline for relaxation session where relaxation is used for most of "exposure."

5) A great deal of usage: Coping essential to exposure.

Coping behavior is present to a very high degree or during the entire session/exposures. For instance, child generates own coping thoughts or coping plan or improves upon coping strategies suggested by therapist. Child actively incorporates all or most coping thoughts or behaviors during the exposure with almost no prompting by the therapist. Child attempts to manage anxiety superiorly.

Therapist-Initiated Cognitive Coping Strategies

Degree to which therapist teaches or elicits coping thoughts or uses cognitive restructuring.

0) No Cognitive Strategies: Therapist does not teach child to identify anxious thoughts, challenge anxious thoughts, or help child develop coping thoughts.

1) Rare Cognitive Strategies: 1-2 brief mentions of cognitive strategies with minimal impact.

2) Minimal Cognitive Strategies: Cognitive strategies used a couple times but not a significant part of session.

3) Moderate Cognitive Strategies: Used several times where 1-2 instances are significant or meaningful to session.

4) Substantial Cognitive Strategies: Cognitive strategies are one of major component of session. Therapist gives many examples and seems to impact child or direction of session (e.g., child uses strategies to get through exposure; large part of session focuses on cognitive strategies).

5) Core component: Cognitive strategies are core component of the session.

Judge Rated Anxiety (at peak level)

*** Rated during Prep and Exposure

Child's average level of anxiety (i.e., nervous, scared, worried, and/or frightened) during the imaginal or in-vivo exposure.

0) Not at all anxious: Child displays NO evidence of compulsions, behavioral avoidance, or behavioral signs stereotypic of general anxiety. Child appears comfortable and relaxed.

- *Stereotypic movements:* repetitive hand or leg movement such as shaking or tapping; rocking body from side to side; swinging arms
- *Anxious verbalizations:* "I probably look stupid"; "I can't do this".
- *Behavioral signs of distress:* tearing, crying, screaming, visible sweating.

1) Little-to-no anxiety: Child displays a few isolated instances of any anxious behaviors/ verbalizations. Child mostly appears comfortable and relaxed.

2) Mildly anxious: Child displays some stereotypic movement or very little avoidance. No anxious verbalizations, no tearing, no crying, no screaming, and no visible sweating. Child generally appears comfortable and relaxed.

3) Moderately anxious: Child displays a fair amount of stereotypic movement or avoidance and possibly a trembling voice, or some anxious verbalizations. No tearing, no crying, no screaming, and no visible sweating. Child appears somewhat uncomfortable.

4) Very anxious: Child displays frequent stereotypic movement or high avoidance, anxious thoughts, tearing, or visible sweating. No screaming or crying. Child definitely appears uncomfortable.

5) Extremely anxious: Child appears to be in crisis. Child displays high levels of compulsive behaviors or stereotypic movement or complete avoidance, anxious verbalizations, sweating, screaming, or crying.

Judge Rated Child General Engagement

*** Rated during Prep and Exposure

Child's general engagement during prep or exposure. Includes behaviors like:

- Active participation: Child appears interested or invested in working in session, trying his best
- Voiced or demonstrated enthusiasm for activities
- Child asks questions, makes productive suggestions
- Child actively collaborates with therapist to devise exposure.

0) Not at all engaged: Child doesn't engage prep or exposure at all.

1) Little-to-no engagement: Child makes feigned attempts to be involved but seems disinterested.

2) Mildly engaged: Child is mildly engaged but motivation seems to wax and wane. Child minimally participates but seems like therapist is working harder than child.

3) Moderately engaged: Child makes good faith effort to participate in exposure but shows some slips in interest or motivation.

4) Very engaged: Child makes substantial effort to complete exposure and make most of task. [Baseline of expected participation].

5) Extremely engaged: Child is active in prep and exposure, making suggestions, pushing self harder.

Therapist Extensiveness for Exposures

*** Rated during Prep and Exposure

Degree to which therapist pushes child in exposure. Gives guidelines, structure, guidance, and creatively pushes child to engage in difficult tasks. This measures how extensive the exposure is done or degree to which therapist tries to push exposure. It is NOT a measure of how much a therapist pushes other therapeutic tasks (e.g., relaxation). We want this to be a measure of how extensive exposure procedures were used in the exposure.

0) No Therapist guidance/effort: Child may or may not complete or do exposure, but Therapist offers no guidance or structure for task.

1) Near Absent guidance/effort/pushing: Minimal amount of therapist efforts or nominal exposures (e.g., brief imaginal exposure before relaxation). Or lets child out easy during other exposures. [baseline for relaxation sessions]

2) Below Expected guidance/pushing: Provides framework for exposure but provides minimal guidance and no pushing. Therapist fails to respond to 1-2 child hesitations or "tests."

3) Expected Therapist guidance/pushing: Provides set-up, guidance, and encourages child to continue exposure in presence of 1-2 child hesitations. [baseline for exposure sessions]

4) Above Average guidance/pushing/creativity: Noticeable encouragement in presence of multiple hesitations OR therapist demonstrates creative ways to intensify exposures.

5) Remarkable efforts on part of therapist: Therapist provides lots of prompts, without which the exposure would stop. Even if child escapes, therapist made substantial efforts to complete task OR pushes child to engage very challenging task.

Appendix B

Data Coding Sheet

Coder: _____ Date Coded: _____

Subject #: _____ Sess #: _____ Coding Form # ___ of ____

Subj Initials: _____ Sess Date: _____ # of Exposures: _____

	Exposure #:	
Description		
Type (IM or IV or P)		
Location (IN or OUT)		
Parental Presence (Y or N)		
Prep Time: Start-Stop (H:M:S)		
Exp Time: Start-Stop (H:M:S)		
# Tasks comp / # expected		/
SUDS before		
SUDS at end		
Peak SUDS		
Judge-rated Anx Rating (0-5)		
	Examples	(0-5)
Avoidance Behavior		
Escape Behavior		
Compulsion Behavior		
Reassurance/Safety Obj		
Cognitive Coping		
Behavioral Coping		
General Engagement		
Therapist Cognitive		
Exposure Extensiveness: Th pushing Exposure		