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Intensive Family-Based Cognitive-Behavioral Therapy for Pediatric Obsessive-Compulsive Disorder: Applications for Treatment of Medication Partial- or Nonresponders

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Serotonin reuptake inhibitor medications and cognitive-behavioral therapy (CBT) are both effective treatments for pediatric obsessive-compulsive disorder (OCD). Despite recommendations that youth with OCD be treated with CBT alone or together with serotonin reuptake inhibitor medication, many youth are treated with medication alone or with non-CBT psychotherapy initially. Although effective, symptom remission with medication alone is rare (e.g., only 21.4% of youth achieved remission with sertraline in the Pediatric OCD Treatment Study, 2004) and residual symptoms often remain (e.g., 58% of subjects in the March et al. [1998] sertraline trial were not considered treatment responders). This paper reviews the literature on the efficacy of CBT for pediatric OCD, particularly as it relates to the treatment of youth with prior inadequate response to medication. It also describes an intensive, family-based CBT program for children and adolescents with OCD and support for its efficacy among those with prior partial- or nonresponse to medication. Finally, we present a case study of an adolescent girl with OCD who participated in the intensive treatment program after having limited benefit from medication and non-CBT psychotherapy and experienced a favorable response.

Obsessive-compulsive disorder (OCD) among children and adolescents frequently is a debilitating disorder that, if left untreated, often runs a chronic course (Thomsen & Mikkelsen, 1995). Although OCD previously was considered to be rare among youth, more recent research has revealed 6- to 12-month prevalence rates of 1.3% to 4.0% among children and adolescents (Douglass, Moffitt, Dar, McGee, & Silva, 1995; Rapoport et al., 2000; Reinherz, Giaconia, Lefkowitz, Pakiz, & Frost, 1993). By definition, OCD is an anxiety disorder comprised of two primary components. Obsessions are characterized by recurrent, intrusive thoughts or images that are unwanted and elicit marked anxiety or distress. Compulsions are characterized by repetitive behaviors or mental actions intended to reduce or prevent distress or other negative, feared outcomes. For example, a child may experience intrusive thoughts about germs and of becoming infected by a fatal virus whenever she encounters objects within a public restroom. These thoughts elicit feelings of anxiety or distress, which the child may then attempt to reduce by washing her hands excessively after touching objects such as bathroom doors or faucet handles. Alternatively, she may avoid touching these objects directly (e.g., by using a paper towel to open restroom doors) or refrain from using public restrooms altogether in order to prevent herself from experiencing the intrusive thoughts and related distress. Because frequent engagement in compulsions and avoidance of anxiety-provoking stimuli can be quite time consuming and disruptive to daily activities, OCD is associated with significant impairment in children's academic, family, and social functioning (Piacentini, Bergman, Keller, & McCracken, 2003; Piacentini, Peris, Bergman, Chang, & Jaffer, 2007).

Use of Serotonin Reuptake Inhibitors for Treatment of Pediatric OCD

A sizable percentage of children and adolescents with OCD seen in our clinic have first presented to their pediatricians or to mental health professionals without adequate training in evidence-based care (particularly psychotherapy) for OCD. As a result, psychotropic medications or non-evidence-based forms of psychotherapy often are used as the first line of treatment for pediatric OCD in the community, which is inconsistent with practice parameters that suggest initiating treatment with cognitive-behavioral therapy (CBT) alone or in conjunction with a selective serotonin reuptake inhibitor

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(SSRI; Pediatric OCD Treatment Study Team [POTS], 2004). This deviation from practice parameters likely is due to a variety of reasons, including medical providers' greater knowledge of and experience with prescribing psychotropic medications relative to conducting behaviorally oriented psychotherapy, differing theoretical orientations of psychotherapy providers, unwillingness of providers to conduct exposure-based treatments, and the widespread availability of medication. Fortunately, there is a sizable body of research supporting the efficacy of serotonin reuptake inhibitors (SRIs; e.g., clomipramine, fluvoxamine, fluoxetine, sertraline) in the treatment of pediatric OCD (cf., Abramowitz, Whiteside, & Deacon, 2005; Geller et al., 2003; Reinblatt & Riddle, 2007). However, despite the superiority of SRIs to placebo, CBT monotherapy has superior efficacy to SRI monotherapy (Abramowitz et al., 2005; de Haan, Hoogduin, Buitelaar, & Keijsers, 1998; POTS, 2004), and the average pediatric patient receiving SRIs continues to experience OCD symptoms in the lower end of the moderate severity range following treatment (e.g., Abramowitz et al., 2005). For example, in March et al. (1998), youth treated with sertraline concluded treatment with an average score on the Children's Yale-Brown Obsessive-Compulsive Scale (CY-BOCS; Scahill et al., 1997) of 16.6, which remains in the clinical range of symptom severity. In addition, a meaningful percentage of youth taking SRIs experience adverse side effects (Murphy, Segarra, Storch, & Goodman, 2008), most notably behavioral activation (Goodman, Murphy, & Storch, 2007). Among those who do improve with medication, research suggests that remission is rare (e.g., only 21.4% of youth achieved remission with sertraline; POTS, 2004), and treatment gains often are not maintained once medication is discontinued, resulting in symptom relapse (Leonard et al., 1991; Pato, Zohar-Kadouch, Zohar, & Murphy, 1988). Although properly dosed medication has consistently been shown effective in reducing symptoms, our experience is that many youth treated in community settings are underdosed or titrated upwards too rapidly, resulting in limited treatment benefit, adverse effects, and/or medication discontinuation. In fact, we would estimate that a sizable proportion of patients with a limited SRI response have not received an adequate trial of their respective medication, oftentimes before agents are switched. Therefore, although there is substantial research supporting the efficacy of SRIs for pediatric OCD, medication monotherapy has some significant limitations and is not effective for all children.

CBT for Pediatric OCD

An alternative treatment modality for pediatric OCD is CBT. CBT for pediatric OCD typically includes several fundamental and interrelated treatment components (Barrett, Healy-Farrell, Piacentini, & March, 2004; March & Mulle, 1998). The first is psychoeducation, including providing information about the nature and course of OCD and discussing what CBT will entail. Second, children may be taught to challenge anxiety-provoking cognitions. Although researchers and clinicians may differ in the extent to which they utilize cognitive components, cognitive therapy in pediatric patients involves identifying and challenging anxiety-related dysfunctional thoughts, generating more balanced or helpful thoughts, disengaging from anxiogenic cognitions, and engaging in assertive and soothing self-talk when feeling anxious. Third, a list of anxiety-provoking situations or activities is developed that are relevant to the child's OCD symptoms, the child rates each item in terms of expected level of distress that it would provoke, and then items are ordered in a hierarchy according to distress levels. Finally, children are exposed in a graded fashion to items on their hierarchy, starting with easier activities and gradually working their way up to more difficult ones. These exposures may be imaginal or in vivo (the latter is typically preferable), and children are asked to remain in the situation while refraining from engaging in compulsions until their anxiety habituates to low or manageable levels—this process is referred to as exposure and response prevention (ERP). Children also are instructed to practice exposures between sessions for up to 60 minutes a day in order to promote generalization of treatment gains. Furthermore, reward systems may be implemented to enhance children's motivation to complete in-session exposures and therapy homework. Finally, most treatments involve a relapse prevention component.

A fairly substantial body of research supports the efficacy of CBT to treat pediatric OCD. Indeed, a meta-analysis of studies on the treatment of pediatric OCD (Abramowitz et al., 2005) revealed that CBT resulted in greater reduction of OCD symptoms than SRIs or placebo. Furthermore, OCD symptoms of youth treated with CBT were found to decrease to mild levels at posttreatment whereas symptoms of youth treated with SRIs were in the lower end of the moderate range posttreatment. The POTS trial (2004), considered the gold standard of pediatric OCD trials, compared the efficacy of CBT alone, sertraline alone, and combined CBT and sertraline to treat children and adolescents with OCD. Although all active treatments were superior to placebo in reducing symptoms of OCD, combined treatment was superior to CBT alone and sertraline alone, which did not differ significantly from each other. However, in terms of clinical remission of OCD symptoms by posttreatment, the combined CBT and sertraline treatment did not differ significantly from CBT alone, but the combined treatment was superior to sertraline alone and placebo. Similarly, Asbahr et al. (2005)

reported a randomized clinical trial directly comparing the efficacy of CBT delivered in a group format to sertraline among children and adolescents with OCD. They found that, although both treatments led to significant reductions in OCD symptoms, those treated with group CBT had significantly lower rates of symptom relapse at 9 months following treatment compared to those who were treated with sertraline (Asbahr et al., 2005). Given the growing amount of research supporting the efficacy of CBT, it is widely considered the first-line treatment of choice for pediatric OCD (March et al., 1997; POTS, 2004).

There also has been growing interest in examining the utility of including a substantial family treatment component with CBT for pediatric OCD. Research has suggested that OCD has a substantial impact on family functioning and that certain family factors also impact the expression of OCD symptoms. For example, families of youth with OCD may exhibit higher levels of overinvolvement and criticism, decreased tendency to foster independence in the child, and lower levels of cohesion and support (Waters & Barrett, 2000). Furthermore, greater family accommodation and participation in the child's OCD symptoms had been related to more severe symptoms of OCD in the child (Peris et al., 2008; Storch, Geffken, Merlo, Jacob, et al., 2007). Symptoms of OCD have been associated with high levels of perceived burden and stress among parents and siblings of those with OCD (Cooper, 1996; Storch et al., in press). Consistent with these findings, it has been theorized that symptoms of OCD and family dysfunction operate in a cyclical manner, each influencing the other (Waters & Barrett, 2000).

For these reasons, more recent interventions for pediatric OCD have included a substantial family treatment component in addition to more typical CBT interventions (e.g., Barrett, Healy-Farrell, & March, 2004; Freeman et al., 2003; Freeman et al., 2008; Lewin et al., 2005). Prior to this, more traditional CBT approaches have included parents to varying degrees. For example, in the POTS (2004) trial, parents were included for the entire session in Sessions 1, 7, and 11, whereas de Haan et al. (1998) treated youth on a primarily individual basis. In the present approach, parents attend all or a substantial portion of each therapy session, and siblings sometimes participate as well (see below for a more detailed description of family participation). Although there is some variance among studies, treatment involving family members includes psychoeducation about the nature and treatment of OCD, problem-solving training, ways to decrease family accommodation and inadvertent reinforcement of the child's OCD symptoms, and learning strategies for facilitating and reinforcing the child's completion of exposure and response prevention and other therapy assignments—in short, parents are taught to be their child's "coach" or "therapist." A recent study by Barrett, Healy-Farrell, and March (2004) revealed that family-based CBT, administered in both individual family and group formats, results in greater reductions in OCD symptoms compared to wait-list control. Furthermore, a significantly greater percentage of children in the individual and group conditions no longer met criteria for an OCD diagnosis posttreatment (88% and 76%, respectively), compared to children in the wait-list condition (0%). Youth in the active treatment groups maintained these gains 18 months after treatment completion (Barrett, Farrell, Dadds, & Boulter, 2005). Another study compared family-based CBT, administered in an intensive (daily sessions for 3 weeks) versus weekly format, among children and adolescents with OCD (Storch, Geffken, Merlo, Mann, et al., 2007). At posttreatment, 75% of youth in the intensive group and 50% of youth in the weekly group no longer met criteria for an OCD diagnosis. At 3-month follow-up, 72% of youth in the intensive group and 77% in the weekly group did not meet diagnostic criteria for OCD. There were no statistically significant differences between groups in the majority of outcome variables suggesting the relative merits of both treatment schedules. Finally, a recent study examined the efficacy of 12 sessions of family-based CBT relative to relaxation training in 42 young children with OCD (5 to 8 years; Freeman et al., 2008). Among treatment completers, CBT was associated with a large effect size relative to relaxation training (d=.85) and 69% achieved clinical remission (versus 20% of the relaxation training arm).

These findings supporting the efficacy of CBT for pediatric OCD are encouraging. However, it is important to note that outcome studies examining the efficacy of CBT for pediatric OCD often have included only treatment naïve youth, while excluding those who failed to respond to a previous CBT trial or repeated SRI trials (e.g., POTS, 2004) or those who have previously been treated with medication or CBT for their OCD (Asbahr et al., 2005). Although these requirements hold some advantages in terms of standardization of treatment and participant characteristics, it is unclear whether findings of these studies would generalize to the substantial portion of youth with OCD who have been partial- or nonresponders to prior treatments. Notably, there is an ongoing multisite trial funded by the National Institutes of Health (Principal Investigators: John March, M.D., Martin Franklin, Ph.D., Jennifer Freeman, Ph.D.) that examines varied augmentation strategies of partial response to past SRI treatment (e.g., clomipramine, sertraline, fluoxetine, etc.) that was handled by community physicians. More specifically, this study examines the relative efficacy of gold-standard CBT (i.e., provided by

highly trained psychologists) in conjunction with continued medication treatment; diluted CBT (i.e., a brief form of psychotherapy provided by the prescribing psychiatrist that encourages cognitive-behavioral skills such as exposure) in conjunction with continued medication treatment; and continued medication treatment alone in youth who have been partial responders to an SRI. Participants were already on an SRI prior to study entry, with the duration of past SRI treatment ranging from a minimum of 12 weeks up to several years.

Intensive Family-Based, Cognitive-Behavioral Treatment Program for Pediatric OCD

Given the number of children and adolescents with OCD who do not respond adequately to psychotropic medications, our research group has been examining the feasibility and efficacy of CBT, administered in an intensive format, to treat youth who have been partial- or nonresponders to prior treatments. In particular, we developed an intensive treatment program for pediatric OCD in which patients and their families participate in 90-minute sessions every weekday for 3 to 4 weeks.

The intensive treatment format was chosen for its potential to address many of the limitations or barriers for other standard treatment modalities. For example, there currently is a lack of availability of mental health professionals trained in providing CBT for pediatric OCD. Therefore, there often are no providers who are in close enough proximity to youth with OCD to allow them to participate in therapy on a regular, once or twice weekly basis. However, with the intensive treatment format, patients and their families can have access to trained professionals by traveling to the treatment center and staying in the area (e.g., at a hotel, Ronald McDonald house) for a limited period of time. Although this does generate some expense, it typically is more cost-effective than specialized inpatient treatment or ineffective weekly outpatient treatment, and the cost of sustained impairment arguably is greater than that of intensive CBT. Similarly, this modality has considerably fewer "side effects" than psychotropic intervention and our preliminary data suggest good short-term durability of gains (Storch, Geffken, Merlo, Mann, et al., 2007). From a financial perspective, insurance companies typically prefer to pay for outpatient sessions, even if provided on an intensive, daily schedule, compared to funding inpatient treatment.[1] In addition, youth and their families typically prefer intensive outpatient to inpatient treatment, because youth are able to remain with their families throughout the week and they tend to view outpatient treatment as less invasive that inpatient treatment.

Furthermore, a substantial number of youth are so severely impaired by their OCD that they are no longer attending school or engaging in activities outside of the home. More frequent, intensive therapy sessions allow for quicker improvements in functioning, often with an earlier return to school and other activities, than CBT that is spread out across once-weekly sessions. In fact, some (Abramowitz et al., 2003; Storch et al., 2007) suggest that the frequent exposure practice that occurs during intensive treatment maximizes the learning of therapeutic concepts, but may not generalize to the home environment as well as gains made through traditional approaches. Thus, although the majority of individuals benefit from intensive CBT, maintaining treatment gains usually takes additional efforts (e.g., booster sessions).

Finally, participating in daily treatment for several weeks allows children and parents to focus their attention more exclusively on the treatment for OCD and on learning different, more adaptive behaviors that they can practice before returning to their home environment. Several parents at our clinic also have commented that the temporary change in living setting is helpful for their child and family. This is because it requires the child to leave the home and engage in activities outside of the home, and often it is easier to begin to modify maladaptive family and individual child behavioral patterns when outside of the setting in which these typically have occurred. At times, however, children present with resistance to treatment participation. We approach such situations by incorporating motivational interviewing components and/or behaviorally addressing symptoms through concurrent parent management training. A distinct benefit of intensive treatment is that it is more challenging for the child to "escape" from completing therapeutic tasks as there is a short between-session interval (versus in weekly sessions). Often, this results in "reluctant" child participants becoming more enthusiastic by virtue of early treatment success. On balance, however, intensive outpatient treatment is not appropriate for all individuals and may require residential intervention at one of several recognized OCD centers should marked conduct problems, depressive symptoms (i.e., active suicidality), or substance use be present.

Family-Based CBT: How Family Is Included

Our treatment protocol (described in Lewin et al., 2005, and Storch, Geffken, Merlo, Mann, et al., 2007) involves providing family-based CBT, administered in 90-minute sessions, every weekday for 3 weeks. Although there is flexibility in the duration of treatment when outside of a research protocol, we established the 3-week

[1] Notably, there are only several established programs in the United States that have a comprehensive program for treating OCD, making this option very difficult to implement.

duration based on optimizing efficacy/outcome while balancing the expenses of daily treatment and because the POTS (2004) protocol upon which ours is based lasts a total of 14 sessions.

With regards to the family component of treatment, there are a number of ways that caregivers (and other family members as appropriate) are integrated into treatment that differs from more traditional approaches with children and adolescents (the reader is referred to Freeman et al., 2003, for a review of family-based CBT for young children). First, at least one parent is required to be present at all sessions and parents are taught in detail about the nature of OCD. Parents are provided with information about common obsessive-compulsive symptoms, the cognitive-behavioral and basic neurobiological models, and what to expect from treatment. Our goal is for parents to be knowledgeable consumers about their child's disorder and the current, cutting-edge research. Second, and most important, parents are taught to be their child's "coach" or "therapist" so that they can guide their child in managing symptoms in their natural environment (e.g., home). This is accomplished by explaining to the parent(s) the rationale for certain therapeutic tasks (e.g., exposures), modeling correct implementation of the task, supervising parents in conducting the task, and, finally, providing corrective feedback. This process provides the opportunity to address both faulty implementation of therapeutic skills and parental anxiety that may interfere with therapeutic tasks through teaching the parent behavioral (e.g., relaxation, framing tasks as a behavioral experiment) and cognitive skills (e.g., restructuring anxious thoughts). Parents and children are encouraged to design their own in-session and homework activities (with therapist guidance), which we believe promotes homework compliance and generalization.

Third, family accommodation is actively targeted within the ritual hierarchy and otherwise from the early treatment stages. We believe that it is critical to coach parents on appropriate ways of negotiating accommodation as youth are often unwilling to curtail such behavior given its negative reinforcing properties. For example, when children involve their parents in reassurance seeking and confessing, we will guide them in methods of responding appropriately (e.g., ignoring, providing an answer that engenders uncertainty, etc.). This is accomplished by including the appropriate behavior on the ritual hierarchy with the corresponding anxiety level and addressing it once it is reached on the hierarchy. Similarly, when a child tackles an item on their hierarchy, we will also remove any associated accommodation. For example, one teenage male that we treated was fearful of his feces and had his mother clean him after a bowel movement. When we began challenging this symptom, we instructed the mother to not provide any assistance with cleaning him. Fourth, we are direct in addressing problematic family factors other than symptom accommodation. If a parent exhibits problematic psychopathology (e.g., their own OCD, depression) that affects treatment progress, appropriate treatment recommendations are made. Depending on the nature of the situation, this may involve addressing parent and child symptoms concurrently (e.g., treating both parent and child separately but concurrently), sequentially (e.g., treating father's OCD prior to the child's), or through conjoint family treatment.

Session-by-Session Content

At the first meeting, patients and their parents complete a semistructured diagnostic interview (i.e., Anxiety Disorders Interview Schedule for DSM-IV; Silverman & Albano, 1996) to assess for the presence of anxiety, mood, and other disorders and the CY-BOCS to determine the severity of OCD symptoms. Other measures of anxious, depressive, and externalizing symptoms are also administered, such as the Multidimensional Anxiety Scale for Children (March, Parker, Sullivan, Stallings, & Conners, 1997), the Children's Depression Inventory (Kovacs, 1992), and the Child Behavior Checklist (Achenbach, 1991). Family accommodation (e.g., reassurance seeking, hearing confessions, helping the child avoid feared situations, assisting the child in completing their ritual) is measured through behavioral observations during interactions with the family and with the Family Accommodation Scale (Calvocoressi et al., 1995), which has been previously used in pediatric OCD patients (e.g., Peris et al., 2008; Storch, Geffken, Merlo, Jacob, et al., 2007).

Initially, detailed information is obtained from the patient and parent about the child's specific OCD symptoms, including obsessions and compulsions, stimuli that frequently trigger these symptoms (e.g., objects, situations, thoughts), and commonly avoided objects or situations. Parents also are asked how they typically respond to their child's OCD behaviors, as well as their expressions of anxiety more generally. This is to assess for problematic parent-child and family interactions, such as accommodation of the child's OCD symptoms, provision of excessive reassurance, and parental overprotectiveness that may impede appropriate development of autonomy in the child.

Psychoeducation about the nature of CBT for OCD is a primary component of the initial sessions. Parents and children are educated about the nature of OCD, including the defining characteristics of obsessions and compulsions and how these concepts apply to the child's individual OCD symptoms. Children and parents are taught that anxiety is a normal aspect of human experience and can even be helpful as a warning signal of danger. However, it can become problematic if anxiety

is elicited by things that do not actually pose a legitimate threat and if the child engages in ineffective, detrimental strategies for coping with the anxiety (e.g., engaging in compulsions, avoidance). The functional relationship between obsessions, compulsions, and avoidance is explained. For example, the therapist discusses how obsessive thoughts elicit anxiety, and that persons with OCD engage in compulsions in an attempt to reduce this distress. However, the negative consequences of engaging in compulsions are emphasized, such as the time and effort they require, their disruptiveness to daily activities, and the fact that they provide only temporary relief, as the anxiety returns once the child again encounters triggers for the obsession. In addition, because the temporary reduction in anxiety as a result of engaging in the compulsions provides negative reinforcement, the child is more likely to engage in the compulsions again the next time an obsessive thought occurs, thus perpetuating a vicious cycle of obsessive-compulsive behaviors. Parents are encouraged to provide examples of this cycle in their child and are also "quizzed" in a supportive manner to ensure an adequate understanding of the model.

Next, the concept of exposure and response prevention is described, including the importance and utility of patients exposing themselves to anxiety-provoking stimuli while refraining from engaging in related compulsions, in order to allow their anxiety to habituate naturally without engaging in compulsions. This also provides them with the opportunity to learn that the catastrophic outcome that they might be expecting likely will not occur or, if some negative outcome does happen, that they are better able to handle it than they had expected. The therapist also explains that repeated exposure to the same type of anxiety-provoking situation follows a general pattern of lower levels of anxiety at the start of each subsequent exposure and a more rapid decrease in anxiety within each exposure. Children often are encouraged to think of a time in the past when they initially were anxious about engaging in some activity, but had pushed themselves to engage in the activity and subsequently experienced a reduction in anxiety and a sense of mastery, such as learning to swim, ride a bike, climb a tower, or ride a roller coaster. Often it is helpful to record the changes in anxiety that they recall experiencing during this example on a graph of anxiety level across time, in order to provide a visual representation of habituation across time and repeated exposures. Finally, it is emphasized that parents' degree of active participation in the treatment, as well as the amount of effort that the child and parents put forth into completion of both within-session activities and therapy homework between sessions, are directly related to the amount of progress that they will make in treatment. Targeting family accommodation is discussed by illustrating how accommodating behaviors actually reinforce symptoms and providing examples of how such behaviors will be addressed.

In the second session and as appropriate throughout treatment, patients are trained to engage in cognitive strategies for targeting obsession-related thoughts and beliefs, although the particular method is determined based on the child's developmental level. Older children are taught to implement cognitive restructuring techniques, including identifying irrational or maladaptive thoughts, evaluating the evidence that does and does not support these thoughts, and developing more helpful or balanced thoughts. More developmentally advanced youth also can be taught to identify "thinking errors" commonly associated with OCD, such as catastrophizing or taking undue responsibility for negative events, and to challenge these types of thoughts. Younger children are taught strategies for engaging in coping or constructive self-talk (e.g., March & Mulle, 1998), such as externalizing the OCD (e.g., giving it a unflattering nickname), attributing problematic behaviors to the OCD rather than to themselves (e.g., "That's just OCD trying to make me do this—I don't have to do what OCD says"), increasing the child's sense of self-efficacy for fighting back and "defeating" the OCD (e.g., "Go away, OCD—I'm not going to let you win!"), and coaching themselves through anxiety-provoking situations (e.g., "I know I feel really anxious right now, but if I just stick with it, I know my anxiety will start to go down"). In order to cope more adaptively with distress and to prevent their performance of OCD behaviors, children are instructed to implement these cognitive strategies when they feel anxious and when they feel at risk of engaging compulsions. Parents are taught to encourage the use of cognitive strategies by coaching the child to use them (and provide support through the process) and praising efforts to challenge symptoms. As well, we guide parents to use these skills when confronting their own anxiety, particularly in regards to upcoming therapeutic tasks that may cause discomfort (e.g., exposures, watching their child in distress).

During the third session, the therapist assists the child and parents in developing a list of anxiety-provoking activities or situations, or fear hierarchy, and the child is asked to rate how anxiety-provoking it would be to engage in each activity while refraining from engaging in related compulsions on a scale of 0 (*no anxiety*) to 10 (*extreme anxiety*). Since there are often differences in perceptions about symptom severity (Storch, Geffken, Merlo, Jacob, et al., 2007), both parents and children are involved in this process to ensure that all symptoms are accurately endorsed. It is important to identify items reflecting the full range of the scale, as children are exposed to anxiety-provoking stimuli in a graduated fashion, starting with items rated lower in anxiety, and gradually progressing to higher-anxiety items over the course of treatment. The

first exposure exercise typically is conducted in the third or fourth session and represents one of the easier items on the hierarchy. The child is assisted in exposing him- or herself to the anxiety-provoking situation while refraining from engaging in related compulsions. The therapist asks the child for his or her ratings of anxiety at regular intervals over the course of the exposure, and the exposure continues until the child's ratings of anxiety have decreased significantly (e.g., by 60% to 80%). This and similar exposures are repeated within session or between sessions for homework until the situation elicits only minimal anxiety for the child. Once children master an item in their hierarchy, they progress systematically to higher items in their hierarchy. Interestingly, the shorter between-session duration seems to translate into a more rapid ascension up the hierarchy relative to traditional weekly CBT. In part, this may be due to the large number of practice exposures that take place in a short period of time (i.e., a particular task is practiced in session several times, as well as repeatedly out of session as homework before presenting the next day). Many individuals have commented that they are surprised that they are completing some of their most challenging symptoms by the second week of treatment. Over the course of treatment, children and parents are encouraged to take on increasingly greater responsibility for selecting items for exposures and implementing them, with parents serving as coaches for their child during exposure exercises.

Contingency management strategies, including implementing a reward system for the child's completion of in-session activities and therapy homework assignments, often is helpful for increasing motivation and compliance with treatment recommendations. This appears particularly true for children who are not distressed by their own engagement in compulsions, do not perceive them to be a problem, or who believe that the potential negatives of engaging in the exposures (e.g., heightened anxiety) outweigh its benefits and who thus need additional incentive. At times, it may be appropriate to manage comorbid symptoms, such as disruptive behavior, in a sequential fashion prior to targeting obsessive-compulsive symptoms (Lehmkuhl, Storch, Rahman, Freeman, Geffken, & Murphy, 2009). However, when a child is unable to be engaged in treatment, more intensive efforts (i.e., residential care) may be warranted.

Although intensive treatment helps improve treatment access, generalization of skills is an important consideration. In Storch, Geffken, Merlo, Mann, et al. (2007), gains made during the acute treatment phase had a tendency to slightly diminish over the follow-up interval, whereas those subjects who received weekly treatment continued to make slight improvements. Given this, the final treatment sessions focus on reviewing treatment strategies (e.g., exposure, cognitive techniques), discussing the child and family's progress in treatment, and identifying potential difficulties or obstacles that may occur in the future and strategies for managing these situations. This includes discussion of ways to facilitate generalization of gains made in treatment to the child's home environment, such as identifying specific exposures for the child to implement when returning home and reviewing cognitive coping strategies. In addition, the natural course of OCD is discussed, including how stress typically exacerbates symptoms and specific warning signs that the child may be experiencing a relapse and that action should be taken to prevent a worsening in symptoms. Plans for booster sessions and follow-up care also are arranged, either at our clinic or with a provider closer to their home who is trained in CBT. If either of these is not feasible, we may arrange for patients to have regular phone contacts with our clinic. Overall, our experiences indicate that follow-up care is tremendously beneficial in most instances to ensure a smooth transition. Because so much effort has been placed into training parents and children to be CBT experts/coaches, families often comment on how they were able to guide less experienced therapists in follow-up care (e.g., doing specific exposures). Finally, patients and their parents complete posttreatment diagnostic assessments and measures of symptom severity to assess treatment outcome. We provide feedback based on these results of areas that require further attention, as well as the overall progress made.

Support for the Efficacy of Intensive CBT for Pediatric OCD With an Inadequate Response to Medication

Preliminary research has begun to examine the efficacy of CBT in treating OCD that has had inadequate response to psychotropic medications. Although there currently is a paucity of research in this area, a previous study (Tolin, Maltby, Diefenbach, Hannan, & Worhunsky, 2004) examined the efficacy of CBT in treating 15 adults with OCD with a history of inadequate response to medication (i.e., a minimum of two adequate trials of SRIs) using a wait-list controlled open trial. They found that participants who completed treatment experienced a 40% decrease in the severity of OCD symptoms at posttreatment, and that 67% were classified as treatment responders (i.e., *much improved* or *very much improved* in terms of global illness ratings). Treatment gains generally were maintained up to 6 months after treatment. Recently, Simpson and colleagues (2008) examined whether ERP was more effective than stress management training for adult OCD patients who remained symptomatic after past SRI therapy. Overall, effect sizes were large relative to the SMT arm (d=1.31), with 74% of the ERP group being classified as treatment responders versus only 22% of the SMT arm.

Preliminary research with children and adolescents, although also limited, suggests that CBT may be an effica-

cious treatment for those who have had inadequate response to psychotropic medication. For example, although they did not examine this question directly, Franklin et al. (1998) included, among their sample of 14 youth with OCD, 8 youth who were taking medication prior to beginning CBT as part of an open trial investigation. Among their total sample, they found that OCD symptom severity decreased following CBT by an average of 67%. Franklin and colleagues noted that youth who had taken medication and those who had not both responded favorably to the CBT intervention (although this could not be evaluated statistically due to the limited sample size). Similarly, another study (Storch, Geffken, Merlo, Mann, et al., 2007), which examined the efficacy of family-based CBT administered in intensive versus weekly formats, included 24 (out of 40) youth who were currently stabilized on medication. Results revealed no statistically significant differences in treatment outcomes between youth concurrently taking medication versus those not taking medication. A study by de Haan et al. (1998) also provides some indirect support for the efficacy of ERP for youth who have had inadequate response to prior treatment. They compared the efficacy of ERP versus clomipramine for treating 23 children and adolescents with OCD who were randomly assigned to one of the two treatments. They found that ERP was superior to clomipramine in terms of OCD symptom reduction after 12 weeks of treatment. After this time, five youth who had had an inadequate response to their initial treatment modality were administered a combination of ERP and clomipramine for the subsequent 12 weeks. Results indicated that the additional combination treatment resulted in an average reduction in OCD symptoms of 38% compared to pretreatment symptoms and 30% compared to when they concluded the initial treatment period. However, as noted by de Haan and colleagues, due to the uncontrolled nature of the study design, it is unclear whether these gains were due to administration of the combined ERP and clomipramine or to the extended treatment time period, and conclusions are limited by the small sample size.

Our research group has begun to examine the efficacy of our intensive CBT protocol to treat pediatric OCD that has been partially- or non-responsive to prior psychotropic treatment. Initially, we conducted an open trial of CBT among 5 youth, ranging in age from 4 to 14 years, presenting with a primary diagnosis of OCD that had had an inadequate response to one or more prior medications (Storch, Bagner, et al., 2007). After 3 weeks of daily intensive CBT, their average scores on the CY-BOCS Total Severity scale decreased from 32.0 at pretreatment to 11.2 posttreatment, and all participants were determined to be treatment responders (i.e., *much improved* or *very much improved*). Given the promising results of this initial trial, we conducted a subsequent study examining the efficacy of our intensive CBT program among 30 youth, ranging in age from 7 to 19 years, who presented for intensive treatment (Storch, Marien, et al., 2007). These youth had a primary diagnosis of OCD and a history of two or more failed trials of SRIs and/or an SRI augmented with an atypical antipsychotic. Results indicated that OCD symptom severity decreased by an average of 54% from pre- to posttreatment, and that these improvements were maintained at 3-month follow-up. In addition, the majority of youth were determined to be treatment responders (i.e., *much improved* or *very much improved* in terms of severity of psychopathology) at posttreatment (83.3%) and the 3-month follow-up (73.3%).

Taken together, these findings indicate that CBT holds strong promise as a treatment modality for children and adolescents who have had limited response to psychotropic medications. Youth with OCD who have a history of inadequate response to medication generally appear to respond well to CBT and to maintain their treatment gains over time. Thus, although individuals who do not respond favorably to multiple psychotropic medications often are referred to as "treatment resistant," it appears that this may not be an accurate label for some youth with OCD who have not yet received a trial of CBT. This is consistent with our experiences at our intensive treatment program for OCD as the majority of children and adolescents have a history of multiple trials of SRIs or other medications (and non-CBT psychotherapy), but nevertheless experience a substantial reduction in their symptoms following CBT. The following section describes a case example of an adolescent girl with a history of inadequate response to medication who was treated in our intensive, family-based CBT program.

Case Study

Sarah was a 13-year-old girl who presented to our clinic with severe symptoms of OCD (34 on the CY-BOCS Total Severity Scale). In addition to a primary diagnosis of OCD, she received a diagnosis of Major Depressive Disorder, Recurrent, Generalized Anxiety Disorder, and Attention-Deficit Hyperactivity Disorder on the ADIS-IV-Parent Version and through a clinical interview with an experienced clinical child psychologist. Sarah's parents were divorced, and her mother attended all treatment sessions with her as she was the primary caregiver. Sarah and her mother lived approximately 2 hours from our clinic and chose to stay in a local hotel during treatment. Sarah's mother reported that Sarah's obsessive-compulsive symptoms had a relatively acute onset approximately 2 years prior to presenting at our clinic. She had been diagnosed with OCD by a child psychiatrist and had been prescribed several psychotropic medications in the past, including the following medications (with the highest

dosages taken and symptoms targeted by the medication in parentheses): sertraline (25 mg; obsessive-compulsive, depressive, and anxious symptoms), bupropion (dosage unknown; depressive symptoms), alprazolam (maximum of 2 mg daily; anxiety symptoms), and methylphenidate (27 mg; inattention and hyperactivity)). From parent report, Sarah exhibited very little benefit from sertraline and buproprion on either OCD or depressive symptoms, and had experienced worsening of symptoms with bupropion. Although some benefit was noted with methylphenidate on inattention, alprazolam was associated with significant sedation. It was unclear why methylphenidate was discontinued. Throughout the course of therapy, Sarah was taking fluoxetine (20 mg; obsessive-compulsive, depressive, and anxious symptoms), clonazepam (.25 mg twice daily; anxiety symptoms), and quetiapine fumarate (25 mg in morning and 50 mg in evening; obsessive-compulsive symptoms). Notably, her prescribing psychiatrist was hesitant to increase her fluoxetine dosage due to fears about symptom worsening—it is quite conceivable that the low medication dosage was associated with limited therapeutic response. Sarah also had participated in several weekly sessions of supportive therapy within the past year, although she had not received any CBT. Although such sessions did not incorporate structured CBT mechanisms, they did include suggestions to resist rituals. However, the weekly format of sessions allowed Sarah to delay and usually escape from engaging in any anxiety-provoking tasks. Based on maternal report, Sarah's inattentiveness also affected her ability to relate in an unstructured manner as she struggled to maintain attention to the therapist's comments and implement therapeutic tasks independently. Sarah and her mother reported a worsening of her symptoms with some medications (e.g., bupropion). Overall, these treatments had limited impact on her symptoms.

Sarah's primary obsessions centered around sexual themes, and she experienced intrusive images of naked people (e.g., family members, strangers), people engaging in sexual behaviors, and fears that she may be homosexual. These obsessions evoked significant distress for her, and she engaged in a number of compulsions in an attempt to alleviate her anxiety, including confessing her thoughts to her mother (both in person and by telephone), seeking reassurance from her mother that she was not a bad person for having these thoughts and that she was not homosexual, and engaging in certain behaviors in an attempt to distract herself from having these thoughts (e.g., mentally reciting nursery rhymes). In addition, she frequently avoided situations and objects that tended to trigger these obsessive thoughts, including watching movies or television shows that potentially could contain romantic scenes, looking at magazines that might contain pictures of people in revealing clothing, going to places where she might see people dressed in such clothing (e.g., beaches, the mall), interacting with people dressed in revealing clothing (e.g., those wearing short skirts), and avoiding family members when obsessive images were particularly severe.

Sarah also had perfectionistic standards for herself, particularly regarding schoolwork, and experienced obsessions reflecting a "just right" theme. For example, when telling a story, she believed that she must always relay the details accurately and in an overly thorough manner. In addition, she demonstrated an overly rigid adherence to schedules, required that her mother tell her the schedule of activities for the day, and would become quite upset if changes were made to this plan. Finally, Sarah experienced intrusive thoughts of swear words and a subsequent fear that she might say them aloud in public at inopportune times, which she found to be quite disturbing. As is common for family members of children with OCD, Sarah's mother engaged in significant accommodation of Sarah's symptoms, such as attempting to follow their daily schedule without modification and taking Sarah's frequent phone calls (typically 3 to 4 calls per day) and providing reassurance, even when Sarah was calling from school. Although Sarah's OCD symptoms affected her concentration at school, she was able to maintain adequate grades, got along well with her peers, and had several close friends.

The first and second sessions were spent providing psychoeducation regarding the nature of OCD, as well as the definitions of obsessions and compulsions, and Sarah was encouraged to provide examples of her own obsessions and compulsions. The concept of OCD as a problem that causes difficulty in the "volume control" of thoughts was discussed. In addition, the rationale and procedure for CBT and ERP for OCD was described. As Sarah was a swimmer, the function of exposures was discussed in relation to her experience with previous swim meet competitions. Sarah reported that she was quite anxious immediately before swimming in her first swim meet, but that her anxiety had decreased over the course of the swim, as well as with each subsequent swim meet competition. It is worth noting that although adolescence is a time of growing autonomy and desire for privacy, Sarah was comfortable with her mother's inclusion in the entirety of sessions. Indeed, her mother was aware of Sarah's fears given that Sarah sought reassurance frequently and confided in her. However, this approach may not be advisable in all cases given age-appropriate developmental needs.

During the second session and thereafter, the therapist assisted Sarah in identifying OCD-related dysfunctional thoughts and beliefs. For example, Sarah reported dysfunctional beliefs that if she thinks a woman is

attractive or experiences an intrusive image of a woman naked, that she is a "bad person" or must be homosexual, and she was guided in evaluating the evidence that does and does not support these thoughts, as well as identifying more helpful or balanced thoughts. In addition, relevant cognitive (i.e., "thinking") errors were discussed, including beliefs that she must always have control over her thoughts and that this is even possible, that just because she has a recurrent thought it must be true or meaningful, and that having sexual thoughts is abnormal or bad. In particular, it was emphasized to her that it is not the thoughts or images that are problematic per se, but rather her beliefs about having them. In addition, Sarah was encouraged to "talk back" to the OCD monster (her nickname for OCD), in order to help her to externalize the OCD and gain a greater sense of control and self-competence, such as by saying that OCD cannot tell her what to do and that she is stronger than the OCD. Given Sarah's high level of anxiety, we worked with the family to develop a point-reward system in which Sarah could earn privileges for her efforts at completing assignments. Points were awarded for efforts to use therapeutic skills (not necessarily with success) and she was able to redeem points for preferred, consumable activities/items (e.g., special time with mom, getting an ice cream, renting a movie). Her mother also was instructed in other strategies to facilitate Sarah's progress, such as providing praise and positive attention for Sarah's more adaptive, "brave" behaviors, and ignoring complaining and excessive reassurance-seeking behaviors, and these strategies were practiced in session when applicable as well.

The therapist, Sarah, and her mother then identified items to include in Sarah's exposure hierarchy. Examples of hierarchy items included watching certain movies containing sexual themes (e.g., *Dirty Dancing*), looking at pictures of people wearing revealing clothing (e.g., Victoria's Secret catalogue, fashion magazines), placing herself in situations in which she might encounter people wearing revealing clothing (e.g., sitting across from someone wearing a short skirt or low-cut shirt in a waiting area of the hospital), allowing her mother to make unplanned changes to her schedule, not being told ahead of time the schedule for the day, making mistakes or doing things imperfectly on purpose (e.g., spelling a certain number or words wrong on her spelling homework assignments, using ugly colors and drawing outside of the lines in a coloring book and hanging it up in the clinic hallway), and telling a story about a past event to the therapist and her mother while purposely leaving out important details and changing several of the details to be incorrect. After items appearing to reflect the full range of difficulty and distress levels were identified, Sarah was asked to rate each hierarchy item on a scale of 0 (*no anxiety*) to 10 (*extreme anxiety*). Sarah and her mother were encouraged to think of additional items that might be important to include in her exposure hierarchy for therapy homework.

After creating her hierarchy, Sarah was assisted in selecting her first exposure activity, which was to write a list of "cuss" words and read aloud this list repeatedly in front of her therapist and mother. Prior to initiation of this exposure, and as appropriate through therapy, Sarah and her mother were educated that: (a) attempts to suppress intrusive thoughts actually have a paradoxical effect, resulting in increased frequency of such intrusions; (b) being exposed to an anxiety-provoking stimuli repeatedly would result in less related anxiety with subsequent exposures, thereby severing the connection with the "cuss" word and resultant anxiety; and (c) everyone has intrusive thoughts but it is the meaning made of such thoughts that result in distress or other emotions. If the stimuli is held as "taboo" or "bad," Sarah would experience distress; rather, if the stimuli is considered simply a noise without a particular meaning, less anxiety would be experienced. Sarah initially had assigned this a distress rating of 4. During the exposure, Sarah reported that her distress rating peaked at 9 and decreased to 1 over the course of approximately 25 minutes. After the exposure, we discussed the importance of Sarah not engaging in any compulsions later in attempt to make up for completing the exposure (e.g., apologizing to or seeking reassurance from her mother), as well as ways her mother should respond if Sarah did engage in these types of behaviors (e.g., refraining from providing reassurance, selectively ignoring these behaviors). For homework, Sarah agreed to telephone and practice saying the cuss words aloud to her grandmother (after Sarah's mother had telephoned and explained the assignment to Sarah's grandmother), as well as to repeat writing them down and reading them aloud to her mother. Although Sarah was rather anxious overall, she was eager to comply with homework assignments, which was likely due both to the rapport she had with the treatment team and the point-reward system.

The next several sessions were spent with Sarah engaging in exposures from her hierarchy to which she had assigned mild to moderate distress ratings, particularly those relating to perfectionism, excessive focus on accuracy and thoroughness, fears of impulsively saying inappropriate things aloud in front of others, and overly rigid adherence to schedules. After Sarah was able to engage in these exposures with minimal anxiety, she began engaging in exposures to which she had assigned moderately high to high distress ratings. These exposures primarily related to confronting objects and situations that typically triggered intrusive sexual thoughts and images. The first exposure relating to this topic involved

having Sarah look at a magazine picture of a woman in a low-cut blouse. Sarah initially was reluctant to engage in the exposure and avoided looking at the picture. However, the therapist facilitated her exposure to the picture by asking Sarah to describe other aspects of the picture first, then gradually asking Sarah questions to describe the woman, what she was wearing, and the intrusive thoughts that Sarah experienced while looking at the picture, in order to facilitate Sarah's full exposure to the feared object. Throughout these sessions, Sarah's mother was "trained" to devise and implement ERP tasks with therapist guidance and feedback as appropriate. Importantly, this enabled her to create a continuous therapeutic environment where she was able to help Sarah challenge symptoms as they arose in the natural environment.

Over the course of treatment, Sarah was able to progress to items at the top of her exposure hierarchy and eventually complete them with minimal anxiety. In part, this success was due to the massed ERP practice characteristic of intensive CBT, which allowed her to challenge symptoms systematically but in rapid succession. As well, the short spacing between sessions together with the contingency symptom prevented Sarah from avoiding homework completion as she knew she would be held accountable the following session. At her final session, Sarah and her mother reported that that Sarah's general anxiety, obsessive thoughts, confessing, reassurance-seeking, avoidance, and compulsive behaviors had decreased considerably. Sarah reported that she felt more comfortable when she encountered sexual themes in her daily life (e.g., TV shows, magazines, public displays of affection), and that she felt more comfortable with talking about appropriate sexual topics overall. Her mother also noted that Sarah had begun to take greater responsibility for engaging in exposures herself. Consistent with their perceptions, Sarah's CY-BOCS Total Severity score had decreased to 16, indicating moderate levels of OCD symptoms. As this was her last session of intensive treatment, we reviewed the typical course of OCD, as well as ways to continue to maintain treatment gains and address any recurrence of symptoms. Sarah and her mother were praised for their efforts and accomplishments in therapy. They expressed interest in returning for a booster session in 1 month, in order to help them to maintain treatment gains and address any new symptoms or challenges that might arise. At the booster session, Sarah and her mother reported that she had continued to maintain her treatment gains and to implement the skills learned in therapy as needed. They were encouraged to call our clinic to schedule another booster session they were interested in doing so in the future. A follow-up assessment conducted 4 1/2 months after the end of intensive treatment indicated that Sarah's CY-BOCS Total Severity score had decreased further to 7, indicating mild levels of OCD symptoms.

Conclusions

Currently, CBT is widely considered to be the first-line treatment of choice for pediatric OCD (POTS, 2004), as reflected in expert consensus guidelines for the disorder (March et al., 1997). However, given insufficient availability of mental health providers trained in the provision of CBT for OCD at this time, together with the widespread availability of psychotropic medications, youth with OCD often are treated with medication or non-evidence-based psychotherapy rather than CBT. Although SRI medications have been found to be effective in reducing OCD symptoms, a substantial number of youth experience an inadequate response to medication alone or adverse side effects requiring that the medication be discontinued. Further, some factors may contribute to poor medication response (e.g., tic or disruptive behavior comorbidity; Ginsburg, Kingery, Drake, & Grados, 2008),[2] and it is not uncommon for youth to undergo several trials of different medications without an adequate response. Although such individuals often are referred to as "treatment resistant," some of these youth may respond favorably to CBT. In particular, preliminary research indicates that youth treated with intensive CBT tend to experience a significant decrease in OCD symptoms and, although further work in this area is needed, suggests that they maintain treatment gains over time. It is possible that family-based CBT holds particular promise for treating children and adolescents with OCD, particularly those with severe, impairing symptoms or an inadequate response to medication. It must be kept in mind, however, that there are no randomized studies directly comparing family-based CBT to individually oriented CBT where parents play a less salient role; thus, it is unclear if a family approach has incremental efficacy above and beyond traditional approaches. Considering Kendall et al. 's (2008) findings that family-based CBT for non-OCD childhood anxiety disorders was particularly useful in the presence of parental anxiety, it may be that the family component incorporated into treatment needs to be specifically tailored to the family psychopathology commonly seen in pediatric OCD (e.g., accommodation, parental anxiety/OCD, expressed emotion, etc.; Renshaw, Steketee, & Chambless, 2005). Given that OCD is a disorder that frequently results in significant impairment and distress among youth and their family

[2] On balance, a number of factors have been related to negative CBT response including comorbidity (i.e., disruptive behavior, depression, ADHD; Storch et al., 2008), family dysfunction, and baseline OCD symptom severity (Ginsburg et al., 2008).

members, the current focus on development and evaluation of efficacious treatments for the disorder is encouraging, as it likely will positively impact the lives of a substantial number of youth and their families.

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