

Cognitive-Behavioral Family Treatment of Childhood Obsessive-Compulsive Disorder:

Preliminary Findings

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The effectiveness of a 14-week cognitive-behavioral family treatment protocol for childhood obsessive-compulsive disorder (OCD) was piloted using a volunteer sample of seven children aged 10-14 years. The primary outcome measures were diagnostic status, symptom severity, and global functioning which were assessed at pre- and post-treatment, and at three-month follow-up. A series of self-report measures assessing obsessive-compulsive symptomatology, depression, and family factors were also completed at pre- and post-treatment. The results indicated that six participants no longer met criteria for OCD at post-treatment, with a mean reduction of 60% in symptom severity. Self-reported obsessive-compulsive symptomatology and family involvement in the disorder also significantly decreased across time. The findings support the efficacy of cognitive-behavioral treatment with a structured family component for childhood OCD. Further research investigating the comparative efficacy of treatment with and without family involvement is warranted.

Recent epidemiological studies estimate that approximately one in every two hundred children and adolescents is affected by obsessive-compulsive disorder (OCD) (1-3). OCD is a debilitating condition that often has a profoundly negative effect on family relationships (4), peer friendships (5), and academic performance (6). Despite the interference caused by the disorder, fewer than 20% of young people receive treatment (2), and the majority of these cases are often misdiagnosed with depression or other anxiety disorders.

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Whilst substantial gains in knowledge have been made in research of adult OCD, comparatively little is known about children with this disorder, particularly with regard to familial factors and treatment efficacy (7). It is important to acknowledge that children develop within the context of a family and that treatment should reflect this fact. Family-focused interventions that target specific psychosocial factors, such as family involvement in the obsessive-compulsive symptoms, are likely to be more effective and be associated with increased treatment durability than interventions that target the child as an individual.

Several arguments can be put forward for involving families in the treatment of childhood OCD. First, high levels of involvement in the obsessive-compulsive symptoms have been reported in families with an affected member. Accommodation of the OCD behavior through assistance with rituals, giving reassurance, and facilitating avoidance of feared stimuli is widely recognized as reinforcing and maintaining the symptoms. These behaviors can be directly targeted in family-based treatment. Second, high levels of hostility and criticism have been associated with poor treatment outcome and relapse in adults with OCD (8-10). Interventions aimed at modifying family-interaction patterns may increase the efficacy of treatment and assist in the maintenance of gains. Third, the rates of diagnosis of OCD in family members are higher than the general population. Hence, strategies taught to the affected person in treatment may have a secondary benefit to others in the family who may be struggling with obsessional symptoms.

In a review by March (11), 11 studies, identified from 32 behavioral treatments for children and adolescents with OCD, included the parents in the implementation of extinction or response-prevention strategies. All of these studies were either case reports or single case studies (e.g., 12-14). The results of these uncontrolled investigations tend to support parental involvement in the treatment of children. A small number of recent studies have specifically included parents in cognitive-behavioral interventions for childhood OCD.

Piacentini et al. (15) reported on the efficacy of concurrent family treatment with three children aged 9, 12, and 13 years. Therapy consisted of 10 two-hour weekly sessions divided into individual and family components. The family meetings involved the parents, the child, and two therapists. The main topics of the family component were: 1. psychoeducation about OCD, 2. differential reinforcement of behavior, 3. reducing parental involvement in the obsessive-compulsive symptoms, and 4. increasing positive family interactions. Two of the cases demonstrated

obvious improvement in symptom severity at post-treatment while the third case responded poorly to the intervention, most likely due to comorbidity (separation anxiety and oppositional-defiant disorder) and a hostile family environment. The authors asserted that the addition of the family component contributed to improved outcome and increased treatment compliance.

In a larger trial, 42 children and adolescents with OCD, aged 5 to 17 years, completed a manualized treatment protocol adapted from Piacentini et al. (15,16). The majority of participants received the family component, although exact numbers are not given. Furthermore, this component was not systematically administered to all families. While all families completed the topics of psychoeducation and general disengagement from the child's symptoms, only those who presented with moderate to high levels of conflict and/or disruption completed the entire family component. The results at post-treatment indicated that almost four in every five participants were classified as responders with a clinician rating of at least "much improved."

Utilizing a multiple-baseline design, Knox, Albano and Barlow (17) investigated the contribution of parents to the individual cognitive-behavioral treatment of four children diagnosed with primary OCD. Outcome was assessed by changes in clinical severity ratings, scores on the Leyton Obsessional Inventory-Child Version (LOI-CV) (2), and parent- and child-monitored compulsive behaviors. Treatment initiation was staggered across time for the children and began with therapist-assisted imaginal and in vivo E/RP tri-weekly for four weeks. The parental component of the treatment consisted of psychoeducation and the application of home-based E/RP. Parents also received training in differential reinforcement techniques aimed at ignoring the compulsions and requests for assistance or for reassurance and reinforcing adaptive coping strategies. At the conclusion of treatment, six maintenance sessions focusing on relapse prevention were initiated involving both the child and the parents. The functional relationships between the child's symptoms and the treatment techniques were outlined and any concerns addressed.

The results indicated that the parent component was an important and potentially necessary part of the treatment of OCD in children. The results generally showed that E/RP alone resulted in little or no change in the frequency of compulsions (with one child's increasing markedly), whilst E/RP applied by the parents saw eventual improvements in all four children. Two children received no diagnosis at 12-month follow-up, one had features of the disorder, and one had worsened in terms of clinical

severity. This last child was described as not complying fully with the treatment regime and engaging in extensive overt behavioral avoidance during exposure tasks. Three of the children's scores on the LOI-CV for all three scales at 12-month follow-up were less than scores at pre-treatment, although no statistical comparisons could be made due to the small sample. The fourth child demonstrated a reduction on frequency and resistance, but a marked increase in ratings of interference. The authors observed that the two children who benefited most from the intervention had fairly simple diagnostic pictures, whilst the other two presented with comorbid diagnoses, including ADHD and dysthymia, respectively.

Whilst the findings of these treatment studies take the first step towards investigating the contribution of parental involvement to the treatment process, the small sample size and methodological limitations prevent us from drawing definitive conclusions based on the data. However, the findings do provide support for the utility of future research into the efficacy of family-assisted treatment for childhood OCD. Possible targets for intervention with parents could include attitudes toward OCD, parental obsessive-compulsive behaviors, and, most importantly, family accommodation.

Given the possible reciprocal influence of the family's behavior and the child's obsessive-compulsive symptomatology, it seems intuitively reasonable to assume that the most effective intervention with young people will involve the parents. If the family's responses to the symptoms are directly or indirectly contributing to their maintenance, then education on how to respond appropriately is likely to have a positive impact. Furthermore, if the symptoms have contributed to conflict between family members, the active involvement of parents and siblings aimed at developing a shared understanding, and a team approach to fighting the disorder, may serve to reduce overt hostility towards the child and empower the family.

The present study investigates the efficacy of a 14-week cognitive-behavioral intervention with a structured parent-skills-training component for children and adolescents with OCD. The following modules are included in this component: 1. forming a supportive team, 2. psychoeducation, 3. differential reinforcement of behavior, 4. parental participation in child relaxation training, 5. reduction of family accommodation, 6. parental anxiety management, 7. encouragement of family support of exposure and response prevention, and 8. problem-solving skills training. Treatment outcome is measured on several dependent variables, including diagnostic status, symptom severity, global functioning, and level of family

accommodation. Self-reported obsessive-compulsive symptomatology and depression are also assessed.

METHOD

Participants

Participants were referred to Griffith University from community mental health agencies and via parents following media announcements in community newspapers. Ten subjects between 10 and 14 years of age meeting DSM-IV criteria for OCD were included in the study. The Anxiety Disorders Interview Schedule for Children (18) was used to assign the diagnosis of OCD. The children and parents were interviewed separately by trained interviewers who independently judged the children's diagnostic status. This interview is widely used in the assessment of childhood OCD and has sound psychometric properties (19). Disagreements in diagnostic status were resolved by a third supervising clinician after a discussion of the presenting symptoms. Exclusionary criteria included diagnoses of Tourette's Syndrome, schizophrenia, primary major depression or other anxiety disorder, organic mental disorder, and mental retardation.

Diagnostic severity was broadly assessed using the NIMH Global Severity Scale which rates the clinical presentation from 1 (normal) to 12 (extreme) (20). Participants who scored 7 (moderate) or above on this scale were included in the study. The Children's Global Assessment Scale (21) was used to assess general-functioning and symptom impairment. Scores range from 1 (needing constant supervision) to 100 (superior) and are based on clinical judgment. Healthy functioning is represented by scores above 70. The CGAS has demonstrated inter-rater reliability and validity (21). Participants scoring 70 or below, indicative of impaired functioning, were included in the study. Thus, in addition to meeting diagnostic criteria for OCD, participants also had to exhibit symptoms of at least moderate severity with interference in daily functioning.

The sample at the beginning of treatment consisted of ten children, four girls and six boys, aged between 10 years 1 month and 14 years 1 month. Therapy was implemented by three psychologists (2 females, 1 male). The male therapist treated three participants (1 withdrawal), the two female therapists treated four participants (no dropouts) and three participants (2 dropouts), respectively. One child was withdrawn from the study after demonstrating an escalation in the frequency and intensity of aggressive behavior following the cessation of medication. Two other children dropped out of the study citing distance to travel and parent-child

conflict over treatment attendance, respectively. The final sample consisted of 7 children aged between 10 years 1 month and 13 years 2 months who completed all the assessment and treatment phases.

ASSESSMENT

The Children's Yale-Brown Obsessive-Compulsive Scale was used to assess symptoms. The presence of specific obsessive-compulsive symptoms was screened using the 20-item Multidimensional Anxiety Scale for Children Obsessive-Compulsive Screen (MASC OC-Screen). The Children's Depression Inventory (22) is a 27-item questionnaire assessing various symptoms of depression.

The McMaster Family Assessment Device was used to assess family functioning (23). Family involvement in the child's symptoms and modification of parental and family routines as a consequence of the OCD was assessed using the pilot version of the Family Accommodation Scale for Obsessive-Compulsive Disorder (24).

PROCEDURE

Following referral, participants were first interviewed over the telephone to screen for obsessive-compulsive symptomatology. Eligible participants were sent a screening package of questionnaires, including the MASC OC-Screen and CDI. Following screening, a diagnostic interview in the clinic was scheduled ($n = 17$). Children and their parents signed consent forms before completing the ADIS-C and ADIS-P in separate interviews. The CY-BOCS was also administered in a joint session with the parents and child. Each family meeting inclusion and exclusion criteria for the study ($n = 10$) were given a package of self-report questionnaires to complete before beginning treatment. Those participants not eligible for the study were referred to appropriate agencies, if deemed necessary.

Treatment was initiated within two weeks of completing the assessment protocol and continued for 14 weekly sessions lasting approximately 90 minutes each. Maintenance of treatment gains was assessed at the end of a 3-month follow-up. The diagnostic interview and CY-BOCS were administered at pre- and post-treatment, and three-month follow-up. Ratings on the CGAS and NIMH Global Severity Scale were also assigned at each assessment point by the interviewer of the parental ADIS. The diagnostic interviews at pre-treatment were conducted by the therapists; at post-treatment and follow-up these were administered by two postgraduate psychology students who were not involved in the treatment program. The CY-BOCS was conducted by the assigned therapist at each assessment

point. Participants completed the self-report questionnaire package at pre- and post-treatment. A consumer-satisfaction measure was included at post-treatment to assess parent and child perceptions of the therapist and the level of progress achieved as a result of the program. The MASC OC-Screen and CDI were also completed at follow-up. Parent reports of the child's and parent's coping with the obsessive-compulsive symptoms were assessed each week.

Treatment Protocol

Treatment consisted of two components: individual cognitive-behavioral therapy based on the protocol developed by March and colleagues (25,26) and parallel parent-skills training modules that were specifically designed for this study. The combined program was referred to by the acronym POWER representing "Positively Overcoming Worries and Excessive Rituals." A unique component of this program was the development of Child (8 to 11 years), Youth (12 to 14 years), and Parent Workbooks. These were designed to present the information and materials for each treatment session and provide self-report forms to record homework tasks and progress. The parents and children brought these workbooks to each session.

The majority of sessions were divided into three parts as follows: individual therapy with the child (45 minutes), parent-skills training (30 minutes), and a family review of homework goals (15 minutes). The exceptions to this structure were weeks 1, 5, 12, 13, and 14 that consisted of joint sessions with the child and parent/s instead of the parent-training component

Individual CBT Sessions.

The child sessions were adapted from an unpublished manual by March, Foa, Franklin, & Kozak. It can be broadly summarized in four steps: 1. psychoeducation (session 1), 2. cognitive training and anxiety management training (sessions 2 to 5), 3. developing the stimulus hierarchy for each symptom (sessions 2 to 6), and 4. graded exposure and response prevention (sessions 6 to 14). These steps have been outlined in more detail in March, Mulle, and Herbel (26).

Parent-Skills Training.

The parent-skills training component emphasizes the involvement of parents in the treatment process. The primary aims are to create an "expert team" with the parents, child, and therapist; to provide psychoeducation about OCD and its treatment; to reduce parental involvement in the

child's symptoms; to encourage family support of home-based exposure and response-prevention trials; and to increase problem-solving skills.

The first six sessions are devoted to explaining OCD, the treatment rationale, and outlining the treatment. This includes exploring the nature of OCD and correcting any misinformation parents may have about the disorder and/or their role in it. The cognitive-behavioral formulation of OCD treatment is described and the relevant cognitive, affective, and behavioral strategies explained. Blame reduction with the parents is also targeted. Two behavioral strategies for dealing with the child's symptoms are introduced: differential reinforcement of behavior and praise, specific to the child's action. With the aim of reducing excessive anxiety and increasing perceptions of coping, parents are encouraged to ignore minor anxieties and praise functional and adaptive behaviors in the child.

Sessions 7 through 9 focus on the interaction between the parents' behavior and the child's obsessive-compulsive symptomatology. First, parents are taught anxiety-management skills to assist them in dealing with the stress and anxiety associated with observing or being drawn into the child's rituals. This session reinforces the family relaxation-skills training presented in session 5. Additional techniques include positive imagery, time out, and worry time. Second, parental involvement in the child's symptoms, including reassurance and direct assistance, is targeted. In collaboration with the child, a parental response is chosen with the aim of withdrawing the parents' often unwitting reinforcement of the OCD behaviors. Depending on the presenting problem, a new target response may be selected in each of the following weeks. Last, the effect of OCD on family functioning is explored and the importance of maintaining routines is emphasized.

Sessions 10, 11, and 12 teach problem-solving skills and encourage the direct application of these skills to both general behavior and OCD problems. A simple model of problem solving is first introduced: 1. defining the problem, 2. brainstorming possible solutions, 3. evaluating each solution, 4. choosing a solution, 5. implementing solution, and 6. evaluating outcome of solution. This model is applied to both a general behavior problem (e.g., household chores) and then, in collaboration with the child, to an OCD-related problem. The aim of this component is to teach the family skills for dealing with future lapses, if necessary.

Sessions 13 and 14 are joint sessions focusing on relapse prevention and reviewing treatment. These involve teaching the family how to deal with

setbacks, as well as reviewing the knowledge and skills learned in treatment.

Treatment Fidelity and Integrity.

All therapists received ongoing, weekly case supervision throughout the duration of the program to ensure that the treatment protocol was followed. No significant deviations from the manual were noted. To ensure the integrity of the treatment, participants and their families were asked not to seek or receive any additional therapy for the duration of the program, including medication. All families complied with this request.

RESULTS

Characteristics of the Sample

All participants presented with both obsessions and compulsions. Two cases reported only one type of obsession while multiple compulsions were present in all cases. The most common obsessions were contamination concerns (71%), with the need for symmetry and somatic fears reported by more than one participant. The most common compulsions were hand-washing and/or cleaning behaviors, and reassurance-seeking questions (71%). Checking rituals and ordering routines were also common compulsions (28%). Comorbidity was common with only one participant diagnosed with "pure" OCD (see Table I). Occasionally, comorbid diagnoses of other anxiety disorders, particularly generalized anxiety disorder and phobias were present. No cases presented with current clinical depression or tic disorders, although these were reported as past problems for three cases.

Treatment Efficacy

Using SPSS 10.0, the hypotheses were examined using a-priori paired t-tests at an α level of .05. Comparisons were made for pre-versus post-treatment data and post-treatment versus follow-up data on NIMH Severity, CY-BOCS Total Score, CGAS, MASC OC-Screen, and CDI. Scores on the FAD General Functioning Scale (mother and father) and Family Accommodation Scale were compared at pre- and post-treatment only. With the appropriate Bonferroni correction, results were considered significant if $p < .004$.

Diagnostic Status

At post-treatment, only one participant met criteria for OCD based on both parent and child interviews, although this child had made substantial improvements in treatment as indicated by a greater than 40% reduction in the severity of the symptoms on the CY-BOCS (see Table I). At

follow-up this participant continued to improve and no longer met criteria, however a second child had relapsed and required further CBT intervention. Overall, these results represent a success rate of 86% for the entire sample.

Clinician-Rated Measures

Table I depicts the changes in CY-BOCS score for each individual participant at pre-treatment, post-treatment, and follow-up. Inspection of the data reveals that six of the seven participants experienced more than a 40% reduction in CY-BOCS total scores from pre- to post-treatment; with the exception of the case mentioned previously, all participants maintained these results at three-month follow-up. As judged by a NIMH Global

Table I. DIAGNOSTIC STATUS, CY-BOCS SCORE, AND CGAS SCORE FOR EACH PARTICIPANT ACROSS TIME

| Child | DSM-IV Diagnoses | | | CY-BOCS | | | CGAS | | |
|-------|---------------------------------|---------------------------|------------------|---------|------|-----|------|------|-----|
| | Pre | Post | F/U | Pre | Post | F/U | Pre | Post | F/U |
| 1 | OCD | | SP GAD | 22 | 8 | 0 | 59 | 81 | 85 |
| 2 | OCD SAD GAD | SAD SP | SP | 22 | 8 | 9 | 55 | 60 | 75 |
| 3 | OCD GAD | | | 23 | 9 | 2 | 58 | 91 | 91 |
| 4 | OCD SP | GAD | GAD | 22 | 4 | 10 | 67 | 86 | 70 |
| 5 | OCD GAD | | OCD GAD SP | 25 | 5 | 16 | 65 | 91 | 60 |
| 6 | OCD SP GAD | | | 16 | 15 | 2 | 65 | 73 | 71 |
| 7 | OCD SAD SocP SP GAD | OCD SAD SocP GAD | GAD SocP | 25 | 14 | 9 | 48 | 50 | 80 |

NOTE. CY-BOCS = Children's Yale-Brown Obsessive Compulsive Scale; CGAS = Children's Global Assessment Scale; OCD = Obsessive-Compulsive Disorder; GAD = Generalized Anxiety Disorder; SAD = Separation Anxiety Disorder; SP = Specific Phobia; SocP = Social Phobia.

Severity score of 3 or less, five cases were asymptomatic or experiencing minimal symptoms at post-treatment. At follow-up, one of these cases had relapsed, while the remainder were asymptomatic or displaying very minimal symptoms.

A-priori paired t-tests revealed that pre-treatment scores differed significantly on the CY-BOCS (mean difference = 13.14, $SD = 6.12$, $t = 5.680$, $p < .001$) and NIMH Global Severity (mean difference = 4.71, $SD = 2.14$, $t = 5.834$, $p < .001$) but not on the CGAS (mean difference = 16.43, $SD = 11.65$, $t = -3.732$, $p > .01$), although a trend was evident (see Table I). There were no significant differences on these outcome measures from post-treatment to follow-up.

Child Symptomatology Measures

A-priori paired t-tests showed that pre-treatment scores differed significantly on the MASC OC-Screen (mean difference = 16.57, $SD = 8.50$, $t = 5.157$, $p < .002$) but not on the CDI (mean difference = 3.86, $SD = 4.63$, $t = 2.20$, $p > .07$). There were no significant differences on these outcome measures from post-treatment to follow-up.

Family Measures

A-priori paired t-tests on Family Accommodation Scale (FAS) total scores revealed significant reductions in family accommodation from pre- to post-treatment (mean difference = 6.57, $SD = 2.88$, $t = 6.04$, $p < .001$). Before treatment, one family scored in the severe range, three in the moderate range, and three in the mild range; after treatment, five families scored in the mild category and two in the moderate category. Inspection of individual scores revealed that all families evidenced a reduction in family accommodation from pre- to post-treatment.

No significant differences across time were found for either parents' score on the General Functioning Scale of the McMaster FAD (mother: mean difference = -1.57, $SD = 2.23$, $t = -3.732$, ns ; father: mean difference = -1.67, $SD = 3.72$, $t = -1.096$, ns). Due to the low statistical power, no other subscales were compared.

DISCUSSION

At post-treatment, 86% (6 out of 7) of participants did not meet DSM-IV diagnostic criteria for OCD. For five participants, these results were maintained at follow-up. One of the participants continued to improve after treatment and no longer met diagnostic criteria at follow-up; a second child experienced a significant increase in obsessive-compulsive symptoms and required further treatment.

The mean reduction in NIMH severity ratings (0 to 12), based on information gathered in the diagnostic interview, was 60%. All participants demonstrated decreases in the global severity of the symptom presentation at post-treatment. At follow-up, the results mirrored that described above for diagnostic status, with five children maintaining the gains made in treatment.

Scores on the clinician-rated CY-BOCS also decreased by 60% on average, with all children evidencing an overall decrease in the duration, interference, and distress caused by the obsessions and compulsions, with corresponding global increases in resistance and control. Five of the seven participants demonstrated a clinically significant improvement on these variables as defined by a more than 50% reduction in total scores from pre- to post-treatment. At follow-up, one child reported notable increases in the obsessions and compulsions; all other children demonstrated no more than subclinical symptomatology.

The results of the present study compare favorably with other child OCD treatment studies on this commonly used outcome measure. March and colleagues (25) reported a mean reduction in CY-BOCS scores of 50%, while Franklin et al. (27) observed a reduction of 67%, on average. A similar CBT treatment study that included a family component reported a mean reduction of 45% (16). The durability of this intervention is also similar to these treatment studies.

Child functioning, as measured by scores on the CGAS, did not significantly increase after treatment despite all participants demonstrating clear improvements at post-treatment. It appears that this result was distorted by large variability in improvement across individuals and the small sample size. Also, the CGAS is a rating of the degree of global impairment in peer interactions, school performance, general behavior, and family relationships caused by all forms of psychopathology, not specifically OCD. Hence, comorbid diagnoses influence ratings on this scale that were present in this cohort across all assessment points. Inspection of the individual data revealed five children above the cutoff point for healthy functioning at post-treatment, with one child impaired by other general anxiety concerns and the other primarily by OCD symptoms. At follow-up, six participants met the criteria for healthy functioning, the exception being the child who relapsed.

The overall frequency of obsessive-compulsive symptoms, as reported by the children on the MASC-OC Screen, decreased significantly from pre- to post-treatment. These results correspond with the clinician-rated data. All but one child continued to report these reductions in OCD-specific

symptomatology at follow-up. Given the secretive nature of OCD and the typical reluctance of children to verbalize their fears to unfamiliar interviewers, the self-reported improvement in symptoms is particularly encouraging.

Mean scores on the CDI decreased only marginally from pre- to post-treatment. Inspection of the individual pre-treatment scores indicated that only three reported depression levels of clinical interest, two of which evidenced a decrease in scores to subclinical levels at post-treatment. Also, no participant met diagnostic criteria for depression, hence the lack of decreases in self-reported depression may be indicative of a floor effect that left minimal room for change.

The results indicated that the degree of family accommodation reported by the parents decreased significantly after treatment. The rationale for including parents in the application of treatment of young people with OCD was primarily based on the understanding that accommodation contributes to the maintenance of the disorder through reinforcement of the anxiety and compulsions. Parental accommodation was directly targeted in treatment via psychoeducation and incorporation of specific behaviors in the child's symptom hierarchy. Due to the lack of a comparison group, however, these findings are purely correlational. It is equally plausible that the decrease in the child's symptomatology resulted in decreased family accommodation; alternatively, the combined influence of the two processes may interact to give the results. Future research is necessary to disentangle this relationship further.

Scores on the measure of family functioning did not evidence any change across time. There are several possible reasons for this. The most likely explanation is that the FAD may not be sensitive to specific changes in family behaviors that were targeted in this treatment program. All families were observed to be compliant with the majority of the therapy components, included reducing family accommodation, contingency management, differential reinforcement, and application of problem-solving. These behavioral changes may be better assessed via alternative means, such as self-monitoring or through the utilization of a more relevant family scale. Additionally, it may be more useful to measure perceptions of disability and burden, or of coping, rather than general family functioning.

To our best knowledge, the present study is the first to manualize a family-based cognitive-behavioral treatment protocol and to standardize treatment administration across all participants in a community-referred sample. This study also incorporates recommendations given by March (25) for improving treatment outcome research in childhood OCD. First,

the inclusion/exclusion criteria were clearly defined and the OCD symptoms, functional impairment, and comorbidity were assessed in structured interviews. Second, treatment outcome was measured through the application of reliable and valid measures of both symptomatology and functioning. Third, participants were assessed using all measures at pre- and post-treatment, and on pertinent measures at follow-up. Fourth, assessment covered different symptom areas, including cognitive, affective, and familial. Fifth, all participants received the same number of treatment sessions and identical treatment content. Last, no participants received concurrent pharmacological or psychological treatment during the course of the study.

The lack of significant change on several measures is worth exploring. First, while mean scores on the CDI decreased only marginally from pre- to post-treatment, closer inspection of the data revealed that this was possibly indicative of a floor effect in responses across time. Second, scores on the CGAS did not significantly increase after treatment despite all participants demonstrating improvements in functioning on this measure. It appears that this result was confounded by large variability in improvement across individuals and the small sample size.

Last, scores on the measure of family functioning did not evidence any change across time despite clinical observations to the contrary. There are several possible reasons for this although the mostly likely explanation is that the FAD may not be sensitive to specific changes in family behaviors that were targeted in this treatment program. All families were observed to be compliant with the majority of the therapy components, including reduction of family accommodation, contingency management, differential reinforcement, and application of problem-solving. These behavioral changes may be better assessed via alternative means, such as self-monitoring or through the utilization of a more relevant family scale. It may be more useful to measure perceptions of disability and burden, or of coping, rather than general family functioning.

This study was an open clinical trial and, hence, is vulnerable to participants' and evaluators' biases, therefore, the results should be interpreted with some caution. The lack of a comparison group precludes any strong conclusions being made about the importance of different treatment components, particularly E/RP and family involvement. This notwithstanding, the children in this study improved substantially following a treatment that included a structured family component with no concurrent medication or therapy. Further research directed at disentangling the

effects of separate components is warranted, in particular the comparative efficacy of individual versus family-based therapy.

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