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Decreased Family Accommodation Associated with Improved Therapy Outcome in Pediatric Obsessive-Compulsive Disorder

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Abstract

Pediatric obsessive-compulsive disorder (OCD) is a chronic, disabling condition that affects both patients and their families. Despite the identification of efficacious treatments (e.g., cognitive-behavioral therapy and selective serotonin reuptake inhibitor medications), not all patients respond fully. The purpose of the present study was to examine whether the amount of family accommodation provided to pediatric OCD patients is associated with treatment outcome, and whether decreases in accommodation are associated with improved outcome. The sample consisted of 50 youth (aged 6–18 years) who participated in 14 sessions of family-based cognitive-behavioral therapy for OCD, and their parents. Participants completed measures at pre-treatment and post-treatment. Results indicated that family accommodation was prevalent among families of pediatric OCD patients and that such accommodation was associated with symptom severity at pre-treatment. In addition, decreases in family accommodation during treatment predicted treatment outcome, even when controlling for pre-treatment OCD severity/impairment. Results suggest that the level of accommodation provided by the family may indicate an important obstacle to, or predictor of, treatment outcome in pediatric OCD. Directions for future research are discussed.

Keywords

Family Accommodation; Children; Treatment Predictors; Obsessive-compulsive disorder; Cognitive-Behavioral Therapy

Although efficacious treatments have been developed, about 20–40% of children with OCD do not respond to treatment, and many who benefit remain symptomatic following treatment completion (Benazon et al., 2002; POTS, 2004). OCD may develop into a chronic disorder that negatively impacts child and family functioning (Piacentini et al., 2003) by preventing the

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child from engaging in developmentally appropriate activities and interfering with family routines. It is important to identify factors associated with treatment outcome, but child factors examined in previous research have not yielded clear findings. Given the family's integral role in the life of a child and the impact of OCD on the family as a whole, more research is needed examining family factors related to treatment outcome. Researchers examining family accommodation (FA) in both adult and pediatric OCD samples have reported that family members often participate in and maintain OCD symptoms (Amir, Freshman, & Foa, 2000; Bolton, Collins, & Steinberg, 1983; Calvocoressi et al., 1999; Ferrao, et al., 2006; Storch, Merlo et al., 2007). Children have frequent interactions with family and rely upon them for assistance with activities of daily living. As such, approximately 70% of families accommodate some, if not all, of their child's OCD symptoms (Allsop & Verduyn, 1990; Storch, Merlo et al., 2007).

Although counter to adaptive functioning, FA is often well-intentioned. Clinical experience suggests that parents believe family functioning is facilitated by accommodating the child's OCD behaviors. Unfortunately, accommodating symptoms maintains or exacerbates symptoms by providing short-term relief, which negatively reinforces the behaviors and prevents habituation. Providing accommodation also directly contradicts the goals of CBT for OCD (e.g., Allsop & Verduyn, 1990; Storch, Merlo et al., 2007). The overarching goal of CBT is to teach the child adaptive ways to cope with anxiety and re-engage in appropriate activities. FA allows the child to avoid participation in feared activities or obtain reassurance about unrealistic worries. This validates the child's fear and prevents the child from experiencing a natural reduction of anxiety after facing the feared object or situation. Only a few studies examine FA treatment outcomes (e.g., Barrett, Healy-Farrell, & March, 2004; Ferrao et al., 2006; Waters, Barrett, & March, 2001), but each has demonstrated that FA decreases following treatment.

The present study investigates the association between FA and treatment outcome in a relatively large sample of pediatric OCD patients participating in CBT. It extends previous research by examining change in FA as a predictor of outcome, and by including clinician-, parent-, and child-rated outcome measures. We predicted that: 1) the majority of parents would report FA of their child's symptoms, 2) FA would be positively related to ratings of child OCD impairment, 3) the level of FA would decrease following CBT participation, 4) post-treatment levels of FA would be significantly associated with treatment response, and 5) the magnitude of the change in level of FA from pre-treatment to post-treatment would be associated with parent-, child-, and clinician-rated post-treatment impairment, over and above pre-treatment impairment.

Method

Participants

A total of 54 children were recruited from two separate studies (comparing intensive vs. weekly CBT [Storch, Geffken et al., 2007], and evaluating the use of motivational interviewing booster sessions). Participants in both studies received 14 sessions of family-based CBT in either intensive or weekly formats. There were no differences in FA or treatment outcome between the groups, so all children were combined for analyses.¹ Given that our goal was to examine changes across treatment, the primary analyses are based on the sample of 49 consecutive treatment completers.² Secondary intent-to-treat analyses are included in the results. The children (55% male) ranged in age from 6-18 years ($M = 12.8$; $SD = 2.6$), and were primarily

¹Hierarchical regression analyses indicated that (when treatment protocol and change in accommodation scores were entered in step 1) there was no significant interaction of "treatment protocol X change in accommodation scores" in the prediction of change in CY-BOC from pre- to post-treatment ($R^2 = .31$, $\Delta R^2 = .05$, ns).

Caucasian (95%). All families reported being of middle or upper middle class SES. Inclusion criteria consisted of: 1) primary diagnosis of OCD; 2) Children's Yale-Brown Obsessive Compulsive Scale (CY-BOCS) Total Score ≥ 16 ; 3) not on psychotropic medications or stable on medication for at least 8 weeks (see Table 1 for medication data).³ Participants were excluded if they had a comorbid psychotic disorder or autism.

Measures

The Anxiety Disorders Interview Schedule for DSM-IV: Child and Parent Version (ADIS-C/P; Silverman & Albano, 1996) is a clinician-administered, structured interview that was used in the present study to confirm OCD diagnoses following preliminary diagnosis based on a clinical interview administered by the first or last author. The ADIS-C/P has demonstrated good to excellent psychometric properties (Silverman et al., 2001).

The Family Accommodation Scale—Parent Report (FAS-PR) is a 13-item, parent-report questionnaire. It was adapted from the Family Accommodation Scale (Calvocoressi et al., 1999) to include more specific wording and examples. Areas assessed include the provision of reassurance or objects for compulsions, decreased behavioral expectations for the child, modification of family routines, and help avoiding distressing objects, places, or experiences. Items are rated on a 5-point scale (total score range = 0-52). Given that there are no published cut-off scores for the FAS-PR, we chose to use a total score of 13 (i.e., average score of “mild” or higher on every item) as the cut-point to determine the presence of clinically meaningful FA. The FAS-PR measures the degree of FA in the past month. At post-treatment, parents were asked to complete the FAS-PR to reflect their experiences over the past week. It has demonstrated excellent reliability ($\alpha = .94$) and moderate convergence ($r = .41$) with a similar youth-report measure of family accommodation, as well as clinician ratings of symptom severity ($r = .77$; Fernandez, Storch, Geffken, & Murphy, 2006). For the present sample, internal consistency was high ($\alpha = .88$ at pre-treatment; $\alpha = .91$ at post-treatment).

The Children's Yale Brown Obsessive-Compulsive Scale (CY-BOCS; Scahill et al., 1997) is a 10-item, clinician-rated inventory of pediatric OCD symptom severity. Items assess the severity of obsessions and compulsions in the previous week, and are rated on a 5-point scale. The CY-BOCS has demonstrated good internal consistency, convergent and divergent validity (Scahill et al., 1997), and treatment sensitivity (POTS, 2004). Inter-rater reliability was high for 20 participants who were re-administered the CY-BOCS at pre-treatment ($k = .96$). Internal consistency ranged from .84 (pre-treatment) to .94 (post-treatment).

The Children's OCD Impact Scale--Parent & Child versions (COIS; Piacentini & Jaffer, 1999) are 56-item measures that assess the impact of OCD symptoms on specific areas of child functioning (i.e., school, social, home/family, general) over the previous month, using a 4-point scale. The COIS has demonstrated good psychometric properties (Piacentini et al., 2003). At post-treatment, participants were instructed to complete the COIS to reflect their experiences over the past week. COIS-C data were unavailable for the one 6-year-old

²One child was dropped from the study after 5 sessions because she began pharmacotherapy with an SSRI, 1 child dropped out of the study after 2 sessions due to multiple missed appointments, 1 child completed 13 sessions of treatment, but the parents refused to complete the post-treatment assessment, and 2 children dropped out of treatment (after 4 and 5 sessions, respectively). This resulted in a completion rate of 49/54 patients (91%). It is believed that this completion rate may be artificially-inflated by the fact that a large portion of the children were participating in intensive treatment, where drop-out rates are very low.

³There were no differences on study variables between children taking medication and those who were not. T-test results demonstrated that there were no significant group differences (i.e., taking meds vs. not taking meds) on pre-treatment FAS-PR ($t = -0.75$, *ns*), CY-BOCS ($t = -0.32$, *ns*), COIS-P ($t = 0.26$, *ns*), or COIS-C ($t = 0.38$, *ns*) scores. Similarly, there was no significant interaction (when medication status and change in accommodation scores were entered in step 1) of “medication status X change in accommodation scores” in the prediction of change in CY-BOCS from pre- to post-treatment ($R^2 = .291$, $\Delta R^2 = .003$, *ns*).

participant. Internal consistencies for the COIS-P and COIS-C were high ($\alpha = .94$ to $.96$ at pre- and post-treatment).

Procedures

The University of Florida Institutional Review Board approved all procedures. After obtaining written parental consent and child assent, a research assistant (RA) administered the ADIS-C/P and CY-BOCS to the parent and child jointly, and participants completed the FAS-PR and COIS independently. All RAs underwent intensive training as follows: (1) attending a didactic meeting, (2) observing three administrations, and (3) administering the measures three times under direct observation of the last author to ensure inter-rater reliability. RAs remained blinded to our hypotheses for each study, but were aware that all children received treatment.

Families received 14 sessions of family-based CBT for OCD (Lewin et al., 2005), similar to that in the POTS (2004) study, before undergoing the post-treatment assessment. All sessions were attended by the child and at least one parent. Sessions lasted 90 minutes and focused on exposure/response prevention and instruction for parents on coaching exposures and reducing FA. Homework assignments involved both exposure exercises for the youth and limits on accommodation for the parent(s). All therapists were clinical psychology doctoral students, interns, or postdocs who were trained in CBT by observing trained therapists and being observed by the first, third, or final author before conducting sessions independently. They were supervised between sessions and the final author assigned a treatment fidelity rating (0 = poor fidelity, 5 = excellent fidelity) for 66% of patients ($M = 4.67$, $SD = .52$, range = 3-5) based on between-session comparison of session content to the treatment manual during supervision.

Results

Descriptive statistics are presented in Table 2. Scores on all measures were normally distributed and had no significant outliers. In total, 88% of parents reported at least mild FA. As seen in Table 3, FA was significantly correlated with clinician-rated symptom severity (CY-BOCS) and parent-rated impairment (COIS-P) at pre-treatment. Contrary to expectations, FA was not related to child-rated impairment (COIS-C). At post-treatment, 80% of children were considered treatment responders, based on post-treatment CYBOCS < 16 and displaying greater than 35% change on the CY-BOCS. Parents reported significantly less FA, with 65% of parents reporting no significant FA (i.e., FAS-PR < 13). FA was significantly related to clinician-rated symptom severity and parent-rated child impairment at post-treatment. FA was unrelated to child self-impairment ratings; however, child-ratings of impairment at post-treatment were not related to either clinician or parent ratings of symptom severity/impairment.

Families reported an average reduction of 11.21 points ($SD = 11.75$) on the FAS-PR from baseline to post-treatment. Responses ranged from a reduction of 41 points to an increase of 8 points. Parents of treatment responders showed a trend toward greater decreases in FA ($t = 1.82$, $p = .07$, $d = 0.66$). Specifically, parents of responders ($n = 39$) reported an average reduction of 12.73 points ($SD = 12.13$) on the FAS-PR, whereas parents of non-responders ($n = 10$) reported an average reduction of only 5.30 points ($SD = 8.15$). Indeed, 40% of the parents of non-responders reported either no change ($n = 1$) or an increase ($n = 3$) in FA from baseline to post-treatment. Results of X^2 analyses indicated that families who reported no significant FA at post-treatment (i.e., FAS-PR < 13 ; $n = 32$) were more likely to be treatment responders ($X^2(2) = 17.62$, $p < .001$). Of these families, 31 (97%) were responders, and 1 was a partial responder (i.e., CY-BOCS < 16 , but $< 35\%$ change on CY-BOCS). Of the families reporting significant FA at post-treatment ($n = 17$), only 8 (47%) were responders, 3 (18%) were partial responders (i.e., CY-BOCS < 16 or $> 35\%$ change on CY-BOCS), and 6 (35%) were non-responders.

In order to test hypothesis 5, hierarchical multiple regression was used. Given the sample size ($n = 49$), G*Power calculations indicated that we would have power of .82 to detect a clinically meaningful effect of change in FA (i.e., $\Delta R^2 = .15$, $f^2 = .18$), with $\alpha = .05$. When controlling for pre-treatment clinician-rated severity scores (CY-BOCS total score), the magnitude of change in FA from pre- to post-treatment was significantly associated with clinician-rated post-treatment severity scores (see Table 4). Similarly, when controlling for parent-rated impairment, the magnitude of change in FA was significantly related to parent-rated impairment scores at post-treatment. Results based on child report showed a different pattern. Post-treatment change in FA was not related to child-rated impairment scores at post-treatment. These analyses were repeated using intent-to-treat procedures. As seen in Table 5, the results demonstrated the same pattern.

Discussion

The present study examined whether change in FA over the course of family-based CBT was significantly associated with treatment response for pediatric OCD. Consistent with others (e.g., Barrett et al., 2004; Waters et al., 2001), levels of FA decreased from pre- to post-treatment. Additionally, change in FA from baseline to post-treatment was significantly associated with parent- and clinician-rated symptom severity at post-treatment, even when controlling for pre-treatment symptom severity.

Unfortunately, the mechanism by which FA relates to symptom severity remains unclear. Children with more severe symptoms typically display higher rates of functional impairment (Piacentini et al., 2003), so it is possible that increased FA results from the attempts to minimize child distress and impairment. Clinical experience suggests that parents become distressed by seeing their child suffer, as is common for children with OCD (Piacentini et al., 2003). Thus, many parents attempt to “help” by accommodating; however, the provision of FA can exacerbate OCD symptoms. As a result, it is possible that FA directly leads to increases in symptom severity. Parents are typically unaware of this and will continue to accommodate their child until they are educated about the negative consequences of doing so. Other parents recognize that FA exacerbates symptoms in the long run, but feel pressured to utilize a short-term “fix.”

Results indicated that participation in family-based CBT is associated with a significant decrease in FA, and that this decrease is associated with positive treatment outcome. Given that the primary goals of CBT for OCD are to expose the child to anxiety-provoking situations and to prevent ritual engagement, it is clear that FA contradicts the goals of treatment. Thus, helping parents and siblings to recognize FA, instructing them to decrease FA, and teaching them ways to help the child manage his/her OCD symptoms without accommodating may be particularly effective ways to involve families in treatment. Our clinical experience suggests that targeting FA can lead to decreases in symptom severity and functional impairment, even if the patient is unwilling to participate fully in treatment. These results have important clinical implications, as many children with OCD do not respond fully to treatment. We speculate that family-based CBT targeting FA may be indicated for pediatric OCD patients when high levels of FA are present.

Contrary to predictions, FA was not related to child-rated impairment, but there is an intuitive explanation. We hypothesize that parents who accommodate symptoms allow their child to avoid feared stimuli. Then, because the child does not experience the associated anxiety, s/he may view OCD symptoms as less disruptive than s/he would otherwise. And when parents accommodate their children by completing tasks for them, the child does not experience the penalties of unfinished work. Parents who accommodate their child's symptoms take on more of the burden, allowing the child to avoid consequences and to feel higher-functioning. This

hypothesis is supported by the finding that children's self-ratings of impairment were not related to clinician-rated symptom severity at baseline or to clinician or parent ratings of symptom severity at post-treatment. When parents decrease FA, the child may experience greater impairment in the short term, until learning to manage these "extra" responsibilities on his/her own. Thus, clinicians should prepare families for increased struggles by explaining that the long-term benefit will likely outweigh the short-term consequences of decreasing FA.

Some limitations of the study should be noted. First, the sample was relatively homogeneous. Second, the lack of a control group (i.e., patients receiving individual therapy without a focus on decreasing FA) precludes us from making causal attributions to the variables under study and prevented us from obtaining blind assessments of outcome. Future research should explore whether family-based CBT is more efficacious than individual CBT for decreasing FA. Third, inter-rater reliability was not calculated for the ADIS or post-treatment CY-BOCS, though we did employ checks in confirming each participant diagnosis. Fourth, although the present study supports the treatment sensitivity and internal consistency of the FAS-PR, the psychometric properties have not been systematically studied. Finally, despite the relative stability of results across parent and clinician reports, the use of a parent-report measure of FA, rather than a more objective measure, may have influenced the results of the current study. Future research should include observational measures of FA.

Despite these limitations, the present study provides a foundation for continued research into the role of FA in pediatric OCD and its responsiveness to treatment. Future studies might examine whether FA is influenced by OCD subtype, presence of comorbidities, family psychopathology, or other family patterns. In addition, given that the relation between FA and OCD symptom severity appears to be bidirectional, more research is needed to clarify the mechanisms of influence. Prospective studies examining FA may help to clarify whether it is best viewed as a risk factor or a consequence of OCD symptom severity. Finally, future studies should examine motivations for FA and compare treatment outcome for children affected by significant levels of FA versus those who are not.

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Table 1
Medication data for study participants

Medication Regimen	# Participants	% Participants	Pre-Tx FAS-PR	
			<i>M</i>	(<i>SD</i>)
None	12	24%	20.45	10.56
1 SRI	17	35%	22.95	9.57
2 SRIs	6	12%	18.33	12.27
1 SRI + Atypical Antipsychotic	13	27%	25.76	11.39
Stimulant only	1	2%	19.00	-----

Note. SRI = Serotonin re-uptake inhibitor; Pre-Tx FAS-PR = Baseline scores on the Family Accommodation Scale—Parent Report.

Table 2

Baseline and post-treatment scores on main study variables

MEASURE	BASELINE		POST-TREATMENT		<i>t</i>	<i>d</i>
	<i>M</i>	(<i>SD</i>) <i>Range</i>	<i>M</i>	(<i>SD</i>) <i>Range</i>		
CY-BOCS	27.5	(5.5) 17-38	10.0	(6.8) 0-34	17.23***	3.52
COIS-P	43.4	(26.6) 4-106	19.0	(18.5) 0-106	7.01***	1.43
COIS-C	48.0	(37.3) 5-173	23.6	(27.8) 0-125	5.72***	1.17
FAS-PR	22.4	(10.5) 1-51	11.2	(10.0) 0-41	6.68***	1.36

Note. CY-BOCS = Children's Yale-Brown Obsessive Compulsive Scale; COIS-P = Children's Obsessive Compulsive Impact Scale—Parent version; COIS-C = Children's Obsessive Compulsive Impact Scale—Child version; FAS-PR = Family Accommodation Scale—Parent Rated version.

p < .001

Table 3
Correlations Among Family Accommodation Scores and OCD Symptom Severity/Impairment

MEASURE	CY-BOCS PRE	COIS-P PRE	COIS-C PRE	FAS-PR POST	CY-BOCS POST	COIS-P POST	COIS-C POST
FAS-PR PRE	.49***	.38**	.14	.35*	.32*	.19	.32*
CY-BOCS PRE		.63***	.22	.22	.35*	.29*	.33*
COIS-P PRE			.41**	.27	.25	.52***	.25
COIS-C PRE				-.11	-.17	.02	.65***
FAS-PR POST					.69***	.74***	.14
CY-BOCS POST						.75***	.21
COIS-P POST							.16

Note. PRE = Baseline rating; POST = Post-treatment rating; CY-BOCS = Children's Yale-Brown Obsessive Compulsive Scale; COIS-P = Children's Obsessive Compulsive Impact Scale—Parent version; COIS-C = Children's Obsessive Compulsive Impact Scale—Child version; FAS-PR = Family Accommodation Scale—Parent Rated version.

 $p < .001$
**
 $p < .01$
*
 $p < .05$

Table 4
Regression findings examining prediction of outcomes by change in FAS-PR scores

(Outcome)	Predictors	R ²	β	Δ R ²	p
(POST CY-BOCS)	PRE CY-BOCS	.12	.46	.12	.01
	Change in FAS-PR	.29	.42	.17	.002
(POST COIS-P)	PRE COIS-P	.27	.57	.27	<.001
	Change in FAS-PR	.52	.51	.25	<.001
(POST COIS-C)	PRE COIS-C	.42	.65	.42	<.001
	Change in FAS-PR	.42	-.04	.001	.77

Note. PRE = Baseline rating; POST = Post-treatment rating; CY-BOCS = Children's Yale-Brown Obsessive Compulsive Scale; COIS-P = Children's Obsessive Compulsive Impact Scale—Parent version; COIS-C = Children's Obsessive Compulsive Impact Scale—Child version; FAS-PR = Family Accommodation Scale—Parent Rated version.

Table 5
Intent-to-treat regression findings examining prediction of outcomes by change in FAS-PR scores

(Outcome)	Predictors	R ²	β	Δ R ²	p
(POST CY-BOCS)	PRE CY-BOCS	.19	.52	.19	.001
	Change in FAS-PR	.42	.48	.23	<.001
(POST COIS-P)	PRE COIS-P	.46	.69	.46	<.001
	Change in FAS-PR	.65	.44	.19	<.001
(POST COIS-C)	PRE COIS-C	.42	.66	.42	<.001
	Change in FAS-PR	.42	.05	.002	.70

Note. PRE = Baseline rating; POST = Post-treatment rating; CY-BOCS = Children's Yale-Brown Obsessive Compulsive Scale; COIS-P = Children's Obsessive Compulsive Impact Scale—Parent version; COIS-C = Children's Obsessive Compulsive Impact Scale—Child version; FAS-PR = Family Accommodation Scale—Parent Rated version.