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ORIGINAL PAPER

Clinical and Family Correlates of Coercive–Disruptive Behavior in Children and Adolescents with Obsessive–Compulsive Disorder

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Abstract Obsessive–compulsive disorder (OCD) in youth is frequently associated with disruptive behaviors such as attacks of rage or temper. A common but insufficiently understood form of disruptive behavior in OCD is forceful attempts to impose symptom accommodation on family members. This study examined: (a) the phenomenology of coercive–disruptive behaviors in pediatric OCD, (b) child and family correlates of coercive–disruptive behavior; and (c) indirect effects of coercive–disruptive behavior on OCD symptom severity, mediated by family accommodation. We addressed these aims by evaluating the families of 61 treatment-seeking youth diagnosed with OCD, using structured interviews and maternal report scales. Most mothers reported coercive–disruptive behavior. Coercive–disruptive behavior was associated with severity of OCD symptoms, but not with particular symptom dimensions. Coercive–disruptive behavior was associated with anxiety, oppositionality and hyperactivity, but not with depression or inattentiveness. At the family level, coercive–disruptive behavior was associated with family accommodation and related parental distress but not with dimensions of family style. Hierarchical regression indicated that the family-level variable of accommodation contributed to predicting coercive–disruptive behavior, above and beyond child-level variables. The indirect pathway through family accommodation accounted for 97.13 % of the total effect of coercive–disruptive behaviors on OCD severity, supporting the mediational model. Overall, the data suggest that coercive–disruptive behaviors are common in youth with OCD and are more strongly linked to youth clinical features than to family style. Coercive–disruptive behaviors are a cause for concern and may lead to increased family accommodation, which has frequently been found to predict worse clinical outcomes.

Keywords Obsessive–compulsive disorder · Family functioning · Disruptive behavior · Parent–child relationships

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Introduction

Pediatric obsessive–compulsive disorder (OCD) is relatively common among children and adolescents and has a heterogeneous presentation and clinical course (Flament et al. 1988; Heyman et al. 2001; Valleni-Basile et al. 1994). Reports have highlighted the prevalence of externalizing symptoms, including rage attacks and temper tantrums, in the presentation of OCD. Some studies have found that aggressive outbursts in OCD are linked to greater severity and impairment, as well as to poorer treatment response (Garcia et al. 2010; Langley et al. 2010; Stewart 2012; Storch et al. 2012). In another large study of youth with OCD, aggressive outbursts were prevalent but were linked to depressive symptoms rather than to OCD symptom severity or treatment outcomes (Krebs et al. 2013). Aggressive outbursts may also lead to increased family accommodation of the youth's symptoms, which has been consistently tied to greater severity and to poorer treatment outcomes in OCD and anxiety (Caporino et al. 2012;

Flessner et al. 2011; Lebowitz et al. 2012, 2013b, 2014b; Peris et al. 2008; Stewart et al. 2008; Storch et al. 2007).

In one systematic study of youth with OCD aggressive outbursts were particularly prevalent at home, and were frequently triggered by the interruption of OCD-related behaviors (Storch et al. 2012). Rage was directly associated with impairment, severity, accommodation and externalizing symptoms. Results supported a mediational model whereby the youth's rage increased family accommodation, leading to greater symptom severity and impairment. Though informative, one limitation of most research on externalizing behaviors in OCD is the use of standard assessment tools intended to evaluate these behaviors in the general population. In one published study of context-specific disruptive behaviors in OCD, 30 youth with OCD were compared to 30 children with a disruptive behavior disorder (without OCD) using both standard measures of externalizing symptoms and an OCD specific coercive–disruptive checklist (Lebowitz et al. 2011). Results indicated that some OCD youth displayed a pattern of coercive behavior specifically aimed at imposing symptom accommodation on family members (Lebowitz et al. 2011a, b, c). The coercion included, for example, demands that others abide by rules of cleanliness or participate in rituals, prohibitions against opening windows, or forceful demands for repeated reassurance. When met with resistance to these demands, a significant number of affected youth respond with physical aggression or verbal abuse (Lebowitz et al. 2011b; Storch et al. 2012). Mothers were identified as the most frequent targets of such coercive behaviors (Lebowitz et al. 2011b), although fathers and siblings were reportedly common targets as well. Coercive–disruptive behavior was associated with more severe OCD symptoms in the youth. In addition to limitations such as low sample size and sparse subject characterization, that study of coercive–disruptive behavior did not investigate family accommodation or the mediational model (Storch et al. 2012).

Another gap in the current knowledge relates to family-level correlates of disruptive behavior in youth with OCD. Ample research links dimensions of family style such as high conflict, inconsistent discipline, low organization, and yielding to coercion with aggression and externalizing behaviors in youth (Kim et al. 1999; Loeber and Stouthamer-Loeber 1998; Patterson et al. 1989). Family accommodation has also been linked to family-level variables such as low organization and high conflict, and high conflict families have reported worse consequences of not accommodating, likely indicating more coercive behavior from the child (Peris et al. 2008).

In this study, we report on psychosocial correlates of coercive–disruptive behavior in youth with OCD, including both child-level and family-level variables. We ask whether coercive–disruptive behaviors are associated with various child-level and family-level clinical and sociodemographic characteristics. Based on the previous research, we predicted that coercive–disruptive behavior would be positively correlated with severity of the OCD symptoms, and with greater family accommodation, and we investigate links to other child and family variables. Next, we ask whether family-level variables explain coercive–disruptive behavior, over and above child-level variables. Finally, we test whether coercive–disruptive behavior influences OCD symptom severity, by increasing family accommodation. That is to say, does family accommodation mediate the hypothesized link between coercive–disruptive behavior and symptom severity? If so, this model would highlight the need for interventions that provide parents with tools for coping with coercive–disruptive behavior, with the clear aim of reducing family accommodation. Recent reports have pointed to the potential efficacy of this kind of intervention (Lebowitz 2013; Lebowitz et al. 2013a; Peris and Piacentini 2013).

Method

Participants

Informants were mothers of 61 treatment-seeking youth who presented at one of two OCD specialty programs on the eastern coast of the Unites States. No significant differences in demographic or clinical characteristics were found between the two participating clinics. Youth met criteria for a primary diagnosis of OCD established based on clinical interview including administration of the Children's Yale-Brown Obsessive Compulsive Scale (CYBOCS) (Scahill et al. 1997) by highly trained clinicians with particular experience in OCD and in accordance with the recommended procedures for best practices (Leckman et al. 1982). Final diagnosis were reached by consensus among the study researchers. Mothers of youth with comorbid or past psychotic, bipolar or pervasive developmental disorders were excluded from the study. The study was approved by the university Institutional Review Boards at both locales. Signed informed consent/assent was obtained before conducting any study procedures.

Procedure

Mothers completed the structured interviews and written measures. Interviews were administered by doctoral level psychologists or graduate level clinical psychology students who had received training by the clinic director including didactics, observation, and implementation under supervised conditions.

Measures

The Children's Yale-Brown Obsessive Compulsive Scale (CYBOCS) (Scahill et al. 1997) is a widely used clinician-administered semi-structured measure of OCD severity with established psychometric properties including validity and reliability. CYBOCS includes a checklist of various obsessions and compulsions and 10 items that assess the severity of the OCD symptoms. The checklist items have been repeatedly factor analysed and form dimensional groups relating to contamination/cleaning, sexual/religious, symmetry/order, aggression/harm and hoarding. The parent report form has good agreement with the child version, and is particularly suited to children with externalizing symptoms (Storch et al. 2006). Internal consistency for the total CYBOCS score in the current study was adequate ($\alpha = 0.79$). Internal consistency for symptom dimensions was adequate apart from symmetry/order and hoarding, which were excluded from further analysis.

The Coercive–Disruptive Behavior Scale for Pediatric OCD (CD–POC) (Lebowitz et al. 2011) is an 18-item parent-report checklist that assesses a range of coercive behaviors through which youth with OCD impose rules and prohibitions on family members. Items are rated on a five-point scale from Never to Almost all the time. CD–POC has been shown to have good psychometric qualities (Lebowitz et al. 2011) and to address externalizing behaviors not captured by other measures of disruptive behaviors. Internal consistency for CD–POC in the present study was excellent ($\alpha = 0.90$).

Family Accommodation (FA) was measured with 13 parent-report items. Though initially used in clinician administered form (Calvocoressi et al. 1995), these items have frequently been used in parent-report form and have demonstrated excellent psychometric qualities including validity and reliability (Geffken et al. 2006; Peris et al. 2008; Stewart et al. 2008). An overall Accommodation score was calculated based on the first 9 items including participation in OCD related behaviors (5-items) and modification of family routines (4-items). Additional items assess distress related to accommodation (1-item) and negative consequences of not accommodating (3-items). Internal consistency for the FA accommodation items was high ($\alpha = 0.81$).

The Swanson, Nolan and Pelham-IV Questionnaire (SNAP-IV) (Swanson et al. 2001) assesses symptoms of inattention, hyperactivity and oppositionality through 40 parent-report items and has been used in many studies with good psychometric qualities including validity and reliability (Bussing et al. 2008). Internal consistency for the total SNAP-IV, and for the inattention, hyperactivity and oppositionality subscales in this study were excellent ($\alpha = 0.95$, 0.93, 0.91 and 0.94 respectively).

The Spence Children's Anxiety Scale parent report (SCAS-P) (Nauta et al. 2004) includes 39 items that assess symptoms of child anxiety in various domains. The scale has good psychometric properties and the internal consistency for the total score in this study was excellent ($\alpha = 0.90$).

The Child Depression Index:Parent (CDI:P) (Kovacs 1992) is a 17 item parent-report measure of childhood depressive symptoms and has been found to be a reliable and valid estimator of childhood depression. Internal consistency for the scale in this study was good ($\alpha = 0.82$).

The Perceived Stress Scale for Parents (PSSP) (Cohen et al. 1983) includes 4 parent-report items that query parents' perception of stress experienced by the child. Internal consistency for PSSP in this study was adequate ($\alpha = 0.79$).

The Yale-Brown Obsessive Compulsive Scale (YBOCS) (Goodman et al. 1989a, b) is widely used for assessing symptoms of OCD in adults and is similar to the child version (CYBOCS) described above. YBOCS was used to assess symptoms of OCD in the mother. Internal consistency for the total score was good ($\alpha = 0.87$).

The Family Environment Scale (FES) (Moos and Moos 1994) evaluates dimensions of family style and of the family unit's social environment, and has good psychometric properties. FES includes 90 items and parents indicate either agreement or disagreement. Ten subscales include degree of conflict; cohesion/caring; expressiveness; independence; control; organization; achievement orientation; intellectual/cultural orientation; active recreational orientation; and moral/religious emphasis. Three broader dimensions include Relationships; Personal Growth and System Maintenance (Moos 1990). Internal consistency for all subscales in this study ranged from adequate to good (α values ranged from 0.5 to 0.81), apart from the control subscale which showed low consistency ($\alpha = 0.34$).

Youth and Family Demographics included age, sex, parents education and occupation, family structure, number of siblings living at home, the educational setting in which youth was enrolled.

Data Analyses

Means and standard deviations of key study measures are presented in Table 1. We first examined associations between coercive–disruptive behavior (CD–POC) and key child and family clinical (CYBOCS, FA, PSSP, CDI:P, SNAP-IV, SCAS-P; FES) and demographic (child age, gender, number of siblings at home, parent occupation and employment, family structure) variables. The current sample did not allow for comparisons of coercive–disruptive behavior based on comorbid diagnoses due to

Table 1 Descriptive statistics, internal consistency and Pearson correlations for study variables

Measure	Mean	SD	α	CD–POC
Child-level variables				
CD–POC				
Total sample	16.46	13.4	0.90	–
Any anxiety disorder	19.59	13.2		
Major depressive disorder	17.36	12.7		
Oppositional defiant disorder	22.12	17.1		
ADHD	18.13	11.8		
CY-BOCS total	25.5	6.1	0.79	0.33**
Obsessions	12.08	3.7	0.73	0.254
Compulsions	13.39	3.3	0.65	0.332*
SCAS-P	31.64	15.4	0.90	0.4**
CDI:P	20.84	7.7	0.82	0.23
PSSP	8.63	3.3	0.79	0.03
SNAP-IV total	37.88	22.4	0.95	0.39**
Oppositionality	8.83	7.5	0.93	0.42**
Hyperactivity	7.38	7.1	0.91	0.27*
Inattentiveness	13.67	8.1	0.94	0.08
Age	13.1	3.4	–	−0.07
Family-level variables				
FA total	16.49	7.8	0.81	0.58***
Participation	10.16	4.6	0.49	0.51***
Modification	6.34	4.4	0.83	0.49***
Distress	2.17	1.4	–	0.49***
Consequences	5.6	3.8	0.81	0.67***
FES scales				
Cohesion/caring	5.31	2.7	0.81	−0.24
Expressiveness	4.36	2.0	0.60	−0.19
Conflict	3.29	2.2	0.63	0.25
Independence	5.17	1.7	0.50	−0.2
Achievement/orientation	3.76	1.8	0.52	−0.09
Intellectual/cultural	5.31	1.9	0.59	−0.08
Active/recreational	4.34	2.4	0.70	−0.19
Moral/religious	4.81	2.3	0.67	−0.24
Organization	5.02	2.0	0.52	−0.16
Control	4.40	1.7	0.35	0.11
FES dimensions				
Relationships	12.96	4.1	0.67	−0.12
Personal growth	23.39	7.0	0.81	−0.24
System maintenance	9.41	3.0	0.59	−0.05
Parent Y-BOCS	2.76	4.6	0.87	0.3

CD–POC coercive–disruptive behavior checklist for pediatric OCD, *CY-BOCS* Children's Yale-Brown Obsessive–Compulsive Scale, *SCAS-P* Spence Children's Anxiety Scale parent report, *CDI:P* Child Depression Index:Parent, *PSSP* Perceived Stress Scale for Parents, *SNAP-IV* Swanson, Nolan and Pelham-IV Questionnaire, *FA* family accommodation, *FES* Family Environment Scale, *Y-BOCS* Yale-Brown Obsessive–Compulsive Scale, *ADHD* attention deficit hyperactivity disorder

* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$

insufficient power, but observed scored for diagnostic groups are included in Table 1.

We used hierarchical linear regression, using a stepwise forward approach, to examine the relative contributions of child-level and family-level variables identified in bivariate analyses. Missing data were rare (∼1 %) and were substituted for with the relevant means.

Mediational analysis comparing total, direct and indirect effects of CD–POC score on CY-BOCS was used to test the hypothesis that coercive–disruptive behavior leads to increased FA, resulting in greater symptom severity in youth (Baron and Kenny 1986). Bootstrapping with 5,000 trials (Preacher and Hayes 2008) and the Sobel test were employed to test the significance of the model. Mediational procedures were done using the macro MedText for SPSS version 19 (Kenny 2011).

Results

Average age of youth was 13.1 years (range = 7–18 years) and 61 % were male. Average level of youth OCD symptom severity as measured by CY-BOCS was 25.5 (SD 6.12). Average YBOCS score for mothers was 2.76 (SD 4.62, range 0–17). Twelve percent (n = 7) of mothers had YBOCS scores ≥8, and one scored at or above 16 (2 %). Most youth had parents with higher education: 73.6 % of fathers and 81.5 % of mothers had at least a partial college education; 30.2 % of fathers and 40.7 % of mothers had a college or equivalent degree. All fathers were either working or retired; 84.7 % of mothers were employed either full or part time. Most youth (73 %) were living in intact two-parent homes. Youth were predominantly as white (77 %). Number of additional siblings at home ranged from 0 to 7 (M = 1.36; SD = 1.22). Most youth (78 %) were in regular educational placements, the rest (22 %) were in special education with no reported history of intellectual disability. Concurrent comorbidity was common: 57.6 % of youth had at least one anxiety disorder; 16.9 % had major depressive disorder; 13.6 % had oppositional defiant disorder; 25.4 % had attention deficit hyperactivity disorder.

Coercive–disruptive behaviors were common in this sample of OCD youth. Most mothers (62.7 %) rated at least one item on the CD–POC as occurring 'often' and 23.7 % rated at least one coercive–disruptive behavior as occurring 'almost all the time'. The highest rated items were 'Forces others to make decisions for him/her and demanding endless reassurance to their own decisions' and 'Imposes physical closeness or exaggerated clinginess', both of which were rated at least 'often' by over 40 % of responders. The lowest rated items, 'Forbids the entrance of strangers to the home or limits others in their social

Table 2 Phenomenology of coercive–disruptive behaviors in youth with obsessive–compulsive disorder

Coercive–disruptive behaviors	Mean	SD	Never	Rarely	Sometimes	Often	Almost all the time
Forbidding actions because of disgust	1.05	1.28	46.6	24.1	15.5	5.2	8.6
Imposing physical closeness	1.86	1.39	29.3	5.2	25.9	29.3	10.3
Imposing cleanliness	0.52	0.96	72.4	10.3	12.1	3.4	1.7
Neglecting personal hygiene	0.69	1.06	63.8	12.1	19	1.7	3.4
Forbidding/demanding because of pickiness	1.03	1.35	59.9	8.6	13.8	15.5	5.2
Forbidding objects because of fear or disgust	0.83	1.17	60.3	10.3	19	6.9	3.4
Aggressive reaction to changes in the home	0.72	1.02	60.3	15.5	15.5	8.6	–
Aggressive reactions to normal actions	0.78	1.12	60.3	13.8	17.2	5.2	3.4
Demands reassurance or decision making	1.81	1.35	2.6	19.3	15.8	31.6	8.8
Performs damaging rituals	0.67	1.06	61.4	22.8	7	5.3	3.5
Forces others to perform feared actions	0.98	1.26	50.9	21.1	14	7	7
Demands special cuddling or contact	1.05	1.43	58.9	7.1	12.5	12.5	8.9
Forbids guests in the home	0.42	0.86	75.4	12.3	8.8	1.8	1.8
Imposing intimacy	0.42	1.02	82.5	3.5	7	3.5	3.5
Demands attention to repetitions	1.25	1.38	45.6	12.3	2.6	7	10.5
Imposing physical contact	0.81	1.2	63.2	8.8	15.8	8.8	3.5
Deprives sleep	0.89	1.34	58.9	19.6	3.6	8.9	8.9
Imposes rules because of tactile sensitivity	0.88	1.28	61.4	10.5	12.3	10.5	5.3

Values for frequency of responses are percentages (%)

activity in the home' and 'Imposes intimacy or acts provocatively around others', were rated 'never' by 75.4 and 82.5 %, respectively (Table 2).

Coercive–disruptive behaviors were not associated with child age ($r_{59} = -0.07$, $p = 0.59$), nor were there significant differences between boys and girls ($t_{55} = 0.8$, $p = 0.4$). As predicted, coercive–disruptive behaviors were positively correlated with severity of OCD symptoms ($r_{59} = 0.33$, $p < 0.05$). No significant links were found between CD–POC scores and the OCD symptom dimensions included in analysis (excluding hoarding and symmetry because of low internal reliability in the current sample). Youth CD–POC scores were positively associated with youth anxiety symptoms ($r_{59} = 0.4$, $p < 0.01$), but not with depressive symptoms ($r = 0.023$, $p = 0.86$). Parent report of youth stress was not associated with CD–POC scores ($r_{59} = 0.031$, $p = 0.82$). Using the SNAP-IV subscales, coercive behavior was moderately correlated with oppositionality ($r_{59} = 0.42$, $p < 0.01$), more weakly with hyperactivity ($r = 0.27$, $p < 0.05$), and not at all with inattentiveness ($r_{59} = 0.08$, $p = 0.56$).

Coercive–disruptive behavior was strongly correlated with overall FA ($r = 0.58$, $p < 0.001$), and with both the participation and modification subscales ($r_{59} = 0.51$ and 0.49 respectively, $p < 0.001$). Reports of distress associated with family accommodation were also related to the level of coercion ($r_{59} = 0.49$, $p < 0.001$), as were reports of negative consequences of not accommodating ($r_{59} = 0.67$, $p < 0.001$).

No aspects of family style, as measured with the ten FES subscales, showed significant links to coercive–disruptive behavior. The conflict subscale showed a correlation that approached significance ($r_{59} = 0.25$, $p = 0.06$). No significant associations to CD–POC were found when using the three global FES dimensions either. A non-significant relation was found between maternal self-report of OCD symptoms and CD–POC scores ($r_{59} = 0.302$, $p = 0.11$) and none of the demographic family related variables predicted CD–POC severity.

Hierarchical regression was used to investigate the relative contribution of child-level and family-level variables to predicting coercive–disruptive behavior. Variables were

Table 3 Hierarchical regression predicting coercive–disruptive behavior in youth with obsessive–compulsive disorder (OCD), from child and family variables

Variable	Step 1: child-level variables					Step 2: family-level variables				
	b	SE (b)	β	95 % CI		b	SE (b)	β	95 % CI	
				Lower	Upper				Lower	Upper
CY-BOCS	0.49	0.26	0.22	−0.04	1.02					
SCAS-P	0.22	0.11	0.25*	0.0	0.43					
SNAP-ODD	0.55	0.21	0.31*	0.12	0.98					
SNAP-HYPER	0.26	0.23	0.13	−0.21	0.73					
FA						0.78	0.23	0.43**	0.31	1.25
CONFLICT						0.37	0.72	0.06	−1.07	1.81

CI confidence interval, *CY-BOCS* Children's Yale-Brown Obsessive–Compulsive Scale, *SCAS-P* Spence Children's Anxiety Scale parent report, *SNAP-ODD/HYPER* Swanson, Nolan and Pelham-IV Questionnaire Oppositionality/Hyperactivity Subscales, *FA* family accommodation, *CONFLICT* Family Environment Scale Conflict Subscale

* $p < 0.05$; ** $p < 0.01$

entered in two steps based on the bivariate correlations. In step 1 CD–POC scores were predicted from the child-level variables: CY-BOCS, SCAS-P, and the SNAP-IV oppositionality and hyperactivity scores. In step 2 the family-level variables: FA and FES-conflict, were entered into the step 1 equation. Results of the variance inflation factor (all < 2.0) and collinearity tolerances (all > 0.65) indicate that the estimated βs are well established in the regression model.

The results of step 1 indicated that child level variables explained 34.3 % of variance in CD–POC scores (adjusted $R^2 = 0.29$), which was significantly different from zero ($F_{4,51} = 6.65$, $p < 0.001$). The family-level variables added in step 2 explained an additional 12.6 % of variance, a change which was significantly different from zero ($F\Delta = 5.8$, $p < 0.01$), indicating that family level variables made a significant contribution to predicting coercive–disruptive behavior, beyond the child level variables. The complete (step 2) model accounted for 46.9 % of variance in CD–POC scores (adjusted $R^2 = 0.4$), and was statistically significant ($F_{7,48} = 7.2$, $p < 0.001$). Unstandardized and standardized regression coefficients, and confidence intervals for the full model are presented in Table 3.

Figure 1 illustrates the hypothesized relationships between coercive–disruptive behavior, family accommodation and OCD symptom severity. Power for the test of an indirect effect is estimated at .37, assuming moderate effect sizes. Bivariate regressions showed coercive–disruptive behavior predicted OCD symptom severity [b = .15 (95 % CI 0.035–0.264), β = .33 t(57) = 2.6, $p < 0.05$] and family accommodation [b = .37 (95 % CI 0.241–0.495], β = .61, t(57) = 5.3, $p < 0.01$], and that family accommodation predicted OCD symptom severity [b = 0.39 (95 % CI 0.175–0.615), β = .52, t(57) = 4.7, $p < 0.01$]. The analysis showed that the indirect pathway through FA accounted for 97.13 % of the total effect of CD–POC on

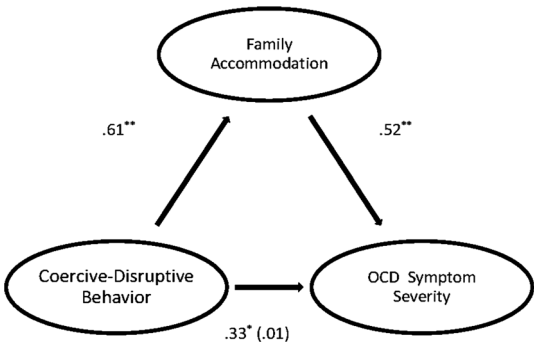

Fig. 1 Model of the indirect effect of coercive–disruptive behavior on obsessive–compulsive symptom severity, mediated through family accommodation. The indirect pathway through family accommodation accounted for 97.13 % of the total effect of the coercive–disruptive behaviors on OCD severity (Sobel z = 3.06, $p < 0.01$). Path coefficients are standardized; Coefficient in parenthesis is the direct effect when controlling for mediator

OCD severity (Sobel z = 3.06, $p < 0.01$). Bootstrapping with 5,000 trials estimated the indirect effect equaled .15 (95 % CI 0.073–0.148). No evidence was found for non-linear effects.

Discussion

This study is the first to investigate individual and family characteristics of youth with OCD who forcefully impose accommodation of OCD symptoms on family members. Coercive–disruptive behaviors were quite common in this sample: almost two thirds of mothers reported that at least one coercive behavior occurred frequently. Frequently reported forms of coercion involved youth demanding that others make decisions for them, imposing physical

closeness or clinginess, enforcing rules and prohibitions because of special pickiness or disgust, and requiring that parents attend to repeated actions or confessions. These results coincide with earlier findings indicating that rage among youth with OCD is often related to the need to complete OCD symptoms (Stewart 2012; Storch et al. 2012), and confirms more anecdotal reports of highly prevalent coercive–disruptive behaviors among OCD youth (Lebowitz et al. 2011).

The relation between parent report of coercive–disruptive behaviors in OCD and report of more general disruptive symptoms remains unclear. In an earlier study of coercive–disruptive behavior youth who had elevated CD–POC scores fell within normal limits on another standard measure of externalizing symptoms. In contrast, youth with OCD who exhibited frequent rage were also reported to have elevated anger and irritability. Rage was not specifically OCD related in that study, but was commonly triggered by OCD related symptoms. In the current study, reports of specifically OCD related coercive–disruptive behavior were associated with parent report of oppositional behavior more generally as well as hyperactivity. The current sample size did not allow for comparisons between youth who met particular comorbid diagnoses and those who did not.

Coercive–disruptive behavior was positively associated with severity of OCD and anxiety symptoms as well as with family accommodation, but not with symptoms of depression in the youth. This is in contrast to more general temper tantrums that have been strongly tied to depressive symptoms in youth with OCD (Krebs et al. 2013). Notably, no significant links were found between coercive–disruptive behavior and any of the dimensions of family style measured in this study. This is interesting because reports of aggressive and disruptive behavior in youth have frequently linked them to family style, including dimensions specifically measured with FES such as low organization and high hostility (Bird et al. 2006; Jester et al. 2005; Jouriles et al. 1988). Although it is possible that other aspects of family style not measured in this study would show stronger links to coercive behavior it also plausible that the coercive–disruptive behavior is more strongly linked to the youth's psychopathology than to family style.

The link between coercive–disruptive behavior and OCD severity appears to be almost entirely mediated by the family accommodation of the youth's symptoms. Youth who successfully impose accommodation on their families are very likely to be at risk for increasingly severe OCD symptoms, presumably resulting in a vicious cycle of coercion and symptom severity. This cycle presents both a challenge and opportunity. Parents face the difficult challenge of coping with the youth's demands, but the link between coercive behavior, accommodation and symptom severity may signal an opportunity for intervention. Treatments that enable parents to cope with the youth's behavior while reducing family accommodation may lead to symptom reduction (Peris and Piacentini 2013). To be successful, such treatments would likely need go beyond most current child or family based treatment protocols and to focus more systematically on reducing the accommodating parental behaviors, while also equipping parents with practical and effective tools for managing the youth's disruptive behavior. Recent preliminary reports of one such treatment protocol (The SPACE Program) have been encouraging (Lebowitz 2013; Lebowitz and Omer 2013). If supported by further research, reducing family accommodation may provide a promising avenue for the treatment of pediatric-onset OCD that is not contingent on the youth's collaboration or motivation (Abramowitz et al. 2002; Franklin and Foa 2011). As family accommodation is increasingly being recognized as an important aspect of other anxiety disorders (Lebowitz et al. 2013, 2014a, b) these results may have implications for children with non-OCD anxiety disorders as well.

The results of this study must be considered in light of several limitations. First, results are based on the report of only one parent and not on youth self-report. Although mothers have been indicated as the primary targets of coercive–disruptive behaviors in OCD (Lebowitz et al. 2011) the inclusion of two parents would have provided a more complete view of the child and family. Studies of externalizing behavior frequently rely on parent reports because including youth self-report may bias the sample towards more cooperative youth. However, including information from the youth would certainly have enriched the report. Given the previous research on rage in OCD, the current study would also have benefited from including a measure of rage specifically, alongside the measure of coercive–disruptive behavior. Other data that would have enriched this report are the ages of onset of externalizing symptoms and OCD symptoms. Ascertaining whether the OCD had an earlier onset would contribute to determining whether the externalizing symptoms are of a secondary nature. Second, the sample was relatively homogenous, indicating the need for caution in generalizing the findings to more diverse populations (Keller et al. 2004). Third, the cross-sectional nature precludes testing the proposed causal model of indirect effects. Future research with larger samples and longitudinal designs may confirm the model, or point to an alternative explanation of the identified relationships. Fourth, we obtained limited information on parental psychopathology, focused on OCD symptoms. Additional information on parental mental health may be important in understanding coercive–disruptive behaviors of OCD youth. For example, some parents may find it particularly challenging to maintain self-regulation when

the youth acts disruptively, potentially exacerbating the cycle of accommodation and symptom severity.

The current results offer important insight into the patterns, correlates, and significance of coercive–disruptive behavior in youth with OCD. Coercive behavior is common and can include a wide range of rules and prohibitions forcefully imposed on the family. Coercive–disruptive behaviors can occur across many diverse family styles and are not related to particular kinds of family environments. Therefore, clinicians should be encouraged to assess the presence and severity of coercive–disruptive behaviors and family accommodation in all families of youth with OCD. Coercive behavior leads to increased family accommodation placing the youth at risk for more severe symptoms and potentially lowering the likelihood of successful treatment (Garcia et al. 2010). Coercive behaviors of youth are associated with significant distress for parents, increasing the burden associated with pediatric OCD. Prospective longitudinal studies are needed estimate the frequency of coercive–disruptive behaviors and family accommodation in a younger cohort of OCD. Prospective longitudinal studies will also strengthen causal inferences. However, in our judgment, psychoeducation of parents concerning coercive behaviors and family accommodation should be considered in the initial clinical assessment of youth with OCD regardless of their chronological age. Future studies are also needed to assess the efficacy of The SPACE Program (Lebowitz 2013).

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