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Dysregulation in pediatric obsessive compulsive disorder

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ABSTRACT

Although obsessive compulsive disorder (OCD) and common co-occurring conditions share deficits in self-regulatory abilities, there has been minimal examination of impaired self-regulation (dysregulation) in youth with OCD. This study examined the association of dysregulation with symptom severity, impairment, and treatment outcome in pediatric OCD. Clinicians assessed obsessive-compulsive severity, family accommodation and global severity in 144 youth with OCD. Youth completed self-report severity ratings of anxiety and depressive symptoms. Parents completed the Child Behavior Checklist (CBCL), and both children and parents completed parallel ratings of obsessive-compulsive impairment. Ninety-seven youth received cognitive behavioral therapy (CBT) and were re-assessed after treatment. Dysregulation was assessed using the CBCL-Dysregulation Profile. Before treatment, dysregulated youth exhibited greater obsessive-compulsive symptom severity, depressive mood, family accommodation, and impairment than non-dysregulated youth. The magnitude of dysregulation directly predicted child-rated impairment, parent-rated impairment, and family accommodation, beyond obsessive-compulsive severity. The magnitude of pretreatment dysregulation predicted treatment discontinuation but not treatment response. Obsessive-compulsive symptom severity and dysregulation level significantly decreased after CBT. Dysregulated youth with OCD presented as more clinically severe than their non-dysregulated counterparts, and may require more individualized interventions to reduce dysregulated behavior to prevent CBT attrition. For treatment completers, CBT was associated with a decrease in dysregulation level.

1. Introduction

Pediatric obsessive compulsive disorder (OCD) affects 1–2% of youth (Douglass et al., 1995; Flament et al., 1988), and is associated with distress, impairment (Piacentini et al., 2003), and a diminished quality of life (Lack et al., 2009). As many as 80% of youth with OCD exhibit at least one comorbid condition (POTS, 2004; Storch et al., 2008a), with common co-occurring conditions including both internalizing (e.g., other anxiety disorders, mood disorders), and externalizing problems (e.g., attention-deficit hyperactivity disorder, disruptive behavior disorders; Farrell et al., 2006; Geller et al., 2001; Masi et al., 2010; Storch et al., 2012). Across the phenomenology of OCD and its co-occurring conditions, a shared deficit of inhibitory abilities emerges (e.g., inability to regulate intrusive thoughts, repetitive behaviors, affect and/or behavior). Indeed, impaired emotion regulation skills for children with OCD or non-OCD anxiety disorders have been reported (Jacob et al., 2012; Suveg and Zeman, 2004). As the ability to emotionally regulate conditioned fear is suggested to be directly linked to extinction learning (a core component of OCD psychosocial treatment; Britton et al., 2011), deficiencies in self-regulatory capabilities (e.g., comorbid conditions with deficits in self-regulation) may further impair extinction learning sought in treatment. Despite its relevance, there has been no examination of impaired self-regulation (dysregulation) in youth with OCD.

Dysregulation is broadly characterized by impairment in self-regulation abilities across the domains of affect, behavior, and cognition. Dysregulation represents dysfunctional self-regulation components that can manifest – with some idiographic differences– in any psychiatric disorder. For example, affective manifestations of dysregulation may be discernible as severe anxiety, depressed mood, or extreme mood fluctuations. Behavioral manifestations can be exhibited as impulsivity, agitated behaviors,

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irritability, restlessness, and aggressive actions (Brotman et al., 2006). Cognitive manifestations of dysregulation can be identified as inattention, distractibility, and difficulty focusing thoughts. Although heterogeneous in symptom presentation, dysregulation has been commonly assessed using the Child Behavior Checklist-Dysregulation Profile (CBCL-DP), which is comprised of the Child Behavior Checklist syndrome scales of Anxious/Depressed (affective), Aggressive Behavior (behavioral), and Inattention (cognitive) (Althoff, 2010; Ayer et al., 2009).

Using the CBCL-DP as an index of dysregulation, between 1.0% and 3.5% of youth in epidemiological studies (Althoff et al., 2010; Hudziak et al., 2005), 6–7% of general child psychiatric clinic samples (Holtmann et al., 2008; Holtmann et al., 2011), and 10–44% of children with Attention Deficit-Hyperactivity Disorder (ADHD) (Spencer et al., 2011; Volk and Todd, 2007) meet defined criteria for dysregulation. Limited information exists on the pathogenesis of dysregulation, with some evidence supporting the involvement of both genetic and environmental factors (Althoff et al., 2006; Boomsma et al., 2006; Hudziak et al., 2005). Dysregulation appears to be relatively stable across time and age, with dysregulated children reportedly continuing to exhibit these qualities from childhood to adolescence (Boomsma et al., 2006), and on through adulthood (Althoff et al., 2010). Higher dysregulation severity in youth has been associated with the development of severe mental health problems such as substance abuse, personality disorders, and suicidality in late adolescence and early adulthood (Meyer et al., 2009; Volk and Todd, 2007). Beyond serving as a harbinger of severe psychopathology, dysregulation has been associated with psychosocial impairment in both cross-sectional and longitudinal studies (Biederman et al., 2009; Meyer et al., 2009). Although dysregulation has been examined in non-clinical samples and several clinical samples, there has been no study of dysregulation in pediatric OCD. Dysregulation shares aspects with several comorbid conditions found to impact the clinical severity (e.g., non-OCD anxiety disorders, bipolar disorder), psychosocial impairment (e.g., attention-deficit hyperactivity disorder, externalizing disorders) and treatment response (e.g., disruptive behavior disorders) in pediatric OCD (Geller et al., 2003; Langley et al., 2010; Masi et al., 2004; Storch et al., 2008a; Sukhodolsky et al., 2005). Moreover, shared phenomenology between dysregulation and these conditions may help account for the heterogeneous findings observed across the noted studies assessing severity, impairment and treatment outcome in youth with OCD.

This report examined dysregulation in a sample of youth with a diagnosis of OCD, many of whom received treatment for their obsessive-compulsive symptoms as part of either a treatment study or standard clinical care. First, we examined whether there were differences in clinical characteristics and comorbidity patterns between youth categorized as dysregulated and those youth who were not. We hypothesized that youth who were categorized as dysregulated would have more severe psychopathology than youth who were not. Second, we were interested to examine the contributions of dysregulation to youth's impairment and level of family accommodation. In the context of OCD, family accommodation refers to actions taken by family members to minimize youth's distress by facilitating compulsions, providing reassurance, minimizing responsibilities and providing assistance with tasks (see either Lebowitz et al. (2012) or Storch et al. (2007) for a detailed review). We explored the extent to which dysregulation predicted child-rated impairment, parent-rated impairment, and family accommodation. We hypothesized that dysregulation would account for a significant amount of variance in impairment and family accommodation above and beyond obsessive-compulsive symptom severity. Third, we investigated whether pre-treatment dysregulation predicted cognitive behavioral therapy (CBT) outcome or treatment attrition. We hypothesized that dysregulation would predict CBT attrition and treatment outcome. Finally, we explored the association between dysregulation and obsessive-compulsive symptom severity after youth received CBT. We hypothesized that there would be a significant positive association between the change in dysregulation and obsessive-compulsive symptom severity after treatment.

2. Method

2.1. Participants

Participants were 144 youth (82 boys) ranging between 6 and 17 years of age (M_{years}=12.61, S.D.$_{years}$=2.81) with a primary or co-primary diagnosis of OCD. Participants were recruited from one of two university-based specialty clinics for OCD in the southeast United States. After their clinical evaluation, children and families were invited to participate in either research treatment protocols, or complete assessments as part of standard clinical care to track therapeutic outcome. Written consent from parents and assent from children was obtained from all participants. Children and families completed clinical assessments, which were either part of research studies (n=78; Storch et al., 2008b, 2010b, 2011), or standard clinic flow (n=66). Post-treatment assessment data was available for 97 youth who either participated in a cognitive-behavioral treatment outcome study (n=31) or through clinical care and completed a post-CBT assessment (n=66). For the 78 youth enrolled in research, inclusion and exclusion criteria were comparable across all studies, requiring participants to (1) meet diagnostic criteria for OCD as their primary or co-primary problem; (2) be medication free and/or taking psychiatric medication with no planned changes during treatment; and (3) not have another psychiatric condition requiring treatment prior to treating OCD.

2.2. Measures

Anxiety Disorders Interview Schedule for DSM-IV-Child and Parent Version (ADIS-C/P): the ADIS-C/P is a semi-structured clinical interview that was used to assess current episodes of Axis I disorders and provide differential diagnosis based on DSM-IV-TR criteria (Silverman and Albano, 1996). The ADIS-C/P has demonstrated strong psychometric properties, including test–retest reliability, inter-rater reliability, and concurrent validity (Silverman et al., 2001; Wood et al., 2002).

Children's Yale–Brown Obsessive Compulsive Scale (CY–BOCS): the CY–BOCS is a semi-structured clinician-administered measure of current obsessive-compulsive symptom severity (Scahill et al., 1997). The CY–BOCS produces a total score that was used as an index of obsessive-compulsive symptom severity before and after treatment. The CY–BOCS has demonstrated strong psychometric properties (e.g., inter-rater reliability, internal consistency, test–retest reliability, discriminant validity, and convergent validity; Scahill et al., 1997; Storch et al., 2004).

Clinical Global Impression-Severity (CGI-Severity): the CGI-Severity is a seven-point clinician rating of psychopathology severity, which ranges from 0 (no illness) to 6 (extremely severe; Guy and Bonato, 1970). The CGI-Severity was used to measure youth's overall presentation of illness severity. The CGI-Severity has been widely used in treatment studies and has demonstrated good psychometric properties in youth with OCD (Storch et al., 2010a).

Clinical Global Impression-Improvement (CGI-Improvement): the CGI-Improvement is a clinician-rated measure of response to treatment on a seven-point Likert scale ranging from *very much worse* to *very much improved*, which was administered after treatment (Guy and Bonato, 1970). Well validated in CBT trials for OCD (Lewin et al., 2012), a rating of *very much improved* or *much improved* were considered positive responses to treatment.

Family Accommodation (FA): family accommodation was assessed using the 13 items used in Calvocoressi et al. (1995). These items were used to measure a family's accommodation of children's obsessive-compulsive symptoms within the past month, and associated distress/impairment with accommodation. These items sum to produce a total score of family accommodation. These items have demonstrated good psychometric properties (e.g., internal consistency, and convergent validity; Calvocoressi et al., 1995; Storch et al., 2007).

Child Obsessive Compulsive Impact Scale– Parent/Child (COIS-P/C): the COIS-P is a 56-item parent-rated questionnaire used to examine OCD-related impairment in specific areas of child psychosocial functioning (Piacentini et al., 2003). The complimentary/parallel measure of the COIS-P for children is the child-rated COIS-C. The COIS-P/C scales are summed separately to produce separate parent and child ratings of impairment. The COIS-P/C have good reliability and validity in samples of youth with OCD (Piacentini et al., 2003).

Multidimensional Anxiety Scale for Children (MASC): the MASC is a psychometrically sound 39-item self-report questionnaire that was used to assess symptoms of general, social, and separation anxiety in youth (March et al., 1997). Items are rated on a four-point Likert-scale that ranges from *never true* (0) to *often very true*