Mediators of Exposure Therapy for Youth Obsessive-Compulsive Disorder: Specificity and Temporal Sequence of Client and Treatment Factors

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Objective: Behavioral engagement and cognitive coping have been hypothesized to mediate effectiveness of exposure-based therapies. Identifying which specific child factors mediate successful therapy and which therapist factors facilitate change can help make our evidence-based treatments more efficient and robust. The current study examines the specificity and temporal sequence of relations among hypothesized client and therapist mediators in exposure therapy for pediatric Obsessive Compulsive Disorder (OCD).

Method: Youth coping (cognitive, behavioral), youth safety behaviors (avoidance, escape, compulsive behaviors), therapist interventions (cognitive, exposure extensiveness), and youth anxiety were rated via observational ratings of therapy sessions of OCD youth (N = 43; ages = 8 – 17; 62.8% male) who had received Exposure and Response Prevention (ERP). Regression analysis using Generalized Estimation Equations and cross-lagged panel analysis (CLPA) were conducted to model anxiety change within and across sessions, to determine formal mediators of anxiety change, and to establish sequence of effects.

Results: Anxiety ratings decreased linearly across exposures within sessions. Youth coping and therapist interventions significantly mediated anxiety change across exposures, and youth-interfering behavior mediated anxiety change at the trend level. In CLPA, youth-interfering behaviors predicted, and were predicted by, changes in anxiety. Youth coping was predicted by prior anxiety change.

Conclusions: The study provides a preliminary examination of specificity and temporal sequence among child and therapist behaviors in predicting youth anxiety. Results suggest that therapists should educate clients in the natural rebound effects of anxiety between sessions and should be aware of the negatively reinforcing properties of avoidance during exposure.

Keywords: exposure and response prevention; mediators of change; child and adolescent; Obsessive Compulsive Disorder
Obssessive-compulsive disorder (OCD) is a debilitating disorder that affects between 1% and 4% of children and adolescents and contributes to significant impairment (Barrett, Farrell, Pina, Peris, & Piacentini, 2008). Exposure and Response Prevention (ERP) is well-documented as efficacious for OCD (Abramowitz, Whiteside, & Deacon, 2005; Barrett et al., 2008; Pediatric OCD Treatment Study [POTS] Team, 2004; Sanchez-Meca, Rosa-Alcazar, Iniesta-Sepulveda, & Rosa-Alcazar, 2014). However, even the most rigorously conducted interventions produce relatively low remission rates (39.3% remission rate in POTS, 2004). Identifying the critical mechanisms and essential strategies within ERP can help improve the effectiveness of ERP (Barrett et al., 2008).

Clinical trials have identified pretreatment factors that either predict (pretreatment severity, academic and social functioning, family dysfunction, and accommodation) or fail to predict (age, gender, baseline medication status) outcomes (Barrett, Farrell, Dadds, & Boulter, 2005; Garcia et al., 2010; Merlo, Lehmkühl, Gefken, & Storch, 2009; Piacentini et al., 2011). Aspects of treatment delivery have also been found to be important, such as exposure schedule (e.g., flooding versus gradual exposure; Boersma, Den Hengst, Dekker, & Emmelkamp, 1976) or its evocative medium (e.g., imaginal versus in vivo; Foa, Steketee, & Grayson, 1985). However, few studies have examined within-treatment patient and therapist factors that improve treatment during delivery. This research is unique in its ability to provide specific recommendations for increasing the efficiency and effectiveness of empirically supported therapies (Kazdin & Nock, 2003).

Cognitive behavioral therapy (CBT) for OCD is comprised of both exposure and cognitive restructuring, but ERP is the cornerstone of effective treatment (Barrett et al., 2008). ERP involves exposing patients to stimuli that trigger obsessive fears while encouraging the patient to resist the associated compulsive behaviors (Foa & Kozak, 1986). The most commonly proposed mechanism for ERP is that, across repeated exposures, obsession-triggered anxiety dissipates through the process of emotional processing, typically reflected by autonomic habituation. In addition, as the individual’s fears dissipate, she or he comes to learn that the feared consequences of not ritualizing do not materialize. The cognitive component of CBT aims to help individuals challenge unrealistic distortions, such as inflated sense of responsibility for harm, excessive self-doubt, and thought-action fusion (Salkovskis, 1996). Treatment protocols for youth often include cognitive therapy techniques presented in developmentally sensitive language to increase the child’s sense of personal efficacy, predictability, and controllability (Franklin, Freeman, & March, 2010). However, cognitive strategies are typically included to support and complement ERP, rather than replace it, and the unique contribution of cognitive mechanisms has not been demonstrated in youth (Barrett et al., 2008; Franklin & Foa, 2008).

Based on cognitive behavioral theory, we have certain expectations about the characteristics of successful ERP. First, the course of anxiety would be expected to decline over the course of treatment after repeated exposures to feared stimuli (autonomic habituation). However, the exact trajectory of anxiety reduction is unknown. Early theories predicted slow, gradual decline in anxiety as habituation occurred. Recent experimental research demonstrates that sustained excitation during exposures enhances the effectiveness and generalizability of treatment (Craske et al., 2008). If ERP is done correctly, where excitation levels are maintained, we might expect short-term increases in anxiety (within exposure or within session) in the service of achieving longer-term anxiety decreases (across sessions). Likewise, if sustained excitation is critical to ERP success, then the degree to which a therapist increases exposure intensity should be important. As the therapist orchestrates challenging exposures and encourages patients to remain in an exposure despite wishes to escape, the patient reaches critical levels of excitation.

Second, cognitive processes should play a role. When a client’s anticipated negative consequences fail to occur, the client’s distorted expectation of harm would be expected to dissipate (Foa & Kozak, 1986). For example, a youth who believes, “I will contract a deadly disease,” after touching a sticky substance might be asked to touch a hand to an unknown substance, resist cleaning the hand, and use a coping statement to counter anxiety. When the youth does not contract a disease, the youth gains direct evidence that counters the unrealistic, catastrophic fear. Successful ERP should display evidence of the therapist employing cognitive restructuring and a client utilizing coping statements to push through exposures. Alternatively, habituation during ERP may occur through cognitive distancing (i.e., tolerating distress in the presence of anxious thoughts) as the youth learns to identify the inconsequential nature of intrusive thoughts as part of anxiety’s “false alarm/message.”

Third, it has been theorized that client safety behaviors during exposures interfere with optimal doses of exposure, diminishing treatment effectiveness. Safety-seeking behaviors can be either overt or covert and function to help youth avoid or cope with a perceived threat (Salkovskis, 1996). The broadest and most common class of safety behavior
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