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Review

# Cognitive-behavioral high parental involvement treatments for pediatric obsessive-compulsive disorder: A meta-analysis

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ABSTRACT

A meta-analysis on the efficacy of cognitive-behavior-family treatment (CBFT) on children and adolescents with obsessive-compulsive disorder (OCD) was accomplished. The purposes of the study were: (a) to estimate the effect magnitude of CBFT in ameliorating obsessive-compulsive symptoms and reducing family accommodation on pediatric OCD and (b) to identify potential moderator variables of the effect sizes. A literature search enabled us to identify 27 studies that fulfilled our selection criteria. The effect size index was the standardized pretest-postest mean change index. For obsessive-compulsive symptoms, the adjusted mean effect size for CBFT was clinically relevant and statistically significant in the posttest ($d_{adj}$ = 1.464). For family accommodation the adjusted mean effect size was also positive and statistically significant, but in a lesser extent than for obsessive-compulsive symptoms ($d_{adj}$ = 0.511). Publication bias was discarded as a threat against the validity of the meta-analytic results. Large heterogeneity among effect sizes was found. Better results were found when CBFT was individually applied than in group ($d_+$ = 2.429 and 1.409, respectively). CBFT is effective to reduce obsessive-compulsive symptoms, but offers a limited effect for family accommodation. Additional modules must be included in CBFT to improve its effectiveness on family accommodation.

## 1. Introduction

Obsessive-compulsive disorder (OCD) is a debilitating condition characterized by obsessions (recurrent and intrusive thoughts) and/or compulsions (repetitive behaviors or mental acts) having serious consequences in an individual's daily life (American Psychiatric Association, 2013). Recent epidemiological studies have shown that OCD is relatively prevalent in children and adolescents, yielding similar rates (around 2%; Canals, Hernández-Martínez, Cosi, & Voltas, 2012) to those observed in adults (Kessler, Petukhova, Sampson, Zaslavsky, & Wittchen, 2012). OCD is also often associated with other psychological disorders, such as tics, attention deficit-hyperactivity disorder, autism spectrum disorders (ASD) or depression, which increase degree of discomfort and complicate treatment and prognosis (Murray, Jassi, Mataix-Cols, Barrow, & Krebs, 2015; Storch, Lewin, Geffken, Morgan, & Murphy, 2010).

The significant impairment that young people experience with OCD has encouraged the development of interventions and assessments tailored to this population, and the effectiveness of programs has been these treatment tested in several studies in the past twenty years (Freeman et al., 2014; Rapp, Bergman, Piacentini, & McGuire, 2016; Rosa-Alcázar, Iniesta-Sepulveda, & Rosa-Alcázar, 2012). As in adults, the core component of pediatric interventions is exposure with response prevention (ERP), which is usually accompanied by complementary techniques such as psychoeducation, cognitive training, and relapse prevention (American Academy of Child and Adolescent Psychiatry Committee – AACAP– on Quality Issues, 2012).

Parental involvement is an essential component of successful and well-accepted treatment programs for children with OCD for several reasons. Poor functioning, high levels of distress and conflict, guilt, and accommodation behavior have been observed in the relatives of young people with OCD (Peris, Benazon, Langley, Roblek, & Piacentini, 2008). These behaviors and attitudes influence the course and maintenance of children's OCD (Barrett, Farrell, Dadds, & Boulter, 2005; Garcia et al.,

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2010; Peris et al., 2012). Family accommodation, in particular, has been observed as a predictor of symptom severity (Strauss, Hale, & Stobie, 2015; Wu et al., 2016) and poor response to CBT (Rudy, Lewin, Geffken, Murphy, & Storch, 2014). Thus, the inclusion of parents in pediatric interventions for OCD could bring potential benefits. First, given that exposure exercises are anxiety-provoking for children; they require family members to guide home-based exposure and encourage treatment compliance (Choate-Summers et al., 2008; Freeman et al., 2003). Second, when parents are engaged in accommodation behaviors (facilitating objects for rituals, providing reassurance or helping the child to avoid situations) opportunities for children to have corrective learning experiences in their natural environment are reduced, interfering with the habituation process. Accordingly, parental involvement focused on assisting exposure and reducing family accommodation is considered a safe and acceptable way of enhancing CBT efficacy (Storch, 2014; Taboas, McKay, Whiteside, & Storch, 2015).

The term Cognitive-Behavioral Family Treatment (CBFT) has been used for treatment programs that include a structured parental component, in which at least one parent attends the majority of treatment sessions, usually having been trained to reduce family accommodation, and to assist and encourage children during exposure exercises (Barrett, Healy-Farrell, & March, 2004; Freeman et al., 2008; Storch et al., 2007).

A number of RCTs have provided strong evidence supporting the effectiveness of CBFTs regarding the comparative efficacy with control conditions, in the first randomized controlled trial evaluating the efficacy of CFBT for pediatric OCD, Barrett et al. (2004) randomly assigned 77 children ages 7–17 to 14 weeks of individual CBFT, group CBFT or waitlist control group. Two treatment conditions were superior to the waitlist. In the study by Piacentini et al. (2011) findings demonstrated significant superiority of CBFT over relaxation training in reducing symptom severity, functional impairment and family accommodation in 71 children and adolescents from 8 to 17 years. Freeman et al. (2008, 2014) also compared a CBFT with an active control condition of family-based relaxation training including preschool children (ages 5 − 8), population that have been underrepresented in OCD treatment trials. Results showed that the percentage of participants achieving clinical remission was significantly higher in the CBFT condition relative to relaxation training. Lewin, Wu, McGuire, and Storch (2014) also evaluated the effectiveness of 12-session 6-week intensive family-based ERP program in very young children (ages 3–8). To reflect standard practice, treatment as usual (TAU) was used as a control condition. Results showed significant higher percentages of responder and remitters in ERP relative to TAU arm, demonstrating that very young children could be effectively treated using extant approaches for older children when developmentally-appropriate adaptations are included.

Several CBFT formats have been evaluated across a number of studies. Regarding individual and group format, equivalent therapeutic effects were observed in the mentioned study by Barrett et al. (2004). Family interventions can also be categorized into those that employ an intensive or a weekly approach. Storch et al. (2007) randomized forty participants (ages 7–17) to a 14-session intensive (daily) or weekly CBFT. At post-treatment, intensive condition showed slight superiority in remission and improvement rates, although both conditions were equivalent, at 3-month follow-up. Intensive treatment can be beneficial to those whose special circumstances (e.g., relocation, great impairment) require a faster response (Storch et al., 2006; Storch, Lewin et al., 2010). Finally, limited access to providers sufficiently trained in CBT for OCD, has encouraged the emergence of telecommunication-delivered programs in which parental inclusion is of particular importance in implementing interventions at home. Web-camera delivered CBFT have demonstrated superiority over waitlist condition in a RCT including 31 OCD youth between 7 and 16 years (Storch et al., 2011) Also, no significant differences were observed between a telephone-based and face-to-face CBFT in a randomized trial Turner et al. (2014).

Recent meta-analyses on psychological treatments for pediatric OCD have analyzed the influence of family involvement in the effectiveness reached by the interventions. Our previous works included family-based and non-family CBTs, coding two moderator variables: a) the degree of parental involvement as *minimal* (parents only received information), *moderate* (parents attended some sessions) or *high* (parents attended almost all sessions and were trained to assist children during exposures), b) the focus of the intervention (whether intervention focused on the child with OCD or on the whole family). Results of a meta-analysis including only randomized controlled trials showed that neither the level of family involvement nor the focus of treatment exhibited a significant relationship with the effect sizes (Sánchez-Meca, Rosa-Alcázar, Iniesta-Sepúlveda, & Rosa-Alcázar, 2014). Nevertheless, in a meta-analysis with both RCTs and open trials, level of parental involvement showed a positive and statistically significant association with the effect size for obsessive-compulsive symptoms (*minimal*: $d_+ = 1.45$, *moderate*: $d_+ = 1.54$, *high*: $d_+ = 2.26$), exhibiting a large percentage of variance explained of 34% (Rosa-Alcázar et al., 2015).

Thompson-Hollands et al., 2014Thompson-Hollands, Edson, and Comer (2014) conducted a meta-analysis including studies on the treatment of OCD in children and adults. They coded the level of family involvement in a 5-point scale from 1 *minimal involvement* (e.g., family members attended a portion of a single session and asked questions about the treatment) to 5 *extensive involvement* (e.g., a fully family-based treatment with relatives present for all sessions and actively involved in treatment activities). Results including 28 studies conducted until 2012 showed that level of family involvement did not influence the effectiveness of the interventions. They also analyzed the inclusion of family techniques in the treatment package, finding that targeting family accommodation influenced the effect sizes of general functioning outcomes (targeted: $d_+ = 1.09$ vs. not targeted: $d_+ = 0.58$).

### 1.1. Purpose of the study

As an extension of our previous work, the purpose of this meta-analysis was to examine the global effectiveness of CBT interventions for OCD with high parental involvement to improve obsessive-compulsive symptoms and family accommodation in children and adolescents. Although several meta-analyses on the efficacy of psychological treatments for pediatric OCD have already been published, a number of studies on the effectiveness of CBFTs for pediatric OCD have recently been conducted and eight were not included in the previous meta-analyses (Comer et al., 2014; Freeman et al., 2014; Lenhard et al., 2014; Lewin et al., 2014b; Skarphedinsson et al., 2015; Torp et al., 2015; Turner et al., 2014; Whiteside et al., 2014). Recent studies have examined different formats and modalities of implementation that could be moderators of the effectiveness. Additionally, the influence of psychological techniques included, as well as the intensity and duration of the parental component have not yet been analyzed.

With this in mind, the current study had two goals: 1) to analyze global effectiveness of CBFTs with extensive parental involvement for OCD in children and adolescents that used clinician-rated assessment of obsessive-compulsive symptoms with the Children's Yale-Brown Obsessive–Compulsive Scale (CY-BOCS; Scahill et al., 1997) and parent-report of family accommodation with the Family Accommodation Scale for Obsessive–Compulsive Disorder (FAS; Calvocoressi et al., 1995, 1999) at posttreatment and at follow-up, and 2) to examine the presence of possible moderator variables related to participants, interventions and methodologies used in the studies.

## 2. Method

### 2.1. Study selection criteria

In order to be included in this meta-analysis, studies had to fulfill the following selection criteria: (a) to examine the efficacy of CBTs for