Title

Comparing OCD-affected youth with and without religious symptoms: Clinical profiles and treatment response

Permalink

https://escholarship.org/uc/item/0h08j9fx

Authors

Wu, Monica S
Rozenman, Michelle
Peris, Tara S
et al.

Publication Date

2018-10-01

DOI

10.1016/j.comppsych.2018.07.009

Peer reviewed

Comparing OCD-affected youth with and without religious symptoms: Clinical profiles and treatment response

Monica S. Wu[*], **Michelle Rozenman**, **Tara S. Peris**, **Joseph O'Neill**, **R. Lindsey Bergman**, **Susanna Chang**, and **John Piacentini**

UCLA Semel Institute for Neuroscience and Human Behavior, Los Angeles, CA, USA

Abstract

Background: Childhood obsessive-compulsive disorder (OCD) is a heterogeneous psychiatric condition, with varied symptom presentations that have been differentially associated with clinical characteristics and treatment response. One OCD symptom cluster of particular interest is religious symptoms, including fears of offending religious figures/objects; patients affected by these symptoms have been characterized as having greater overall OCD severity and poorer treatment response. However, the extant literature primarily examines this symptom subtype within adults, leaving a gap in our understanding of this subtype in youth.

Method: Consequently, this study examined whether presence of religious symptoms in OCD-affected children and adolescents ($N = 215$) was associated with greater clinical impairments across OCD symptoms and severity, insight, other psychiatric comorbidity, family variables, or worse treatment response.

Results: Results found that youth with religious OCD symptoms presented with higher OCD symptom severity and exhibited more symptoms in the aggressive, sexual, somatic, and checking symptom cluster, as well as the symmetry, ordering, counting, and repeating cluster. Religious OCD symptoms were also significantly associated with poorer insight and higher family expressiveness. No differences in treatment response were observed in youths with versus without religious OCD symptoms.

Conclusion: Ultimately, youths with religious OCD symptoms only differed from their OCD-affected counterparts without religious symptoms on a minority of clinical variables; this suggests they may be more comparable to youths without religious OCD symptoms than would be expected

based on the adult OCD literature and highlights the importance of examining these symptoms within a pediatric OCD sample.

Childhood obsessive-compulsive disorder (OCD) is a chronic psychiatric condition affecting approximately 1–2% of children and adolescents [1]. It has been linked to impairment across multiple domains of life, negatively impacting academic, social, and family functioning [2,3]. Despite these deleterious consequences, individuals with OCD unfortunately experience numerous barriers to seeking and receiving care, resulting in delayed diagnoses and treatment [4]. Moreover, even after receiving front-line treatments for pediatric OCD [5], only about half of youths experience full remission of symptoms [6]. Consequently, research on specific factors that may negatively impact treatment response and contribute to more severe symptom presentations is imperative. Given the tremendous heterogeneity in OCD symptom presentations [7], conducting nuanced examinations of specific symptom subtypes to test questions about which factors may influence disorder severity and treatment response can help elucidate such factors; these investigations may allow for personalized intervention approaches that help to alleviate disorder-related burden.

Numerous investigations with OCD-affected adults have examined the phenomenology and clinical profiles of various symptom dimensions [8–10], including contamination, harm, immoral, or symmetry/"just right" symptoms. Of particular interest in adult studies, religious symptoms have been explored given the distressing nature of the content, implications for morality, and interactions with the patient's own religion and cultural upbringing. However, this literature is conflicted in regards to whether religious symptoms are associated with more severe clinical profiles. In some studies, adult patients with religious obsessions are rated by clinicians as having poorer insight into their symptoms, as well as cognitive distortions such as magical thinking, overinflated sense of responsibility, perfectionism, importance of thoughts, and thought-action fusion related to morality [11–14]. Additionally, such adults presented with longer durations of illness and higher symptom severity when compared to OCD-affected adults who did not experience religious symptoms [15]. In contrast, other studies did not find differences in OCD symptom severity [16,17], although religious symptoms have been associated with having more obsessions [16]. More work needs to be done in this area, particularly in relation to whether religious symptoms are associated with differential clinical presentations in children and adolescents with OCD.

Investigations in adult OCD have also focused on the potential impact of religious symptoms on treatment-seeking behaviors and treatment response. One study found that OCD-affected adults with religious symptoms were more likely to seek pastoral counseling, but less likely to seek pharmacological treatment [17], highlighting differences in the types of treatment services obtained (although there was no difference in rates of seeking CBT). Additionally, individuals with religious OCD symptoms reported longer delays in receiving an accurate diagnosis and seeking professional help for their illness [15]. Given the barriers that already face youth with psychiatric difficulties [18,19], discussing religious symptoms, which may feel especially embarrassing or taboo, is presumed to be even more difficult [20]. In regards to treatment response, the adult OCD literature has been mixed. A recent review highlighted worse CBT-related outcomes for individuals presenting with more severe symptoms from the sexual/aggressive/religious subtype [21]. Some studies have also indicated that religious

symptoms demonstrate stability over time [22], with poorer long-term outcomes observed for adult patients receiving pharmacological and/or behavior therapy [23]. However, other studies failed to find any differences in treatment response [24]. Similar findings have also been mirrored in the limited child OCD literature [25,26].

Taken together, there are considerable data suggesting that individuals with OCD characterized by religious symptoms may have a unique clinical profile, including a poorer response to treatment. However, even though OCD frequently begins in childhood [27], there remains a gap in extending this work to this age group. This gap is important to address, given the phenomenological differences between adults and youth in the clustering of OCD symptom sub-types [10], developmental factors that may impact the malleability of religious symptoms [26], and differences in the treatment approaches to pediatric OCD [28,29]. Indeed, data regarding the relationship of religious OCD symptoms in youth with such critical clinical factors as family psychopathology and environment, as well as psychiatric comorbidities, are strikingly absent from the existing literature base.

This study seeks to fill the gaps in the pediatric OCD literature by examining whether the presence of religious symptoms is associated with greater overall OCD severity and higher rates of other OCD symptom clusters. Youth with religious OCD symptoms were expected to have higher symptom severity and to present with more aggressive, sexual, somatic, and checking symptoms [10] than their OCD-affected counterparts without religious symptoms. We also examined the clinical pro-files of youth presenting with and without religious OCD symptoms on characteristics related to OCD (insight, disorder-related impairment), psychiatric comorbidity (internalizing and externalizing disorders), as well as the family (accommodation, family environment) and the parent (parental psychopathology). We hypothesized that presence of religious OCD symptoms would be linked to higher OCD-related impairment, poorer insight, higher comorbidity [11,15,30], lower family accommodation [31], more controlled family interactions, and higher parental psychopathology. Predictions regarding the style of family interactions were drawn from related research into the effects of parenting strategies on mental pollution in OCD [32], and expectations about parental psychopathology were similarly referenced from broader literature in OCD [33]; neither of these hypotheses, however, have been tested specifically for religious OCD symptoms. Finally, we aimed to explore treatment response to CBT in youth with and without religious OCD symptoms. Although the limited child literature has not demonstrated differences in CBT response, some studies with adults suggest that the presence of religious symptoms is associated with poorer response [21,23].

1. Method

1.1. Participants and procedures

The current sample consisted of children and adolescents presenting to a university-based research clinic specializing in the assessment and treatment of OCD. Participating youth were drawn from one of three clinical research protocols [34–36]. Each of these studies was approved by the university institutional review board, and all youth completed assent and primary caregivers completed consent prior to initiation of any research procedures. All three studies had standardized reliability across clinician-administered measures and used

the same core battery of measures. To be eligible for the present investigation, youth had to be diagnosed with primary OCD at study entry and have completed the relevant core baseline assessment battery and self- and parent-report questionnaires described below.

The final study sample included 215 youths ages 7 to 17 ($M = 12.25$, $SD = 2.75$) of whom 57% were male, and 74% self-identified as Caucasian and 26% as a racial/ethnic minority. A subsample of youths ($n = 134$) completed 12 sessions of manualized CBT as part of the original treatment trials in which they were enrolled; data from this subset of youths were used to examine CBT treatment response in this investigation. Additionally, a separate subsample of these youths (drawn from two of the three research protocols) completed measures on parental psychopathology and OCD-related insight; these data were analyzed in a model separate from the other variables in order to maintain consistent samples within analyses. It is noted, however, that including these variables in the previous, broader models did not yield differences in the findings. The respective sample sizes per measure are presented in Table 1.

1.2. Measures

Demographic information was obtained through a parent-report demographics form that queried youth age, gender, and race/ethnicity.

Anxiety Disorders Interview Schedule for Children, Version IV [ADIS; 37] is a semi-structured diagnostic interview with strong psychometric properties [38]. For the purposes of this study, the ADIS was used to con-firm primary OCD diagnosis and to assess for psychiatric comorbidities.

Children's Yale-Brown Obsessive Compulsive Scale [CY-BOCS; 39] is a clinician-rated dimensional measure of OCD severity that includes a symptom checklist and provides a total severity score derived from 10 items assessing distress, impairment, and resistance against and control over symptoms. The CY-BOCS is the gold-standard dimensional measure of OCD severity and has demonstrated sound psychometric properties [40]. As in prior investigations [41], the CY-BOCS checklist was used to code the presence or absence of empirically-derived symptom clusters [42,43]. The original symptom clusters included: 1) aggressive, sexual, religious, somatic, and checking; 2) symmetry, ordering, counting, and repeating; 3) washing/cleaning; and 4) hoarding. As the present investigation was specifically interested in religious symptoms, those were removed from the original cluster 1 and comprised their own cluster. This religiosity subgroup was used to split the sample into groups of youth who did versus did not report religious symptoms.

Clinical Global Impressions - Improvement [CGI-I; 44] is a 1-item global clinician-rated measure of the patient's improvement following treatment on an eight-point scale. Scores below 4 indicate improvement, while scores N4 indicate symptom worsening. The CGI-I was used in this study to characterize treatment response such that CGI-I scores of 1 "very much improved" and 2 "much improved" reflected treatment response.

Children's Obsessive Compulsive Impact Scale – Revised (COIS-R) [3] is a 27-item questionnaire that assesses child (COIS-R-C) and parent (COISR-P) perspectives on OCD-

related impairment across home, academic, and social domains. In this study, the COIS was calculated as a total score of all items and used to test whether religious symptoms were related to worse functional impairment as rated by youth and parents.

Insight into symptoms was assessed using a single interviewer-administered item adapted from the Overvalued Ideas Scale [OVIS; 45]: "Do you think your problems or behaviors are reasonable (i.e., make sense)?" and scored on a Likert scale from 0 (excellent insight) to 4 (no insight/delusional). This measure of insight, which was used in the Pediatric OCD Treatment Study [46] and other investigations of pediatric OCD [47,48], was used to assess whether youth with religious symptoms had poorer insight than OCD-affected youth without religious symptoms.

Family Accommodation Scale [49] is a 13-item questionnaire administered by a clinician to the consenting parent to assess the degree of OCD-related parent accommodation in the last month. Responses are provided on a scale from 0 to 4 and were summed to form a total score, with higher values representing higher levels of accommodation. The FAS measures behavioral involvement by family members (e.g., provision of reassurance; participation in compulsions), as well as levels of family distress associated with family involvement in OCD.

Family Environment Scale [FES; 50] is a 90-item, parent-report measure assessing several domains of family functioning through true-false responses. In this study, the Cohesion, Expressiveness, and Control sub-scales were used to assess parent perspectives on the degree to which the family feels cohesive, is able to express themselves to other family members, and the degree of parental control, respectively.

Brief Symptom Inventory [BSI; 51] is a 53-item, broad measure of psychopathology commonly used to assess mental health symptoms in adults. Responses are provided on a 5-point rating scale and psycho-pathology subscales can be calculated. The BSI was administered to parents, and anxiety, depression, and psychoticism subscales were used in this investigation to test whether parent mental health difficulties might be associated with youth religious symptoms.

1.3. Data analytic plan

Descriptive statistics were examined for all clinical variables, including the mean, standard deviation, range, and respective sample sizes (Table 1). Independent t-tests were conducted to examine mean differences in OCD-affected youth with versus without religious symptoms for age and CY-BOCS baseline severity, and chi-squared tests were conducted to determine differences in gender, ethnic minority status, and OCD symptom clusters. Any significant differences from the aforementioned analyses were planned a priori to be included in all subsequent analyses as covariates. The clinical variables were then clustered by construct (i.e., OCD-related variables, family/parental variables, and psychiatric comorbidity as the IVs) and run as separate binomial logistic regressions to statistically predict the presence of religious OCD symptoms (DV). For treatment outcome, a binomial logistic regression was used to predict treatment response (DV) as a categorical outcome (clinical cutoff for CGI-I) from presence of religious symptoms at baseline (IV). An ANCOVA was utilized to examine

between-group differences (youth with or without religious OCD symptoms as IV) in treatment response (DV), which was calculated as a continuous outcome (CY-BOCS change pre- to post-treatment). As this was the first study to examine the clinical characteristics and treatment response of youth with religious symptoms as part of their OCD symptom presentation, no corrections were applied for multiple comparisons.

2. Results

2.1. Sample description

Out of the total sample of 215 youths, 112 (52%) positively endorsed the presence of religious obsessive-compulsive symptoms. There were no significant differences in age [$t(213) = 0.60$, $p = .55$, Cohen's d = 0.08], gender [$X^2 (1, N = 215) = 0$, $p = .98$], or racial/ethnic minority status [$X^2 (1, N = 215) = 0.13$, $p = .72$] between youth with and without religious symptoms.

2.2. Clinical profile of youth with religious OCD symptoms

Youth with religious OCD symptoms ($M = 25.55$, $SD = 4.35$) presented with higher OCD symptom severity (CY-BOCS total severity score) compared to those without these symptoms ($M = 24.17$, $SD = 4.21$; $t(213) = -2.36$, $p = .02$, Cohen's $d = 0.32$). In addition, a greater proportion of youth with religious OCD symptoms also reported co-occurring symptoms from the aggressive, sexual, somatic, and checking cluster [92% vs. 76%; $X^2 (1, N = 215) = 10.62$, $p = .001$] and the symmetry, ordering, counting, and repeating cluster [90% vs. 70%; $X^2 (1, N = 215) = 14.03$, $p < .001$]. However, the two study groups did not differ with regards to proportion of youth reporting co-occurring contamination [78% vs. 78%; $X^2 (1, N = 215) = 0$, $p = .999$] or hoarding symptoms [46% vs. 39%; $X^2 (1, N = 215) = 1.26$, $p = .26$]. Given these significant differences, all subsequent analyses included the CY-BOCS total score as a continuous covariate, and the presence of symptoms from the aggressive, sexual, somatic, and checking cluster, as well as the symmetry, ordering, counting cluster, as categorical (yes/no) covariates.

Neither child- and parent-rated OCD-related impairment on the COIS-R nor the presence of psychiatric comorbidities (either internalizing, externalizing, both internalizing and externalizing, or none) were predictive of religious OCD symptoms, $ps > .05$. In contrast, the presence of religious OCD symptoms were predicted by higher scores on family expressiveness (Adjusted OR: 1.49, $p = .01$), but not family accommodation, cohesion, or control ($ps > .05$).

Among the subsample of families who completed measures on insight and parental psychopathology, insight was predictive of religious OCD symptoms, with poorer insight observed in youths with religious OCD symptoms versus without (Adjusted OR: 0.54, $p = .03$). The relationship between parental psychopathology (depressive symptoms, anxiety, and psychoticism) and the presence of child religious symptoms was not statistically significant, $ps > .05$. Table 2 displays detailed statistics from these logistic regressions.

2.3. Religious OCD symptoms and treatment response

After controlling for baseline CY-BOCS score, child age and gender, symptoms from the aggressive/sexual cluster, and symptoms from the somatic/checking/repeating/counting/ arranging cluster, youths with versus without religious OCD symptoms did not differ in treatment response on the CGI-I (Adjusted OR = 1.62, $p = .22$) or change in CY-BOCS from preto-post-treatment ($F(1, 125) = 1.43$, $p = .23$). Fig. 1 displays the percentage of youth who scored as responders (CGI-I) after treatment and the changes in CY-BOCS total scores from pre- to post-treatment, categorized by youth with versus without religious symptoms.

3. Discussion

This study is the first to examine the clinical characteristics and treatment response associated with religious symptoms in child and adolescent OCD. Drawing on a large, well-characterized sample of youth with OCD, we found that the presence of religious symptoms was associated with greater overall OCD severity, more frequent presence of symptoms from other clusters, and poorer insight.

Youth with religious symptoms exhibited significantly higher OCD symptom severity on the CY-BOCS when compared to their counterparts without religious symptoms, even when controlling for presence of other OCD symptoms, which is consistent with findings from the adult OCD literature [15]. Religious symptoms have been associated with an inflated sense of responsibility in adults [12,14] and these patients may struggle with an inability to discern ego-syntonic thoughts (consistent with their religious practices) from OCD-related obsessions; consequently, the youth in our sample may experience greater distress or difficulty with resisting/responding to these specific symptoms, which in turn may be reflected in overall OCD severity. However, child- and parent-reported OCD-related impairment was not significantly higher in youth with religious symptoms than those without, suggesting that these symptoms may not carry a substantially higher functional burden than the other types of OCD symptoms found in this sample [52].

Alternatively, the presence of religious OCD symptoms might pose a risk factor for the presence of other OCD symptoms, thereby inflating disorder severity ratings. Indeed, compared to youth without religious symptoms, we found a higher proportion of youth with religious OCD symptoms who also present symptoms from the aggressive, sexual, somatic and checking cluster, as well as the symmetry, ordering, counting, and repeating cluster. Religious symptoms have repeatedly been observed to cluster with aggressive and sexual symptoms in pediatric OCD [10], as well as with somatic symptoms and checking compulsions [53]. Relatedly, youth with religious symptoms reported poorer insight than their unaffected counterparts. It may be possible that youth with religious symptoms are more likely to have other symptoms that are "forbidden" or related to global concerns about morality, or that youth are not able to distinguish between their symptoms and other thoughts, reflecting a global lack of insight into whether their thoughts are realistic. Consequently, this may result in a reticence to discuss symptoms with others (e.g., parents, providers) because youth may fear that disclosing these thoughts would lead others to recognize that they are immoral or otherwise "bad" [20], resulting in lower motivation for participating in therapy [54,55]. Indeed, patients with religious OCD symptoms are

particularly prone to possessing strong beliefs about their thoughts (e.g., inflated responsibility, importance of thoughts/control over thoughts), more so than individuals with other symptom dimensions such as contamination or sexual obsessions [13]. This places them at further risk for maintenance and exacerbation of obsessive-compulsive symptoms, as patients with these thought distortions are more likely to engage in counter-therapeutic techniques to cope with the thoughts, such as thought suppression [56].

When considering family variables, only family expressiveness emerged as a significant predictor of religious OCD symptoms. The finding of having higher family expressiveness statistically predict the presence of religiosity is somewhat surprising, as youths with other related disorders (e.g., anxiety disorders) tend to come from families with lower family expressiveness [57]. However, clinical anecdotes may suggest that youth with religious OCD symptoms do not typically come from punitive, restricting, overly-religious families; on the contrary, these symptoms are ego-dystonic and often at odds with the family's religious practices and supportive environment. These families may generally have higher intra-family communication, which has been broadly related to higher expressiveness and a moral/ religious family focus in non-psychiatric samples [58]. Additionally, higher family expressiveness may be related to increased familial support more broadly, which can buffer against impaired functioning [59], potentially explaining (at least in part) the lack of significant findings between religious OCD symptoms and impairment. Ultimately, further study into the family dynamics of these youth is warranted to disentangle potential variables that may be contributing to higher familial emotional expression and the presence of religious OCD symptoms. It is notable that we did not find differences in parental psychopathology, family cohesion, or parental control between youth with and without religious symptoms; these findings could be a reflection of the lack of differences between youth with and without religious symptoms in parent- and child-reported impairment (including impairment at home) due to the OCD. Future studies should seek to continue examinations of other family variables (e.g., hostility/blame), given the importance of considering family characteristics and involving caregivers in the treatment of pediatric OCD [28,29,35].

With regards to CBT treatment outcome, treatment response rates and OCD severity reduction were not impacted by the presence of religious symptoms. This is in line with prior findings in smaller samples [25,26], suggesting that youth with religious symptoms respond to CBT in a manner comparable to those without such symptoms. In contrast, although the adult literature has demonstrated mixed findings, a number of studies have found that the presence of religious symptoms predicts poorer treatment response [21,23]. It may be that parental participation – including information about family expectations related to religious activity, what constitutes appropriate religious behavior (e.g., amount and type of prayer), and guidance at home (e.g., participation in religious activity) – serve to benefit the child by providing feedback in session and enforcing these expectations in the home environment. Interestingly, prior work examining hoarding symptoms in pediatric OCD parallels these religious symptom findings; youth with hoarding symptoms did not differ in treatment response [60], despite the adult literature supporting that adult hoarding predicts much poorer treatment response [61,62]. Additionally, religious beliefs may be less entrenched or more malleable in youth when compared to adults [26], potentially making it

easier to address these symptoms in CBT as compared to adults. Provided that these findings are replicated, clinicians are encouraged to continue using exposure and response prevention to address religious symptoms, given the comparable efficacy for youth with and without religious OCD symptoms.

These study findings should be interpreted in the context of several limitations. First, these data were compiled from three clinical trials that did not ascertain religious affiliation information or greater detail about the severity of religious obsessions and/or compulsions; specifically, our measure of religious symptoms was a dichotomous (presence/absence) variable taken from the CY-BOCS. Religious practice can affect the prevalence of religious symptoms [63], as well as the content of the symptoms and how individuals react in response to religion-related obsessions [64]. Degree of religiosity in adults can also impact symptom severity, feelings of over-responsibility, and the need for certainty and control [65,66], suggesting the importance of future studies to examine these constructs in pediatric populations. Additionally, no corrections were applied for multiple comparisons, as this is the first study to examine the clinical characteristics of religious OCD symptoms in a pediatric sample; this approach is designed to prevent potential variables of interest from being excluded prematurely, with further study recommended to facilitate identification of pertinent variables. Furthermore, patients included in this sample were treatment-seeking; other studies should examine the impact of religious OCD symptoms on pharmacological treatment response, as well as the clinical characteristics of these youth in a broader context (e.g., non-treatment seeking youth in the community) to increase generalizability. Lastly, this manuscript examined the impact of the presence of religious OCD symptoms, regardless of whether or not they were the child's primary OCD symptom presentation. Future studies should examine the impact of these symptoms when it is the child's primary concern and elucidate potential differences with youth that have these symptoms but do not report them as their primary concern.

Despite these limitations, the present study investigated the clinical features and treatment response of youth with religious symptoms in a well-characterized, relatively large sample of treatment-seeking youths with primary OCD. Findings suggest that although there are some unique differences between youths with and without religious symptoms, such as OCD symptom severity, certain OCD symptom clusters, insight, and family expressiveness, these youths are fairly comparable to children with OCD who do not have religious symptoms. Indeed, treatment response did not differ between youth with versus without religious symptoms, suggesting that exposure and response prevention response and OCD symptom reduction rates were comparable between groups. Despite potential clinician concerns with addressing religious symptoms because the content may be difficult to discuss and/or overlap with family religious practices, clinicians should continue to use CBT and to conduct exposures with these children and adolescents [67], with the expectation that youth with religious OCD symptoms should obtain comparable benefit to their peers without these symptoms.

Author Manuscript

Acknowledgements

References

[1]. Zohar AH. The epidemiology of obsessive-compulsive disorder in children and adolescents. Child Adolesc Psychiatr Clin N Am 1999;8:445–60. [PubMed: 10442225]

[2]. Piacentini J, Bergman RL, Keller M, McCracken J. Functional impairment in children and adolescents with obsessive-compulsive disorder. J Child Adolesc Psychopharmacol 2003;13:S61–9. [PubMed: 12880501]

[3]. Piacentini J, Peris TS, Bergman RL, Chang S, Jaffer M. Functional impairment in childhood OCD: development and psychometrics properties of the Child Obsessive-Compulsive Impact Scale-Revised (COIS-R). J Clin Child Adolesc Psychol 2007;36: 645–53. [PubMed: 18088221]

[4]. Garcia-Soriano G, Rufer M, Delsignore A, Weidt S. Factors associated with non-treatment or delayed treatment seeking in OCD sufferers: a review of the literature. Psychiatry Res 2014;220:1–10. [PubMed: 25108591]

[5]. American Academy of Child and Adolescent Psychiatry. Practice parameters for the assessment and treatment of children and adolescents with obsessive-compulsive disorder. J Am Acad Child Adolesc Psychiatry 2012;51:98–113. [PubMed: 22176943]

[6]. McGuire JF, Piacentini J, Lewin AB, Brennan EA, Murphy TK, Storch EA. A meta-analysis of cognitive behavior therapy and medication for child obsessive-compulsive disorder: moderators of treatment efficacy, response, and remission. Depress Anxiety 2015;32:580–93. [PubMed: 26130211]

[7]. van den Heuvel OA, Remijnse PL, Mataix-Cols D, Vrenken H, Groenewegen HJ, Uylings HB, et al. The major symptom dimensions of obsessive-compulsive disorder are mediated by partially distinct neural systems. Brain 2009;132:853–68. [PubMed: 18952675]

[8]. Abramowitz JS, Deacon BJ, Olatunji BO, Wheaton MG, Berman NC, Losardo D, et al. Assessment of obsessive-compulsive symptom dimensions: development and evaluation of the Dimensional Obsessive-Compulsive Scale. Psychol Assess 2010;22:180–98. [PubMed: 20230164]

[9]. Rosario-Campos MC, Miguel EC, Quatrano S, Chacon P, Ferrao Y, Findley D, et al. The Dimensional Yale-Brown Obsessive-Compulsive Scale (DY-BOCS): an instrument for assessing obsessive-compulsive symptom dimensions. Mol Psychiatry 2006;11: 495–504. [PubMed: 16432526]

[10]. Bloch MH, Landeros-Weisenberger A, Rosario MC, Pittenger C, Leckman JF. Meta-analysis of the symptom structure of obsessive-compulsive disorder. Am J Psychiatry 2008;165:1532–42. [PubMed: 18923068]

[11]. Tolin DF, Abramowitz JS, Kozak MJ, Foa EB. Fixity of belief, perceptual aberration, and magical ideation in obsessive-compulsive disorder. J Anxiety Disord 2001;15:501–10. [PubMed: 11764309]

[12]. Sica C, Novara C, Sanavio E. Religiousness and obsessive–compulsive cognitions and symptoms in an Italian population. Behav Res Ther 2002;40:813–23. [PubMed: 12074375]

[13]. Siev J, Steketee G, Fama JM, Wilhelm S. Cognitive and clinical characteristics of sexual and religious obsessions. J Cogn Psychother 2011;25:167–76. [PubMed: 25045202]

[14]. Nelson EA, Abramowitz JS, Whiteside SP, Deacon BJ. Scrupulosity in patients with obsessive-compulsive disorder: relationship to clinical and cognitive phenomena. J Anxiety Disord 2006;20:1071–86. [PubMed: 16524696]

[15]. Karadaĝ F, Oguzhanoglu NK, Özdel O, Ateŝci FÇ, Amuk T. OCD symptoms in a sample of Turkish patients: a phenomenological picture. Depress Anxiety 2006;23:145–52. [PubMed: 16502403]

[16]. Tek C, Ulug B. Religiosity and religious obsessions in obsessive-compulsive disorder. Psychiatry Res 2001;104:99–108. [PubMed: 11711164]

[17]. Siev J, Baer L, Minichiello WE. Obsessive-compulsive disorder with predominantly scrupulous symptoms: clinical and religious characteristics. J Clin Psychol 2011;67: 1188–96. [PubMed: 22042580]

[18]. Owens PL, Hoagwood K, Horwitz SM, Leaf PJ, Poduska JM, Kellam SG, et al. Barriers to children's mental health services. J Am Acad Child Adolesc Psychiatry 2002;41:731–8. [PubMed: 12049448]

[19]. Kataoka SH, Zhang L, Wells KB. Unmet need for mental health care among U.S. children: variation by ethnicity and insurance status. Am J Psychiatry 2002;159:1548–55. [PubMed: 12202276]

[20]. Storch EA, Björgvinsson T, Riemann B, Lewin AB, Morales MJ, Murphy TK. Factors associated with poor response in cognitive-behavioral therapy for pediatric obsessive-compulsive disorder. Bull Menn Clin 2010;74:167–85.

[21]. Thorsen AL, Kvale G, Hansen B, van den Heuvel OA. Symptom dimensions in obsessive-compulsive disorder as predictors of neurobiology and treatment response. Curr Treat Options Psychiatry 2018;5:182–94. [PubMed: 30237966]

[22]. Mataix-Cols D, Rauch SL, Baer L, Eisen JL, Shera DM, Goodman WK, et al. Symptom stability in adult obsessive-compulsive disorder: data from a naturalistic two-year follow-up study. Am J Psychiatry 2002;159:263–8. [PubMed: 11823269]

[23]. Alonso P, Menchon JM, Pifarre J, Mataix-Cols D, Torres L, Salgado P, et al. Long-term follow-up and predictors of clinical outcome in obsessive-compulsive patients treated with serotonin reuptake inhibitors and behavioral therapy. J Clin Psychiatry 2001;62:535–40. [PubMed: 11488364]

[24]. Abramowitz JS, Franklin ME, Schwartz SA, Furr JM. Symptom presentation and outcome of cognitive-behavioral therapy for obsessive-compulsive disorder. J Consult Clin Psychol 2003;71:1049–57. [PubMed: 14622080]

[25]. Storch EA, Merlo LJ, Larson MJ, Bloss CS, Geffken GR, Jacob ML, et al. Symptom dimensions and cognitive-behavioural therapy outcome for pediatric obsessive-compulsive disorder. Acta Psychiatr Scand 2008;117:67–75. [PubMed: 17986317]

[26]. Storch EA, Merlo LJ, Larson MJ, Marien WE, Geffken GR, Jacob ML, et al. Clinical features associated with treatment-resistant pediatric obsessive-compulsive disorder. Compr Psychiatry 2008;49:35–42. [PubMed: 18063039]

[27]. Geller DA. Obsessive-compulsive and spectrum disorders in children and adolescents. Psychiatr Clin North Am 2006;29:353–70. [PubMed: 16650713]

[28]. Freeman JB, Garcia A, Benito K, Conelea C, Sapyta J, Khanna M, et al. The Pediatric Obsessive Compulsive Disorder Treatment Study for Young Children (POTS jr): developmental considerations in the rationale, design, and methods. J Obsessive Compuls Relat Disord 2012;1:294–300. [PubMed: 23181244]

[29]. Lewin AB, Park JM, Jones AM, Crawford EA, DeNadai AS, Menzel J, et al. Family-based exposure and response prevention therapy for preschool-aged children with obsessive-compulsive disorder: a pilot randomized controlled trial. Behav Res Ther 2014;56:30–8. [PubMed: 24657310]

[30]. Stewart SE, Hu YP, Leung A, Chan E, Hezel DM, Lin SY, et al. A multisite study of family functioning impairment in pediatric obsessive-compulsive disorder. J Am Acad Child Adolesc Psychiatry 2017;56:241–249.e3. [PubMed: 28219490]

[31]. Wu MS, Geller DA, Schneider SC, Small BJ, Murphy TK, Wilhelm S, et al. Comorbid psychopathology and the clinical profile of family accommodation in pediatric OCD. Child Psychiatry Hum Dev. [Under review].

[32]. Berman NC, Wheaton MG, Fabricant LE, Abramowitz JS. Predictors of mental pollution: the contribution of religion, parenting strategies, and childhood trauma. J Obsessive Compuls Relat Disord 2012;1:153–8.

[33]. Calvo R, Lázaro L, Castro J, Morer A, Toro J. Parental psychopathology in child and adolescent obsessive-compulsive disorder. Soc Psychiatry Psychiatr Epidemiol 2007;42:647–55. [PubMed: 17516014]

[34]. O'Neill J, Piacentini J, Chang S, Ly R, Lai TM, Armstrong CC, et al. Glutamate in pediatric obsessive-compulsive disorder and response to cognitive-behavioral therapy: randomized clinical trial. Neuropsychopharmacology 2017;42:2414–22. [PubMed: 28409563]

[35]. Peris TS, Rozenman MS, Sugar CA, McCracken JT, Piacentini J. Targeted family intervention for complex cases of pediatric obsessive-compulsive disorder: a randomized controlled trial. J Am Acad Child Adolesc Psychiatry 2017;56:1034–42 [e1]. [PubMed: 29173737]

[36]. Piacentini J, Bergman RL, Chang S, Langley A, Peris TS, Wood JJ, et al. Controlled comparison of family cognitive behavioral therapy and psychoeducation/relaxation training for child obsessive-compulsive disorder. J Am Acad Child Adolesc Psychiatry 2011;50:1149–61. [PubMed: 22024003]

[37]. Silverman WK, Albano AM. The Anxiety Disorders Interview Schedule for DSM-IV-child and parent versions. San Antonio, TX: Graywind Publications; 1996.

[38]. Silverman WK, Saavedra LM, Pina AA. Test-retest reliability of anxiety symptoms and diagnoses with the Anxiety Disorders Interview Schedule for DSM-IV: child and parent versions. J Am Acad Child Adolesc Psychiatry 2001;40:937–44. [PubMed: 11501694]

[39]. Scahill L, Riddle MA, McSwiggin-Hardin M, Ort SI, King RA, Goodman WK, et al. Children's Yale-Brown Obsessive Compulsive Scale: reliability and validity. J Am Acad Child Adolesc Psychiatry 1997;36:9. [PubMed: 9000776]

[40]. Storch EA, Murphy TK, Geffken GR, Soto O, Sajid M, Allen P, et al. Psychometric evaluation of the Children's Yale-Brown Obsessive-Compulsive Scale. Psychiatry Res 2004;129:91–8. [PubMed: 15572188]

[41]. Rozenman M, Peris T, Bergman RL, Chang S, O'Neill J, McCracken JT, et al. Distinguishing fear versus distress symptomatology in pediatric OCD. Child Psychiatry Hum Dev 2017;48:63–72. [PubMed: 27225633]

[42]. Stewart SE, Rosario MC, Brown TA, Carter AS, Leckman JF, Sukhodolsky D, et al. Principal components analysis of obsessive-compulsive disorder symptoms in children and adolescents. Biol Psychiatry 2007;61:285–91. [PubMed: 17161383]

[43]. Stewart SE, Rosario MC, Baer L, Carter AS, Brown TA, Scharf JM, et al. Four-factor structure of obsessive-compulsive disorder symptoms in children, adolescents, and adults. J Am Acad Child Adolesc Psychiatry 2008;47:763–72. [PubMed: 18520961]

[44]. Guy W Clinical global impression scale. Rockville, MD: National Institute of Mental Health; 1976.

[45]. Neziroglu F, McKay D, Yaryura-Tobias JA, Stevens KP, Todaro J. The Overvalued Ideas Scale: development, reliability and validity in obsessive-compulsive disorder. Behav Res Ther 1999;37:881–902. [PubMed: 10458051]

[46]. The Pediatric OCD Treatment Study (POTS) Team. Cognitive-behavior therapy, sertraline, and their combination with children and adolescents with obsessive-compulsive disorder: the Pediatric OCD Treatment Study (POTS) randomized controlled trial. JAMA 2004;292:1969–76. [PubMed: 15507582]

[47]. Lewin AB, Bergman RL, Peris TS, Chang S, McCracken JT, Piacentini J. Correlates of insight among youth with obsessive-compulsive disorder. J Child Psychol Psychiatry 2010;51:603–11. [PubMed: 20039994]

[48]. Peris TS, Bergman RL, Asarnow JR, Langley A, McCracken JT, Piacentini J. Clinical and cognitive correlates of depressive symptoms among youth with obsessive compulsive disorder. J Clin Child Adolesc Psychol 2010;39:616–26. [PubMed: 20706915]

[49]. Calvocoressi L, Lewis B, Harris M, Trufan SJ, Goodman WK, McDougle CJ, et al. Family accommodation in obsessive-compulsive disorder. Am J Psychiatry 1995; 152:441–3. [PubMed: 7864273]

[50]. Moos RH, Moos BS. Family environment scale manual. Palo Alto, CA: Consulting Psychologists Press; 1994.

[51]. Derogatis LR, Melisaratos N. The Brief Symptom Inventory: an introductory report. Psychol Med 1983;13:595–605. [PubMed: 6622612]

[52]. Storch EA, Larson MJ, Muroff J, Caporino N, Geller D, Reid JM, et al. Predictors of functional impairment in pediatric obsessive-compulsive disorder. J Anxiety Disord 2010;24:275–83. [PubMed: 20056376]

[53]. Hasler G, LaSalle-Ricci VH, Ronquillo JG, Crawley SA, Cochran LW, Kazuba D, et al. Obsessive-compulsive disorder symptom dimensions show specific relationships to psychiatric comorbidity. Psychiatry Res 2005;135:121–32. [PubMed: 15893825]

[54]. Kozak MJ, Foa EB. Obsessions, overvalued ideas, and delusions in obsessive-compulsive disorder. Behav Res Ther 1994;32:343–53. [PubMed: 8192634]

[55]. Himle JA, Etten ML, Janeck AS, Fischer DJ. Insight as a predictor of treatment outcome in behavioral group treatment for obsessive–compulsive disorder. Cogn Ther Res 2006;30:661–6.

[56]. Altın M, Gençöz T. How does thought-action fusion relate to responsibility attitudes and thought suppression to aggravate the obsessive-compulsive symptoms? Behav Cogn Psychother 2010;39:99–114. [PubMed: 20846469]

[57]. Suveg C, Zeman J, Flannery-Schroeder E, Cassano M. Emotion socialization in families of children with an anxiety disorder. J Abnorm Child Psychol 2005;33:145–55. [PubMed: 15839493]

[58]. La Coste LD, Ginter EJ, Whipple G. Intrafamily communication and familial environment. Psychol Rep 1987;61:115–8. [PubMed: 3671597]

[59]. Wang J, Zhao X. Comparison of family functioning and social support between families with a member who has obsessive-compulsive disorder and control families in Shanghai. Shanghai Arch Psychiatry 2012;24:20–9. [PubMed: 25324597]

[60]. Rozenman M, McGuire J, Wu M, Ricketts E, Peris T, O'Neill J, et al. Hoarding symptoms in youth with OCD: clinical features and CBT response, J Am Acad Child Adolesc Psychiatry. [Under review].

[61]. Mataix-Cols D, Marks IM, Greist JH, Kobak KA, Baer L. Obsessive-compulsive symptom dimensions as predictors of compliance with and response to behaviour therapy: results from a controlled trial. Psychother Psychosom 2002;71:255–62. [PubMed: 12207105]

[62]. Keeley ML, Storch EA, Merlo LJ, Geffken GR. Clinical predictors of response to cognitive-behavioral therapy for obsessive–compulsive disorder. Clin Psychol Rev 2008;28:118–30. [PubMed: 17531365]

[63]. Okasha A, Saad A, Khalil AH, el Dawla AS, Yehia N. Phenomenology of obsessive-compulsive disorder: a transcultural study. Compr Psychiatry 1994;35:191–7. [PubMed: 8045109]

[64]. Yorulmaz O, Gençöz T, Woody S. OCD cognitions and symptoms in different religious contexts. J Anxiety Disord 2009;23:401–6. [PubMed: 19108983]

[65]. Steketee G, Quay S, White K. Religion and guilt in OCD patients. J Anxiety Disord 1991;5:359–67.

[66]. Abramowitz JS, Deacon BJ, Woods CM, Tolin DF. Association between Protestant religiosity and obsessive–compulsive symptoms and cognitions. Depress Anxiety 2004;20:70–6. [PubMed: 15390213]

[67]. McGuire JF, Wu MS, Choy C, Piacentini JC. Exposures in cognitive behavior therapy for pediatric obsessive-compulsive disorder: addressing common clinician concerns. J Child Psychol Psychiatry 2018;59:714–6. [PubMed: 29808492]
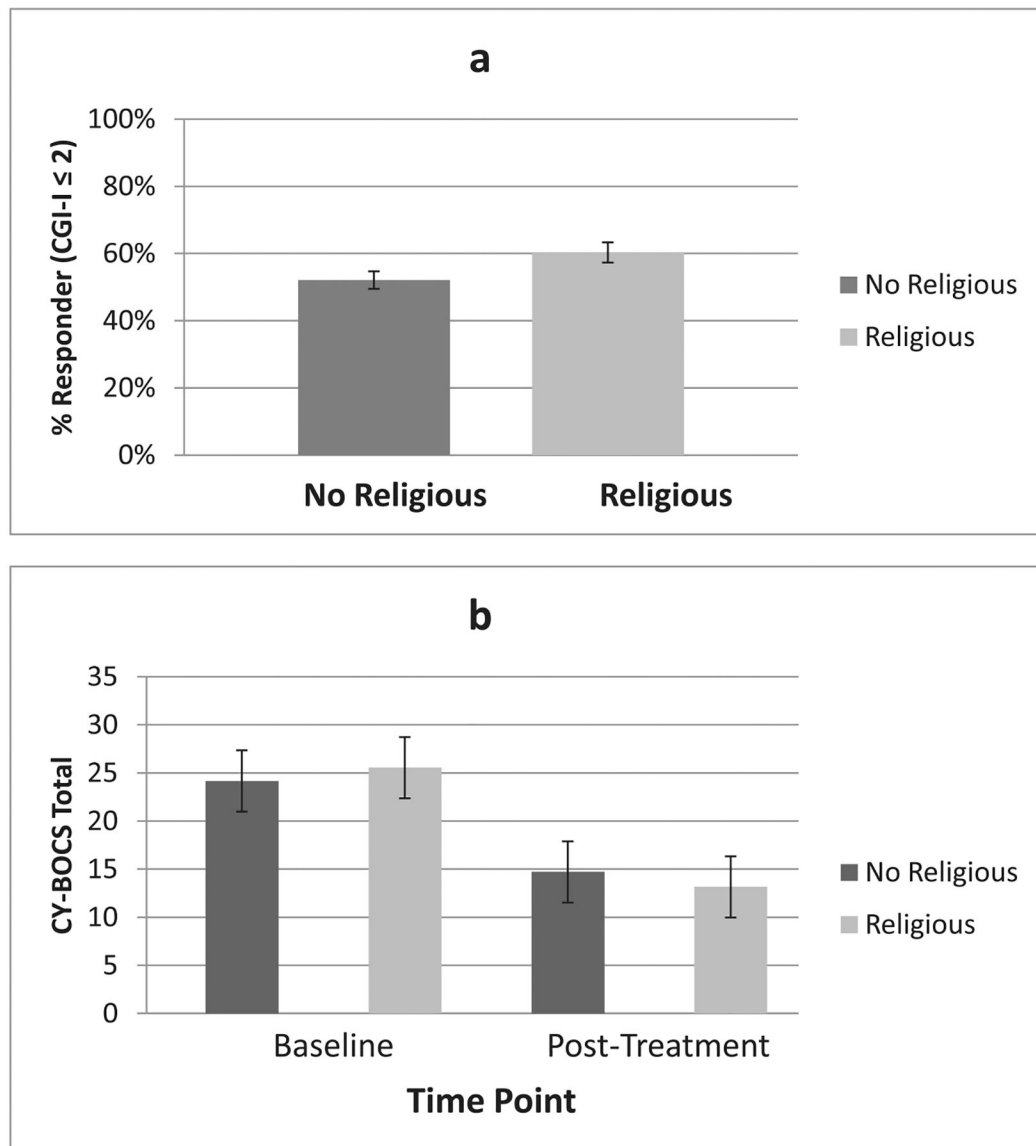
Fig. 1.
Treatment response and OCD symptom severity change after treatment for youth with and without religious symptoms. Note. CGI-I = Clinical Global Impression – Improvement; CY-BOCS = Children's Yale-Brown Obsessive Compulsive Scale. Both groups experienced statistically significant decreases in CY-BOCS total score from pre- to post-treatment ($p < .001$), but no significant differences in total score changes were found between youth with and without religious symptoms.

Table 1

Clinical variables for study sample ($N = 215$).

Variable	*M*	*SD*	Range	Sample size
CY-BOCS	24.89	4.33	15–36	215
COIS-R-P	26.58	16.01	1–82	201
COIS-R-C	23.20	17.77	0–92	203
CGI-I	1.34	1.17	0–5	134
CY-BOCS change	10.66	8.23	−7–36	132
FAS	21.55	10.75	0–50	174
Insight	1.09	1.09	0–4	104
FES Cohesion	6.83	2.07	0–9	130
FES Expressiveness	5.89	1.70	2–9	132
FES Control	4.61	1.86	0–8	131
BSI Depression	0.49	0.62	0–3.67	107
BSI Anxiety	0.62	0.64	0–3	106
BSI Psychoticism	0.26	0.42	0–2.20	106

Note. CY-BOCS = Children's Yale-Brown Obsessive Compulsive Scale; COIS-R-P/C = Child Obsessive-Compulsive Impact scale – Revised (Parent/Child Report); CGI-I = Clinical Global Impression – Improvement; FAS = Family Accommodation Scale; FES = Family Environment Scale; BSI = Brief Symptom Inventory.

Table 2

Logistic regression results for predicting the presence of religious OCD symptoms in youth.

Predictor	*B*	*SE*	Wald χ^2	*p*	Odds ratio
Impairment					
COIS-R-P	−0.02	0.01	2.40	0.12	0.98
COIS-R-C	0.02	0.01	3.58	0.06	1.02
Family variables					
FAS	−0.04	0.02	2.32	0.13	0.97
FES Cohesion	−0.06	0.12	0.26	0.61	0.94
FES Expression	0.39	0.14	7.89	**0.005**	1.47
FES Control	−0.02	0.12	0.04	0.84	0.98
Psychopathology					
Insight	−0.62	0.28	4.93	**0.03**	0.54
BSI Depression	−1.08	0.64	2.86	0.09	0.34
BSI Anxiety	0.69	0.62	1.23	0.27	2.00
BSI Psychoticism	0.68	0.88	0.59	0.44	1.97

Note. Covariates were entered in the first step of each logistic regression (i.e., CY-BOCS total score, presence of symptoms from the aggressive, sexual, somatic, and checking cluster, presence of symptoms from the symmetry, ordering, counting cluster), which were not included in the table to streamline the presentation of results. The p value is bolded if it is <.05.

COIS-R-P/C = Child Obsessive-Compulsive Impact scale – Revised (Parent/Child Report); CGI-I = Clinical Global Impression – Improvement; FAS = Family Accommodation Scale; FES = Family Environment Scale; BSI = Brief Symptom Inventory.