ABSTRACT

Method: This narrative review summarizes research from the years 2019-2024 on obsessive-compulsive disorder (OCD) in children.

Results: This literature suggests a variable prevalence rate of 71% for obsessive intrusive thoughts in children to a lower rate of 10% for children with OCD. Twenty-nine percent of OCD diagnoses are thought to occur for children younger than eight-years of age. Correlates have included sensory processing difficulties, cognitive dysfunction, behavior problems including hoarding and aggressive behavior, sleep disturbances, and immune dysfunction. OCD has been notably comorbid with other childhood disorders including anxiety, depression, ADHD, disruptive behavior disorders and autism. The potential underlying biological mechanisms research has included family history and volume differences in several brain regions including the thalamus, the caudate nucleus and the prefrontal cortex, areas that have been associated with emotional, reward-processing, memory, and fear - formation functions. Most of the interventions have involved cognitive behavioral therapy (CBT) variations including Internet CBT and telephone CBT.

Discussion: The studies in this review highlight the prevalence and severity of obsessive-compulsive disorder in children. However, the data are limited by being primarily based on mixed-age child and adolescent samples as well as being confounded by the correlates/comorbidities of OCD.

Keywords: Obsessive-Compulsive Disorder, Children, Adolescents

Obsessive-Compulsive Disorder in Children: A Narrative Review

This narrative review is focused on obsessive-compulsive disorder in children and adolescents and summarizes 39 papers that were derived from a search on PubMed and PsycINFO using the terms obsessive-compulsive disorder in children and the years 2019-2024. Although the terms obsessive-compulsive disorder in children were entered, many of the research samples have included both children and adolescents. Exclusion criteria for this review included papers on proposed protocols, case studies and non-English language papers. The publications can be categorized as prevalence data, correlates, comorbidities, potential underlying biological mechanisms and interventions. This review is accordingly divided into sections that correspond to those categories. Although some papers can be grouped in more than one category, most of the studies have focused on correlates and comorbidities of obsessive-compulsive disorder and interventions. They specifically include 7 papers on prevalence, 16 on correlates, 12 on comorbidities, 6 on potential underlying biological mechanisms and 11 on interventions.

Definitions, Symptoms and Prevalence

The definition of obsessive-compulsive disorder (OCD) given by the DSM5 (Diagnostic and Statistical Manual of Mental Disorders-Fifth Edition) is a long-lasting disorder that involves experiencing uncontrollable and recurring thoughts (obsessions) and engaging in repetitive behaviors (compulsions) or both. Only a few studies have focused on prevalence of OCD in children and adolescents (see table 1). In a multi-centric study from India, 10% of the sample had OCD [1]. Seventy-five percent of the OCD group children experienced the onset of OCD before age 14. This was a relatively young sample which likely explains the relatively low prevalence of OCD (10%). More aggressive, contamination - related obsessions, and washing.

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checking and repeating compulsions occurred in the children and adolescents with OCD. Two thirds of these children and adolescents endorsed avoidance, path doubting, overvalued sense of responsibility, pervasive slowness and indecisiveness.

Table 1: Prevalence of obsessive-compulsive disorder in children (and first authors).

<table>
<thead>
<tr>
<th>Prevalence</th>
<th>First Authors</th>
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<tbody>
<tr>
<td>10% for OCD in India</td>
<td>Sharma (2019)</td>
</tr>
<tr>
<td>71% for Obsessive thoughts</td>
<td>Soriano</td>
</tr>
<tr>
<td>88% for mild to moderate OCD in India</td>
<td>Sharma (2021)</td>
</tr>
<tr>
<td>29% for children less than 12-years-old in India</td>
<td>Rajith</td>
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</table>

In a study entitled "Obsessional intuitive thoughts in children: an interview-based study", 49 children (8-to-10-years-old) were interviewed on anxiety and OCD questionnaires [2]. Seventy-one percent had one obsessive intrusive thought of greater harm and doubt thoughts and 29% had at least one recent obsessive thought with moderate frequency. The wide range of prevalence would reflect the frequency of obsessive thoughts. Anxiety was a significant comorbidity, likely contributing to the frequency of obsessive thoughts. The most prevalent control strategies included cognitive suppression and distraction as well as thought replacement. These data provide support for the cognitive model of OCD.

In another study from India, 88% of the sample (N=173 treatment-seeking children and adolescents recruited from six centers in India) reported mild to moderate severity of OCD dimensions, which were highly correlated [3]. That as many as 88% of these youth were experiencing mild to moderate severity is not surprising given that they were seeking treatment for OCD. The dimensions of The Children's Yale-Brown Obsessive Compulsive Scale were explored including insight, avoidance, degree of indecisiveness, inflated sense of responsibility, pervasive disturbance of inertia and pathological doubting. In a regression analysis, only insight and avoidance were significant predictors of an OCD diagnosis.

Other pervasive OCD symptoms that have been explored include perfectionism and uncertainty of intolerance [4]. In this rare longitudinal study (N=754 children, mean age =11), the Obsessive Beliefs Questionnaire, the Obsessive-Compulsive Inventory and the Children's Depression Inventory were given. Perfectionism/uncertainty and threat over-estimation at baseline predicted an OCD diagnosis at a follow-up assessment one year later.

In still another study from India, 29% of children in a sample of 46 children less than 12-years-old were showing symptoms at least in India [1]. This was based on the Children's Yale-Brown Obsessive Compulsive Scale. In this study, a family history of OCD was noted in 48% of the sample, other mental illness in 29%, obsessions of contamination and compulsions in 74%.

The wide range of prevalence is likely related to age and OCD severity differences of the samples, although age and severity have not typically been the focus of these studies. At least one study compared age groups and found specific symptom differences in different age children with OCD. In this sample of children in the Nordic Long-term Obsessive Compulsive Disorder Treatment Study (N=269), children less than 11 years of age were compared with children greater than 12 years of age [6]. The younger group showed poor insight and had greater rates of ADHD and disruptive disorders. The older group had higher levels of mental compulsions, miscellaneous obsessions and compulsions and self-rated functional impairment.

These differences in age-related symptoms would seemingly help inform different interventions for different ages.

Surprisingly, only one study in this recent literature on OCD in children addressed environmental effects on OCD symptoms. In that study, OCD symptoms were significantly exacerbated by COVID [7]. Increases were noted for contamination obsessions and cleaning/washing compulsions and the children and adolescents had higher total scores on the Clinical Global Impression Severity Scale. It is not surprising that COVID increased obsessions and compulsions given the increased time spent at home and alone during COVID.

Correlates of Obsessive-Compulsive Disorder in Children

Several correlates other than age have been noted for obsessive-compulsive disorder in children (see table 2). They include sensory processing problems, cognitive dysfunction, behavior problems (including social interaction problems, hoarding and aggressive behavior), sleep disturbances and immune dysfunction.

Table 2: Correlates of obsessive-compulsive disorder in children (and first authors).

<table>
<thead>
<tr>
<th>Correlates</th>
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<tr>
<td>Sensory</td>
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<tr>
<td>Sensory processing problems</td>
<td>Cervin</td>
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<td>Sensory sensitivity</td>
<td>Tal</td>
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<tr>
<td>Olfactory impairment</td>
<td>Bora</td>
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<td>Cognitive</td>
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<td>Cognitive dysfunction</td>
<td>Uhrre</td>
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<tr>
<td>Cognitive disengagement Syndrome</td>
<td>Uzun Cicek</td>
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<tr>
<td>Insight and avoidance</td>
<td>Sharma (2021)</td>
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<tr>
<td>Behavior</td>
<td></td>
</tr>
<tr>
<td>Social interaction</td>
<td>dupLesis</td>
</tr>
<tr>
<td>Hoarding</td>
<td>Hoigaard, Rosenman</td>
</tr>
<tr>
<td>Aggression</td>
<td>Sharma (2019)</td>
</tr>
<tr>
<td>Sleep disturbances</td>
<td>Miniksar, Segal</td>
</tr>
<tr>
<td>Immune Dysfunction</td>
<td></td>
</tr>
<tr>
<td>Immune diseases</td>
<td>Westwell-Roper (2019)</td>
</tr>
<tr>
<td>&gt;Th17 pro-inflammatory cells and &lt;T regulatory cells</td>
<td>Rodriguez</td>
</tr>
<tr>
<td>&gt;interleukin-6, interleukin-1beta &amp; TNF-alpha cells</td>
<td>Westwell-Roper (2022)</td>
</tr>
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</table>
Sensory Processing Problems

In a study on sensory processing difficulties in children with obsessive-compulsive disorder (N = 86), sensory processing in children with OCD was compared to processing in children experiencing other disorders like anxiety disorder [8]. Sensory processing difficulties were related to the specific OCD dimensions of symmetry/ordering. Further research is needed on whether the sensory processing difficulties preceded, followed, or mutually reinforced the development of obsessive-compulsive disorder.

Other research has focused on sensory sensitivity or sensory over-responsivity which was described as “compensatory reliance on proxies for internal states” [9]. In this study on children with OCD (N = 404 five-to-10-year-old children), the parents completed questionnaires that were then submitted to a network analysis. This analysis revealed unique associations of OCD with internal states and all symptoms except obsessing. These findings could reflect the parents’ greater awareness of their young children’s compulsive behaviors than their obsessions.

The specific sense of smell has been explored in children with OCD in a study entitled “Olfactory impairment in children and adolescents with obsessive-compulsive disorder” [10]. In this research on fifty children with OCD and 50 healthy controls, the “Sniffin Sticks” performance was assessed. Olfactory impairment was related to symptom severity and duration. Those with more olfactory problems also had a greater response to treatment. The authors referred to their findings as a “non-invasive state marker of obsessive-compulsive disorder”. Although taste impairment was not assessed in this study, it typically accompanies olfactory impairment and would likely be another “non-invasive state marker” that would help identify OCD in young children who needed early interventions.

Cognitive Dysfunction

In a paper entitled “Atypical neurocognitive functioning in children and adolescents with obsessive-compulsive disorder”, cognitive dysfunctions were noted (N = 119 youth with OCD and 90 healthy controls) [11]. Those dysfunctions specifically noted were inferior cognitive flexibility, decision-making, working memory and processing speed. No group differences appeared on planning or fluency.

Another research group labeled cognitive problems “cognitive disengagement syndrome” [12]. In this sample (N=61 children with OCD and 66 healthy controls), more compulsive disorder symptoms were noted in those with an OCD diagnosis. The researchers also reported poor insight and poor performance on the Stroop test (a test in which you are asked to say the color of the word rather than the word itself, so if the word red is colored blue, the correct answer would be blue). Correlates also included hoarding symptoms, mental comparisons and ADHD comorbidity. The authors suggested that these problems may contribute to deficits in attentional orientation, conceptual flexibility and cognitive processing speed.

Several of the symptom dimensions on the Children’s Yale-Brown Obsessive Compulsive Scale that has been used by several investigators might be considered cognitive dimensions including insight, avoidance, degree of indecisiveness, inflated sense of responsibility, pervasive slowness/inertia and pathological doubting. In a study already mentioned on treatment-seeking children and adolescents, a regression analysis revealed that only insight and avoidance were significant predictors of their OCD [3].

Behavior Problems

Symptoms that have been reported for children with OCD that might be considered behavior problems are social interaction problems, hoarding and aggression. Surprisingly, only one study on social interaction problems appeared in this literature. In a paper entitled, “A comprehensive view of functional impairment in children and adolescents with obsessive-compulsive disorder adds value”, a sample of youth from South Africa reported significant negative effects on their relationships with their peers [13]. Their parents also suggested significant effects in the social domain. Symptoms on the Obsessive-Compulsive Impact Scale were consistent with those reported on the Global Assessment Scale, and parent and clinician reports were also correlated. This concordance of clinician, parent and youth reports is rarely noted in this recent literature. More commonly the clinician and parents provide the data for the young children but their agreement is rarely indicated.

A couple research groups have specifically focused on hoarding. In a study on the prevalence of hoarding in individuals who were receiving manualized exposure-based CBT (N= 269 seven to 17-year-old youth in Denmark, Sweden and Norway), 14 weekly CBT sessions were provided, and the Yale-Brown Obsessive Compulsive Scale was administered [14]. In this sample, 27% had one or more symptoms of hoarding and hoarding was related to indecision. However, hoarding did not affect CBT outcomes.

In another study on hoarding symptoms (N = 215 seven-to-17-year-old youth with OCD), the youth with hoarding had internalizing but not externalizing disorders [15]. Surprisingly, the hoarding and non-hoarding groups did not differ on OCD severity or impairment or response to CBT, and there were no age differences on hoarding.

Aggressive behavior has also been reported but rarely, suggesting that it may not be a typical problem for youth with OCD [1]. Although aggressive behavior was listed among other more commonly reported problematic behaviors for OCD including contamination-related obsessions and washing, checking and repeating compulsions, these behaviors are not included in the Children’s Yale-Brown Obsessive Compulsive Scale which is primarily focused on obsessions. And, most of the studies in this recent literature have used that scale for their data.

Sleep Disturbances

Sleep disturbances have been the focus of at least two papers in the recent literature on OCD in children and adolescents. In one study, the Children’s Yale-Brown Obsessive Compulsive Scale was administered along with the Pittsburgh Sleep Quality Index [16]. The scores on the sleep quality index indicated that those youth with OCD had more sleep disturbances and the more severe the OCD, the lower the sleep quality. Sleep problems occurred more frequently in the symmetry/hoarding group and less frequently in the contamination/cleaning group. These data are confounded, however, by somatic disorders being comorbid with OCD and being associated with lower sleep quality.
In a systematic review on sleep problems in children and adolescents with OCD, 20 studies were included [17]. A high prevalence of sleep problems was reported and support for a bidirectional relationship was noted, likely because most of the studies are cross-sectional, making direction of effects difficult to determine. These data are confounded again by a comorbid anxiety disorder which was thought to predate the sleep disturbances whereas the comorbidity with depression was reputedly increasing with age in the few longitudinal studies included in this review.

**Immune Dysfunction**

Immune dysfunction has been associated with OCD in childhood both with respect to diseases and to immune cells. In a large sample study on immune-related comorbidities in childhood-onset OCD (N = 1401), a greater-than-expected prevalence was noted [18]. A greater prevalence of various immune diseases was also reported including scarlet fever, encephalitis, meningitis and rheumatoid arthritis. The disease prevalence was greater in youth with cleaning/contaminated symptoms which could have been exacerbated by the fear of experiencing these diseases. The disease prevalence was also greater in first degree relatives (i.e., parents, children and siblings).

In research on immune cells (N = 99 children and adolescents with OCD and 46 controls), those youth with OCD had a greater number of Th17 pro-inflammatory cells and fewer T regulatory cells that are protective [19]. The Th17 cells were greater in those who had more severe OCD and for a longer duration of OCD and the percentage of T regulatory cells decreased with the duration of OCD. These data provide evidence of the involvement of both immune regulatory and immune dysfunction cells and suggest an imbalance of the levels of pro-inflammatory and T regulation cells.

In a paper entitled “Severe symptoms predict salivary interleukin-6, interleukin-1 beta and tumor necrosis factor-alpha levels in children and youth with obsessive-compulsive disorder” (N = 41 child-onset OCD and 46 healthy controls), a significant amount of the variance in IL-6, IL-1 beta and TNF-alpha was explained by OCD [20]. The severity of OCD was a predictor of increased IL-6, IL-1 beta and TNF-alpha levels. These data suggested that pro-inflammatory cytokines are associated with OCD diagnoses and symptom severity. They also highlight the importance of these biomarkers that can be easily assessed in non-invasive saliva sampling.

**Comorbidities of Obsessive-Compulsive Disorder in Children**

Comorbid disorders may also confound the effects and the treatment of obsessive-compulsive disorder in children. In the current literature on OCD in children, the comorbidities include anxiety, depression, comorbid anxiety and depression, ADHD, disruptive behavior disorders and autism (see table 3).

<table>
<thead>
<tr>
<th>Comorbidities</th>
<th>First Authors</th>
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<tbody>
<tr>
<td>Anxiety</td>
<td>Ciffer, Garcia-Soriano, Segal</td>
</tr>
<tr>
<td>Depression</td>
<td>Vergara, Zaboski</td>
</tr>
<tr>
<td>Anxiety and depression</td>
<td>Luo</td>
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<tr>
<td>Attention deficit</td>
<td>Smarason</td>
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<td>hyperactivity disorder</td>
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<tr>
<td>Disruptive behavior disorders</td>
<td>Smarason</td>
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<tr>
<td>Autism spectrum disorder</td>
<td>Aymerich</td>
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</table>

**Anxiety**

Anxiety is frequently comorbid with OCD. In a sample from a tertiary care center in Istanbul Turkey (N = 150), for example, the Yale-Brown Obsessive Compulsive Scale for Children was used for the severity of OCD and the Clinical Global Impression Scale was used to assess improvement [21]. The most prevalent obsessions were contamination and aggression. The most prevalent compulsions were washing and ordering. Those with aggression had comorbid anxiety.

Anxiety was also comorbid with OCD based on the Children's Anxious Thoughts Interview in a study in which 29% had at least one recent obsessive thought (N = 49 eight-to-10-year-old children) [2]. Anxiety disorder was also thought to precede the sleep problems that were reported for children with OCD in a review of 20 studies [17].

**Depression**

Depression is also a frequent comorbidity of OCD in children. In a study on functional impairment in children with obsessive compulsive symptoms (N = 64 with OCS and 64 without OCS in 10-17-year-old youth), those with OCS also had depression as well as more severe prodromal symptoms (early signs that appear before the major symptoms) and worse functioning [22].

In a study on quality of life in children and adolescents with OCD (N = 225 intensive treatment-seeking children and adolescents with OCD), both the children and parents completed scales [23]. OCD did not predict quality of life, but major depression disorder predicted quality of life at .76 and comorbid social phobia at .36. These data highlight the significance of comorbid disorders and the importance of considering their confounding effects on OCD symptoms and treatment.

Anxiety and depression have also been comorbid in children and adolescents with OCD [24]. In this sample from China (N = 153), the mean number of obsessions was seven and the mean number of compulsive symptoms was two. Surprisingly, the junior-high school students had a greater number of symptoms than the primary and high school students. An increasing number of symptoms occurred with age that peaked prior to senior high school. The most common obsessive symptoms were miscellaneous obsessions, aggressiveness, religiousness, and the most common compulsive symptoms were checking, miscellaneous compulsions, cleaning-washing and repeating behaviors. The inverted U curve with the younger and older youth having fewer symptoms may relate to the primary school children reporting fewer obsessions due to less awareness of...
them and the older youth reporting fewer compulsive behaviors due to the socialization that occurs by senior high school.

Other Comorbid Disorders

Other comorbid disorders of OCD include ADHD, disruptive behavior disorders and autism. In a study from Norway, children less than 11 with OCD were noted to have greater rates of ADHD and disruptive behavior disorders [25].

In a review and meta-analysis of 42 studies (N= 6209), 10% of those children with OCD also had autism spectrum disorder (ASD) [26]. Those who had both OCD and ASD had greater functional impairment, psychopathy, and other comorbidities.

Potential Underlying Biological Mechanisms for Obsessive-Compulsive Disorder in Children

Potential underlying biological mechanisms for OCD have been the focus of several papers in this literature on OCD in children (see table 4). These include family history, genes in various brain regions, and thickness or volume changes in different areas of the brain.

In a paper entitled "Clinical profile of obsessive - compulsive disorder in children less than 12 - years-old "(N= 46), a family history of OCD was noted in 48% of the children [5].

In research entitled "Genetic meta-analysis of obsessive - compulsive disorder and self-report compulsive symptoms" (N=8287), the Compulsion Scale scores (checking, washing and ordering/precision) were correlated with the genome-wide association data [27]. The data from this research suggested a significant increase in compulsive symptoms for genes expressed in the hippocampus, amygdala and caudate nucleus, areas that have been associated with emotional, reward-processing, memory, and fear - formation functions.

In a longitudinal study on Brazilian children (N= 378), the volume of the right thalamus decreased from baseline to the follow-up assessment at three years [29]. This change was related to obsessive-compulsive symptoms in children. However, it's not clear whether the alterations in volume occurred before or after the onset of symptoms, even though this was a longitudinal assessment.

Caudate grey matter volume has also been associated with obsessive compulsive disorder [30]. In this study (N= 29 with OCD and 28 age - matched controls who were 7-17 years old), 17 of the children responded to fluoxetine or group CBT. Greater caudate grey matter volume was noted in the responders. The right caudate volume accounted for 20% of the variance in the children's changes on the OCD scale following treatment.

In a similar study but focused on the right prefrontal cortical area entitled "Right prefrontal cortical thickness is associated with responses to cognitive behavioral therapy", children with obsessive-compulsive disorder (N=168 5-18-year-old youth) were seen [31]. In this sample, greater thickness in the right prefrontal cortical area was related to responsivity to cognitive behavioral therapy.

Although different research groups focused on different regions of the brain, they are all areas that have been associated with emotional, reward-processing, memory, and fear - formation functions, which in turn could be related to obsessive-compulsive symptoms. Many of the changes in these regions were related to responsivity to CBT, highlighting the bidirectionality of OCD symptoms and brain involvement and the plasticity or responsivity of these brain regions to therapy.

Interventions for Children with Obsessive-Compulsive Disorder

Several intervention studies have appeared in this recent literature on OCD in children (see table 5). They have typically focused on cognitive behavioral therapy (CBT) and its variations. They include ERP (exposure response prevention) CBT, internet CBT, telephone CBT, the length of CBT and CBT combined with pharmaceuticals. The only study that focused on a drug therapy assessed the effects of clomipramine.

In a systematic review and meta-analysis of CBT for OCD in children and adolescents, nine trials were included (N= 645) [32]. In six of the nine trials, CBT was compared with psychological interventions. This meta-analysis did not include any studies comparing CBT with other interventions.
intervention and in three of the trials, CBT was compared with SSRIs (selective serotonin reuptake inhibitors). CBT decreased the severity of OCD and increased the functioning of children with OCD. Similar effects were noted for the SSRIs.

Exposure and response prevention CBT has also been noted to decrease irritability in children with OCD (N = 161 seven-17-year-old youth) [33]. In another study on exposure - based CBT, that therapy was compared to psychoeducation and relaxation across 12 sessions (N = 71) [34]. The CBT resulted in greater changes in parent and youth distress ratings and symptoms. No changes were noted for symmetry/ordering symptoms or hoarding.

At least three papers appeared in this literature on CBT that was delivered via internet to children with OCD. In one study on Internet-based CBT in children and adolescents with OCD, 14 sessions of CBT were provided with the first session being face-to-face and 13 sessions being delivered via video [35]. OCD symptoms were recorded with a smart phone app and the therapy materials were in a data cloud. Acceptance and satisfaction were noted by 88% of the participants and face-to-face was not preferred by 87%. Both the parents and the children emphasized the usefulness of the exposure and response prevention protocol. A significant decrease in obsessive-compulsive symptoms was reported.

In a later study by the same research group involving 14 sessions of internet-based CBT (N=60), a reduction in symptoms was noted for both the treatment group and the waitlist control group after they had received CBT [36]. Remission rates peaked at 32 weeks for 68-79% of the samples. These effects were comparable to those noted for face-to-face CBT.

In a randomized controlled trial on a comparison of internet-delivered CBT versus face-to-face CBT (N = 152 eight-to-17-year-old youth with OCD), CBT was given for 16 weeks [37]. The non-responders received face-to-face CBT at three months. Ninety-nine percent completed the trial, but as many as 46% of the internet group and 30% of the in-person group were non-responders. Also, anxiety and depression were noted in both groups which may have contributed to these high non-response rates for CBT. These data highlight the efficacy of internet CBT even for very young children.

Telephone delivered CBT has also been compared to face-to-face CBT for pediatric obsessive-compulsive disorder (N = 72 11 to 18-year-old youth) [38]. In this study, pre-treatment parent - child peer problems moderated intervention effects on the symptoms in both the phone CBT and the face-to-face CBT groups.

The length of CBT has also been assessed in a study entitled “Extended treatment of multi-modal CBT for children and adolescents with OCD improves symptom reduction: a within-subjects design” [39]. The CBT intervention period in this study was extended to 12 weeks (N=38). Non-responders could not be determined in the shorter treatment period (8 weeks), and there was a greater reduction of symptoms following the longer 12-week CBT intervention. OCD and comorbid symptoms decreased including internalizing, anxiety, and depressive symptoms.

Surprisingly, pharmacotherapy only appeared in two papers in this recent literature. In one study called “Retrospective review of fluvoxamine and clomipramine combination therapy in OCD in children and adolescents”, only six participants were included [40]. This combination therapy was used after SSRI monotherapy failed for treatment-resistant children. No adverse effects occurred.

In a network meta-analysis, the efficacy of pharmacological and psychological treatments alone and in combination for children and adolescents with OCD were compared [41]. Twelve types of treatment were reviewed in 18 studies (N = 1353 youth). Pharmacotherapy and psychotherapy were more effective than the placebo condition, and pharmacotherapy and CBT were more effective than pharmacotherapy alone. Of the medications that were included in this review, escitalopram was reputedly the most effective.

Methodological Limitations and Future Research Directions

This recent literature on obsessive-compulsive behavior disorders in children and adolescents has several methodological limitations that relate to different definitions/diagnoses, sampling, measures, and methods across studies. These limitations are highlighted by the scarcity of meta-analyses that could not be conducted likely because of significant variability of methods and measures across studies that resulted in their failure to meet criteria for meta-analysis. Although there is a sufficient literature for meta-analyses to be conducted, the authors of the few meta-analyses suggested that those analyses were limited by small samples and the heterogeneity of the children/adolescents on age and the severity of their obsessive-compulsive behavior disorder.

The definitions and diagnostic criteria for obsessive-compulsive disorder (OCD) have varied across studies with some researchers sampling children who have obsessive compulsive symptoms and others who have limited their samples to youth who have received a diagnosis of obsessive-compulsive disorder. These different levels of severity have not been compared or traced developmentally in longitudinal studies. And, in many studies OCD was confounded by correlated problems including sensory processing deficits, cognitive dysfunction, behavior problems, immune dysfunction and/or comorbid disorders including anxiety, depression, disruptive behavior disorders and ADHD.

Directionality could not be determined in the studies on correlates and comorbidities given that most of the studies are cross-sectional. And researchers have not traced the longitudinal development of obsessive-compulsive symptoms or the disorder. In addition, the samples have typically been a combination of children and adolescents. This is one of the most serious problems as the symptoms and comorbidities that are unique to the children versus the adolescents could not be determined. In the only study that compared children and adolescents, the symptom profiles were different. These data would suggest the use of different interventions for different age groups. Some of the studies on symptoms have also lacked comparison groups of children without OCD and some of the intervention studies were not randomized controlled trials with waitlist control groups.

The use of different scales by the different research groups has also made it difficult to compare results across studies. And the
frequent use of the Children’s Yale-Brown ObsessiveCompulsive Scale which primarily taps obsessive behaviors suggests that those studies are unevenly measuring obsessive thoughts and compulsive behaviors. In addition, the youth and parent-report scales are more subjective and less definitive than the more objective physiological measures like the saliva sampling of the immune dysfunction research and the fMRIs that appeared in studies on potential underlying biological mechanisms.

Most of the studies focused on an individual OCD symptom, for example, cognitive dysfunction or hoarding. When multiple OCD symptoms were reported, the relative contributions of the symptoms to the severity of the disorder were not assessed by regression analyses. The absence of research on peer influences and effects of internet use on OCD in this literature was also surprising given the frequency of these effects on other disorders in children and adolescents.

The multiple studies on the effectiveness of cognitive behavioral therapy (CBT) were not surprising given its effectiveness for many other disorders in children. Surprisingly, although different forms of CBT have been compared, for example, internet versus in person CBT, none of the CBT studies involved parents, although parents would seemingly be affected by their child’s OCD. Surprisingly, other alternative therapies that have been effective for reducing other childhood disorders like massage therapy, tai chi, yoga and exercise have not appeared in this literature [43,44].

The potential underlying biological mechanism literature has been primarily fMRI research, although those samples are small likely due to the expense of the research. The results have been highly variable in terms of the activated regions of the brain and whether grey matter was reduced. These mixed findings likely relate to the different age groups being sampled and the different severity of the obsessive-compulsive behaviors being measured in the children and adolescents.

Despite these methodological limitations, this literature has highlighted the prevalence of obsessive-compulsive disorder in children and adolescents. The prevalence may have recently increased as the excessive use of social media and the internet has increased. The prevalence of OCD highlights the need for more intervention research. The studies on correlates and comorbidities have helped identify children and adolescents who need therapy and the intervention data have informed clinicians on potential treatments for those with obsessive-compulsive disorder. Further research is needed to specify the relative significance of the OCD symptoms for identifying those children and adolescents and the specific intervention techniques that are effective in reducing OCD and its correlates and comorbidities.

References


