Chapter 5

Manifestation and Treatment of OCD and Spectrum Disorders within a Pediatric Population

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Additional information is available at the end of the chapter

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Abstract

The following chapter describes the presentation, impact, and treatment of obsessive compulsive disorder (OCD) in a pediatric population. Similarities and differences in the assessment and treatment of childhood-onset OCD and adult-onset OCD are noted. Children with OCD may struggle with additional mental health conditions such as anxiety, depression, and ADHD. The authors discuss the importance of addressing comorbid mental health conditions and clarify factors that may be involved in differential diagnosis. Additionally, the impact of the family environment and parent-child interactions on children with OCD is reviewed. It is common for pediatric and adult individuals with OCD to involve close family members in OCD-related behaviors in some capacity. Accommodation refers to family members' modification of their own behavior in order to assist in their child's OCD-related rituals. Addressing family accommodation in treatment can substantially impact treatment outcomes in children with OCD. Finally, evidence-based treatment modalities for pediatric obsessive compulsive disorder are explored including cognitive behavior therapy and psychiatric medication.

Keywords: OCD, pediatric, cognitive behavior therapy, family therapy, OCD medication

1. Introduction

Obsessive-compulsive disorder (OCD) has been exhibited in children as early as age 3 and all the way through adolescence and into adulthood [1]. If untreated, OCD can greatly impact children's and adolescents' abilities to thrive and participate in their lives. Functional impairment for children is frequently exhibited across various life domains including scholastic, family, social, and recreational realms [2]. Additionally, symptoms often remain or intensify

as children develop. A thorough understanding of pediatric OCD symptoms and treatment recommendations can help ensure that children are appropriately screened, assessed, and provided with effective treatment and resources.

About 1–3% of children are estimated to carry an OCD diagnosis [3, 4]. Several studies have found that males are overrepresented in pediatric OCD populations, while females hold the majority in adult cases [5]. Male's age of onset of OCD tends to be between the ages of 5 and 15 years, while women have a bimodal distribution, either developing it during childhood or during pregnancy [6].

While there are many similarities between childhood-onset OCD and adult-onset OCD, several distinguishing factors are noted. Individuals with OCD onset in childhood and early adolescence are more likely to exhibit a gradual increase in symptoms and less likely to attribute triggering events, whereas individuals who develop OCD in adulthood are likely to identify possible environmental factors such as pregnancy or job loss as well as a sudden onset of symptoms [7]. Studies have also revealed individuals with early-onset OCD are likely to have a strong family history of OCD [8, 9].

Certain clinical features such as magical thinking, tapping/rubbing, and collecting compulsions as well as motor and vocal tics are more common in childhood OCD [7]. Comorbidity patterns may differ as well with children more often presenting with ADHD and tic disorders, while adults tend to present with mood-related difficulties [10]. Symptom clusters appear to manifest somewhat differently within pediatric and adult populations. Research has indicated five common symptom dimension groups in adults through factor analysis of the Yale-Brown Obsessive Compulsive Scale (YBOCS) (cleaning, symmetry, forbidden thoughts, harm, and hoarding) and about three groups in children based on Children's Yale-Brown Obsessive Compulsive Scale (harm/sexual, symmetry/hoarding, and contamination/cleaning) [11, 12].

Children may also not necessarily recognize the irrational nature of their OCD symptoms and may not describe their symptoms as distressing. Abstract thinking and hypothesis testing are still developing during childhood so the ability to draw conclusions or make connections between symptoms and restrictions on daily living is limited. In fact, a study exploring insight in 71 youths with OCD who were part of a larger treatment trial found significant differences in insight between age groups [13]. About 48% of preadolescents (ages 8–10) were categorized as high insight, while close to 72% of younger adolescents (ages 11–13) and 79% of older adolescents (ages 14–17) were categorized as high insight [13]. Thus, younger children may have a hard time addressing their symptoms due to the potential lack of understanding of the impact of OCD. Lower insight in children has been linked to greater OCD severity, higher parent-reported OCD-related impairments, and higher family accommodation [14]. A thorough assessment of insight in children is recommended; should a child appear to have poor insight, increased involvement of family members is likely warranted.

It may also be that children do not report beliefs around their compulsions, while adults do because the beliefs may be explanations adults give to their compulsions. In other words, if you have an urge to perform a particular task, you experience a feeling (e.g., anxiety) and you perform the motor act. Then you give in to the urge and try to explain why you performed a motor act. Adults usually try to explain their behaviors and have the language as well as

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the associations formed between certain behaviors and learned explanations, for example, we wash our hands to be clean, we look things over to be thorough and avoid mistakes, we even things up because symmetry is aesthetically pleasing, etc. It may be worth investigating at what point do children begin to explain their behaviors. As for pure obsessions, they are spontaneous thoughts over which neither children nor adults have any control except for their reaction to the thought.

2. Comorbidity

Most children who have OCD also suffer from additional mental health issues similar to their adult counterparts. Comorbidity with OCD presents considerable challenges including greater symptom severity, worse functional impairment, and poorer treatment response [2]. While studies tend to vary on percentages of comorbid conditions, they consistently demonstrate that anxiety, depression, ADHD, tic disorder, and oppositional defiant disorder are typical concerns for the pediatric OCD population [15, 16].

A recent study of 322 children with a primary diagnosis of OCD found that almost two-thirds of the sample met criteria for at least one additional diagnosis beyond OCD, with a number of comorbidities ranging up to six mental health diagnoses [16]. Only 34% of the sample presented solely with OCD. Similar to other studies, anxiety was the most common comorbidity (50%), followed by externalizing disorders including ADHD and ODD (16%), followed by depression (12%), and followed by tic disorder (11%). Adolescents (ages 14–17) in particular were most likely to have comorbid difficulties compared to preadolescents (ages 10–13) and children (ages 7–9) in particular depression, which was six times more likely [16].

Since most children who present in OCD specialty clinics will likely have co-occurring conditions, it is important that pediatric OCD assessments address the presence and impact of potential comorbidities. Decisions about treatment alterations related to comorbidities often come up as well. For example, if a child meets criteria for depression and OCD, is it necessary to have stages of treatment that address each issue separately or is it possible that CBT for OCD will address both? In fact, some studies have suggested that depressive disorders are often secondary to OCD and treating OCD as usual will typically lead to improvements in depression [15]. It is also possible that symptoms from another condition can interfere with a child's ability to absorb or tolerate therapy as usual; a child with ADHD may have trouble concentrating during sessions, whereas a child with ODD may act out during sessions. In these cases, it is particularly important to continue assessment in initial treatment stages so that any possible issues can be identified and addressed as necessary.

3. Differential diagnosis

Before discussing various disorders that need to be differentiated from OCD, it is important to recognize that within normal development there are rituals that would not be considered dysfunctional.

3.1. Normal development

Young children often seek out and find comfort in routines, for example, reading the same bedtime story every night, playing with the same toys each time at the library, or requesting the same afternoon snack every day. While these behaviors may appear ritualistic on the surface, they would not be classified as compulsions if they do not cause significant impairment or are excessively time-consuming; additionally, interruption of these rituals typically would not cause severe distress in the child [17]. Generally, children will gradually reduce their reliance and preference for these rituals as they age with little issue. These routines are to be distinguished from the presence of obsessions and compulsions, which often involve repetitive behavior, however, typically at a higher frequency and intensity and with the addition of high anxiety and distress when rituals are interrupted. Notably, children do not customarily just "grow out" of OCD so it is important that parents address the issue and provide appropriate treatment rather than minimize the impact of the symptoms or accommodate as a short-term fix [18, 19].

3.2. When do rituals become dysfunctional?

Obsessive compulsive disorder involves intrusive and anxiety-provoking thoughts, images, and/or impulses (obsessions) and repetitive mental or behavioral actions intended to reduce anxiety and prevent feared negative consequences (compulsions), which cause distress, are time consuming, and cause functional impairment [20]. The content of obsessions and compulsions often varies such that OCD can appear quite heterogeneous across cases: one child may repeatedly wash their hands throughout the day in an effort to prevent life-threatening illnesses, while another child repeats certain phrases to ensure "bad" thoughts do not lead to the occurrence of "bad" events. Additionally, two children may wash hands repeatedly and display similar compulsions for entirely different obsessional themes (for example, one child may fear germs, whereas another child seeks a "just right" feeling). The Children's Yale-Brown Obsessive Compulsive Scale (CY-BOCS) is considered the gold standard for assessment of OCD and includes a clinician-rated checklist of common obsessions and compulsions, which allows for specificity and clarity of symptoms [21].

Diagnosing OCD is complicated as it manifests quite differently across cases and symptoms can appear similar to other disorders [22]. Children and adolescents may attempt to hide their symptoms due to shame or embarrassment about having "bad" or irrational thoughts or unusual behaviors, which may cause parents or clinicians to miss or overlook dysfunction [17]. As children are still developing with regard to verbal communication abilities, they may not articulate clear obsessions. Similarly, mental rituals may go undetected. Also, as discussed above, children with OCD may have comorbid conditions, which can lead to challenges in distinguishing symptoms between diagnoses. Symptoms of different conditions can look quite similar in presentation; that is, does a child who repeatedly asks for reassurance and checks for physical ailments related to fear of throwing up have a separate phobia or is the fear of vomiting considered another manifestation of OCD? Certain tics can also manifest quite similarly to behavioral compulsions related to symmetry or "just right" feeling. Differential diagnosis must be carefully conducted particularly in situations where treatment recommendations would differ. Below are some disorders that need to be considered in differential diagnosis.

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3.3. PANDAS/PANS

"Pediatric autoimmune neuropsychiatric disorders associated with streptococcal infections" (PANDAS) refers to a particular subtype of pediatric OCD with abrupt onset, episodic course of illness, and a number of distinctive features [23, 24]. The original diagnostic criteria for PANDAS included (1) the presence of OCD and/or a tic disorder, (2) onset of these symptoms prior to puberty, (3) abrupt onset of symptoms, and (4) association with autoimmune infection group A streptococcus (GAS) [24]. The autoimmune response in PANDAS contributes to inflammation of the basal ganglia and subsequent dysfunction of the brain structure [24]. Researchers began investigating PANDAS when they identified a subset of pediatric individuals who had an unusual course of OCD symptoms: a sudden dramatic onset followed by a gradual reduction over several months [23, 24]. They noted similarities to individuals with Sydenham's chorea (a type of rheumatic fever) and, upon further investigation, noted that numerous patients with chorea also had obsessive compulsive symptoms as well.

PANDAS symptoms are documented as early as age 3 and intensification of symptoms can occur within mere days [24]. An investigation of 50 clinical case studies identified average age of onset for PANDAS with obsessive compulsive symptoms at 7.4 and with tic symptoms at 6.3 [24]. To be classified as PANDAS, the symptoms must be temporally related to GAS infection such as a positive throat culture or elevated anti-GAS antibody titers. Patients also often exhibit neurological irregularities such as motor hyperactivity and tics though these may wax and wane during periods of remission. Other symptoms associated with PANDAS include impulsivity, distractibility, emotional lability, separation anxiety, age-inappropriate behavior, bedwetting, and handwriting disabilities [24, 25]. Of note, PANDAS-like symptoms have been exhibited in response to other bacterial and viral infections including influenza, varicella, mycoplasma infections, and chronic Lyme disease [26].

Recently, researchers noted potential challenges with the original diagnostic criteria of PANDAS (such as difficulty establishing temporal association with GAS infection as well as difficulty distinguishing between PANDAS and non-PANDAS cases). Thus, researchers have reviewed the original diagnostic criteria and available data to establish PANS: pediatric acute-onset neuropsychiatric syndrome [26]. PANDAS is now considered under the rubric of PANS. Diagnostic criteria for PANS include (1) abrupt, dramatic onset of obsessive compulsive disorder, (2) severely restricted food intake, (3) concurrent presence of additional neuropsychiatric symptoms from at least two of the following seven categories: anxiety; emotional lability and/or depression; irritability or aggression; behavioral regression; reduced school performance; motor abnormalities; somatic symptoms including sleep disturbance, enuresis, or urinary frequency, and (4) symptoms are not better explained by a neurological or medical disorder [26]. PANS is conceptualized as a broader clinical entity that can be related to a preceding infection; however, it also refers to acute-onset symptoms without apparent immune disturbance [26]. If a child does exhibit the clinical criteria of PANS, the possibility of PANDAS should be explored and appropriate laboratory studies conducted to determine any association to GAS or other infectious triggers.

Treatment for PANS includes standard OCD treatments including exposure and response prevention as well as psychotropic medications (selective serotonin reuptake inhibitors,

SSRIs) [27]. Additional treatment options specific to PANDAS that are being explored include antibiotics, tonsillectomy, nonsteroidal anti-inflammatory drugs (NSAIDS), therapeutic plasma exchange (TPE), intravenous immunoglobulin (IVIG), and anti-CD20 monoclonal antibodies (rituximab) [27].

3.4. Generalized anxiety disorder

A child who has difficulty controlling worries about everyday issues would likely be exhibiting symptoms of generalized anxiety disorder (GAD). GAD involves excessive worry about real-life concerns, while OCD centers on irrational fears that are unrealistic and beyond the scope of daily life problems [22, 28]. At times, these disorders can be clearly distinguished, for example, when one child worries excessively about an upcoming math test while another is overwhelmingly concerned about receiving a deadly illness from germs or turning into an animal by the power of their thoughts. Sometimes, however, the differential diagnosis may be less clear-cut; for example, a child's concern about his mother flying on an airplane could be categorized as a worry about his mother's well-being (GAD) or irrational fear of harm toward loved ones (OCD). Furthermore, pathological worry may function similarly to mental compulsions as both are self-initiated and aimed at reducing distress [28]. It has been suggested that compulsions can be distinguished from pathological worry by its frequency (compulsions will likely have a higher number of repetitions), rigidity (a child with OCD is more likely to seek the same answer over and over, whereas a child with GAD may ask numerous questions about different risks), quality (compulsions are likely to be more illogical such as tapping an object repeatedly to prevent harm to a loved one), and function (compulsions for OCD often seek to reduce distress related to thought of future negative events, whereas pathological worry seeks to reduce occurrence of future negative event but as no compulsions or acts involved in preventing the outcome) [28].

3.5. Tic disorders

Tics refer to sudden, repetitive, stereotyped movements or sounds. While tics are often perceived as involuntary, they usually are accompanied by premonitory sensory urges [29]. Simple tics include eye blinking, neck jerking, shoulder shrugging, or throat clearing. Complex tics can involve facial gestures, touching, smelling objects, or repeating words or phrases; often complex tics involve repeating certain actions until it feels right. Simple tics are more easily distinguished from compulsions due to their brevity, lack of purpose, and seemingly involuntary nature, while complex tics can present quite similarly to compulsions [29]. A behavior that functions to reduce distress or anxiety (e.g., repeatedly tapping the sidewalk to prevent a feared consequence) is likely to be related to OCD, while a behavior that functions to relieve somatic discomfort or tension (e.g., repeatedly moving arm in certain way in response to discomfort) [22]. Additionally, clinicians can ask if withholding the behavior would result in anxiety or physical discomfort. Looking at the symptom in context of the child's history can be helpful as well depending on if the child has presented with anxiety and/or distinct obsessions or compulsions vs. simple tics with minimal anxiety [22].

3.6. Autism

Individuals with autism spectrum disorders often display rigid interests and repetitive behaviors, which can appear similar to obsessions and compulsions. Common repetitive behaviors associated with autism disorder include repetitive motor mannerisms, preference for sameness, distressing reactions to change, and perseveration on a restricted range of interests [30]. It has been suggested that repetitive behavior in autism is a source of pleasure rather than a reaction to anxiety [30]. Querying about developmental history may help differentiate between OCD and autism such as screening for history of language delays and difficulties with social interactions. Additionally, fixed interests in autism are typically experienced as ego-syntonic and even enjoyable, while symptoms in OCD are often distressing and experienced as ego-dystonic [22].

3.7. Eating disorder

Patients with eating disorders (EDs), similar to OCD, experience intrusive thoughts that contribute to maintenance of dysfunctional behaviors. Intrusive thoughts in ED typically center on food, diet, physical exercise, and appearance [31]. These intrusions trigger negative affect, which leads to engagement in behaviors to alleviate discomfort such as checking weight, compulsive exercise, binge eating, purging, or restricting food intake. Thus, both ED and OCD involve intrusive thoughts related to feared negative outcomes, which are linked to compensatory behaviors intended to reduce emotional distress [31]. OCD can present similarly to ED (for example, severe weight loss from contamination-focused OCD due to fears that food is dirty); eating only certain foods that are perceived to keep in good health for those with health-related OCD. Also the reverse can be true where patients with ED may appear to be OCD; for example, avoid having oils around due to fear of contamination of the food with fats; counting the number of bites of a piece of food; cutting the food into a certain number of pieces, etc. Studies that have assessed frequency of obsessions and compulsions in OCD and ED (particularly anorexia nervosa) patients have found symmetry obsessions and ordering compulsions to be most common for ED, while OCD patients tend to have more variety of symptoms [32].

3.8. Primary vs. secondary depression

Depression is often comorbid with OCD and may be treated differently whether it is secondary and occurring in response to the stress caused by OCD or it is a primary condition that is separate from the OCD. Comorbid depression is associated with increased OCD symptom severity and increased functional impairment [14, 33]. Screening for depression is important to ensure treatment is effective and taking into account a person's overall well-being. Notably, several studies have revealed that treating OCD through exposure and response prevention can lead to a decrease in comorbid depression and that treatment outcomes are not worsened by the presence of depression [15, 34, 35]. Distinguishing whether depression is primary or secondary to OCD can guide treatment decisions whether to begin with exposure and response prevention or to begin with CBT targeting depression. Assessing the content

of depressive cognitions can provide information on whether depressive thoughts center on impairment or quality of life issues related to OCD. Additionally, obtaining a timeline of symptoms (such as whether depression preceded OCD or began afterward) can assist with identifying if depression is reactionary to OCD or a distinct condition.

4. Course of the disorder

While OCD has frequently been described as a debilitating and chronic illness whose symptoms wax and wane over time, less is known about the course of the disorder for children and adolescents specifically. In fact, research demonstrates potential differences regarding the course of illness between pediatric and adult populations. A study that compared pediatric and adult treatment-seeking individuals with OCD over a 3-year time period found that children had a significantly higher remission rate (53%) compared to adults (34%) [36]. Better psychosocial functioning as well as engaging in treatment earlier in the course of illness was related to shorter time to remission for children with OCD. These findings suggest a better prognosis for pediatric OCD and additionally emphasize the importance of early recognition and intervention for children with OCD [36].

Additionally, clinical presentation of OCD may vary across the life span between children, adolescents, and adults. Youth diagnosed with OCD at an earlier age tend to have higher rates of ADHD and anxiety disorders [1, 37]. As children with OCD age into adolescence, they are more likely to experience mood disorders such as depression [1, 16, 37]. These developmental trends are exemplified by a study that investigated differences in clinical presentation between 46 children, 55 adolescents, and 60 adults with OCD. Results revealed that ADHD and tic disorder rates were inversely related to age such that the children had the highest prevalence followed by adolescents and then adults [37]. Conversely, adults had the highest rates of depression followed by adolescents and then children with the lowest rates of depression [37]. Similarly, another study that examined the prevalence of comorbidity in pediatric OCD demonstrated adolescents had a six times greater likelihood of having a co-occurring depressive disorder compared to younger children [16].

5. Etiology

OCD pathogenesis involves neuroanatomy, biochemical, genetic, and environmental factors. Brain structures that are associated with obsessive compulsive disorder include the orbitofrontal cortex, striatum, thalamus, and the basal ganglia, which are all involved in the cortical-striatal circuit [38]. MRI and fMRI scans have demonstrated structural abnormalities for individuals with OCD. Biochemical factors that have been identified to play a role include neurotransmitters like serotonin [38, 39], and in fact, serotonin changes have been shown to change purely with an intensive exposure and response prevention treatment [40]. Genetic factors also appear to have a strong influence on the development of early-onset OCD. Children

with OCD are likely to have other first-degree relatives that also have OCD as well as anxiety, mood, ADHD, and tic disorders [9]. Numerous studies have demonstrated elevated rates of OCD in parents of children with early onset of the disorder, including a study that found a quarter of fathers and almost 10% of mothers meeting criteria for OCD [41]. For a subset of individuals, the pathogenesis of OCD is related to an autoimmune infectious disease known as autoimmune neuropsychiatric disorders associated with Streptococcus (PANDAS), which is also implicated in Tourette's disorder. It has been suggested this year that PANDAS be renamed to encephalitis autoimmune disorder poststreptococci.

With regard to environmental factors, family environment has been identified as a likely contributor to OCD development in children [42]. Social learning is theorized to play an important role in the development of childhood anxiety disorders. Children learn from seeing how their parents function in the world and how their parents cope with their own anxiety and emotional distress. Additionally, parent communication style and relationship quality impacts child development of psychopathology. Authoritarian parenting style (low warmth, high behavioral control) has been linked to higher incidences of obsessive compulsive symptoms and obsessive compulsive beliefs (such as regarding the importance of thoughts and personal responsibility) [43]. This finding is consistent with other studies that have demonstrated an association between parental control and higher rates of child anxiety [44]. Family factors are therefore important to address in the treatment of pediatric OCD.

6. Parent-child interactions

Children's OCD symptoms affect and are affected by family dynamics and the family environment. As children are heavily reliant on their parents for activities of daily living and general well-being, parents often bear the brunt of their child's OCD severity and impairment. Extensive research demonstrates the importance of accounting for family factors in the treatment of pediatric OCD [45–48]. In fact, family-based therapy has demonstrated effectiveness and is highly encouraged, especially in the case of younger children [45, 49].

A parent of a child with OCD is faced with many challenges on a daily basis. Children may delay family activities due to involvement in rituals or may refuse to partake in activities or gatherings altogether due to their OCD symptoms. When children become distressed by their obsessions and compulsions, it is typically family members who deal with the resulting temper tantrums, crying, reassurance seeking, or avoidance of situations and activities. Children may request or demand their parents adjust their behavior to assist with rituals or prevent feared negative consequences related to obsessional fears (e.g., expecting a parent to hand-wash excessively after a parent touches something the child considers dirty). Parents are faced with difficult questions such as how to cope effectively with their children's emotional distress, whether to assist in rituals or provide reassurance, and how to respond when children avoid or refuse to participate in activities. In addition, parents often have to deal with the poor interpersonal relations these children exhibit [50].

6.1. Pediatric OCD and family accommodation

A child, age 8, becomes tearful after accidentally touching something in a public area due to worries of becoming severely ill. She cries and asks her mother repeatedly "Am I going to be sick and die?" The child's mother answers the question, "No, that's not possible, you aren't going to become sick from that"; however, the girl appears unsatisfied and continues to ask similar questions. When her mother eventually tells her she already answered the question and attempts to end the conversation, the daughter throws herself onto the floor and begs her mother to answer again. The mother knows from past experience that when she answers her daughter, she is likely to calm down sooner and experience relief. However, she has also observed that her daughter seems to ask more frequently for reassurance and seems to want her mother to repeat the answer more times. What is this mother's best choice in this situation?

It is common for pediatric and adult individuals with OCD to involve close family members in OCD-related behaviors in some capacity [51, 52]. Accommodation refers to family members' modification of their own behavior in order to assist in their child's OCD-related rituals [53–55]. This may occur in a variety of forms including participating in rituals themselves (e.g., washing their hands excessively at their child's request or listening to repeated confessions of their child), facilitating avoidance of situations (e.g., picking child up early from school or removing knives in home if child has aggressive obsessions), and providing reassurance (e.g., saying nothing bad is going to happen in response to child asking about a harm-related fear).

Research suggests that the majority of families engage in accommodation on a regular basis. An analysis of the Pediatric OCD Treatment Study (POTS) explored the prevalence of family accommodation as well as whether there are child or parent factors that are related to a tendency toward accommodation. The POTS is a randomized controlled trial that investigated the effectiveness of cognitive behavioral therapy alone, medication alone, and the combination of therapy and medication, compared to a placebo control condition in children (ages 7–17) with OCD and their families [56]. In a subset of 96 individuals who completed the Family Accommodation Scale Parent Report (FAS-PR), 99% of parents reported engaging in at least one accommodating behavior to some extent and 77.1% reported engaging in at least one accommodating behavior daily [53]. More than half of parents reassured their child (63.5%), while about a third participated in their child's OCD rituals (32.33%) and assisted in avoiding triggering situations (33.3%) on a daily basis [53]. These results are comparable to other studies that have explored the prevalence of accommodation in pediatric OCD [46, 57].

Parents typically accommodate with their child's best interests at heart in hopes of alleviating distress, assisting with management of OCD symptoms, and/or improving family functioning. Accommodation often does result in short-term relief and can appear helpful when, for example, a child ceases tantruming after receiving reassurance. In reality, OCD symptoms are actually maintained as rituals are negatively reinforced and the child learns they cannot handle their fears without compulsions. Family accommodation has been shown to be associated with symptom severity pretreatment for children and adolescents with OCD, further evidence that this practice actually worsens rather than solves the problem [46, 57, 58]. Yet, children eventually come to expect family participation in rituals and become agitated when

family members attempt to change the system. Thus, parents can often feel powerless to intervene and feel compelled to continue accommodation even if they realize it may exacerbate symptoms over time.

In an effort to understanding the family processes that contribute to accommodation, researchers have explored the correlates and predictors of this phenomenon. Within the 96 families involved in the POTS cited above, more severe rituals, oppositional behavior, and higher frequency of washing symptoms in children contributed to increased parental accommodation. Parental anxiety was also identified as a relevant factor, which suggests that as parents' anxiety increases, they may have a harder time setting boundaries and disengaging from requests to participate in rituals [53]. A study of 65 children and their families (ages 8–17) also demonstrated that child symptom severity as well as parent anxiety, parent hostility, and parent psychopathology correlate with accommodation. Additionally, higher family conflict was associated with more accommodation-related distress and worse consequences when not accommodating while higher family organization was associated with the less accommodation-related distress [57]. Thus, without addressing family or parent-related factors, cognitive behavioral therapy can be compromised and lead to less beneficial outcomes. A prospective, longitudinal study found that parental accommodation (measured at intake) was the strongest predictor of OCD symptom severity at intake and 2-year follow-up, again demonstrating the impact of family factors on pediatric OCD [54]. This study analyzed data from an ongoing, prospective study, the Brown Longitudinal Obsessive Compulsive Disorder Study (BROWNS), to examine the predictive value of parental accommodation (assessed at intake) on OCD symptom severity at intake and 2 years after intake after controlling for factors such as child age, anxiety, and depression [59]. Results revealed, as discussed above, that parental accommodation at a single point in time may have a strong influence on predicting future OCD symptom severity. Potentially, family accommodation patterns become so entrenched that they are maintained over time due to the potential short-term effects of sudden accommodation changes (child becoming agitated and expressing distress). Thus, unless intervention directly targets family factors, one may expect parental accommodation to remain a strong predictor of future OCD symptoms and outcome.

Addressing family accommodation in treatment can substantially impact treatment outcomes in children with OCD [46, 58]. In a study of 50 youth and families who participated in family-based cognitive behavioral therapy, family accommodation was common among the participants and was associated with symptom severity before treatment [46]. Decreases in family accommodation during treatment predicted treatment outcome even when controlling for pretreatment OCD severity. Accordingly, treatment protocols for OCD are increasingly emphasizing reduction of family accommodation as an important therapeutic factor.

7. Assessment practice guidelines

The 2012 evidence-based practice parameters published by the American Academy of Child Adolescent Psychiatry detail assessment recommendations for pediatric OCD symptoms [17].

Routine screening of obsessions and compulsions is recommended during all psychiatric evaluations of children and adolescents, regardless of whether OCD is part of the presenting complaint. Screening can be conducted via several brief questions such as "Do you have worries that just won't go away or get stuck" and "Do you do things over and over or have habits you can't stop?" [17]. For individuals who exhibit OCD symptoms and meet DSM criteria for the disorder, a comprehensive evaluation of possible comorbid psychiatric disorders is recommended as well as a thorough medical, developmental, family, and school history [17]. As discussed in comorbidity section above, children are likely to present with multiple diagnoses, which may impact their treatment needs and ability to participate effectively in OCD treatment. With regard to family history, inquiries should focus on family mental health history, activities of daily living, general family dynamics, and lifestyle factors. Medical history questions may also provide helpful information regarding differential diagnosis of PANDAS/PANS. Additionally, gathering information about a child's academic performance over time also allows for an understanding of functional impairment and symptom severity outside of the child's home [17].

8. Treatment practice guidelines

Evidence-based treatment modalities for pediatric obsessive compulsive disorder comprise cognitive behavior therapy (CBT), specifically exposure and response prevention (ERP), as well as psychiatric medication (selective serotonin reuptake inhibitors, SSRIs) [17, 45, 60, 61]. CBT is recommended as the first-line treatment for mild-to-moderate cases of OCD in children [17]. A combination of psychotropic medication and CBT is recommended for moderate-to-severe OCD in children, with serotonin reuptake inhibitors considered the first-line medication [62]. Additionally, medication can be helpful in cases where children are having difficulties engaging in treatment or have co-occurring disorders that cause additional functional impairment. Medication augmentation may also be considered for individuals with treatment resistance (i.e., nonresponsive to empirically based interventions) who experience persistent OCD symptoms despite adequate treatment interventions.

9. Cognitive behavioral therapy for pediatric OCD

Exposure and response prevention (ERP) involves prolonged, repeated contact with feared stimuli that trigger obsessions (exposure) without engagement in compulsive or avoidant behaviors (ritual prevention) [63, 64]. Treatment will usually start with psychoeducation to orient the child and family to the cognitive behavioral model and expectations for therapy. The therapist, child, and often family members will then collaborate to create a list of situations that trigger anxiety and rate them from lowest to highest intensity (i.e., treatment hierarchy). Exposures will typically begin with situations that trigger mild anxiety and proceed in a graded fashion as the child habituates (experiences a reduction in anxiety) and/or increases their willingness to remain in the situations despite anxiety. Simultaneously, the child does not engage in rituals before, during, or after exposure to block negative reinforcement and to allow the anxiety

to decline naturally. For example, a child who worries about contracting a serious illness and engages in excessive handwashing and avoidance of germs would not only touch objects that are associated with germs but also refrain from handwashing for the exposure exercise.

9.1. Family involvement in treatment

Family-based CBT programs have been recommended for early childhood OCD (approximately ages 5–8) and have demonstrated success in randomized control trials [45, 61]. Parent participation is particularly important for younger children who have unique developmental needs and rely heavily on their caretakers. The Pediatric Obsessive-Compulsive Disorder Treatment Study for Young Children (POTS JR) evaluated the efficacy of a family-based CBT protocol (FB-CBT) for young children who addressed cognitive, socioemotional, and family factors compared to a family-based relaxation training protocol [45]. This 14-week randomized clinical trial involved 127 pediatric outpatients with OCD aged 5–8 years at three academic medical centers. Results revealed that the FB-CBT led to significant reductions in OCD symptoms and functional impairment; young children with OCD were able to benefit from exposure and response prevention with parental support [45].

Family-based CBT incorporates parent tools such as behavior management skills training; parents are trained in behavioral strategies such as implementing reward systems, modeling, and ignoring behaviors that are reinforced by attention [45]. As children may lack insight into their symptoms and/or resist voluntary contact with triggers, they may be more likely to participate in treatment with the addition of external reinforcers. Additionally, parents can be actively involved during in-session and home-based exposure exercises and provide helpful support to their child. Therapists teach parents how to act as a coach between sessions, which ensures increased likelihood of children practicing and adhering to CBT principles between sessions [45]. Parents who are included in the treatment process are less likely to accommodate their child's OCD, which can greatly enhance treatment outcomes [14].

9.2. Treatment intensity

While outpatient therapy often involves a weekly schedule, the possibility of more intensive treatment can be considered depending on the child's clinical presentation and circumstances. Studies have demonstrated that daily sessions offer comparable results to weekly sessions and even provide slight advantages immediately posttreatment though there appear to be no group differences at later follow-ups [48, 49]. While weekly treatment allows for children to maintain their routines and remain in school and other activities, intensive treatment can also be considered as an option when children have a limited time frame and/or require a faster response rate. Many of our children receive intensive treatment during holidays or during the summer months. In addition, children who are unable to attend school may be considered for intensive outpatient programs.

9.3. Additional consideration for ERP in child populations

Children are encouraged to externalize the OCD as separate from themselves [64, 65]. Therapists often describe OCD as a "bully" or "worry monster" that puts "silly worries" or "scary thoughts"

into the children and "commands" or "bullies" the children to repeat certain behaviors. Children externalize their OCD by giving their OCD a name of their choice (e.g., Mr. Wrong, Meanie, Silly Sam, etc.) and "bossing back" or fighting OCD by not listening to its commands and doing the opposite of what OCD says (i.e., exposures).

Psychoeducation can involve using examples from other areas of the child's life to build motivation for facing fears as a way of overcoming them (e.g., learning to ride a bike or swim). Depending on child's age or developmental level, therapists may measure level of anxiety in a variety of ways: a fear thermometer or using objects of different sizes that symbolize anxiety levels (e.g., three cups of different sizes). When possible and applicable, therapists can make exposure into a game (e.g., doing silly things in the presence of feared trigger, who can touch the dirty pen first, passing a pen between their toes and race with the therapist) to increase children's willingness to participate and match their developmental level. Additionally, including parents in the "game" or exposure activity may help children feel more comfortable and open to engage.

10. Addressing treatment obstacles and future directions

Factors associated with poorer treatment response in children with OCD include lower insight, higher family accommodation, comorbid disorders, and greater symptom severity [48, 49, 61]. Researchers are exploring ways to improve the efficacy and accessibility of OCD treatments. Potentially, strategies aimed at enhancing readiness in children may facilitate increased engagement in therapy such as motivational interviewing strategies [66]. In fact, a pilot study explored the usefulness of adjunctive motivational interviewing sessions (MI) compared to adjunctive psychoeducation sessions; results indicated the MI condition led to faster reduction in symptoms (though scores posttreatment were not significantly different from the control condition), and on average, treatment was completed three sessions earlier than those in the control group [46]. Incorporating technology may allow CBT researchers and clinicians to reach a wider audience of individuals who otherwise may not have access to treatment due to location and other logistics (e.g., childcare for other siblings, transportation availability). One pilot study found significant treatment outcomes for a web-based CBT intervention, leading to the suggestion that web-based CBT may be considered in cases where in-person sessions are not feasible [67]. Additionally, as discussed above in prior sections, family members are increasingly being included and targeted in standard CBT therapy protocols for children with OCD with substantially positive outcomes [46, 58].

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References

[1] Garcia AM, Freeman JB, Himle MB, Berman NC, Ogata AK, Ng J, et al. Phenomenology of early childhood onset obsessive compulsive disorder. Journal of Psychopathology and Behavioral Assessment. 2009;**31**(2):104-111

[2] Piacentini J, Bergman RL, Keller M, McCracken J. Functional impairment in children and adolescents with obsessive-compulsive disorder. Journal of Child and Adolescent Psychopharmacology. 2003;**13**(2, Supplement 1):61-69

[3] Flament MF, Whitaker A, Rapoport JL, Davies M, Berg CZ, Kalikow K, et al. Obsessive compulsive disorder in adolescence: An epidemiological study. Journal of the American Academy of Child & Adolescent Psychiatry. 1988;**27**(6):764-771

[4] Heyman I, Fombonne E, Simmons H, Ford T, Meltzer H, Goodman R. Prevalence of obsessive-compulsive disorder in the British nationwide survey of child mental health. International Review of Psychiatry. 2003;**15**(1-2):178-184

[5] Castle DJ, Deale A, Marks IM. Gender differences in obsessive compulsive disorder. Australian & New Zealand Journal of Psychiatry. 1995;**29**(1):114-117

[6] Neziroglu F, Anemone R, Yaryura-Tobias JA. Onset of obsessive-compulsive disorder in pregnancy. American Journal of Psychiatry. 1992;**149**(7):947-950

[7] Millet B, Kochman F, Gallarda T, Krebs MO, Demonfaucon F, Barrot I, et al. Phenomenological and comorbid features associated in obsessive–compulsive disorder: Influence of age of onset. Journal of Affective Disorders. 2004;**79**(1):241-246

[8] Nestadt G, Samuels J, Riddle M, Bienvenu OJ, Liang KY, LaBuda M, et al. A family study of obsessive-compulsive disorder. Archives of General Psychiatry. 2000;**57**(4):358-363

[9] Walitza S, Wendland JR, Gruenblatt E, Warnke A, Sontag TA, Tucha O, et al. Genetics of early-onset obsessive–compulsive disorder. European Child & Adolescent Psychiatry. 2010;**19**(3):227-235

[10] Kalra SK, Swedo SE. Children with obsessive-compulsive disorder: Are they just "little adults"? The Journal of Clinical Investigation. 2009;**119**(4):737-746

[11] Højgaard DRMA, Mortensen EL, Ivarsson T, Hybel K, Skarphedinsson G, Nissen JB, et al. Structure and clinical correlates of obsessive–compulsive symptoms in a large sample of children and adolescents: A factor analytic study across five nations. European Child & Adolescent Psychiatry. 2017;**26**(3):281-291

[12] Hybel KA, Mortensen EL, Højgaard DR, Lambek R, Thomsen PH. Symptom profiles and executive function in childhood obsessive-compulsive disorder. Journal of Obsessive-Compulsive and Related Disorders. 2017;**14**:36-46

[13] Lewin AB, Bergman RL, Peris TS, Chang S, McCracken JT, Piacentini J. Correlates of insight among youth with obsessive-compulsive disorder. Journal of Child Psychology and Psychiatry. 2010;**51**(5):603-611

[14] Storch EA, Merlo LJ, Larson MJ, Geffken GR, Lehmkuhl HD, Jacob ML, et al. Impact of comorbidity on cognitive-behavioral therapy response in pediatric obsessive-compulsive disorder. Journal of the American Academy of Child & Adolescent Psychiatry. 2008;**47**(5):583-592

[15] Brown HM, Lester KJ, Jassi A, Heyman I, Krebs G. Paediatric obsessive-compulsive disorder and depressive symptoms: Clinical correlates and CBT treatment outcomes. Journal of Abnormal Child Psychology. 2015;**43**(5):933-942

[16] Peris TS, Rozenman M, Bergman RL, Chang S, O'Neill J, Piacentini J. Developmental and clinical predictors of comorbidity for youth with obsessive compulsive disorder. Journal of Psychiatric Research. 2017;**93**:72-78

[17] Geller DA, March J. Practice parameter for the assessment and treatment of children and adolescents with obsessive-compulsive disorder. Journal of the American Academy of Child & Adolescent Psychiatry. 2012;**51**(1):98-113

[18] Abramowitz JS, Whiteside SP, Deacon BJ. The effectiveness of treatment for pediatric obsessive-compulsive disorder: A meta-analysis. Behavior Therapy. 2005;**36**(1):55-63

[19] Bloch MH, Craiglow BG, Landeros-Weisenberger A, Dombrowski PA, Panza KE, Peterson BS, et al. Predictors of early adult outcomes in pediatric-onset obsessive-compulsive disorder. Pediatrics. 2009;**124**(4):1085-1093

[20] American Psychiatric Association. Diagnostic and Statistical Manual of Mental Disorders (DSM-5). Washington, D.C.: American Psychiatric Pub; 2013

[21] 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. Journal of the American Academy of Child & Adolescent Psychiatry. 1997;**36**(6):844-852

[22] Lewin AB, Piacentini J. Evidence-based assessment of child obsessive compulsive disorder: Recommendations for clinical practice and treatment research. Child Youth Care Forum. 2010;**39**(2):73-89

[23] Allen AJ, Leonard HL, Swedo SE. Case study: A new infection-triggered, autoimmune subtype of pediatric OCD and Tourette's syndrome. Journal of the American Academy of Child & Adolescent Psychiatry. 1995;**34**(3):307-311

[24] Swedo SE, Leonard HL, Garvey M, Mittleman B, Allen AJ, Perlmutter S, et al. Pediatric autoimmune neuropsychiatric disorders associated with streptococcal infections: Clinical description of the first 50 cases. American Journal of Psychiatry. 1998;**155**(2): 264-271

[25] Orefici G, Cardona F, Cox CJ, Cunningham MW. Pediatric autoimmune neuropsychiatric disorders associated with streptococcal infections (PANDAS). In: Streptococcus pyogenes: Basic Biology to Clinical Manifestations. Oklahoma City, Oklahoma: University of Oklahoma Health Sciences Center. 2016. pp. 1-43

[26] Swedo SE, Leckman JF, Rose NR. From research subgroup to clinical syndrome: Modifying the PANDAS criteria to describe PANS (pediatric acute-onset neuropsychiatric syndrome). Pediatric Therapeutics. 2012;**2**(2):113

[27] Sigra S, Hesselmark E, Bejerot S. Treatment of PANDAS and PANS: A systematic review. Neuroscience & Biobehavioral Reviews. 2018;**86**:51-65

[28] Comer JS, Kendall PC, Franklin ME, Hudson JL, Pimentel SS. Obsessing/worrying about the overlap between obsessive–compulsive disorder and generalized anxiety disorder in youth. Clinical Psychology Review. 2004;**24**(6):663-683

[29] Mansueto CS, Keuler DJ. Tic or compulsion? It's Tourettic OCD. Behavior Modification. 2005;**29**(5):784-799

[30] Zandt F, Prior M, Kyrios M. Repetitive behaviour in children with high functioning autism and obsessive compulsive disorder. Journal of Autism and Developmental Disorders. 2007;**37**(2):251-259

[31] García-Soriano G, Roncero M, Perpiñá C, Belloch A. Intrusive thoughts in obsessive–compulsive disorder and eating disorder patients: A differential analysis. European Eating Disorders Review. 2014;**22**(3):191-199

[32] Phillips KA, Kaye WH. The relationship of body dysmorphic disorder and eating disorders to obsessive-compulsive disorder. CNS Spectrums. 2007;**12**(5):347-358

[33] Canavera KE, Ollendick TH, May JTE, Pincus DB. Clinical correlates of comorbid obsessive–compulsive disorder and depression in youth. Child Psychiatry & Human Development. 2010;**41**(6):583-594

[34] Abramowitz JS, Foa EB. Does comorbid major depressive disorder influence outcome of exposure and response prevention for OCD? Behavior Therapy. 2000;**31**(4):795-800

[35] 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. Bulletin of the Menninger Clinic. 2010a;**74**(2):167-185

[36] Mancebo MC, Boisseau CL, Garnaat SL, Eisen JL, Greenberg BD, Sibrava NJ, et al. Long-term course of pediatric obsessive–compulsive disorder: 3 years of prospective follow-up. Comprehensive Psychiatry. 2014;**55**(7):1498-1504

[37] Geller DA, Biederman J, Faraone SV, Bellordre CA, Kim GS, Hagermoser L, et al. Disentangling chronological age from age of onset in children and adolescents with obsessive–compulsive disorder. The International Journal of Neuropsychopharmacology. 2001;**4**(2):169-178

[38] Lewin AB, Storch EA, Geffken GR, Goodman WK, Murphy TK. A neuropsychiatric review of pediatric obsessive-compulsive disorder: Etiology and efficacious treatments. Neuropsychiatric Disease and Treatment. 2006;**2**(1):21

[39] Yaryura-Tobias JY, Neziroglu F, Bhagavan HN. Obsessive-compulsive disorders: A serotonergic hypothesis. In: Neuro-Psychopharmacology. Vienna: Proceedings of the 11th Congress of the Collegium Internationale Neuro-Psychopharmacologicum. 1979. pp. 117-125

[40] Neziroglu F, Steele J, Yaryura-Tobias JA, Hitri A, Diamond B. Effect of behavior therapy on serotonin level in obsessive compulsive disorder. In: Stefanis CN, Rabavilas AD, Soldator CR, editors. Psychiatry: A World Perspective. Vol. 3. Amsterdam, Netherlands: Elsevier Science Publishers; 1990. pp. 707-710

[41] Lenane MC, Swedo SE, Leonard H, Pauls DL, Sceery W, Rapoport JL. Psychiatric disorders in first degree relatives of children and adolescents with obsessive compulsive disorder. Journal of the American Academy of Child & Adolescent Psychiatry. 1990;**29**(3): 407-412

[42] Grisham JR, Anderson TM, Sachdev PS. Genetic and environmental influences on obsessive-compulsive disorder. European Archives of Psychiatry and Clinical Neuroscience. 2008;**258**(2):107-116

[43] Timpano KR, Keough ME, Mahaffey B, Schmidt NB, Abramowitz J. Parenting and obsessive compulsive symptoms: Implications of authoritarian parenting. Journal of Cognitive Psychotherapy. 2010;**24**(3):151-164

[44] Ballash N, Leyfer O, Buckley AF, Woodruff-Borden J. Parental control in the etiology of anxiety. Clinical Child and Family Psychology Review. 2006;**9**(2):113-133

[45] Freeman J, Sapyta J, Garcia A, Compton S, Khanna M, Flessner C, et al. Family-based treatment of early childhood obsessive-compulsive disorder: The Pediatric Obsessive-Compulsive Disorder Treatment Study for Young Children (POTS Jr)—A randomized clinical trial. JAMA Psychiatry. 2014;**71**(6):689-698

[46] Merlo LJ, Lehmkuhl HD, Geffken GR, Storch EA. Decreased family accommodation associated with improved therapy outcome in pediatric obsessive–compulsive disorder. Journal of Consulting and Clinical Psychology. 2009;**77**(2):355

[47] Peris TS, Sugar CA, Bergman RL, Chang S, Langley A, Piacentini J. Family factors predict treatment outcome for pediatric obsessive-compulsive disorder. Journal of Consulting and Clinical Psychology. 2012;**80**(2):255

[48] Storch EA, Geffken GR, Merlo LJ, Jacob ML, Murphy TK, Goodman WK, et al. Family accommodation in pediatric obsessive–compulsive disorder. Journal of Clinical Child and Adolescent Psychology. 2007;**36**(2):207-216

[49] Storch EA, Geffken GR, Merlo LJ, Mann G, Duke D, Munson M, et al. Family-based cognitive-behavioral therapy for pediatric obsessive-compulsive disorder: Comparison of intensive and weekly approaches. Journal of the American Academy of Child & Adolescent Psychiatry. 2007;**46**(4):469-478

[50] Borda T, Feinstein BA, Neziroglu F, Vessia T, Perez-Rivera R. Are children with obsessive-compulsive disorder at risk for problematic peer relationships? Journal of Obsessive-Compulsive and Related Disorders. 2013;**2**(4):359-365

[51] Gomes JB, Van Noppen B, Pato M, Braga DT, Meyer E, Bortoncello CF, et al. Patient and family factors associated with family accommodation in obsessive–compulsive disorder. Psychiatry and Clinical Neurosciences. 2014;**68**(8):621-630

[52] Van Noppen B, Steketee G. Testing a conceptual model of patient and family predictors of obsessive compulsive disorder (OCD) symptoms. Behaviour Research and Therapy. 2009;**47**(1):18-25

[53] Flessner CA, Freeman JB, Sapyta J, Garcia A, Franklin ME, March JS, et al. Predictors of parental accommodation in pediatric obsessive-compulsive disorder: Findings from the Pediatric Obsessive-Compulsive Disorder Treatment Study (POTS) trial. Journal of the American Academy of Child & Adolescent Psychiatry. 2011;**50**(7):716-725

[54] Francazio SK, Flessner CA, Boisseau CL, Sibrava NJ, Mancebo MC, Eisen JL, et al. Parental accommodation predicts symptom severity at long-term follow-up in children with obsessive–compulsive disorder: A preliminary investigation. Journal of Child and Family Studies. 2016;**25**(8):2562-2570

[55] Storch EA, Larson MJ, Muroff J, Caporino N, Geller D, Reid JM, et al. Predictors of functional impairment in pediatric obsessive-compulsive disorder. Journal of Anxiety Disorders. 2010b;**24**(2):275-283

[56] Pediatric OCD Treatment Study (POTS) Team. Cognitive-behavior therapy, sertraline, and their combination for children and adolescents with obsessive-compulsive disorder: The pediatric OCD treatment study (POTS) randomized controlled trial. JAMA. 2004;**292**:1969-1976

[57] Peris TS, Bergman RL, Langley A, Chang S, Mccracken JT, Piacentini J. Correlates of accommodation of pediatric obsessive-compulsive disorder: Parent, child, and family characteristics. Journal of the American Academy of Child & Adolescent Psychiatry. 2008;**47**(10):1173-1181

[58] Lebowitz ER, Panza KE, Bloch MH. Family accommodation in obsessive-compulsive and anxiety disorders: A five-year update. Expert Review of Neurotherapeutics. 2016;**16**(1): 45-53

[59] Pinto A, Mancebo MC, Eisen JL, Pagano ME, Rasmussen SA. The Brown Longitudinal Obsessive Compulsive Study: Clinical features and symptoms of the sample at intake. The Journal of Clinical Psychiatry. 2006;**67**(5):703

[60] Franklin M, Foa E, March JS. The pediatric obsessive-compulsive disorder treatment study: Rationale, design, and methods. Journal of Child and Adolescent Psychopharmacology. 2003;**13**(2, Supplement 1):39-51

[61] Franklin ME, Kratz HE, Freeman JB, Ivarsson T, Heyman I, Sookman D, et al. Cognitive-behavioral therapy for pediatric obsessive-compulsive disorder: Empirical review and clinical recommendations. Psychiatry Research. 2015;**227**(1):78-92

[62] Geller DA, Biederman J, Stewart SE, Mullin B, Martin A, Spencer T, et al. Which SSRI? A meta-analysis of pharmacotherapy trials in pediatric obsessive-compulsive disorder. American Journal of Psychiatry. 2003;**160**(11):1919-1928

[63] Foa EB, Kozak MJ. Psychological treatment for obsessive-compulsive disorder. In: Mavissakalian MR, Prien RF, editors. Long-Term Treatments of Anxiety Disorders. Washington, DC: American Psychiatric Press; 1996. pp. 285-309

[64] March JS, Mulle K. OCD in Children and Adolescents: A Cognitive-behavioral Treatment Manual. New York: Guilford Press; 1998

[65] Wagner AP. Cognitive-behavioral therapy for children and adolescents with obsessive-compulsive disorder. In: Hudak R, Dougherty D, editors. Clinical Obsessive-Compulsive Disorders in Adults and Children. Cambridge: Cambridge University Press; 2011. pp. 138-151

[66] Rollnick S, Miller WR. What is motivational interviewing? Behavioural and Cognitive Psychotherapy. 1995;**23**(4):325-334

[67] Storch EA, Caporino NE, Morgan JR, Lewin AB, Rojas A, Brauer L, et al. Preliminary investigation of web-camera delivered cognitive-behavioral therapy for youth with obsessive-compulsive disorder. Psychiatry Research. 2011;**189**(3):407-412