

## Obsessive–Compulsive Disorders in Adolescence

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Despite early onset of obsessive–compulsive disorder (OCD) being supported by several studies, adolescents do not always receive an adequate diagnosis. This is due to several reasons. For example, young people hide their concerns and rituals, considering them embarrassing and strange. Family members may not give enough importance to the problem or consider symptoms to be excessive, or OCD is mistakenly diagnosed (Heyman et al., 2003). In this sense, there is evidence that a high percentage of adults with OCD recognize that symptom onset occurred in childhood or adolescence. Therefore, pediatric OCD could be a chronic condition that persists until adulthood, with the need for clinicians to have an exhaustive knowledge of clinical characteristics to facilitate early diagnosis and intervention. In the practice parameters established by the American Academy of Child and Adolescent Psychiatry's Committee on Quality Issues for the assessment of OCD in children and adolescents, it is recommended that screening for the presence of obsessive–compulsive symptoms should be routinely conducted (Geller & March, 2012).

Despite heterogeneity observed in OCD presentation, obsessions and compulsions are the core symptoms that define the disorder (American Psychiatric Association [APA], 2013; World Health Organization, 1993). Obsessions are cognitive responses that can appear as recurrent and persistent thoughts, impulses, or images that are perceived by the individual as intrusive and undesired. Compulsions are repetitive responses or mental acts, and these are carried out with the purpose of avoiding, reducing, or preventing anxiety provoked by certain feared situations. In the fifth edition of the *Diagnostic and Statistical Manual of Mental Disorders* (DSM-5; APA, 2013), OCD was removed from the anxiety disorders section and placed in the obsessive–compulsive and related disorders category. This new group was established according to similarities in diagnostic issues and clinical utility, and includes OCD, body dysmorphic disorder, hoarding disorder, trichotillomania (hair-pulling disorder), excoriation (skin picking), and substance/medication-induced obsessive–compulsive disorder and related disorders.

The prevalence of OCD in the general population of children and adolescents is between 1% and 4%, depending on location. In the USA, percentages have been reported to range from 1% to 2% (Flament et al., 1988); in New Zealand 4% (Douglass, Moffitt,

Dar, McGee, & Silva, 1995); and in Spain a percentage of 1.8% has been reported, increasing to 5.5% if subclinical OCD is included (Canals, Hernández-Martínez, Cosi, & Voltás, 2012). Heyman et al. (2003) found rates of 0.25% in youth from 5 to 15 years old, showing that almost 90% of the cases detected had not been previously diagnosed. In the DSM-5, prevalence rates range from 1% to 1.8% (APA, 2013). In early childhood, OCD prevalence seems to be influenced by gender, with rates for males being greater than for females. The gender distribution tends to balance in adolescence and adulthood. Finally, other studies observed that OCD could exhibit a bimodal incidence across the lifespan, with one peak in preadolescence (around approximately age 10 years; Geller, 2006) and a later peak in early adulthood (mean age of 19.5 years; Ruscio, Stein, Chiu, & Kessler, 2010). The heterogeneity observed in data reported by epidemiological studies could be explained not only by intrinsic characteristics of populations studied but also by other extrinsic factors, such as: (1) the use of different diagnostic instruments (clinical judgment, structured interviews, specific questionnaires, nonstructured measures, etc.); (2) the use of different conceptualizations of the disorder, following roughly restrictive criteria; (3) the inclusion of different types of samples (clinical, community, students, etc.); (4) diagnostic mistakes due to lack of adequate assessment instruments; and (5) comorbidity with other mental disorders (hyperactivity, conduct problems, tic disorders, etc.).

## 1 Clinical Characteristics and Consequences

The clinical manifestations of OCD are obsessions and compulsions. Obsessions can appear as thoughts, impulses, or images, with thoughts being the most frequent form. It is possible to observe various obsessive themes in the same individual, and these can change during the course of the disorder. In addition, obsessions are experienced as intrusive, repetitive, and egodystonic. Young people with OCD try to resist them, generating high levels of anxiety that interfere with daily routines. Moreover, they experience a loss of control over their own behavior and an intense fear of terrible things that might occur. The level of the individual's awareness of the senselessness of these beliefs is variable. In the DSM-5, insight regarding the disorder is defined as an adolescent's ability to recognize the excessive and/or unreasonable nature of their symptoms and is categorized according to "good/fair insight" or "absent insight." When youth present good/fair insight, they can recognize the irrational and excessive nature of their symptoms, presenting better ability to externalize the disorder and resist the symptomology. Contrarily, if their insight level is low, they present difficulties in seeing the unreasonable nature of their symptomatology and therefore show lower resistance to and control over obsessive-compulsive responses. It has consistently been observed that insight levels are higher for adolescents than for younger children. Obsessions observed more frequently in adolescent ages are related to contamination, aggression, and symmetry. Sexual obsessions increase significantly from childhood to adolescence; in adolescence, their prevalence is similar to that in adults. In addition, religious obsessions are more common in adolescents compared to either children or adults.

Compulsions can be manifested as observable behaviors or mental acts that the individual performs repeatedly. Despite these behaviors not being generally useful or pleasurable, adolescents with OCD feel an intense need to perform them to avoid feared

events or situations. In this way, anxiety is reduced or temporarily neutralized, but, in the long term, fears and the need to engage in rituals are reinforced, maintaining OCD and other anxiety problems via a negative reinforcement cycle. Rituals, compulsions, and avoiding behaviors are commonly related to obsessive content. For example, contamination obsessions are frequently neutralized by hand washing and avoiding touching things. However, a logical association between obsessions and compulsion is not always observed (e.g., touching an object a certain number of times to avoid something bad from happening). When compulsions take the form of cognitive responses (e.g., praying, counting, or repeating words mentally), these are denominated mental or covert rituals, which are more difficult to detect. The most frequent compulsions in adolescence are washing and repeating. However, it is common that several compulsive behaviors are present at the same time, and the importance given to them could be variable during the course of the disorder.

Regarding the course of OCD, onset is characterized by a predominance of an obsessive theme that can remain stable over months or even years. However, in 90% of cases obsessive content varies during the course of the disorder. The severity of OCD usually presents fluctuations, increasing under stressful situations. It is well known that certain factors can worsen the prognosis of pediatric OCD, such as the presence of tic disorders, greater symptom severity, poor response to psychological and pharmacological treatments, family history of mental disorders, and early onset.

The consequences of OCD in adolescents' lives are quite severe, interfering greatly in the activities of daily life. Adolescents can have serious difficulties in academic and social areas, sleep problems, suicide attempts, and even physical harm derived from certain compulsions (e.g., dermatitis caused by excessive washing). On an emotional level, depressive thoughts and emotions are frequent due to the impact that OCD produces in all life areas. Shame is also a common feeling in adolescents with OCD, since their behavior and thoughts are considered strange, particularly when obsessions have sexual or aggressive content. In this sense, adolescents may avoid social situations due to fear of ridicule or being unable to perform rituals in public. Peers can exhibit negative reactions to compulsive behavior, increasing avoidance of social situations and isolation. Adolescents with OCD may believe they are bad or strange, and this can do great damage to their self-esteem.

Family is also impacted by OCD. Relatives, especially parents, can be distressed or frustrated due to the behavior exhibited by the adolescent with OCD. It is also common that family members must modify daily activities and routines to accommodate to rituals—for example, facilitating items, changing schedules, or participating in rituals. For parents, family accommodation aims to avoid conflict with the adolescent and to reduce his or her anxiety level.

## 2 Etiology

Clinical, experimental, and therapeutic data suggest a multifactorial etiopathogenesis of OCD. There are several theoretical models regarding onset and maintenance of OCD, from both biological and psychological perspectives. From the first, various organic alterations have been proposed as a cause of the disorder, whereas internal conflicts,

the individual's relationships with social systems, and cognitive–behavioral mechanisms have been studied from psychological theories.

Research studies to explore the biological basis of OCD have examined genetic, anatomical, neurochemical, and neuroimmunological factors. Despite the gene or genes involved in OCD development not having yet been identified, a higher concordance of OCD has been observed among monozygotic twins compared to dizygotic twins. Family studies have obtained percentages of concordance of OCD between 20% and 25% for first-grade relatives and higher percentages for other obsessive–compulsive spectrum and anxiety disorders than for nonanxiety disorders. Pauls (2008) stated in his review that OCD is partially a heritable disorder, according to data from 60 genetic studies. Candidate genes were related to the serotonergic and dopaminergic systems, although the glutamate transporter gene obtained the most reliable evidence. Taylor (2013) proposed a polygenetic model of OCD where various genes contribute to the development of the disorder.

Results of immunological studies have shown an association between the presence of beta-hemolytic streptococcal toxins and obsessive–compulsive behaviors in childhood and adolescence. In this sense, several studies suggest that OCD in children and adolescents could be developed as an autoimmune response to streptococcal infection by a similar mechanism to Sydenham's chorea. These data have led to the proposal of an OCD subtype within the PANDAS (pediatric autoimmune neuropsychiatric disorders associated with streptococcus) group (Swedo et al., 1997). It is known that patients with higher expression of B lymphocyte antigen D8/17 present greater vulnerability to developing this subtype, since D8/17 has been observed in 85% of children with PANDAS. Therefore, D8/17 is considered a predictive immunological marker of the development of obsessive–compulsive symptoms and tics after streptococcal infection. Further studies have related the neuropsychiatric symptoms of OCD, such as tics and obsessions, with infections caused by other microorganisms (different from streptococcus) or non-infectious inflammatory processes. The term CANS (childhood acute neuropsychiatric symptoms) includes all these conditions (Singer, Gilbert, Wolf, Mink, & Kurlan, 2012).

Findings from neuropsychological research in OCD have shown deficits in several functions that would reflect alterations in various cerebral areas. However, studies examining neuropsychological functioning in pediatric samples are scarce and the findings are inconsistent.

Differences observed in phenomenological, etiological, and neuropsychological correlates of pediatric and adult-onset OCD have led some researchers to consider neuroanatomical and neuropsychological findings within a developmental context. However, further empirical longitudinal research on neuromaturational processes is necessary to confirm this hypothesis.

Psychological models emphasize the role played by family in the reinforcement and maintenance of OCD, with the family being capable of influencing the course of the disorder. Some studies reported that families of children with OCD present higher levels of emotional reactivity, parent–child conflict, and parental psychopathology. Cognitive theoretical models (Clark, 2004; Frost & Steketee, 2002; Salkovskis, 1999) have proposed a set of dysfunctional beliefs that lead individuals with OCD to misinterpret or overestimate the significance of their unwanted and intrusive thoughts, such as inflated responsibility, overimportance of thoughts, control of thoughts, overestimation of threat, intolerance of uncertainty, and perfectionism (Obsessive Compulsive Cognitions

Working Group, 2001). These maladaptive cognitive distortions contribute to increasing distress, and thus ritualistic behavior and avoidance. Behavioral models establish that compulsive symptoms appear as a response to anxiety or discomfort provoked by intrusive thoughts and are maintained by negative reinforcement. Therefore, compulsions are escape and avoidance responses to prevent anxiety and distress, and are therefore consolidated by an instrumental conditioning process. When conditioning is repeated again and again, connections between compulsions and anxiety reduction are strengthened.

### 3 Comorbidity

In adolescence, OCD can appear with other mental disorders, which increase levels of distress and complicate prognosis and treatment response (Wu & Storch, 2016). Several studies have reported high levels of comorbidity, between 50% and 80%. Disorders frequently observed and associated with OCD in early ages are anxiety disorders (26–75%), mood disorders (25–62%), tic disorders and Tourette syndrome (20–30%), attention-deficit/hyperactivity disorder (10–50%), and disruptive behavioral and pervasive developmental disorders (18–33%; Lavell, Farrell, Waters, & Cadman, 2016). Regarding prognosis, there is wide agreement on the importance of treatment comorbidities. Generally, youth presenting with one or more comorbid conditions exhibit poorer treatment response and remission rates compared to youth without other disorders, reflecting the importance of incorporating additional skills to address comorbid psychopathology in therapy.

The most likely differential diagnoses for OCD are other conditions with repetitive behaviors, such as autism spectrum disorders and tic disorders, although both these groups may co-occur with OCD.

### 4 Assessment Measures

Several disorder-specific measures to assess OCD in children and adolescents have been developed and tested in the past decades. According to the review conducted by Iniesta-Sepúlveda, Rosa-Alcázar, Rosa-Alcázar, and Storch (2014) in the field of pediatric OCD, there are well-established measures to assess symptoms and severity, including the clinical interview Children’s Yale–Brown Obsessive Compulsive Scale (CY-BOCS); approaching well-established assessments, such as the self-report Obsessive Compulsive Inventory–Child Version; and promising assessments, such as the self-report Children’s Florida Obsessive–Compulsive Inventory and the Children’s Obsessional Compulsive Inventory. The Leyton Obsession–Child Inventory was classified as insufficiently tested.

The CY-BOCS maintains the same structure as the original version of the Y-BOCS for adults: a 10-item, clinician-rated, semistructured instrument that assesses the presence and severity of obsessions and compulsions over the past week. Five items are intended to assess the severity of obsessions, and the remaining five address the assessment of compulsions. All items have a Likert-type scale scored from 0 (none) to 4 (extreme), so that the test provides a total score by adding together the 10 items (range 0–40), as well as specific scores for the Obsessions and Compulsions subscales (range 0–20).

The CY-BOCS assesses the presence of a list of items concerning insight, avoidance, indecisiveness, pathological doubting, obsessive slowness, and overvalued ideation.

Most of these measures were originally developed for the adult population and further adapted for use with pediatric patients.

## 5 Treatment

Evidence-based treatment options for adolescent patients with OCD include cognitive-behavioral therapy (CBT), pharmacological treatment with selective serotonin reuptake inhibitors (SSRIs), or their combination (Geller & March, 2012). When OCD presents with mild to moderate severity, CBT is considered the first choice of treatment, whereas SSRIs combined with CBT are indicated for moderate to severe cases, in the presence of comorbidity, or in the absence of mental health providers specializing in CBT. In the CBT (usually a brief therapy of 12 to 14 sessions), patients and families work collaboratively with the therapist to gradually learn to confront their feared stimuli. In addition, they learn to understand and tolerate graded amounts of anxiety while resisting carrying out compulsions. This strategy is exposure with response prevention (ERP), considered the core component of the interventions; it is usually administered alone or in combination with other techniques, such as cognitive restructuring, relaxation, or problem resolution (McGuire et al., 2015). ERP has demonstrated effectiveness compared to pharmacological therapies and other active psychological intervention, such as relaxation therapy (Sánchez-Meca, Rosa-Alcázar, Iniesta-Sepúlveda, & Rosa-Alcázar, 2014). Several empirical studies have examined CBT efficacy comparing different modalities. For example, no significant differences have been found between individual and group CBT, with mean reductions in CY-BOCS scores of 65% and 61%, respectively (Barrett, Healy-Farrell, & March, 2004). Similarly, intensive CBT seems to be as efficacious as CBT applied on a weekly basis. Some studies have compared the benefits of ERP and metacognitive therapy, with better results for ERP being found. Finally, limited access to providers sufficiently trained in CBT for OCD has encouraged the emergence of telecommunication-delivered programs in which parental inclusion is of particular importance in implementing interventions at home. Web-camera-delivered cognitive-behavioral family-based treatment (CBFT) has demonstrated superiority over a waitlist condition in a randomized trial including OCD youth between 7 and 16 years. In addition, no significant differences were observed between telephone-based and face-to-face CBFT in a randomized trial (Storch et al., 2011).

Differential efficacy between the components of CBT has not been sufficiently investigated. Cognitive training is usually included in CBT packages aimed at helping the family and adolescent to externalize the disorder, create common targets, and increase awareness of obsessive-compulsive symptoms.

Despite some predictors of poor response to CBT being known (comorbid psychopathology, low insight into symptomology, type of OCD symptom dimension, developmental considerations, family accommodation, externalizing symptoms, and positive family history of OCD), barriers that reduce ERP's efficacy need to be examined more deeply (Wu & Storch, 2016). In this sense, several studies have been conducted to examine the potential role of the family in enhancing the efficacy of

CBT via reducing family accommodation and augmenting exposure opportunities, which affect OCD maintenance and treatment in adolescence. CBFT has been used for treatment programs that include a structured parental component, in which at least one parent attends most treatment sessions, usually having been trained to reduce family accommodation and to assist and encourage children during exposure exercises. Parent involvement in treatments for children and adolescents with OCD is of particular importance for several reasons. First, poor functioning, high distress levels, conflict, and anxiety have been observed in relatives of OCD-symptomatic children. Second, the parents can participate in the assessment and reporting of objective data and information to the therapist. Third, families' accommodation behaviors to OCD symptoms (e.g., collaboration in rituals, providing reassurance, or modifying routines) have important consequences in the course and maintenance of a child's OCD, namely preventing the child from experiencing habituation of anxiety and learning that feared consequences do not typically occur. Again, parents can be involved in treatments for children and adolescents with OCD: CBFTs for OCD include parent-focused techniques such as psychoeducation, problem solving, instructions on targeting accommodation, training in contingency management, and parent training to create co-therapists at home.

Meta-analytic studies have reported greater effect sizes for studies that included family in the intervention (parents were trained to assist in ERP and to manage problematic behavior), explaining 34% of variance (Rosa-Alcázar et al., 2015). Similarly, percentages of symptom reduction reached 65% in empirical studies on family-based CBT (Barrett et al., 2004). Given these results, programs specifically designed to train parents to reduce accommodation and assist in ERP are being developed; one example is the SPACE (Supportive Parenting for Anxious Childhood Emotions) program.

Currently, future directions point to the need to adapt interventions to the idiosyncrasies of each adolescent and family. Personalizing treatments could add potential benefits to interventions, such as developing more precise targets in ERP, learning better strategies to cope with anxiety, or improvements in family problem solving.

As regards empirical studies, it would also be useful for future studies to provide more detailed descriptions of how exposures are carried out (number of exposures per day, duration, etc.) and define the specific role played by parents (observers, co-therapists, etc.). Finally, analyzing differential efficacy according to other family characteristics, such as parental anxiety, family conflict, or divorce, is also considered of particular importance in the development of treatment.

## 6 Conclusions

Studies on OCD in adolescents have attracted great interest among clinicians and researchers over a relatively short period of years. Several assessment measures and intervention strategies have been developed in this body of research. One of the most rapidly increasing lines of study is focused on factors that complicate treatment, such as comorbid psychopathology, family factors, insight into symptomology, developmental differences, and OCD symptom dimensions. From etiological models, differences between adults and children are being analyzed to test whether mechanisms involved in the origin and maintenance of OCD are the same for both populations. In this sense, several aspects of neuropsychological functioning have emerged as particularly

important: specifically, measures of attention and executive functions, short-term memory, and visuospatial abilities.

SEE ALSO: Assessment of Adolescent Mental Disorders; Behavioral, Cognitive–Behavioral, and Social Learning Approaches; Behavioral Therapy and Cognitive–Behavioral Therapy; Family-Based Interventions; Obsessive–Compulsive and Related Disorders in Children

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## Further Reading

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