OBSESSIVE COMPULSIVE DISORDER IN CHILDREN AND ADOLESCENTS

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Obsessive-Compulsive Disorder (OCD) is a common neuropsychiatric disorder characterized by the presence of obsessions and/or compulsions that are time consuming and cause distress or interference in the patient's life (American Psychiatric Association, 2000). OCD affects all age groups independent of race, socioeconomic status or religion. Moreover, OCD has been estimated to cost approximately 8 billion dollars per year in the US (Hollander et al, 1998). Despite being frequent and disabling some studies suggest that almost 60% of OCD patients wait too long to seek treatment or do not receive treatment due to a lack of health professionals trained to identify OCD (Dell'Oso et al, 2007).

Pediatric OCD may resemble adult OCD but often presents particular clinical features. Recent studies support the idea that OCD is clinically and etiologically heterogeneous and that early-onset OCD may represent a unique subgroup (Miguel et al, 2005; Leckman et al, 2009). Furthermore, in 50% to 80% of OCD cases symptoms start before 18 years of age, which highlights the importance of understanding OCD as a developmental disorder (Kessler et al, 2005). The objective of this chapter is to present the more relevant issues on the evaluation and management of children and adolescents with OCD.

Jean Dominique Esquirol, a French psychiatrist, was the first to describe in 1838 a medical disorder quite similar to contemporary OCD

HISTORICAL OVERVIEW

Obsessive-compulsive symptoms have been identified since the 17th century. At that time, obsessions and compulsions were described as manifestations of religious melancholy and sufferers were considered to be "possessed" by outside forces. By the first half of the 19th century, OCD shifted into the scientific field. Jean Dominique Esquirol, a French psychiatrist, was the first to describe in 1838 a medical disorder quite similar to contemporary OCD and classified it as a "monomania" (a kind of partial delusion). At the end of the 19th century, OCD was classified as *neurasthenia*. As the 20th century began, both Sigmund Freud and Pierre Janet, a French psychologist, isolated OCD from neurasthenia. In 1903 Pierre Janet proposed that obsessional patients possessed an abnormal personality (called "psychastenia"), with features such as anxiety, excessive worrying and doubting, and described the successful treatment of compulsions and rituals with techniques that are similar to the ones used currently in behavioral therapy. Janet reported the case of a five-year old "psychastenic" boy with intrusive and repetitive thoughts. This is considered to be the first clinical description of pediatric OCD (for a review, see Alvarenga et al, 2007).

Currently, both the Diagnostic and Statistical Manual of Mental Disorders (DSM; American Psychiatric Association, 2000) and the International Classification of Diseases (ICD; World Health Organization, 1992) use the same diagnostic criteria for children, adolescents and adults, except that children are not required to have "insight". A revision of these classifications is taking place.

Impact of obsessive compulsive disorder

- OCD is a common neuropsychiatric disorder
- Causes substantial suffering and disability
- Costs approximately 8 billion dollars per year in the US
- Onset in 50% to 80% of cases is before 18 years of age
- Almost 60% of patients remain with symptoms.

EPIDEMIOLOGY

Lifetime prevalence of OCD is 1% to 3% making it one of the most prevalent neuropsychiatric disorders. OCD symptoms start before puberty in approximately one third to one-half of sufferers (Kessler et al, 2005). For instance, a study comprising 330 adult patients with OCD found that 49% presented their first symptoms before 11 years of age and 23% between 11 and 18 (de Mathis et al, 2009). In children and adolescents, OCD was considered to be rare until a study published in 1988 estimated a *one year* prevalence of 0.7% in the US (Flament et al, 1988). The more recent British child mental health survey reported a *point* prevalence of 0.25% among 5- to 15-year-olds; remarkably, most of the cases had never looked for treatment – similar to the results of adult epidemiological studies (Heyman et al, 2003).

The incidence of OCD has two peaks with different gender distributions; the first peak is in childhood, with symptoms mostly arising between 7 and 12 years of age and a male preponderance. The second peak occurs in early adulthood, at a mean age of 21 years and with a slight female majority (Geller et al, 1998).

The Oxford Don, Robert Burton, reported a case in his compendium, the Anatomy of Melancholy (1621): "If he be in a silent auditory, as at a sermon, he is afraid he shall speak aloud and unaware, something indecent, unfit to be said."

CLINICAL FEATURES

OCD is characterized by the presence of obsessions or compulsions that are time consuming (at least one hour per day), cause subjective distress or interfere with the patient's or the family's life. *Obsessions* are intrusive, unwanted ideas, images, fears, thoughts or worries that are experienced as uncomfortable, unpleasant, distressing or anxiety provoking. *Compulsions* are repetitive behaviors or mental acts performed to ignore, reduce or eliminate the anxiety or distress caused by the obsessive thoughts. Compulsions are usually executed according to certain rules the patient feels driven to follow (American Psychiatric Association, 2000). Obsessive compulsive symptoms vary considerably not only from patient to patient but also in the same patient over time. Despite this variation, some symptoms are more frequent than others and are described in Table F.3.1.

Even though there are many similarities in the clinical presentation across the lifespan, children and adolescents with OCD also show specific features. For instance, the younger the patient the higher is the probability of having compulsions without obsessions (Rosario-Campos et al, 2001). Children are also less likely to recognize their symptoms as ego dystonic, making them less willing to resist the urge to perform a compulsive behavior. Therefore, DSM-IV does not require children to have insight to qualify for the diagnosis. Children may also present *tic-like compulsions*, which may be confused with complex tics, mainly if the compulsions are simple rituals of touching (Rosario-Campos et al, 2005). In these cases, compulsions may be preceded or accompanied not only by obsessions but also by various types of sensory phenomena.

Sensory phenomena is a term used to define uncomfortable or disturbing sensations, perceptions, feelings or urges that either precede or accompany repetitive behaviors such as compulsions or tics. OCD patients might feel driven to repeat compulsions until they experience a sense of relief from these uncomfortable sensations. Sensory phenomena can be divided into physical and mental. Examples include sensations in the skin, "just-right" perceptions, and feelings of incompleteness (Rosario et al, 2008; 2009). For instance, people can "feel" an oily sensation on their hands and wash them repeatedly for this reason. Another person may feel "uncomfortable" with the way some objects are arranged on a shelf and may feel an urge to arrange them many times, until they look "just right". Evaluation of the presence and severity of sensory phenomena is relevant because some studies have reported that patients with early-onset and tic-related OCD show more sensory phenomena and some report that these sensory phenomena cause even more distress than the compulsions.

Age at onset

So far, there is no consensus on how best to define age of onset; some authors define it as the age when symptoms began (Rosário-Campos et al, 2001) while others define it as the age when symptoms started to interfere with normal functioning (Tükel et al, 2005). Also, there is no agreement about the best cut-off age for the early-onset subtype; cut-offs at age 10, 14 or 18 years have been proposed (Rosario-Campos et al, 2001). A study of comorbidity in 330 OCD patients shed some light on this question; the authors reported that including age at onset in the analyses as a continuous variable was most informative and that 10 and 17 years were appropriate cut-offs for early and late onset subgroups respectively (de Mathis et al, 2008).

Age at onset is important because there is emerging evidence that early-onset OCD may represent a distinct subtype of the disorder. Previous research has shown that adults who report an early onset display greater severity and persistence of symptoms and may be less responsive to treatment. Moreover, early-onset has been associated with fewer obsessions, more tic-like compulsions, more sensory phenomena, and a higher rate of comorbid tic disorders (Rosario-Campos et al, 2001; de Mathis et al, 2009).

Obsessive-compulsive symptom dimensions

Even though subdividing patients according to age of onset has proven to be useful in identifying more homogenous subgroups, a dimensional approach has proven to be of even greater value. Factor-analytic studies have reduced OCD symptoms to a few consistent and clinically meaningful dimensions: contamination/cleaning, obsessions/checking, symmetry/ordering, and hoarding (Mataix-Cols et al, 2005).

These symptom dimensions, which are similar in all age groups (Bloch et al, 2008), can be understood as overlapping clinical features that may be continuous with "normal" worries first evident in childhood (Leckman et al, 2009), are temporally stable, and correlate with various genetic, neuroimaging and treatment response variables (Mataix-Cols et al, 2005).

For instance, some studies have reported that early-onset OCD patients show higher severity in the following symptom dimensions: aggressive obsessions and related compulsions; sexual and religious obsessions and related compulsions; and symmetry, ordering and arranging obsessions and compulsions (Rosário-Campos et al, 2005; Leckman et al, 2009).

Comorbidity

Similar to adults with OCD, 60% to 80% of affected children and adolescents have one or more comorbid psychiatric disorders. Some of the most common are tic disorders, attention deficit hyperactivity disorder (ADHD), other anxiety disorders, mood and eating disorders (Geller, 2006).

The association between OCD and tic disorders is the most striking. OCD children have reported rates of tics ranging from 20% to 59%, compared to 9% and 6% in adolescents and adults, respectively. Similarly, 48% of early-onset adult OCD patients have tics or Tourette's syndrome, compared to 10% of those with a late-onset (Rosario-Campos et al, 2001). The impact of this association has led some to describe a "tic-related OCD" subgroup, characterized by a higher risk of transmission of both subclinical OCD and tics among first-degree relatives of OCD probands; higher male frequency; earlier age at onset; and a differential treatment response (Rosario et al, 2008).

Moreover, there is a group of disorders that seems to represent a clinical continuum (i.e., intrusive thoughts, anxiety and repetitive behaviors) and to share genetic and physiopathologic mechanisms with OCD. These disorders have been named obsessive-compulsive spectrum disorders and include OCD, body dysmorphic disorder, tic disorders, trichotillomania, and impulse control disorders (Bienvenu et al, 2012).

Course and outcome

The course of OCD is heterogeneous. The onset of symptoms can be abrupt or insidious, and content varies considerably from patient to patient. It is also frequent for symptoms to change over time, even though they often maintain a certain thematic consistency (Miguel et al, 2005).

Table F.3.1 Common obsessions and compulsions

OBSESSIONS	COMPUSIONS OR RITUALS
Injury, violence, aggression or natural disaster: • Recurrent, anxious thoughts or images that they may hurt themselves or other people (for example, when in contact with sharp objects or next to a window) • Fear of obeying aggressive impulses • Fear of not performing certain rituals (usually checking or avoidance) and as a consequence something bad may befall to people who are dear and the consequent responsibility for that.	Checking or avoidancedue to Injury, violence, aggression or natural d isaster obsessions: • Repeatedly checking doors, locks, stove, windows • Checking whether they injured themselves or other people • Verifying whether something bad did happen • Checking or taking other measures to prevent or avoid harm coming to them or others • Need to repeat routine activities to prevent bad consequences.
Sexual and Religious: • “Forbidden” or “improper” sexual thoughts, images, or impulses • Extreme concern about sinning or doing something morally wrong, saying or doing something religiously not acceptable	Checking or avoidance due to sexual, religious, or morality obsessions: • Making sure that they have not done anything wrong of a sexual/ religious nature • Avoiding certain actions, people, places or objects to prevent sexual or religious obsessions and compulsions from occurring • Need to repeat activities to prevent bad consequences • Need to generate "good" thoughts to compensate for or override "bad" thoughts • Silently counting, repeating phrases or praying
Worries or preoccupations or a need for symmetry, order and arranging: • Need for things to be symmetrical or balanced • Need for things to be perfect, exact or “just-right”	Repetition, order, arranging • Arranging objects many times until they are symmetrically aligned or matched • Counting objects like ceiling or floor tiles, books in a bookcase, nails in a wall, or even grains of sand on the beach • Straightening paper and pens on a desktop or books in a bookcase • Touching or doing something on the right side followed by the compulsion to touch or do the same thing on the left side
Contamination; obsessed about getting ill or injured as a result of: • Dirt or germs • Bodily waste or fluids (like vomit, urine, feces or saliva) • Environmental contaminants (like asbestos, radiation, or toxic waste) • Insects or animals • Sticky substances or residues • Household items or other inanimate objects	Checking, avoidance or repetition, excessive or ritualized: • Cleaning or washing of body parts or objects • Showers, baths, and other bathroom routines, which need to be done in a certain order • Excessive use of toilet tissue • Compulsion to perform the whole process again if the sequence of washing or cleaning is interrupted • Avoidance of touching objects, animals or people because they may be dirty or contaminated
Collecting and hoarding: • Fear of getting rid of unimportant objects believing they will be needed in the future • Inability to decide throwing things away	Hoarding or collecting: • Rooms filled with old newspapers, notes, cans, paper towels, wrappers or empty bottles • Picking up objects or trash from the street or from garbage cans.

Similar to what happens in adults, a long time may elapse until the diagnosis is made and treatment started. Studies have reported an average of 2.5 years from the onset of symptoms to diagnosis in the US (Geller et al, 2006) and even longer in Germany (Walitza et al, 2011). One of the reasons for this delay is secrecy. Patients often feel ashamed or guilty about their symptoms or behaviors and conceal them until they interfere with their daily functioning. Mild or moderate cases may only be diagnosed through indirect signs like an increase in the time needed to complete school tasks, isolation, or severely chapped skin as a result of washing compulsions (Rosario et al, 2008). In other cases, symptoms may resemble normal childhood routines. In fact, some repetitive behaviors may be normal in some developmental stages. Young children engage in a significant amount of ritualistic, repetitive, and compulsive-like activities that appear to be part of their normal behavioral repertoire; they often have a rigid routine at bedtime, mealtimes and at school. Various aspects of children's ritualistic and compulsive-like behaviors have been associated with children's fears and phobias. Therefore, OCD could be conceptualized as a pathological condition with continuity with normal behaviors during different developmental periods (Evans et al, 2002).

A 9-year longitudinal study assessing 145 children and adolescents with OCD revealed that the most common diagnoses at follow-up were generalized anxiety disorder (25%), followed by depressive disorders (16%) and a tic disorders (16%). Approximately two-thirds rated themselves as very much or much improved in relation to their OCD. Almost half (49%) of the participants reported that they needed further treatment. The largest predictor of persistence of OCD at follow-up in this sample was duration of the illness. Severity at baseline did not predict persistence. The impact of OCD on functional impairment and quality of life was mild to moderate (Micali et al, 2010). These findings suggest that pediatric OCD is a chronic or relapsing/remitting disorder that has long-term treatment implications. Other studies have shown that some children become subclinical over time (Stewart et al, 2004) and that children have a very favorable outcome when treated early (AACAP, 2012).

Click on the picture to view a general description of CBT (06:07)

Clinical assessment

Considering the secrecy surrounding OCD symptoms, it is important for family members to pay attention to early signs of ritualistic behaviors becoming troublesome. Table F.3.2 lists some questions that may help screening for OCD.

Table F.3.2 Screening questions to help in the identification of obsessive compulsive symptoms

Has your child ever shown:
• Concerns about catching a disease after touching something or unduly worrying about dirt, leading to repetitive hand washing?
• A preoccupation with ordering or arranging things so much so that it interferes with normal life of schooling?
• A need for things to look, feel or sound “just right”?
• Excessive worries, fears or concerns with aggressive, sexual or religious thoughts?
• An excessive need to collect or hoard objects?

Table F.3.3 Scales used in the evaluation of OCD patients

	CY-BOCS	DYBOCS	YGTSS	USP-SPS	FAS
Author (Year)	Scahill et al (1997)	Rosario-Campos et al (2006)	Leckman et al (1989)	Rosario et al (2008)	Calvocoressi et al (1999)
Aims	Assess presence and severity of obsessions and compulsions	Assess presence and severity of OCD symptom dimensions	Assess presence and severity of tics	Assess presence and severity of sensory phenomena	Assess levels of family accommodation
Administration time	15 minutes (excluding time to go over symptom checklist)	10 minutes for each dimension or 15 minutes for overall severity (excluding time to go over symptom checklist)	20 minutes (excluding time to go over symptom checklist)	20 minutes (excluding time to go over symptom checklist)	20 minutes (excluding time to go over symptom checklist)
Self-report	No	No	No	No	No
Valid and reliable	Yes	Yes	Yes	Yes	Yes
Clinically useful	Yes	Yes	Yes	Yes	Yes
Useful for research	Yes	Yes	Yes	Yes	Yes
Available in languages other than English	Yes	Yes	Yes	Yes	Yes

CYBOCS: Children´s Yale-Brown Obsessive-Compulsive Scale; DYBOCS: Dimensional Yale-Brown Obsessive-Compulsive Scale; USP-SPS: University of São Paulo Sensory Phenomena Scale; YGTSS: Yale Global Tic Severity Scale; FAS: Family Accommodation Scale.

When OCD is suspected, a comprehensive clinical evaluation – including detailed interviews with parents and, if possible teachers – is required in order to assess the compulsions, obsessions and sensory phenomena. In younger children, OCD features might appear subtly during play activities or drawing. It is vital to differentiate between obsessive compulsive symptoms and normal childhood ritualistic behavior, typical of specific developmental phases, such as mealtime or bedtime rituals. In this regard, detailed information about degree of distress, impairment and time consumed performing rituals should provide enough data to decide whether or not treatment is warranted. Moreover, it is also important to assess insight and the family's perception of the symptoms, as well as how family members deal with the patient.

Rating scales are useful to obtain detailed information regarding OCD symptoms, tics, and other aspects relevant to the diagnosis. Scales are also used to assess severity at baseline and to evaluate improvement in a more objective way during follow up treatment. Some of these instruments are listed on Table F.3.3, which are in the public domain and can be obtained from the authors upon request.

ETIOLOGICAL FACTORS

Factors that increase the risk of OCD are summarized in Table F.3.4 .

Genetic

Contrary to what was believed for many years – that OCD was essentially an environmentally caused illness – twin, family, segregation and linkage studies have shown that OCD runs in families and this is largely accounted for by genetic factors, with heritability in the range of 45% to 65% (van Grootheest et al, 2005). Genetic-family studies have shown that the earlier the onset of OCD symptoms in the probands the higher the risk for first-degree family members to have obsessive compulsive symptoms, OCD, tics or Tourette's disorder (Rosario-Campos et al, 2005). Conversely, twin studies have shown that concordance rates for monozygotic twins are significantly higher than for dizygotic twins. Considering that concordance rates are not 100%, genetic studies also demonstrate that non-genetic factors are also important in the etiology of OCD.

Genetic linkage studies have identified regions of the genome likely to contain susceptibility loci for OCD on chromosomes 1q, 3q, 6q, 7p, 9p, 10p, and 15q. Many candidate gene studies have been conducted, mostly focusing on serotonergic, glutamatergic and dopaminergic genes although without conclusive findings so far. Among all the polymorphisms that have been studied, some relevant findings involve glutamatergic expression and have been correlated with repetitive behaviors in humans and rodents (Miguel et al, 20005; AACAP, 2012).

Non-genetic

In predisposed subjects, environmental factors, such as emotional stress and traumatic brain injury may trigger OCD. Excessive weight gain during gestation; prolonged labor; preterm birth; and jaundice have been associated with the expression of OCD later in life (Vasconcelos et al, 2007).

Family accommodation

- Parents (and other relatives) facilitate or participate in children obsessive-compulsive symptoms
- Family accommodation reinforces symptoms and is associated with poor outcome
- Examples of family accommodation include among others parents answering doubting questions repetitively; not interrupting or limiting time-consuming washing tasks; helping children in ordering or hoarding rituals.

Table F.3.4 Factors that increase the risk of OCD

Genetic	• Family members with obsessive compulsive symptoms, OCD or tics • Promising candidate genes: SLC1A1 and SAPAP
Family	• Family history of OCD or OCD spectrum disorders (e.g., tic disorders, tricotillomania, body dysmorphic disorder) • High familial accommodation to obsessive-compulsive symptoms
Individual	• Presence of obsessive-compulsive symptoms and subclinical OCD • Neuropsychological abnormalities (global cognitive deficits, mental inflexibility, visual spatial deficits, impaired motor skills) • Comorbid psychiatric disorders (e.g., Tourette's syndrome)
Environmental	• Prenatal, perinatal and postnatal factors, e.g., excessive weight gain during gestation; prolonged labor; preterm birth; jaundice emotional stress, traumatic brain injury, exposure to substances (alcohol, cocaine, stimulants, and hormones) in early pregnancy • Streptococcal infections and rheumatic fever

Group A β-hemolytic streptococcal (GABHS) infection

The association between GABHS infection and rheumatic fever (a systemic autoimmune disease triggered by GABHS infection) and the onset or worsening of OCD or tics has received considerable attention during the last two decades. It is hypothesized that a GABHS infection in a susceptible host initiates the production of autoantibodies that cross-react with the cellular components of the basal ganglia (Mercadante et al, 2005). This hypothesis, which applies only to a small proportion of children who develop OCD, is supported by neuroimaging and immunological findings. OCD and other neuropsychiatric disorders are more common than expected in first degree relatives of rheumatic fever probands (Hounie et al, 2007).

Freud believed that OCD was the patient's maladaptive response to conflicts between unacceptable, unconscious sexual or aggressive id impulses and the demands of conscience and reality, regressing to concerns about control and to modes of thinking characteristic of the anal-sadistic stage of psychosexual development: ambivalence, which produced doubting, magical thinking, and superstitious compulsive acts.

Familial factors

Another important non genetic factor is the family. Younger children are more prone to involve relatives in their rituals, leading to higher levels of family accommodation. While some try to stop the child from performing the rituals, others "accommodate" or even reinforce the symptoms (Amir et al, 2000; McKay et al, 2006).

Neurobiological substrates

It has been hypothesized that there is a dysregulation of fronto-cortico-striato-thalamic circuits in OCD patients. Functional neuroimaging studies have shown that the orbitofrontal cortex, anterior cingulate and striatum are hyper activated in OCD patients and that this activation decreases after treatment (Friedlander et al, 2006**;** Rotge et al, 2008).

Neuropsychological tests have found deficits in mental flexibility and motor skills, visuospatial abilities, and some forms of executive functioning in individuals with obsessive compulsive symptoms and OCD (Mataix-Cols et al, 2008). Some of these deficits have also been found in first-degree relatives of OCD patients (Chamberlain et al, 2005). It has been suggested that some neuropsychological changes observed in childhood, such as deficits in visuospatial abilities, may be an early indication of risk for the development of OCD in adulthood (Grisham et al, 2009).

The serotonergic system seems to be involved in the pathophysiology of OCD – many trials have demonstrated a decrease in symptoms with the use of serotonergic drugs (Bloch et al, 2006). Peripheral serotonergic alterations are frequently observed in adolescents and adults with OCD (Delorme et al, 2005). Beyond the monoamine systems, some researchers suggest that oxytocin may also play a role (Leckman & Herman, 2002).

TREATMENT

Before starting treatment it is extremely important to take into consideration some relevant issues such as the correct identification of the most troublesome OCD symptoms, how long the patient has had the illness, impact on the patient's life and difficulties working with the family (Table F.3.5). A thorough assessment, involving both the patient, family members and school, is extremely important. Another important issue is an accurate assessment of comorbid conditions that usually accompany OCD. Comorbid conditions, if not evaluated or detected, can complicate treatment (Rosario et al, 2008).

Similar to the treatment recommendations for adults, treatment of OCD in children and adolescents relies on cognitive behavioral therapy (CBT), medication and psychoeducation. Both selective serotonin reuptake inhibitors (SSRIs) and CBT have been systematically studied and empirically shown to be useful in the treatment of children and adolescents with OCD.

OCD treatment guidelines

NICE: Obsessive compulsive disorder (OCD) and body dysmorphic disorder (BDD) (CG31) (November 2005)

AACAP: Practice parameter for the assessment and treatment of children and adolescents with obsessive compulsive disorder (January 2012)

Table F.3.5 Issues that need to be clarified during assessment and before treatment

Age of onset	• Age when symptoms were first noticed by the patient or family
Degree of suffering, impairment and time consumed performing rituals	• Important to distinguish OCD from transient obsessive or compulsive behaviors seen in the course of normal development. • Rating scales might aid in this task.
Insight	• Poor insight is common in pediatric patients
Presence of sensory phenomena	• Mental or physical premonitory urges often occur instead of obsessions.
Family attitude towards the illness	• Excessive criticism or high levels of accommodation of symptoms are associated with poorer outcome
Are there comorbid disorders?	• Evaluate for the presence of comorbid conditions (e.g., anxiety disorders, mood disorders, tic disorders, ADHD, alcohol and other substance use disorders).
History of psychiatric disorder in the family	• Are family members affected with OCD or other psychiatric disorders?

CBT manuals and self-help books available for therapists and families interested in these techniques (AACAP, 2012):

- *Talking Back to OCD: The Program that Helps Kids and Teens Say "No Way" and Parents Say "Way to Go"* by John March
- *Obsessive Compulsive Disorders: A Complete Guide to Getting Well and Staying Well* by Fred Penzell
- *Freeing Your Child from Obsessive Compulsive Disorder* by Tamar Chansky
- *What to do When your Child has Obsessive Compulsive Disorder: Strategies and Solutions*, by Aureen Pinto Wagner

Non-pharmacological treatment

CBT is the only psychological therapy shown to be effective in the treatment of childhood OCD (Rosario et al, 2008). Treatment of pediatric OCD should preferably start with CBT for mild to moderate cases, or a combination of CBT and pharmacotherapy for more severe cases, or when CBT is not available (Abramowitz et al, 2005; O´Connor et al, 2006; Walsh & McDougle, 2011).

The CBT theory of OCD integrates behavioral theory with a cognitive framework and has shown significant efficacy especially when in combination with exposure, response prevention, and cognitive restructuring. A meta-analysis has shown mean effect sizes of CBT up to 1.45 (confidence interval 0.68-2.22) despite the heterogeneity of the sample (Watson & Rees, 2008). Cognitive restructuring helps patients realize the influence of thoughts and beliefs on behavior (rituals and avoidance), the functional relationship between obsessions and rituals, and strategies to neutralize them while causing relief. The behavioral model uses exposure and response prevention techniques based on the relationship between obsessions and compulsions, with the purpose of weakening the association and the distress caused by them. It exposes the sufferers to the objects, people or situations they fear, and prevents them from performing the compulsion, in order to gradually reduce the anxiety level (Abramowitz et al, 2005). Cognitive and behavioral techniques complement each other and the power of one lies in its correct combination with the other (Barret et al, 2008; Williams et al, 2010).

Practical aspects in delivering CBT

Most CBT treatment manuals for OCD recommend twelve to twenty-five sessions. The manuals usually suggest that therapists use the first one or two sessions to collect detailed information about the patient's symptoms, how the patient and the family deal with them, family environment, school performance and other relevant issues on the patient's functioning. As much *psychoeducation* as possible is also to be provided; this will involve detailed information about all

Click on the picture to view a description of the UCLA OCD program (03:50)

aspects of the illness, including possible clinical symptoms, impact of comorbidity, treatment options, duration of illness and duration of treatment, the risks of family accommodation and how best to deal with a family member with OCD. Usually, a 50 minute CBT session includes a review of the goals, review of the previous week, provision of new information, therapist-assisted practice, homework for the coming week, and monitoring (Steketee, 1999).

The success of CBT depends on understanding the illness, the basis for the therapeutic activities and the cognitive processes implicated in the maintenance of the disorder. Clinical trials have shown that CBT has better outcomes when the people closest to the patient (parents, family members and teachers) are involved in treatment (Piacentini & Langley, 2004; Freeman et al, 2008). Family members may respond to the patient's symptoms by facilitating avoidance, assisting on ritualistic behaviors, or inadvertently participating in rituals (Calvocoressi et al, 1999; Barret et al, 2004; Freeman et al, 2008) described by some as *family accommodation* (Calvocoressi et al, 1999). High levels of family accommodation have been associated with symptom maintenance and poor outcome (Calvocoressi et al, 1999; Amir et al, 2000). Thus, parents must be included in the treatment (Freeman et al, 2008); in fact, parents often become co-therapists and administer treatment at home.

Pharmacological treatment

For greatest efficacy, the combination of CBT with medication has been suggested as the treatment of choice for moderate and severe OCD (AACAP, 2012). The Pediatric OCD Treatment Study (POTS), a 5-year, 3-site outcome study designed to compare placebo, sertraline, CBT, and combined CBT with sertraline, concluded that the combined treatment (CBT+sertraline) was more effective than CBT or sertraline alone. The effect sizes for the combined treatment, CBT alone and sertraline alone were 1.4, 0.97and 0.67, respectively (Pediatric OCD Treatment Study, 2004). Remission rates for SSRIs alone are less than one third (Pediatric OCD Treatment Study, 2004; Franklin et al, 2011).

Selective serotonin reuptake inhibitors (SSRIs) are the first-line medication for OCD in children, adolescents and adults (AACAP, 2012). *Clomipramine*, a serotoninergic tricyclic agent, was the first medication proven to be effective in the treatment of OCD. Despite its efficacy (effect size: 0.85, confidence interval 0.32–1.39) (Watson & Rees, 2008), side effects – gastrointestinal, autonomic,

Table F.3.6 Medications effective for the treatment of pediatric obsessive-compulsive disorder (adapted from Rosario et al, 2008).

Medication	FDA approved for OCD in children	Minimum age (FDA)	Starting dose (mg/day)	Maximum dose (mg/day)
Clomipramine	Yes	5	12.5 to 25	300
Fluoxetine	Yes	8	2,5 to10	80
Sertraline	Yes	6	12,5 to 25	200
Fluvoxamine	Yes	8	12,5 to 50	300
Paroxetine	Yes	8	2,5 to 10	60
Citalopram	No	N/A	2,5 to 10	60
Escitalopram	No	N/A	2,5 to10	30

N/A: not applicable.

hepatic and, particularly, cardiac conduction problems – limit the clinical use of clomipramine, especially in children and adolescents. For instance, prescribing clomipramine requires electrocardiographic evaluation at baseline and follow up (Mancuso et al, 2010; AACAP, 2012).

Well-designed clinical trials have demonstrated the efficacy and safety of the SSRIs fluoxetine, sertraline and fluvoxamine (alone or combined with CBT) in children and adolescents with OCD. Other SSRIs such as paroxetine, citalopram and escitalopram have also demonstrated efficacy in children and adolescents with OCD, even though the FDA has not yet approved pediatric use (Rosario et al, 2008; AACAP, 2012). A meta-analysis of all published randomized controlled trials in children and adolescents with OCD found an effect size of 0.46 (95% CI 0.37– 0.55) and showed a statistically significant difference between drug and placebo (Geller et al, 2003).

Treatment should start with a low dose to reduce the risk of adverse effects. An adequate trial should use the medication for at 10 to 16 weeks at adequate doses (Table F.3.6). The optimal duration of treatment for children with OCD is unknown. Most experts suggest that treatment should continue for at least 12 months after symptom resolution or stabilization, followed by a very gradual cessation (Rosario et al, 2008; Mancuso et al, 2010).

Non-responders

Despite the effectiveness of SSRIs, about half of the patients do not respond or have significant residual symptoms, even with adequate duration of treatment and maximum recommended or tolerated dosages. For these patients, some strategies have been suggested and are described below. Unfortunately, there are no systematic studies that compare switching medications with adding an augmenting agent to the initial medication (AACAP, 2012).

Click on the picture to hear Eli R Lebowitz PhD talk about "creating effective exposures" in the treatment of childhood anxiety disorders (14:21)

- The first strategy is to *change to another SSRI*.
- In adults with partial response to SSRI, *antipsychotics* (Bloch et al, 2006) and *clomipramine* (Figueroa et al, 1998) have been used as augmentation agents. Further investigation of these pharmacological interventions in children is necessary. Antipsychotics may be indicated in the presence of tic disorders or poor insight (Bloch et al, 2006). Clinical trials suggest that haloperidol (Mancuso et al, 2010), risperidone (Thomsen, 2004) and quetiapine (Cohen et al, 2003) can be effective. Olanzapine should be avoided in children due to limited safety and the risk for metabolic syndrome (Rosario et al, 2008). Concerns about neuroleptic augmentation include potential side effects such as sedation, dysphoria, weight gain, and extrapyramidal symptoms. Novel augmentation clinical trials have been reported for stimulants, gabapentin, sumatriptan, pindolol, inositol, opiates, St. John's wort, *N*-acetyl cysteine, memantine and riluzole, but further evidence is required before recommending their routine use (AACAP, 2012).
- Another strategy is to ascertain the presence of *comorbid disorders* (such as ADHD, tics, depression or conduct disorder). The presence of comorbid disorders has been associated with more severe symptoms and higher parental stress, and may have a worse response to treatment (Grados et al, 2008; Storch et al, 2008). In the presence of such conditions clinicians should consider treating them in parallel (AACAP, 2012)
- *Combining medication with CBT* should always be considered. Franklin et al (2011) investigated whether CBT would augment antidepressant treatment in children who had responded only partially to medication. The study involved 124 participants with OCD aged 7 to 17 years randomized to medication alone

The mother brought J, 9 years of age, because his teacher was concerned about his spending too much time doing exercises due to his concern that they had to be perfect. Also, J was leaving the classroom to wash his hands very often. His mother had also noticed the same at home.

J's was born after a lengthy delivery and showed moderated jaundice. J's father had been diagnosed with Tourette's syndrome during childhood, but had been free from symptoms for many years.

During the assessment interview J said he felt "itching" in his hands, which forced him to wash them repeatedly. He also said it took him a long time to do his homework because he needed to write and re-write everything until he felt that his handwriting was just right. J did not complain about his symptoms and did not avoid washing his hands although he spent about 2 hours a day doing it. He did not describe obsessive thoughts. When asked why he had to wash his hands or re-write things he said that he just had to do it. J does not have tics, in the past or currently.

Scores on the CYBOCS were 17 (zero for obsessions; 17 for compulsions). On the DYBOCS symptom dimensions, scores were zero for aggression, zero for sexual/religion, zero for hoarding, 12 for symmetry/ordering and 10 for contamination/cleaning. The total severity score was 12 and impairment 10, with a global DYBOCS severity score of 22 (moderate).

J and his family were referred to a twice a week CBT program, with sessions lasting 60 minutes. The therapist noticed that parents were extremely worried about J's future and whether or not he would succeed in school. After 12 sessions (six weeks) J showed some improvement in symptoms but parents remained very anxious. For instance, even though J was spending less time doing his homework, his mother decided to help him daily and was practically doing the homework for him. The therapist decided to continue with CBT but only once a week and parents started to participate in the sessions. After 16 weeks (22 sessions), the CYBOCS score had decreased to 8 and the global DYBOCS score to 11, which meant symptoms remission. Parents were also confident on J's school abilities.

Comment

This vignette illustrates a patient with OCD of moderate severity in symmetry/ordering and washing/contamination symptom dimensions. Symptoms were time consuming and compromised school performance. J had little insight about his symptoms. Even though J did not report obsessions, he showed sensory phenomena, both physical ("itching") and mental (perfectionism and "just right" feelings). Family history of Tourette's syndrome, birth trauma and jaundice increased vulnerability to OCD. Parents were very anxious and had a high score on the family accommodation scale.

Considering that symptoms were moderate and there were no comorbid disorders, the initial treatment recommendation was CBT. Fortunately, J. had access to professionals trained in CBT and the family agreed to this plan of action. Because OCD waxes and wanes and is potentially chronic, less intense maintenance CBT is advisable.

(SSRI), *medication plus conventional CBT* (apart from medication management visits a CBT protocol was administered by a psychologist consisting of 14 one-hour sessions over 12 weeks involving psychoeducation, cognitive training, hierarchies of feared situations from least to most anxiety provoking to guide exposure treatment, exposure and response prevention) or *medication plus instruction in CBT* (a pharmacotherapist assigned to manage medication also provided instruction in CBT procedures that were administered according to protocol – 7 sessions over 12 weeks – with an average duration of 45 minutes; instructions included psychoeducation, establishing a simple symptom severity hierarchy, exposure and response prevention targets, and assigning homework). Two brief telephone check-ins were also conducted to provide guidance about CBT implementation at home. After 12 weeks of treatment 68.6% in the *medication plus conventional CBT* group were considered responders compared with 34.0% in the *medication plus instruction in CBT* group, and 30.0% in the medication alone group. That is, 14 CBT sessions delivered by a trained expert added to medication doubled the response rate while a less intense CBT treatment by a non-expert did not increased effectiveness over medication alone (Pediatric OCD Treatment Study, 2004; Franklin et al, 2011)

Beyond the search for new treatment strategies, identification of people *at-risk* of developing OCD is required in order to develop preventive strategies. Several genetic, familial, individual and environmental risk factors have been described (Table F.3.4). Apart from general measures to enhance mental health, currently there are no prevention programs of demonstrated effectiveness.

Table F.3.7 Summary of recommendations for the treatment of OCD

TYPE	RECOMMENDED TREATMENT
Mild (CYBOCS score: 16-19*)	• CBT alone (single or group, minimum 10 sessions)
Moderate (CYBOCS score: 20-29*)	• CBT alone or combined with an SSRI (minimum 10-week trial)
Severe (CYBOCS score: 30-40*)	• CBT+SSRI (minimum 10-week trial)
Remission (CYBOCS total score less than 10)	• Maintenance CBT (booster sessions for a minimum of 12 months) • Maintenance of SSRI at an optimal dose for a minimum of 12 months
Partial response (35% to 50% decrease in CYBOCS score after achieving the optimal tolerated dose of SSRI for a minimum of 10 weeks)	• Switch to another SSRI • Augment with CBT (if not administered already) • Augment with atypical antipsychotic (E.g. risperidone, quetiapine, aripiprazole or haloperidol) • Augment with clomipramine (ECG monitoring)
Non-response (less than 35% symptom remission)	• Review diagnosis, comorbidities, compliance and family accommodation • Switch to another SSRI • Augment with CBT (if not administered already) • Augment with atypical antipsychotic (e.g., risperidone, quetiapine, aripiprazole or haloperidol) • Augment with clomipramine (ECG monitoring) • Treat comorbid disorders concurrently

* March & Mulle (1998) severity criteria. CBT: cognitive behavior treatment provided by a competent clinician trained in this form of treatment in sessions lasting at least 60 minutes; CYBOCS: Children's Yale-Brown Obsessive Compulsive Scale scores, SSRI: selective serotonin reuptake inhibitor.

SUPPORT GROUPS AND ASSOCIATIONS

When people are told they have a family member with OCD, they usually benefit from support groups to deal with it, particularly when the sufferer is a child or adolescent. Participating in a support group is helpful in handling the stress of raising a child with OCD. Support groups, that often have mental health professionals as advisers, meet regularly and seek to educate about the disorder, help people to recognize symptoms, reduce family accommodation, and find the right treatment. Getting together with people who face the same problems gives an opportunity to exchange experiences, discuss how others handle the symptoms and learn more about the disorder. Support groups can also be helpful for the patients, although less so in the case of children. A list of patient and family associations in several countries can be found at http://www.geonius.com/ocd/organizations.html

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