Clinical Practice Guidelines for the Management of Obsessive-Compulsive Disorder in Children and Adolescents

Ajit Avasthi, Akhilesh Sharma, Sandeep Grover
Department of Psychiatry, PGIMER, Chandigarh, India

INTRODUCTION

Childhood obsessive-compulsive disorder (OCD) is a chronic neuropsychiatric condition. Lifetime prevalence of OCD worldwide ranges from 1% to 3%,[1] with a rate higher in developed world 2%–3%.[2] Indian data from national mental health survey and one more study shows a prevalence of 0.8%[3] and 0.6%,[4] respectively. There are limited epidemiological data from India on OCD in children and adolescents. A multicenter study done at rural, urban, and slum area of Bangalore and Lucknow reported prevalence rate of OCD in children and adolescents aged 4–16 years to be 0.1%.[5] A school-based survey of adolescents aged 12–18 years, reported a point prevalence of 0.8%, with male: female ratio of 2:1.[6] Recent population-based data from another developing country, Brazil shows that point prevalence of OC symptoms is 18.3%, and OCD is 3.3% in high school students, with the onset of OC symptoms at the mean age of 9.7 (standard deviation [SD]-3.4) years and mean age of onset for OCD being 13.8 (SD-2.4) years.[7] There is male preponderance in child and adolescents (3:2), but there is slight female preponderance among patients with adult-onset OCD. Nearly half of adults with OCD have their first symptom before 11 years, and nearly one-fourth have their first symptom between 11 and 18 years of age. Evidence from family, linkage, twin, and segregation studies[8,9] have shown that OCD has a genetic component of risk; heritability ranges from 45% to 65%. In childhood-onset OCD, family history of OCD or Obsessive compulsive spectrum disorder is more often present when compared to adult-onset OCD. Further, in comparison to adult-onset OCD, participants with childhood-onset OCD have more evidence of perinatal risk factors, subclinical OC symptoms, the presence of comorbid conditions in three-fourth of cases, neuropsychological deficits, covert symptoms, the significant role of environmental triggers with high family accommodation and less insight.[10-12]

The WHO lists OCD among the group of the highest disabling conditions. Recent epidemiological data have generated interest in public and health-care providers. Researchers have engaged in advance functional neuroimaging, genetics, neurosurgery, neuropsychological, and psychoneuroimmunology fields have contributed to a better understanding of the etiopathogenesis of OCD in childhood. Recent research in two popular treatment methods derived from extrapolation of adult's, i.e., cognitive behavior therapy (CBT) and selective serotonin reuptake inhibitors (SSRIs) have established their efficacy in childhood-onset OCD too. Effectiveness studies from Scandinavian countries show the effectiveness of these interventions in real-life circumstances.

SCOPE OF THE DOCUMENT

Indian Psychiatric Society Clinical Practice Guidelines for management for OCD in adults briefly mentions about juvenile OCD. This document is an attempt to provide evidence-based guideline for psychiatrists practicing in India for the assessment and management of OCD in children and adolescents. The recommendation made in this guideline are based on the available evidence in the form of randomized control trials, available practice

Address for correspondence: Prof. Ajit Avasthi, Department of Psychiatry, PGIMER, Chandigarh, India.
E-mail: drajitavasthi@yahoo.co.in

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guidelines (evidence-based and expert consensus) issued by other professional bodies.

ASSESSMENT

The main purpose of this is to reach a diagnosis in accordance with the Diagnostic and Statistical Manual of Mental Disorders 5 (DSM-5) and/or the International Classification of Diseases 10 (ICD 10) or 11 now.

Cognitive maturity of the child rather than chronological age determines the symptom presentation. OC symptoms may be seen as early as 2 years. It is more frequent to have the onset of symptoms between 6 years to preadolescence, at this time they start having developmental maturity to carry out compulsions. Although symptoms are similar to adults, still there are important differences. Pure obsessions are rare in comparison to rituals and/or compulsions at this age, but as maturity advances from 6 years onwards to adolescence, both obsessions and compulsions start appearing together.

In rituals, the predominant theme is "getting it just right" feeling. In approximately one-third of pediatric patients, symptoms are triggered by environmental stimuli. Avoidance of environmental symptoms may lead to lack of manifestation of symptoms. In addition especially in preadolescent-onset cases a phenomenon akin to tics is described as uncomfortable or disturbing sensations, perceptions, feelings, or urges that either precede or accompany repetitive behaviors such as compulsions and is known as "sensory phenomenon." These sensory phenomena can be mental or physical. Children feel driven to repeat compulsions till they feel just right or sensation is relieved. Hence, clinically they may present with tic-like picture. It becomes more difficult to tease out these as these cases have the highest comorbidity with tics. The distress with compulsions secondary to this sensory phenomenon is more.

Indian studies reveal that compulsions are more frequent than obsessions in children and adolescents.[13] In terms of type of obsessions and compulsions, data from India suggest that among people aged 16 years or younger, contamination obsessions are the most common (62%), followed by obsessions related to aggression (57%), symmetry (34%), sex (22%), religion (22%), somatic (12%), and hoarding (7%).[14,15] Regarding compulsions, cleaning and washing are the most common (69%) followed by repeating (52%), checking (47%), ordering (29%), counting (15%), and hoarding (7%). The miscellaneous obsessions and compulsions are present in 65% and 47% of the patients, respectively. Data from India also suggests that compared to adult-onset cases, childhood-onset cases have more severe symptoms. Compared to the data from West, sexual and aggressive obsessions are less commonly reported in the Indian children. This can be an issue of underreporting or cross cultural variation.[2]

Screening

Child and adolescent psychiatrists may screen for OCD even when it is not part of the presenting complaint. It should be suspected if disorders likely to be comorbid with OCD in children and adolescents are present or are part of the presenting complaint. If the initial brief interview reveals broad pathology then screening instruments such as child behavior checklist, Spence children anxiety scale[16] may be used. If hints are there for OCD then short, specific screening instruments such as parent/self-version of Spence children anxiety scale and/or the short OCD screener[17] may be used. Children found positive on screening should be assessed in detail.

History taking

A detailed history from developmental perspective beginning from the antenatal period till the time of clinical visit should be obtained in detail from all the available informants. There is evidence to suggest that the quality of informant is very important and it can influence the diagnosis and management in childhood OCD.[18] After initial rebuffing from their parents, even preadolescent children recognize their symptoms as nonsensical and feel embarrassed. They try to carry out the rituals in private or hide them. This can continue for months before parents again notice them. At other places like school or ground, peers and teachers are aware of severe cases only. Children in the initial phase of the progression of their symptoms can have a varying degree of control over the associated symptoms, like tic disorder. They can expand their effort in public to control the symptoms and let go when alone [See Table 1].

Developmental and medical assessment

While taking history developmental perspective need to be taken and assessment beginning from the antenatal, perinatal and postnatal period covering every aspect of development and medical problems need to be assessed. Evidence of maternal infection, poor health, difficult labor, and hypoxemic ischemic injury should be looked for. Every dimension of gross motor, fine motor, speech and language, and social development need to be assessed chronologically to look for delays, atypical development or any subtle variations from the prevailing norms. This assessment helps in identifying comorbid neuro-developmental disorders such as attention deficit hyperactivity disorder (ADHD), tics, autism spectrum, and specific learning disorder (SLD) because the presence of early insults increases the likelihood of all these neuro-developmental disorders. Soft neurological signs on physical examination warrant reassessing developmental history. History of any movement disorder, joint swelling, and dyspnea with fever should be enquired. This is very

important in the Indian context, where still a large number of children suffer from rheumatic fever. This history need to be specifically looked in children and adolescents, who present with abrupt and/or acute onset of OC symptoms or sudden relapse of symptoms. It is important because a rare minority of children with rheumatic fever develops pediatric autoimmune and neuropsychiatric symptoms associated with streptococcal infection which can manifest as acute-onset OCD or lead to sudden relapses. It is worth to do a baseline anti streptolysine O titer or anti-DNAse B titer and repeat these when the patient has an exacerbation of symptom. One should look for a significant rise in titer. No imaging study is currently advocated for a diagnosis of OCD. However, neuroimaging may be considered in children and adolescents, who present with atypical development, head injury or other comorbidities.

Family assessment

It is very important to assess the symptoms in the familial context because, many a times, the symptoms of OCD arise due to stress in the family context. Further, the child's OCD affects family and family member's reactions affect the manifestation, course, treatment, and outcome of Child's OCD. Rituals and obsessions may require participation or reassurance from family members. Many a times, family members are ignorant of illness, and they may yield to the demands of the child in fulfilling the compulsions. Every family member should be assessed in this regard. This is called family accommodation. Family members also may act as triggers, giving a start to obsessions or sensory phenomenon. Accordingly, it is important to understand the family dynamics, the relationship of the child and adolescent with every family member and the relationship of family members with each other. An attempt should be made to understand the parental understanding of their child's problem and the possible ways in which it can be addressed [See Table 1].

Educational assessment

Academic and co-curricular performance of child should be inquired. If there is decline in performance, then it is an indicator of more severe illness. Children usually can control their OC symptoms or associated tics for a certain period, for example, while being at school. However if it is not so, then treatment is warranted urgently and is expected to be complicated. In general, these children have either a prior history of neuro-developmental problems such as ADHD and/or SLD which are highly comorbid with OCD at this age. These may be starting to manifest at the same time as preadolescent OCD. Children with such co morbidities may have problems in the domains of visual memory, visual organization, and processing speed, making CBT more difficult. Such children who have prior academic problems should be assessed comprehensively on neuropsychological batteries for intelligence, various aspects of working memory, and specific learning problems [See Table 1].

Comorbidity

All the assessment done above gives hint for various disorders which can coexist with childhood OCD [See Table 2]. The hints then can be worked on in diagnostic exercise which helps in differentiating these from OCD and/or establishing as true comorbidity.[2,14,15,19,20,21]

Assessment scales

Rating scales can aid in obtaining 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 the commonly used instruments are listed on See Table 3. These scales are informant/parent-rated, reliable, valid, useful in clinical setting, and take only 15–20 min to complete.[22]

Other scales for the assessment of OCD in children are clinical global impression scale of severity and improvement (CGI S/I).

In addition, Hamburg obsession-compulsion inventory and its short form and Leyton Obsessional Inventory can be used in adolescents for self-assessment instrument. Leyton Obsessional Inventory is also available in parent and teacher report versions. Semi-structured interview based on the Children's Yale-brown obsessive-compulsive scale (C-YBOCS) is considered to be clinically most useful which can provide every fine detail of symptoms, their severity, the resistance offered and distress along with time spent. However, it is important to remember that use of scales is not a substitute for a good clinical interview and these must only be considered as aids in evaluation and management.

Establishing diagnosis

After obtaining all the information, it is important to carry out diagnostic exercise, in accordance with the prevailing diagnostic system to confirm the diagnosis of OCD. In India, the majority of the clinicians follows ICD of which the latest 11th edition has been circulated for use recently. Besides the ICD, many clinicians also rely on DSM-5. The criterion for establishing the diagnosis of OCD is similar in both. OCD is defined in both ICD-10, and DSM-5 as the presence of repetitive, intrusive thoughts and/or rituals that are unwanted and which interfere significantly with function or cause marked distress. Hence, in both the systems adult criterion are applied for diagnosing OCD in children and adolescents. DSM-5 mentions in detailed description the caveats relevant to diagnosis of OCD in children and adolescents like the presence of compulsions only, the "getting it just right" phenomenon, role of triggers and their avoidance, and sensory phenomenon along with variation in insight according to developmental maturity. ICD-11 has added only two specifiers for insight, but DSM-5 has added in addition to these a specifier on delusional belief

Table 1: Components of assessment of children and adolescents presenting with obsessive-compulsive symptoms

Detailed history taking
Routine screening of a child with brief questioning from parents/child. More so if disorders co morbid with OCD are present
Use of screening instruments if there are initial hints of presence of OC symptoms
Detailed assessment of those found positive on initial screening
Informant quality is very important in diagnosis and management. Gather information from all available sources
Early developmental assessment from antenatal, perinatal, and postnatal period should be done
A detailed developmental assessment should be followed by medical history and examination (includes physical examination) as mild neurological stigmata and organic factors such as streptococcal infections must not be missed
A detailed assessment of child's symptoms with their form, content, severity, resistance offered, insight, role of environmental triggers, family involvement in rituals and their understanding of illness along with time spent and distress should be assessed. Help of various scales and play observation/behavioral experiments must be taken
Establish the diagnosis as per the prevailing diagnostic criteria
Assess for suicidal behavior
Assess for substance use
Assess for child abuse/neglect
Evaluate for comorbidities
Detailed assessment of family environment as well as resources
Evaluate for any family accommodation
Dysfunction in terms of impact of the symptoms on the educational attainment/performance, regularity in school/school refusal/inability to go to school
Expectations of the family members from the treatment
Relevant physical, biochemical, neuropsychological, neuroimaging testing, and immunological should be done as per the need of the case

OC – Obsessive-compulsive; OCD – OC disorder

Table 2: Comorbidity

Like adult OCD, comorbidity is very common in childhood OCD
It is present in 60%-80% of cases. It is rule rather than exception
In particular, age at onset and chronological age at presentation may predict different comorbidity patterns
The age of onset being associated with risk of various neurodevelopment disorders such as tic disorder/Tourette's syndrome, attention deficit hyperkinetic disorder, learning disorders, separation anxiety, enuresis, and simple phobias
Nearly 5% of autism cases have co-morbid OCD
Chronological age at presentation and diagnosis is mostly late than onset, with the emergence of generalized anxiety, panic disorder, substance use, mood (mainly depression), and psychotic disorders as comorbid disorders.
As the chronological age at presentation increases other obsessive-compulsive spectrum disorders such as trichotillomania, body dysmorphic disorder, hypochondriasis, and eating disorders are also among most common co morbidities after puberty
Data varies from study to study but the highest comorbidity is with tic disorder, ADHD, other anxiety, OC spectrum and mood disorders in this order reflecting shared development, biological, and genetic factors
Co-morbidity increases the severity of illness
It has got diagnostic, prognostic, and management implications

ADHD – Attention deficit hyperactivity disorder; OC – Obsessive-compulsive; OCD – OC disorder

and OCD associated with tics, which are especially relevant to childhood-onset OCD. DSM-5 allows a diagnosis of OCD along with other co-morbid disorders like schizophrenia in light of emerging evidence for the same.

Differential diagnosis

While evaluating OC symptoms in children, it is important to consider various differential diagnosis, as listed below [See Table 4].

Continuity with normal behavior

The rituals and behaviors similar to that present in OCD can be part of normal childhood development. The familial, genetic, and twin studies clearly suggest that there is a continuum and OCD lies on the extreme of a continuum, with other end of the continuum is characterized by rituals and compulsive behaviors as part of normal childhood development. In many of the children, these behaviors may come and go as train of development proceeds. These rituals help the child to process experiences and obtain security. These are calming to the child rather than distressing.

Subclinical compulsive behaviors

These are more in severity when compared to normal behavior, not always appear to be part of normal growth and development, i.e., different in content, still lie on the continuum somewhere at the middle but do not impair the child's functioning and development. These do not warrant a diagnosis. These are predictive of future development of OCD. These are also associated with help-seeking for other mental disorders like emotional problems, other anxiety as well as depressive disorders.

Obsessive thoughts arising in the setting of another Axis I anxiety and depressive disorders

Many a times, children with other anxiety disorder and depressive disorders may present with symptoms, which may be confused with obsessions and compulsions. Focusing on the content of thought can often be helpful. In case of separation anxiety and phobias presence of caregiver is associated with the absence of distress. Similarly, there may be no symptoms in the absence of the phobic situation. Focusing on these differences can help in distinguishing OCD from these disorders. Depressive ruminations are similarly distinguished by negative content and being ego-syntonic nature. At times, it may be difficult to differentiate the obsessional concerns seen in OCD from worries of generalized anxiety disorder. Comorbid OC symptoms can be present in every stage of schizophrenia. Focusing on temporal evolution, course and treatment response can help in differentiating OCD from being a part of schizophrenia, as a treatment-emergent condition or independent comorbidity. It is especially difficult in preadolescents where ego dystonicity or well-developed insight is often not present in OCD.

Table 3: Assessment scales

	CY-BOCS	DYBOCS	YGTSS	USP SPS	FAS
Authors	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
Age	6-17 years	6 years and above	6 years and above	6-17 years	For all age groups

This table has been adapted from IACAPAP text book of child and adolescent psychiatry which allows free use of its contents for education, practice and research. 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

Table 4: Differential diagnosis

Continuity with normal behavior
Subclinical compulsive behaviors
Obsessive thoughts arising in the setting of another Axis I anxiety and depressive disorders
Obsessive compulsive spectrum disorders
Neurodevelopment disorders

Obsessive-compulsive spectrum disorders

Body dysmorphic disorder, eating disorders, etc., are characterized by repetitive compulsion like behaviors. However, the content and exacerbation in anxiety after checking may help in distinguishing it from OCD. Impulse control disorder may resemble trigger-related OCD and sensory phenomenon in childhood OCD may be confused with premonitory sensations. A sense of guilt may be distinguishing feature in adolescents but is rare in preadolescents so making distinction difficult. However, it is important to remember that co-morbidity of these disorders with OCD is also very high. Similarly for complex tics and Tourette's syndrome triggers and sensory phenomenon resembling premonitory sensations may be confusing. Tics are characterized by bodily tension; the behaviors are not goal-directed, nor are they connected with fears or anxieties, and it is difficult or impossible to suppress them voluntarily for long once they are of severe nature as in Tourette's or complex tics. However, motor/vocal acts are more symmetrical and less elaborated in simple tics when compared to rituals of OCD. These are more acute in onset, short-lasting and terminate abruptly. In Tics and Tourette's involvement of family members in accommodation is less. They have a more fluctuating and remitting course. Still, comorbidity is very high in preadolescents and tic-related OCD have more aggressive and sexual thoughts and/or rituals.

Neurodevelopment disorders

Nearly 5% of children with autism spectrum disorder have diagnosable OCD as comorbidity in their lifetime. Children with intellectual subnormality and autism spectrum disorders have pervasive and stereotypic behaviors (including pragmatic language). While making the distinction, the developmental context of symptoms should be looked for. In autism, perseverations lack associated anxiety unlike repetitive behaviors/rituals of OCD. Excitement and/or frustration may lead to motor/verbal stereotypic behavior which serves the function to manage stimulation during sensory deprivation or sensory overload. These are not generally accompanied by associated obsessive thoughts. The repetitive behaviors are the result of idiosyncratic interests, have the same theme and are associated with unawareness of disinterest of others. Examples include talking of same story or event exactly in a similar manner repeatedly with an excessive focus on particular details. Similarly, the rigidity of behaviors shown by children with ADHD can be understood as an attempt to control chaos of inner world in managing things which require planning, attention and execution.

Defining the severity of obsessive-compulsive disorder

It is important to rate the severity of the illness at the baseline and from time to time. This often helps in understanding the progress of treatment and also determining the effectiveness of the treatment. C-YBOCS is the most commonly used to assess the severity of OCD and is considered as the gold standard for assessment of severity of OCD. It is a semi-structured interview which measures various symptom dimensions. A score of 16–19 is considered as indicative of mild OCD, a score of 20–29 is considered as an indicator of moderate OCD and a score of 30–40 indicates severe OCD.[23]

At the end of assessment, one should be able to gather information on various aspects of OCD as shown in Table 5.

FORMULATING A TREATMENT PLAN

Formulation of a treatment plan for children and adolescents with OCD involves deciding about treatment setting, treatments to be used and areas to be addressed [Table 6]. The treatment plan drawn should be made in consultation with the patient and other family members. The treatment plan should have a clear focus and it needs to be modified from time to time based on the reassessment of the patient and the family members. Most of the children and adolescents with OCD can be managed at the outpatient level. However, a few patients may require inpatient care. The common indications for inpatient care are given in Table 7.

The main focus of the treatment should be the amelioration of symptoms and dysfunction due to

OCD, comorbid disorders, changing the attitude of family/school/peer toward the patient and their symptoms and developmental challenges, if any. At the first step, it is important to evaluate the child for the presence of comorbid depression and its severity, as moderate-to-severe depression can hamper participation of the child in CBT for OCD. If a child has severe depression which is associated with a threat to the life of the child, then it must be addressed first. If the child is referred from school for academic problems and hyperkinetic conduct disorder is at the forefront then it may be addressed first to make the child settle enough to reach to participate in CBT for OCD.

Treatment options

The treatment options for the management of OCD in children and adolescents include general measures such as psycho-education, relaxation training, counseling and/or guidance for carrying out behavioral interventions, family counseling, and medications.

Specific treatments include nonpharmacological treatments (i.e., CBT, behavior therapy [BT], cognitive therapy [CT], family-based CBT, motivation enhancement treatment) and pharmacological treatment (i.e., SSRIs and other augmenting agents like d-cycloserine).

Factors which influence the selection of the specific treatment modalities include symptom duration, the severity of symptoms, phenomenology/symptom dimensions, cognitive maturity/insight, the motivation for treatment, family accommodation and resources, past treatment response/experiences, treatment resources/therapist training and dysfunction, etc.

Table 5: Information to be gathered by the end of the assessment

Age of onset of first symptom and age at which interference with function started
Duration of untreated OCD
Phenomenology and details of obsessions and/or compulsions/rituals, severity on scales
Presence of environmental triggers
Sensory phenomenon's
Natural course of symptoms from beginning→syndromal onset→current presentation
Time spent in various obsessions, compulsions/rituals and across various situations
At home, with family
At school and with peers
Degree of psychosocial dysfunction or level of functioning
Developmental strengths and weakness; cognitive maturity
Level of child's understanding; level/degree of insight
Family accommodation of symptoms and family strengths/weakness, understanding of family, expressed emotions
History of psychiatric disorder in family
Co-morbid disorders
Complete medical evaluation including ruling out association with streptococcal infection
History of treatment in past: level of response, reason for discontinuation
Motivation of child for treatment
Motivation of family members/parents for treatment
Family resources: educated manpower, psychological mindedness of family
Financial resources available
Expectation from treatment

OCD – Obsessive-compulsive disorder

Psychoeducation

Psychoeducation about OCD must be provided to patient and family members irrespective of the severity of the illness and selection of the specific treatment modality. This should include eliciting the understanding of the patient and family members about the symptoms and the illness, their understanding of the treatment modalities and their role in the treatment, etc., Details of the psychoeducation are provided in Table 8.[22,23,30]

Specific treatments

In last three decades, two types of treatment approaches are primarily tested in children and adolescents with OCD. These include nonpharmacological treatment (mainly includes CBT but also BT and CT) and pharmacological treatment (mainly includes SSRIs but also clomipramine). Various randomized controlled trials have evaluated the evidence for the use of CBT alone, pharmacotherapy alone and a combination of CBT and SSRIs. Available evidence of level–A, i.e., evidence in the form of RCTs, systematic reviews and meta-analysis is available for all these treatments in children and adolescents.[27-34] In general, available studies suggest that these treatments are better than placebo and combined treatment with CBT plus pharmacotherapy is better than pharmacotherapy alone. In short term, i.e., 12 weeks, response rate with CBT alone (70%), combined CBT and SRIs (COMBO) (66%) and SRIs (49%) is more than the placebo (29%) and waitlist (13%). In terms of remission, 53% of patients treated with CBT, 49% treated with a combination of CBT and pharmacotherapy, 24% treated with SRI and 15% treated with placebo, and 10% of waitlisted patients achieve remission. In general attrition rates are also low with CBT. The effect sizes for comparisons of CBT with waiting-list (1.53), placebo (0.93), and SRI with placebo (0.51) have also being shown to be significant. However, effect size for CBT versus SRI (0.22) and Combo (CBT + SRI) versus CBT (0.14) were not significant. There is also evidence for long-term (9 months to 1 year) efficacy of CBT, but there is minimal data for long-term efficacy of SRIs (only one study) in the management of OCD in children and adolescents.

Initially, it was believed that for moderate-to-severe OCD, combination treatment is more efficacious than CBT alone, but recent more rigorous metanalysis suggest that combination treatment is no better than CBT alone. A large POTS trial showed that combination treatment is more efficacious than CBT alone, but heterogeneous results

Table 6: Components of management plan

- Detailed assessment with confirmed diagnosis in hand as discussed
- Focus of acute treatment is to be decided. This is remission of or at least response to presenting symptoms
  - In case of severe depression with or without suicidality, co morbid acute psychosis, substance intoxication or withdrawal, acute medical illness or injury, abuse or neglect and any co morbidity severe enough to warrant immediate care; these conditions should be managed before OCD
  - After this focus should be the acute management of OCD symptoms which are troubling the patient
  - The family needs to be educated along with patient in a language understandable to them

Mode of treatment should be decided on the basis of individualized assessment as per the need and availability of resources

- Exposure based CBT or pharmacotherapy in the form of SRIs or combination therapy should be offered as a treatment depending upon the severity and past treatment history. Feasibility of CBT should be assessed
- For co-morbidities treatment should be given according to their nature and severity prior to, concomitantly or subsequently to management of OCD. At times modality may be similar to or extension/modification of CBT for OCD or SRIs to OCD. ECT may be required for suicidality/catatonia. Antipsychotics for schizophrenia, stimulants/parent management training for ADHD and habit reversal/clonidine for tic disorder-OC spectrum disorders etc.

- Locus of treatment is decided according to focus and modus required. Mostly it can be delivered on outpatient basis. Indication for inpatient treatment as mentioned below in Table on indications for inpatient treatment
- After initiation of acute treatment goal is to achieve complete remission with evidence-based treatment
- If nonresponse or partial response, treatment modalities are applied as mentioned below in details by trying other medications, trying alternative modality like CBT for SRIs, augmenting strategies or combination treatments
- After remission focus/goal is to continue treatment for 12 months at least with the modalities causing remission. Locus is outpatient with brief inpatient admissions if required for booster sessions
- Psycho education and handling of various personal, familial and educational issues is continued as per stage and need
- Long-term goal/focus is to achieve recovery and prevent relapses. Ultimately to increase functioning and reduce distress
- This is done by modus of increasing treatment adherence through therapeutic alliance, continued psychoeducation, handling of unrealistic expectations, developmental transitions/crisis as child matures, decreasing expressed emotions, and continuing booster sessions of CBT. Locus for this is out patient mostly

OC – Obsessive-compulsive; OCD – OC disorder; CBT – Cognitive behavior therapy; SRIs – Serotonin reuptake inhibitors; ECT – Electroconvulsive therapy; ADHD – Attention deficit hyperactivity disorder

Table 7: Indications for inpatient care in children and adolescents with obsessive-compulsive disorder

Client preference
Needs diagnostic clarification and close observation
Risk of harm to self and others due to comorbid depression and/or content of OCD
Medical comorbidity requiring diagnostic clarification and management
Difficulty in delivering treatment on outpatient basis due to logistic reasons
Intensive therapy needed, need for ECT for co-morbid disorders

OCD – Obsessive-compulsive disorder; ECT – Electroconvulsive therapy

at various sites put a question mark over it. As per the findings of the POTS study, CBT and sertraline have equal efficacy during the initial phase of treatment in terms of response to treatment, but the response rate with CBT are better. Later, NordLOTS effectiveness trial has shown that initial nonresponders to CBT behaved the same if CBT was continued for long or SRIs were substituted in place of CBT. However, it needs more research to replicate this. Available data also suggest that the format of CBT, i.e., individual, group, and family does not have a significant influence on the efficacy of CBT.

Evidence for the effectiveness of CBT has emerged from a multicentric real-life trial in Scandinavian nations that establishes CBT as effective in the community, out of controlled situations trials at university levels. It also establishes that minimally trained, but supervised psychotherapy deliverers can do it and lack of training of the therapist does not compromise the effect. This is encouraging but needs replication cross-culturally.

However, it is important to note that most of the efficacy studies have been limited to children and adolescents aged 8–17 years with a mean of 13 years.

In term of various SRIs, good quality RCTs are available for sertraline (5), fluoxetine (2), clomipramine (2), fluovoxamine (2), and paroxetine (1). These RCTs suggest that these agents are more efficacious than placebo. Studies which have compared different SRIs in general suggest lack of statistically significant difference in efficacy across SSRIs. All SSRIs are well tolerated in short-term 8–12 weeks. In terms of adverse effects, fluovoxamine and paroxetine have been reported to have more side effects than other SSRIs. Tolerability and safety of clomipramine is a concern, especially with respect to the cardiac side effects. There is little research evidence for predictors or moderators of treatment response.

Doses of various serotonin reuptake inhibitors

It is generally recommended to start low and go slow. Relevant physical examinations, investigations, history of drug reaction and concomitant medications should be looked for. Safety and tolerability of SRIs approved for OCD have been established.[22,30] The recommended doses for different age groups are shown in Table 10.

Adequate trial

An adequate trial of CBT includes at least 12 weekly sessions with or without family involvement,[23] and an adequate trial for an SSRI includes the use of maximum tolerable dose of 12 weeks.

Defining response and remission

Various studies have used various operational definitions ranging from 20% to 50% reduction in CYBOCS from baseline to define treatment response. Similarly, operational definitions of treatment remission have used various cutoffs of total CYBOCS score such as 7, 8, 10, and 12 on posttreatment CYBOCS. Mataix-Cols *et al*.[26] proposed a response definition of ≥35% reduction on CY-BOCS and

a remission definition of no longer meeting criteria of a structured diagnostic interview or ≤12 on CY-BOCS plus a CGI-severity rating of 1 or 2 [See Table 11].

Components of cognitive behavior therapy

CBT for OCD is a structured therapy and requires various steps [Table 12].

There is little research for treatment nonresponders, partial responders, and not suitable for first/second line treatment options and those with comorbidities.

Table 8: Components of psychoeducation

Know the expectation and understanding of patient and family
Educate about the various symptoms and problem behaviors
Explain OCD as a neurobehavioral disorder in a language which is easily understood by patient and family
Explain them about the need to reduction in family accommodation and participation in rituals
Then with neurobehavioral model explain about the cycle of OCD and how patient-related and family-related factors, as well as environmental factors maintain it
Along with this medical model, clarify myths and misconceptions about the illness
Reduce blame and guilt
Explain the patient and the family members about their role in the treatment in terms of behavioral management
Explain about the waxing and waning nature as well as long-term course
Explain the role of comorbidities and their treatment if these are present
Give hope by explaining about evidence based treatment options available and suitable option for patient in his context
Explain that treatment is a slow and long-term process. Results start appearing gradually over a period of time
Booster sessions for CBT may be required for long. Similarly in some cases, few treatment methods need to be tried to achieve significant improvement
Explain about the role of family in reducing accommodation as well as the role of expressed emotions in worsening/improving illness course
Take feedback and continue education during course of treatment and follow-up according to the needs and issues arising at various stages

OCD – Obsessive-compulsive disorder; CBT – Cognitive behavior therapy

Table 9: Treatment evidence

Level an evidence (RCTs, systematic reviews and meta-analysis) is available for pharmacotherapy (SRIs), CBT and combination of SRIs and CBT
All these treatments are better than placebo and combined treatment with CBT plus pharmacotherapy is better than pharmacotherapy alone
In short term response and remission rates of SRIs, CBT, and COMBO (SRIs + CBT) is significantly better than placebo and/or waitlist
In short term effect size of SRIs versus placebo and CBT versus waitlist is significantly more
But in short term, but effect size for CBT versus SRI and COMBO (CBT + SRI) versus CBT are not significant
There is evidence for long term (9 months-1 year) efficacy of CBT but there is minimal data for long-term efficacy of SRIs (only one study)
Initially, evidence emerged for COMBO better than CBT for moderate to severe OCD but now contradictory findings also coming
Data for effectiveness of CBT from Scandinavian countries also present
Median age of children and adolescents is 13, preadolescent population still underrepresented in studies

RCTs – Randomized controlled trials; CBT – Cognitive behavior therapy; SRIs – Serotonin reuptake inhibitors

TREATMENT RECOMMENDATIONS

Acute treatment [Figure 1]

For mild-to-moderate cases

Where ever feasible CBT should be the first-line treatment. For mild-to-moderate cases, a trained mental health specialist, in general, can follow the standardized manuals if he has good supervision resources alone instead of medications. Otherwise, one of the SSRI (but not clomipramine) should be the first line of management. The recommendation is to use fluoxetine or sertraline ahead of paroxetine and fluvoxamine. An adequate trail should be given. Monitoring should be done on CYBOCS and CGI-I [See Table 9].

For moderate-to-severe cases

Where ever feasible combination of CBT plus SSRI (COMBO) should be the first-line treatment. In terms of choice of pharmacotherapy, it is, in general, recommended that fluoxetine or sertraline need to be used before use of paroxetine and fluvoxamine. An adequate trial should be given. Monitoring should be done on CYBOCS and CGI-I. [27-34]

Recommendation: The treatment modality used should be guided by moderators and predictors of response derived empirical research evidence but taking into account the individual patient concerned

This is more relevant in cases where the long duration of illness is there, family history of OCD and/or related disorders in first degree, high family accommodation, presence comorbid (Tic/Tourette's, ADHD, OC spectrum, depression)

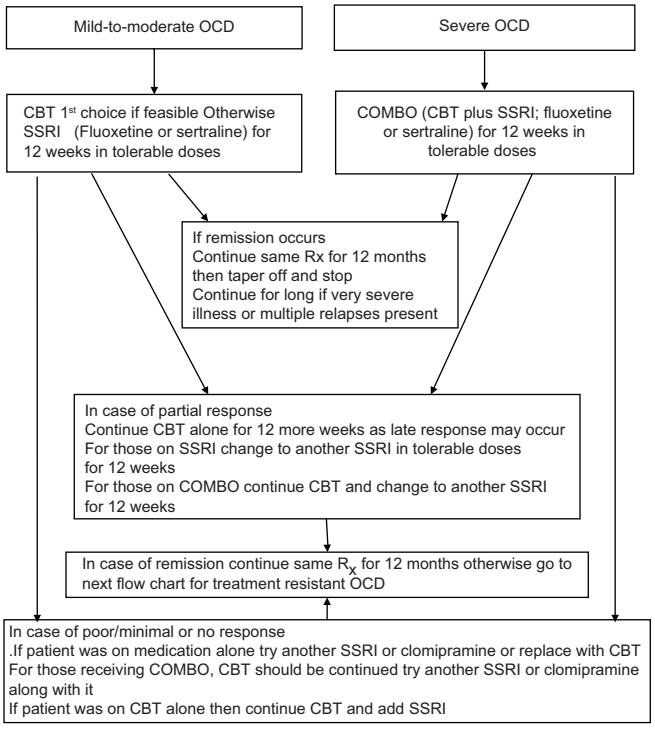

Figure 1: Flow chart for treatment

Table 10: Recommended doses of various serotonin reuptake inhibitors in children and adolescents

Medication	FDA approved for OCD in children	Minimum FDA approved age in years for use	Minimum starting dose (mg/day)		Maximum dose (mg/day)
			Preadolescents	Adolescents	
Clomipramine	Yes	5	6.25-25	25	50-200
Fluoxetine	Yes	8	2.5-10	10-20	10-80
Sertarline	Yes	6	12.5-25	25-50	50-200
Fluvoxamine	Yes	8	12.5-25	25-50	50-300
Paroxetine	Yes	8	2.5-10	10	10-60

Tolerability is the best parameter for maximum dose within approved range. FDA – Food and drug administration; OCD – Obsessive-compulsive disorder

Table 11: How to define response, remission, and nonresponse in obsessive-compulsive disorder

Criterion	Response	Remission	Nonresponse	Comments
March and Mulle, 1998[23]	35%-50% decrease in CYBOCS score	CYBOCS score <10	<35% decrease in CYBOCS	Based upon a trial for developing standard CBT manual
Storch *et al*., 2010[24]	25% or greater decrease in CYBOCS score	45% or greater decrease in CYBOCS score, CYBOCS score <14	<25% decrease in CYBOCS	Compared CGI-I/S with the CYBOCS for determining the cut offs
Nord LOTS trial data, 2017[25]	35% or greater decrease in CYBOCS score	55% or greater decrease in CYBOCS score, CYBOCS score <11	<35% decrease in CYBOCS	Community study, also compared CGI-I/S with the CYBOCS for determining the cut offs

CBT – Cognitive behavior therapy; CYBOCS – Children's Yale-Brown Obsessive-Compulsive Scale; CGI-I/S – Clinical global impression scale of severity and improvement; LOTS – Long-term OCD Treatment Study; OCD – Obsessive-compulsive disorder

disorder, and severe functional impairment is there. Here, in spite of moderate severity of OCD, combination treatment should be started. Good level of insight, less duration of illness, good family functioning/limited accommodation, and the presence of other anxiety disorders predict a good outcome. Symptom severity does not predict poor outcome.[27-34]

Comorbidities should be addressed depending on their severity and dysfunction hand in hand with OCD with their respective evidence-based treatments

Maintenance treatment

Those who achieve remission (CYBOCS score <11) should be on maintenance CBT with booster sessions for a minimum of 12 months if they were on CBT alone. Those who were on SSRI then they should be maintenance SSRI at an optimal dose for a minimum of 12 months. Those who were on combination should keep on receiving it in optimal doses of CBT and SSRI for 12 months [See Table 9].

Those who respond partially response (CYBOCS score improvement between 35% and 50%)

Those who were on CBT alone and had response should be continued on CBT for 3 more months and see if remission occurs as CBT is shown to have such effect. Otherwise, SSRI should be added. If CBT was not there only SSRI was there then another SSRI should be tried. Those who were on COMBO, CBT should be continued and another SSRI should be tried.[27-34]

Those who had poor or no response (<35% symptom remission)

For those receiving COMBO, CBT should be continued to try another SSRI or clomipramine along with it. If the patient was on medication alone, try another SSRI or clomipramine or replace with or add CBT. If the patient was on CBT alone, then add SSRI. An adequate trial should be done.[27-34]

Treatment resistance

In general, two failed adequate trials of SRI s (2 SSRIs or 1 SSRI plus clomipramine) and CBT should be there before establishing treatment resistance in childhood OCD. Adequate duration of SRI and CBT is considered 12 weeks with no change in dose for preceding 3 weeks. For a systematically delivered CBT, 10–12 total sessions with 8–10 sessions of ERP with residual psychopathology constitute an adequate trial. Most of the young children do respond, and a true nonresponse/poor response is seen in around 10% of cases. Hence, other causes for making the treatment difficult should be explored before labeling true treatment resistance [See Table 13].[22,30]

Before establishing treatment resistance one should reconsider

Options for treatment resistance

1. If clomipramine has not been tried, it should be added. It has a synergistic action with fluvoxamine. However, drug interaction with fluoxetine as well as paroxetine should be watched because of CYP 2D6 inhibition and raised the level of clomipramine leading to seizures and cardiac side effect[22,30,34] and See Figure 2.
2. A combination of SRIs should be augmented with CBT
3. Clonazepam augmentation can be done but with caution, especially in small children
4. Atypical antipsychotics have good evidence base in adults for augmentation. However, poor evidence base (case series, reports, and open label studies) for risperidone, quetiapine, haloperidol, and olanzapine. They have more side effects even at lower doses

Table 12: Components of cognitive behavior therapy for obsessive-compulsive disorder

1. Assessment: Symptoms, their severity, resistance offered, environmental triggers, family accommodation, developmental cognitive maturity of child and level of insight, psychological sophistication of family, co morbidities, motivation of child and family, other strengths and weakness as well as feasibility
2. Psychoeducation: Explain the symptoms of OCD and its maintaining cycle in terms of cognitive behavioral understanding. At times it is good to explain family members about neurobehavioral model and then explaining the role of behaviors and cognitions along with biological changes as in a chronic medical disorder. Then explain the rationale for habituation and fear extinction in this cycle in curing it through CBT[23]
3. Cognitive training: According to cognitive maturity this is done to increase mastery and control over obsessions through learning of positive/constructive self-talk by child under guidance of therapist. This helps child as tool initially during ERP and then *in vivo* generalization. Here, therapist innovations are required according to child's maturity and phenomenology of OCD case by case[35]
4. Mapping OCD/creation of symptom hierarchy: With the help of examples of OCD fear thermometers the child's experience with OCD, including specific obsessions, compulsions, triggers, avoidance behaviors, and consequences are put on this thermometer. The zones are defined according to level of distress. Lowest distress creates work zone. As the exposure proceeds in initial sessions it can be revised. Once mastery is generated then child finds himself/herself in the transition zone for stepping up to the next level of distress. Behavioral experiments with or without help of play therapy may be useful in making this.[23]
5. Behavioral experiments: Cognitive retraining and mapping of symptoms on thermometer with behavioral experiments include easy trial E/RP tasks to gauge the child's tolerance of anxiety, level of understanding, and willingness or ability to comply with treatment. At the same time, these tasks instill the idea that it is possible to successfully resist and ultimately win against OCD. Trial E/RP tasks also indicate whether the transition zone has been accurately located, thereby avoiding disruptive "surprises" due to mistargeted goals for exposure or response prevention[35]
6. Graded exposure and response prevention: After all this actual graded exposure in work zone starts. If the task is very much anxiety producing therapist/cotherapist may do modeling to initiate. If the task is complex it can be broken down or shaped to small steps. Initially, very brief sessions with frequent monitoring are required. At time *vitro* to *vivo* progression may be required for some steps. In some tasks, the duration of exposure is gradually increased. Once an ERP task is practiced enough is sessions then home assignments in structured way followed by generalization to natural environment is done. Cognitive retaining is used while facing the exposure according to child's maturity. Sometimes, for pure obsessions only exposure is required along with limiting avoidance of triggers[23]
7. Monitoring: On visual thermometer is done regularly to assess whether work zone is properly chosen and tolerable before each session. Similarly, after completion of a step next transition zone is assessed by proper monitoring of anxiety so that next step is rightly chosen. In addition to this particular overall monitoring of improvement in context of natural environment is also done through narrative, observation, and rating scales. Home assignments are also given and these also help in monitoring[35]
8. Family involvement: is there from very first step of psychoeducation, participating in ERP if they are involved in accommodating the symptoms through reassurances and being part of compulsive rituals. They can be co-therapist, do modeling for priming to exposure, help in monitoring, generalizations and contingency management which is frequently used as a motivators to kick start or for home-based sessions[35]
9. Initial four sessions for assessment, education and hierarchy generation along with cognitive retraining. Sessions should be preferably done in natural settings. Then, real exposure starts weekly sessions for outpatient and daily for intensive inpatient. For once in 2 weeks sessions in between phone call should be made. Duration lasts 50-60 min maximum. It involves check in with client, review homework, and situation, actual session, next homework assignment followed by parental review and feedback of therapy[23,35]

CBT – Cognitive behavior therapy; OCD – Obsessive-compulsive disorder; ERP – Exposure and Response Prevention

Table 13: Evaluation for Treatment Resistant OCD

1. Has the child received an adequate trial at or above the minimum starting dose?
2. Has the child reached the maximum dose?
3. Has the child been unable to tolerate a dose above his or her current dose?
4. Has the child been stable at his or her current dose for 3 weeks?
5. Has the child had at least 10 weeks of treatment?
6. Has a review of diagnosis been done?
7. Has covert symptoms been reassessed and looked for?
8. Has comorbidities been looked and treated?
9. Has family accommodation been looked for addressed?
10. Has compliance to CBT has been followed and monitoring done?
11. Has PANDAS been ruled out in case of acute onset and acute recurrences?
12. Has role of other medical illness and their interaction with their medication been looked at?

CBT – Cognitive behavior therapy; PANDAS – Pediatric autoimmune neuropsychiatric disorders associated with streptococcal infections

in children compared to that of adults. Hence, this augmentation with an agent with minimal evidence should be used with extreme caution. It should be tried after two different SSRI and an SSRI with clomipramine has been tried. A good monitoring of extrapyramidal and metabolic side effects should be done. These are more effective in those with poor insight, mood liability and comorbid OC spectrum disorders including Tics[22,30,34] and See Figure 2

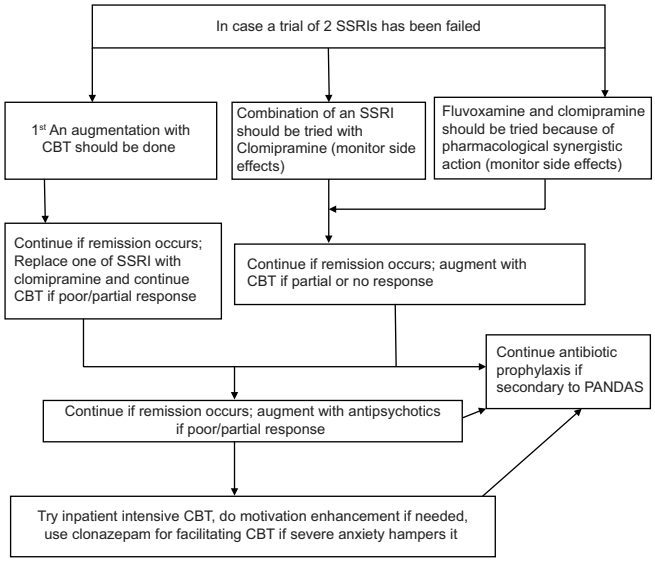

Figure 2: Management of treatment resistant obsessive-compulsive disorder

5. An inpatient treatment should be tried for intensive CBT[22,30,34] and See Figure 2
6. Antibiotic treatment should be continued for prophylaxis if secondary to PANDAS[22,30,34] and See Figure 2

7. Motivation enhancement should be added for those with poor motivation for CBT before doing it[22,30,34] and See Figure 2
8. Neurostimulation methods like r TMS have poor evidence but may be tried[22,30,34] and See Figure 2
9. Neurosurgery for OCD is not indicated for children
10. d Cycloserine augmentation of CBT has been done in a trial but not replicated. This can be tried at a specialized center.

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Conflicts of interest
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