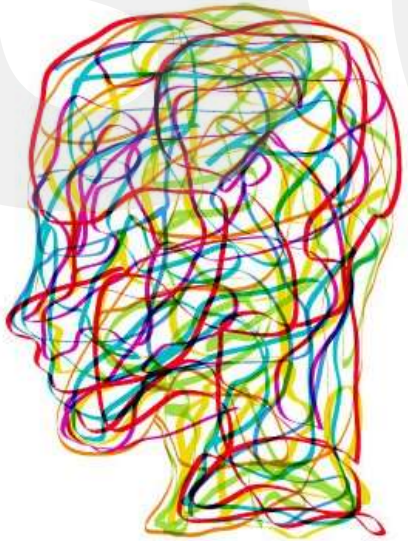
Pediatric Obsessive-Compulsive Disorder

ENTANGLED IN ONE'S OWN YOUNG BRAIN



PARIA ZARRINNEGAR, M.D.

MARCH 2020

Disclosure

I have no conflict of interest in relation to this presentation

Outline

- Background
- Diagnostic Criteria
- Clinical Features
- Epidemiology
- Etiology & Pathogenesis
- Comorbidities
- Course and prognosis
- Evaluation
- Treatment
- Book recommendation

Background

- 7th Century St. John Climacus's story of a monk
- Symptoms of OCD described as far back as 1467, evidence of possession by the devil
- Religious texts of 1600s described "scrupulosity", excessive devotion and extremes of religious doubting
- Studied by pioneers of psychiatry " Carl Westphal and Pierre Janet" as early as 1838
- OC symptoms were noted by Freud early on in his work, Anna Freud attributed to ego deficits and conflicting drive
- OCD was moved from "anxiety disorders" in DSM-IV TR to "Obsessive-Compulsive spectrum disorders" in DSM-5.

Other diagnosis in this category include body dysmorphic disorder, hoarding disorder, trichotillomania and excoriation disorder

DSM-5 Diagnostic Criteria

A. Presence of obsessions, compulsions, or both:

Obsessions are defined by (1) and (2):

1) Recurrent and persistent thoughts, urges, or images that are experienced, at some time during the disturbance, as intrusive and unwanted, and that in most individuals cause marked anxiety or distress
2) The individual attempts to ignore or suppress such thoughts, urges, or images, or to neutralize them with some other thought or action (i.e., by performing a compulsion)

Compulsions are defined by (1) and (2):

1) Repetitive behaviors (e.g., hand washing, ordering, checking) or mental acts (e.g., praying, counting, repeating words silently) that the individual feels driven to perform in response to an obsession or according to rules that must be applied rigidly.
2) The behaviors or mental acts are aimed at preventing or reducing anxiety or distress, or preventing some dreaded event or situation; however, these behaviors or mental acts are not connected in a realistic way with what they are designed to neutralize or prevent, or are clearly excessive.

Note: Young children may not be able to articulate the aims of these behaviors or mental acts.

DSM-5 Diagnostic Criteria

B. The obsessions or compulsions are time-consuming (e.g., take more than 1 hour per day) or cause clinically significant distress or impairment in social, occupational, or other important areas of functioning.

C. The obsessive-compulsive symptoms are not attributable to the physiological effects of a substance or another medical condition.

D. The disturbance is not better explained by the symptoms of another mental disorder

Specifiers:

- **With good or fair insight:** The individual recognizes that obsessive-compulsive disorder beliefs are definitely or probably not true or that they may or may not be true
- **With poor insight:** The individual thinks obsessive-compulsive disorder beliefs are probably true
- **With absent insight/delusional beliefs:** The individual is completely convinced that obsessive-compulsive disorder beliefs are true.
- **Tic-related:** The individual has a current or past history of a tic disorder

Clinical Features

- Presenting problems are variable: temper tantrums, decline in school performance, poor school attendance, food refusal, dermatitis, clogged toilet, running out of cleaning supply
- Obsessions:
  - Most Common obsessions: contamination, safety of self and others, exactness or symmetry, religious scrupulousness
  - Sexual and aggressive preoccupations less common
  - One study found boys to be more likely to have sexual obsessions and girls to have hoarding symptoms
  - Obsessional slowness – motor slowness in severe OCD
- Compulsions:
  - Most Common compulsions in adolescents: cleaning, repeating actions until it feels “right”, checking rituals
  - Most children are unable to specify what their rituals are intended to avert, beyond a vague idea of something bad happening. There is commonly lack of well-developed obsessions

Clinical Features

- Children tend to have isolated and idiosyncratic functional deficits which may be severe but domain specific and variable.
- Parents are often involved in cleaning or checking, reassurance seeking "verbal checking", covering deficits.
- Kids get angry with parents seeking help, parents want to believe it's just a phase.
- Most cases have a gradual onset
- OCD symptoms wax and wane, and change over time

Epidemiology

- Pediatric OCD Prevalence: 1-2%
- Childhood OCD is Male predominant (3:2 M:F) with prepubertal age of onset 6-12.5 years. Adult: slight female preponderance spear in late adolescence
- Age of clinical presentation on average 2 years after onset
- No difference in prevalence based on race/ethnicity or geography
- Sex or age of onset do not predict severity of illness
- Pediatric OCD is more familial and generally has a better prognosis
- OCD is underrecognized and underdiagnosed in youth
- Childhood onset OCD occurs in at least 30-50% of cases with OCD
- 2 peaks of incidence for OCD across life span: preadolescence and early adult life ~21 yrs

Etiology/Pathogenesis

- Genetic component:
  - high concordance rate, higher rate in first-degree relatives
  - Young age of onset is associated with greater familiarity
  - Research has shown some genetic association trends., likely multiple genes of small effect
- Environmental factors:
  - higher rate of perinatal trauma (shoulder dystocia, breech, forceps, prolonged hypoxia) in males with earlier onset of OCD
  - Higher rates of mothers requiring medical care during pregnancy
  - Amongst children with OCD, those with adverse perinatal experiences have earlier age of onset, more severe symptoms, increased risk for comorbidity
- Precipitating Psychosocial events:
  - physical or sexual assault
  - Witnessing domestic violence
  - Being home alone during a forced breaking and entering

Etiology/Pathogenesis

- Auto-immune etiology:
  - In 1980s NIH notes a subset of children with OCD with abrupt-onset following infections
  - Led to development of Pediatric Autoimmune Neuropsychiatric Disorders Associated with Streptococcal Infections (PNDAS) in 1998 and Pediatric Acute-onset Neuropsychiatric Syndrome (PANS) in 2010
- Major brain structures central to OCD: Orbitofrontal cortex, ant. Cingulate cortex, caudate and thalamus
- Neurotransmitters known to be involved in OCD: glutamate, dopamine, serotonin
  - fMRI in 2000, elevated glutamate level in the caudate nuclei of 11 treatment-naïve children, normalized with treatment

PANDAS Criteria

- Presence of OCD and/or a tic disorder (diagnosed according to DSM – Diagnostic and Statistical Manual of Mental Disorders)
- Pediatric onset (between 3 years and the beginning of puberty)
- Episodic course of symptom severity with abrupt onset or dramatic exacerbations
- Symptoms exacerbations must be temporally related to GABHS (Group A streptococcal infection), i.e., associated with positive throat culture and/or elevated anti-GABHS antibody
- Association with neurological abnormalities (motoric hyperactivity and adventitious movements, including choreiform movements or tics)

PANS Criteria

- Abrupt, dramatic onset of obsessive-compulsive disorder or severely restricted food intake
- Concurrent presence of additional neuropsychiatric symptoms, (with similarly severe and acute onset), from at least two of the following seven categories:
    1. Anxiety
    2. Emotional lability and/or depression
    3. Irritability, aggression, and/or severely oppositional behaviors
    4. Behavioral (developmental) regression
    5. Deterioration in school performance (related to attention-deficit/hyperactivity disorder [ADHD]-like symptoms, memory deficits, cognitive changes)
    6. Sensory or motor abnormalities
    7. Somatic signs and symptoms, including sleep disturbances, enuresis, or urinary frequency
- Symptoms are not better explained by a known neurologic or medical disorder, such as SC

Comorbidities

- Very common, present in more than 50% of cases
- Most common comorbidities:
  - Tic disorders - increased risk with earlier age of onset of OCD, remits with age
  - Mood disorders
  - Anxiety disorders - increased risk with earlier age of onset of OCD
  - Disruptive behaviors
  - ADHD – increased risk with earlier age of onset of OCD
- Comorbidity increases risk of relapse of OCD with medication discontinuation

Course and Prognosis

- Most cases have a gradual onset without a history of precipitating stressor
- Trauma may lead to abrupt onset of OCD
- OCD symptoms wax and wane, and change over time
- Many children remit partially or entirety
- Predictors of persistence of symptoms: earlier age of onset, longer duration of illness, history of inpatient treatment, comorbidity, initial poor treatment response, positive first degree family history
- Lower likelihood of cohabitation and marriage, higher likelihood of living with parents as adults, higher level of peer/social problems, isolation and unemployment.
- No difference in average educational level

Evaluation

- Carefully assess current and past OC symptoms
- Distinguishing OC from childhood rituals, routines and anxious worries. what is “normal for age”?
  - OC are recurrent, time consuming, intrusive and distressing and interfere with function. Ask if the child performs the compulsive act to relieve obsession or prevent feared outcome
  - Ask what would happen if the child did not perform the compulsion
  - Ask how the child knows when it has been done enough
- Note that children are often secretive about their symptoms and you might hear concerns from parents only
- Screening questions:
  - Younger children: Do you have worries that just won’t go away? Do you have habits that you can’t stop?
  - Older children: Do you ever have unwanted thoughts that upset you and that you can’t suppress? Do you ever have to do rituals over and over even though you know they don’t make sense?

Evaluation

- Yale-Brown Obsessive Compulsive Scale (CY-BOCS)
  - Clinician administered, best when given to both children and their parents
  - Checklist for over 60 obsessions and compulsions. 8-15:mild, 15-23:moderate,=>24: severe
  - Rates the severity by scoring the 1) time occupied, 2)degree of life interference, 3)subjective distress, 4)internal resistance and 5)degree of control
  - 25-40% reduction is considered a clinically significant response
- Assess the degree of parental entanglement which impairs family life, interferes with tm and helps perpetuate child's symptoms
  - Family Accommodation Scale for OCD – Interviewer rated

Evaluation

- Assess for comorbid conditions, review medical, developmental and family history
  - Acute onset or exacerbation in the setting of recent URI or Strep infection
  - Labs to consider: ASO, Anti-dsDNA. A 0.2 log rise in either or absolute level more than twice upper limit normal suggest recent GABHS infection
- Obtain information from school/teachers
  - School performance: compulsive rereading or rewriting, pathological perfectionism, comorbid anxiety, attentional and impulse problems; or associated cognitive impairments
  - Consider Neuropsychological testing if there is academic struggles

Evaluation - Differential Diagnosis

- Developmentally normal ritualistic behaviors in toddlers and preschoolers
  - In children younger than 6, mild or transient symptoms are very common
  - One study found that 605 of 4th graders have preoccupation with guilt about lying, engage in checking behaviors, 50% contamination and germ fears
  - excessive rituals early in life may be a marker for later onset of OCD
- Anxiety disorders
  - recurrent thoughts in anxiety disorders are usually about real-life concerns and/or social situations, , whereas the obsessions of OCD usually include content that is odd, irrational, or of a seemingly magical nature
  - compulsions are not present in anxiety disorders but avoidance is

Evaluation – Differential Diagnosis

- Major depressive Disorder
  - Rumination is mood-congruent and not experienced as intrusive or distressing
- Stereotypic, repetitive behaviors and restricted and narrow range of interests in ASD
  - OCD is ego-dystonic and associated with anxiety-driven obsessional fears. ASD behaviors are done with apparent gratification and only upsetting when these activities are interrupted.
- Primary psychotic illnesses
  - Over valued ideation and delusional thinking in OCD with poor insight
  - Assess insight when anxiety is minimum
  - Nature of obsessional ideation is not as atypical
  - OC symptoms sometimes herald a primary psychotic illness

Evaluation – Differential Diagnosis

- Tic Disorder
  - sometimes difficult to distinguish from complex tics as both may be preceded by premonitory urges that persists until the action is completed
  - Tics are less complex than rituals and not aimed at neutralizing obsessions
- Other OC related disorders: obsessions/compulsions are mostly focused on a specific area
- OCPD, perfectionism

Treatment Planning

- Individual features of the child have important implications for treatment planning
- Plan should target content and severity of core OCD symptoms but also comorbid difficulties in the context of developmental level, personality, adaptive functioning
- Involve family as much as possible in developing the treatment plan
- Help destigmatize and reframe child's symptoms
- Family therapy should be included when possible
- Collaboration with school is a key part of treatment interventions

Treatment Options

- Medications:
  - Serotonin Reuptake Inhibitors
  - Augmentation with neuroleptics, benzodiazepines
- Psychotherapy alone:
  - CBT: C part without E/RP is less effective
  - Other types of therapy such as ACT (Acceptance and Commitment Therapy) or ABM (Attention Bias Modification) have not been systematically studied as monotherapy in pediatric population
- Combined treatment:
  - Individual therapy: supportive, skills-building, create a sense of mastery
  - Family therapy: Family psychopathology is neither necessary nor sufficient for the onset of OCD symptoms but families affect and are affected by the disorder. High expressed emotions exacerbate sx, calm and supportive family may improve outcome. Help with entanglement.
  - Family support groups

Treatment Planning

- Mild OC symptoms and no impairment could be monitored. If related to stressors, can consider therapy
- Mild to moderate OCD in the absence of comorbidity, can be treated with CBT alone as the first line treatment
- When to start with medications: severe symptoms, time, expense, effort, anxiety associated with CBT, unavailability of therapist, child's lack of sufficient cognitive or emotional maturity or lack of family support, presence of comorbid depression, anxiety and disruptive behaviors
- Many clinicians prefer combined treatment as the first line treatment

Treatment - CBT

- Treatment of choice for mild to moderate OCD symptoms
- More durable effect as compared to medication
- CBT added to stable medication regimen enhances the response
- CBT reduce relapse rate when medication is discontinued
- Treatment is 13-20 sessions and include 3 elements:
  1. Information gathering
  2. Hierarchy-based therapist assisted graded exposure and response prevention (E/RP) :Exposure reduces phobic anxiety and RP reducing rituals
  3. Homework assignment
- Developmental considerations
- Child needs to be willing to participate
- “tool kit” : relaxation, cognitive therapy, use of systematic reinforcement to help with compliance

Treatment - CBT

- Prognostic indicators of good response
  - motivated patient
  - presence of overt rituals and compulsions
  - ability to monitor and report symptoms
  - absence of complicating comorbid conditions
- Prognostic indicators of partial or nonresponse
  - extensive comorbidity
  - family conflict integrating with CBT
  - cognitive limitation as in extreme young age, intellectual disability, ASD
  - less effective in kids with obsessions only
- Add medication if no response after 2-4 weeks or partial response after 4-7 weeks
- Research looking at augmenting CBT with D-Cycloserine (partial glutamate agonist)

Treatment – Serotonin Reuptake Inhibitors

- Clomipramine
  - significantly superior to placebo and other TCAs, moderate improvement in 75% by week 5
  - Dose: 3mg/kg per day for 3 months NTE 5mg/kg or 250 mg/day due to risk of toxicity, EKG changes, and seizures
  - Side effects: anticholinergic, antihistaminic
- SSRIs – first line treatment
  - Sertraline, fluvoxamine, fluoxetine are FDA-approved
  - No data to compare efficacy. Pick based on side effect profile and comorbidities
  - Fluoxetine: steady state is not reached for 2-3 weeks and not completely eliminated for up to 6 weeks – available in liquid form
  - Side effects: nausea, headache, tremor, GI complaints, drowsiness, insomnia, akathisia, disinhibition, agitation, hypomania, “frontal lobe syndrome”: apathy and/or disinhibition, occasionally worsen tics
  - Jitteriness syndrome may go away after 10 days

Treatment - SSRIs

- Start low, go slow
- Fair trial: adequate dose for 10-12 weeks. Many do now show response for 6-10 weeks. Most cases continue to improve during the first 3 months
- Failure to respond to one SSRI does not predict respond to another SSRI
- Switch after 10-12 weeks, switch again to another SSRI or Clomipramine
- No data to compare switching with augmentation
- Substantial number of patients do not respond or have residual symptoms
- Predictors of response is largely unknown
- Individuals with comorbid or family history of tic disorder may not respond as well to the SSRIs

Treatment - Augmentation

- Augmentation is reserved for treatment resistant cases
- Treatment resistant: failure to respond to at least 2 monotherapies as well as combined treatment with at least persistent moderate symptoms
- Augmentation options:
  - Clomipramine + SSRI: Check EKG, watch for drug-drug interactions (monitor clomipramine level)
  - Clonazepam was found to be superior to placebo in adults. Be mindful of the associated risk of withdrawal, dependency, and disinhibition
  - SSRIs+ Antipsychotics were found to be superior to placebo in adults. Carefully assess risks/benefits
  - OCD comorbid with bipolar disorder: focus on treating mood episodes first
  - OCD and ADHD: focus on treating OCD first. Consider alpha-2 agonists, atomoxetine, bupropion for ADHD
  - OCD and Tics: consider augmentation with antipsychotics, clonidine, clomipramine. Monitor QTc

Treatment - Maintenance

- No clear time (12-18 months following satisfactory response)
- Periodic discontinuation trials are advisable (decrease by 25% q2months), but many responders require ongoing maintenance treatment
- Double blind discontinuation study, 89% of children and adolescent patients with drawn from long term clomipramine relapsed within 2 months, comparable rate observed in adults within 7-12 weeks from clomipramine or fluvoxamine
- CBT may decrease the need for long term pharmacotherapy. Do booster sessions or introduce CBT if symptoms worsen with medication taper
- Do not stop abruptly: GI disturbance, HA, dizziness, malaise, insomnia
- Monitor both patient and patent report
- Periodically monitor for comorbidities

Other treatments

- Potential pharmacological treatments include riluzole (anti-glutamatergic drug), D-cycloserine as an adjunct to CBT, ketamine and memantine.
- prophylactic antibiotics
- IVIG, plasmapheresis

- Studied in adults but not children:
  - IV Clomipramine
  - Psychosurgery: Deep Brain Stimulation
  - Transcranial magnetic stimulation

Pediatric OCD Treatment Study (POTS)

Goal: To evaluate the efficacy of CBT alone, sertraline alone, or CBT and sertraline combined, as initial treatment for children and adolescents with OCD.

Design, setting, and participants: The Pediatric OCD Treatment Study, a balanced, masked randomized controlled trial conducted in 3 academic centers in the United States and enrolling a volunteer outpatient sample of 112 patients aged 7 through 17 years with a primary Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition diagnosis of OCD and a Children's Yale-Brown Obsessive-Compulsive Scale (CY-BOCS) score of 16 or higher. Patients were recruited between September 1997 and December 2002.

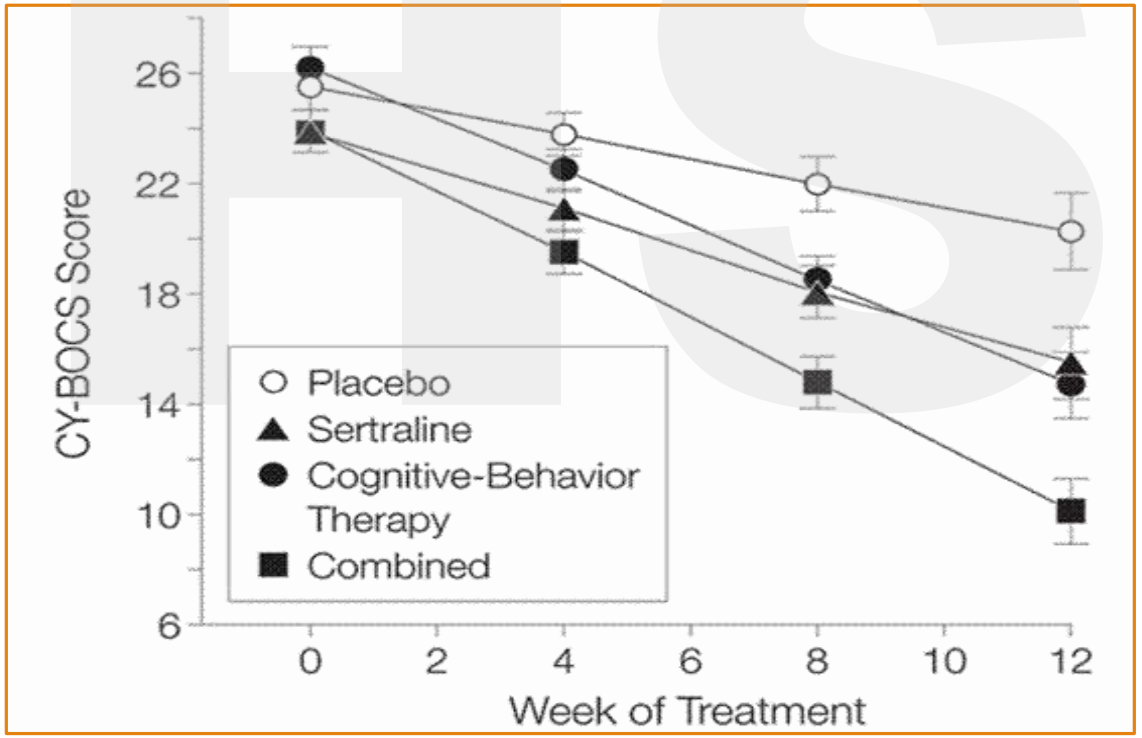
Interventions: Participants were randomly assigned to receive CBT alone, sertraline alone, combined CBT and sertraline, or pill placebo for 12 weeks.

Main outcome measures: Change in CY-BOCS score over 12 weeks as rated by an independent evaluator masked to treatment status; rate of clinical remission defined as a CY-BOCS score less than or equal to 10.

Results: Combined treatment proved superior to CBT alone and to sertraline alone, which did not differ from each other. Site differences emerged for CBT and sertraline but not for combined treatment, suggesting that combined treatment is less susceptible to setting-specific variations.

POTS

The rate of clinical remission for combined treatment was 53.6%; for CBT alone, 39.3%; for sertraline alone, 21.4%; and for placebo, 3.6%.



Pediatric OCD Treatment Study-Phase II

Objective: To examine the effects of augmenting SRIs with CBT or a brief form of CBT

Design, setting, and participants: A 12-week randomized controlled trial conducted at 3 academic medical centers between 2004 and 2009, involving 124 pediatric outpatients between the ages of 7 and 17 years with OCD as a primary diagnosis and a CY-BOCS score of 16 or higher despite an adequate SRI trial.

Interventions: Participants were randomly assigned to 1 of 3 treatment strategies: MM (7 sessions), MM+I-CBT (7 sessions), MM+CBT (7 sessions of MM plus 14 concurrent sessions of CBT). In contrast to CBT, I-CBT did not include: (1) therapist-assisted exposure; (2) imaginal exposure; and (3) didactic parent sessions.

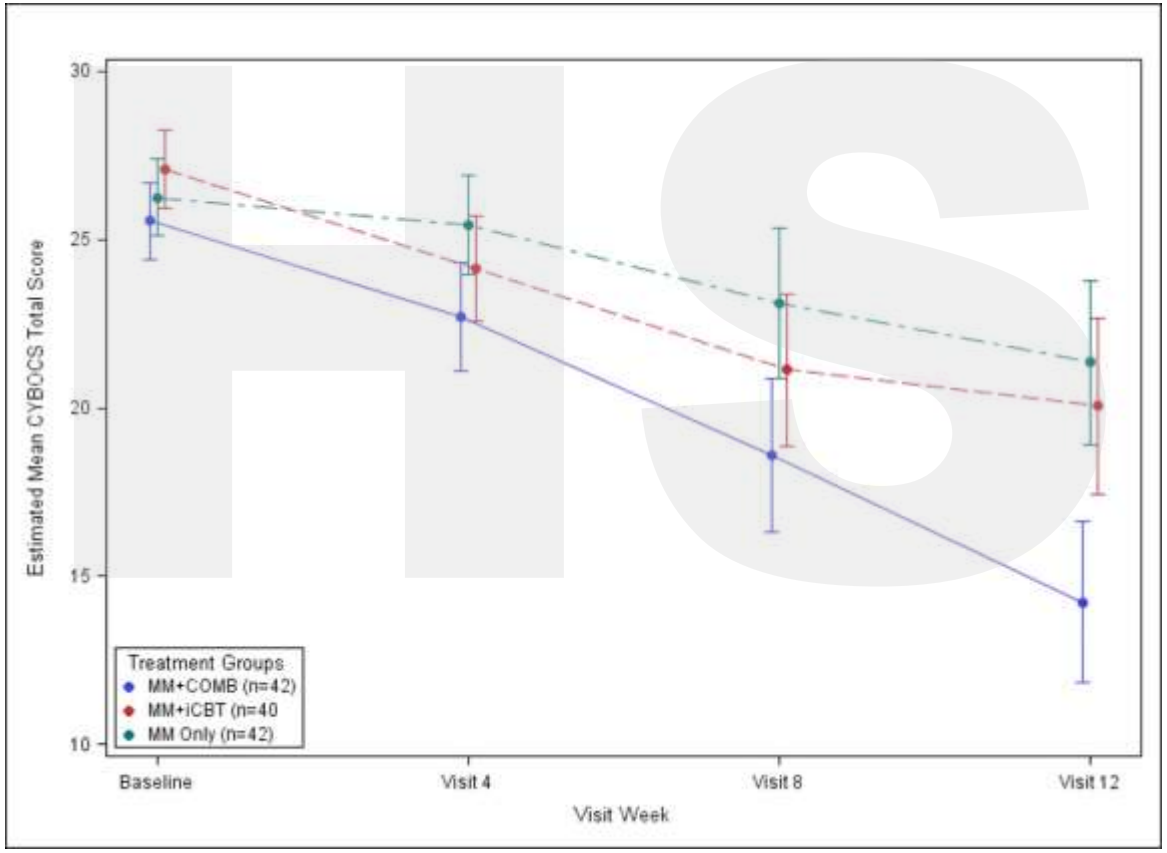
Main outcome measures: Responder status as defined as a post-treatment CY-BOCS reduction of 30% or greater compared to baseline; change in continuous CY-BOCS total score over 12 weeks.

Results: MM+CBT was superior to MM and to MM+I-CBT on all outcome measures.

- In the primary ITT analysis, 68.6% in MM+CBT were considered responders, which was significantly better than the 34.0% in MM+I-CBT, and 30.0% in MM.
- NNT with MM+CBT versus MM to see one additional RESPONSE at Week 12, on average, was estimated as 3; for MM+CBT versus MM+I-CBT the NNT was also estimated as 3 ;for MM+I-CBT versus MM the NNT was estimated as 25.

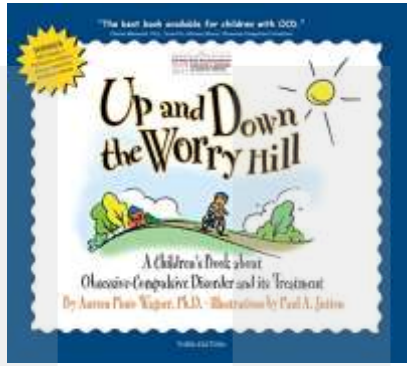
Conclusions: Among patients aged 7 to 17 years with OCD and partial response to SRI use, the addition of CBT to medication management compared with medication management alone resulted in a significantly greater response rate, whereas augmentation of medication management with the addition of instructions in CBT did not.

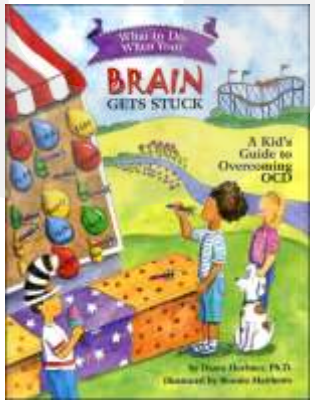
POTS-II


Estimated Mean CYBOCS Total Score
30
25
20
15
10
Treatment Groups
MM+COMB (n=42)
MM+iCBT (n=40
MM Only (n=42)
Baseline
Visit 4
Visit 8
Visit 12
Visit Week

Book Recommendation

- Talking back to OCD – John March
- What to do when your brain gets stuck – Dawn Huebner
- Up and Down the worry hill – Aureen Pinto Wagner
- What to do when your child has Obsessive-Compulsive Disorder – Aureen Wagner
- Standing Up to OCD workbook for kids – Tyson Rueter
- The ACT workbook for Teens with OCD – Zurita Ona
- Freeing your child from OCD – Tamar Chansky
- Turtles all the way down – John Green
- Under Rose-Tainted Skies – Louise Gornall
- Everything is an Emergency – Jason Adam Katzenstein





References

American Academy of Child and Adolescent Psychiatry Practice Parameters for the assessment and treatment of children and adolescents with obsessive-compulsive disorder. J Am Acad Child Adolesc Psychiatry 51(1):98-113, 2012

American Psychiatric Association: Diagnostic and Statistical Manual of Mental Disorders, 5th Edition. Arlington, VA, American Psychiatric Association, 2013

Child and Adolescent Psychiatry The Essentials, 2nd Edition, Chapter 9, Cheng.K Myers.K, Philadelphia, PA, Lippincott Williams & Wilkins,2012

Dulcan's textbook of Child and Adolescent psychiatry, 2nd Edition, Chapter 17, Dulcan.M, Arlington, VA, American Psychiatric Association, 2015

Individual Research article references available upon request


Thank you!