

# Obsessive-Compulsive Disorder in Children and Adolescence

Created by Koko Urata, MD

University of Washington Montana Track, Psychiatry Resident, R3

February 23rd, 2022

Project Echo, MAPP-Net

# Objections

Discussion!

Review Diagnosis, Epidemiology

Differential Diagnosis, Comorbidities

Additional assessments

Neurobiology

Treatment of OCD, QOL

# Obsessive-Compulsive Disorder

## 300.3 (F42.2)

### Obsession

- Recurrent and persistent thoughts, urges, or images that are intrusive and unwanted leading to anxiety or distress
- Attempts to ignore, suppress, neutralize with other thought or action

### Compulsions

- Repetitive behaviors (e.g., hand washing, ordering, checking) or mental acts (e.g., counting, praying, repeating words) are driven in repose or according to rigid rules
- Behaviors or mental acts to prevent or reduce, anxiety/distress/dreaded event or situation

More than 1 hour/day, or causes significant distress or impairment in social, occupational or other important areas of functioning

**Specify:** 1.) With good/fair insight, poor insight, or absent insight/delusional beliefs  
2.) Tic-related: current or history of tic disorder

\*Not attributed to other causes or medical conditions.

# Epidemiology and Risk Factors

- 2-3% lifetime
- 1.2% in a 12-month period
- Average age of onset 19 years old (18-29yrs)
  - 25% cases begin by age 14
  - Males have earlier age of onset 25% before age 10, compared to women.
  - Female onset during adolescence
- Childhood onset occurs in 30-50% of cases
- Age of onset after age 35 is uncommon- look for other causes

## Risk Factors

- Genetic- twin and family studies, high heritability, genes unknown, likely polygenic
- PANDAS (pediatric autoimmune neuropsychiatric disorder associate with group A streptococcus) or PANS (Pediatric Acute Neuropsychiatric Syndrome)
  - Sydenham Chorea, Rheumatic fever.
- Premenstrual, peri/postpartum onset (hormonal fluctuations)
- Trauma
- Neurological lesions- stroke, TBI
- Low SES, low educational level, single

Limitations: lay interviewer diagnosis, low minority representation in studies

# Differential Diagnosis

- Body Dysmorphic Disorder-
  - Hoarding Disorder
  - Trichotillomania (Hair pulling)
  - Excoriation (skin-picking)
  - Substance induced OCD (stimulants)
- 
- ASD- stereotypic repetitive behaviors, restricted and narrow range of interest
  - COVID-19
  - Earlier onset increases risk of ADHD or Anxiety disorder
  - Older onset associated with mood and psychotic disorder

## Comorbidities

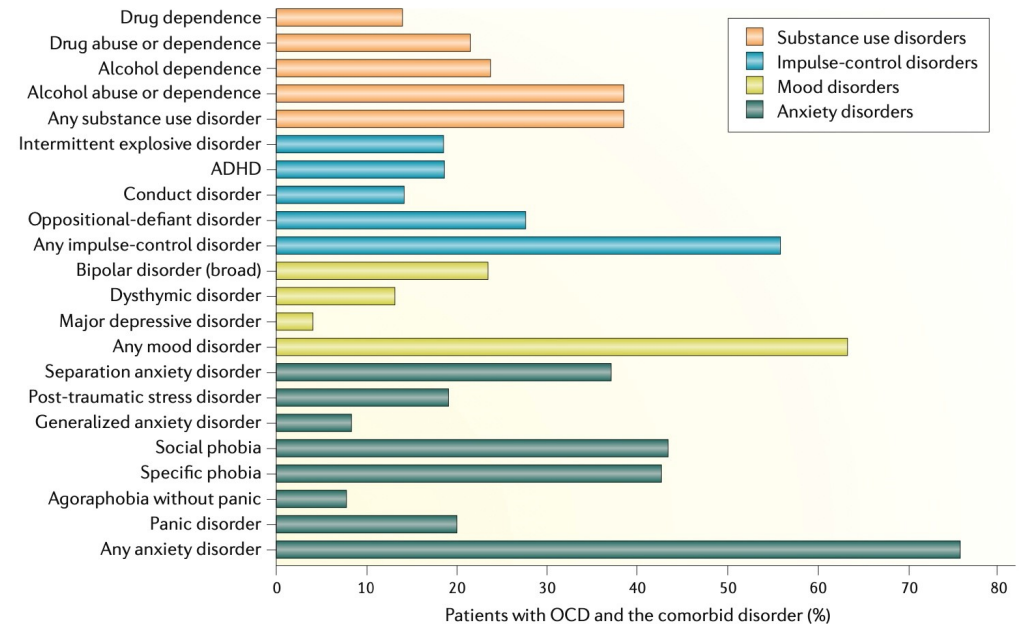


Fig. 3 | **Comorbidities of OCD.** The prevalence of comorbid mental disorders in patients with obsessive-compulsive disorder (OCD) in the National Comorbidity Survey-Replication (NCS-R). ADHD, attention-deficit/hyperactivity disorder. Data from REF.<sup>14</sup>.

# Obsessive Compulsive Personality Disorder (OCPD)

## OCD

- Anxiety disorder
- Characterized by repetitive, unwanted thoughts, and irrational, excessive urges to do certain actions.
- Motive to avoid anxiety or perceived risk
- Symptoms tend to vary in severity
- Easily identified
- Ego-dystonic, person recognizes the thoughts are senseless and is distressed by them

## OCPD

- Personality disorder
- Characterized by rigidity, control, perfectionism
- Motive to be perfect
- Signs and symptoms tend to remind the same
- Cannot be easily recognized
- Ego-syntonic, unaware of behaviors affecting others





## Making Diagnosis

Question: What questions do you ask/work for you?

- Do you ever have unwanted thoughts that upset you and that you cannot suppress?
- Do you have worries that just won't go away?
- Do you ever have ideas, images, or urges that make you anxious?
- Do you have to do rituals over and over, even though you know they don't make sense?
- Do you do things or have habits that you don't want because you feel anxious or worried about something?
- Do you have habits you can't stop ?

# OCD in Children/Adolescence

## Challenges

- Children unable to articulate aims of the behaviors or mental acts
- Unknowingly reinforce compulsive behaviors
- Earlier onset, longer duration, increased severity and hospitalization

## Benefits

- Guardian, parent, teacher observation.
- Family accommodation scale for OCD
- Pediatric onset better prognosis than adult onset.



# Further assessments

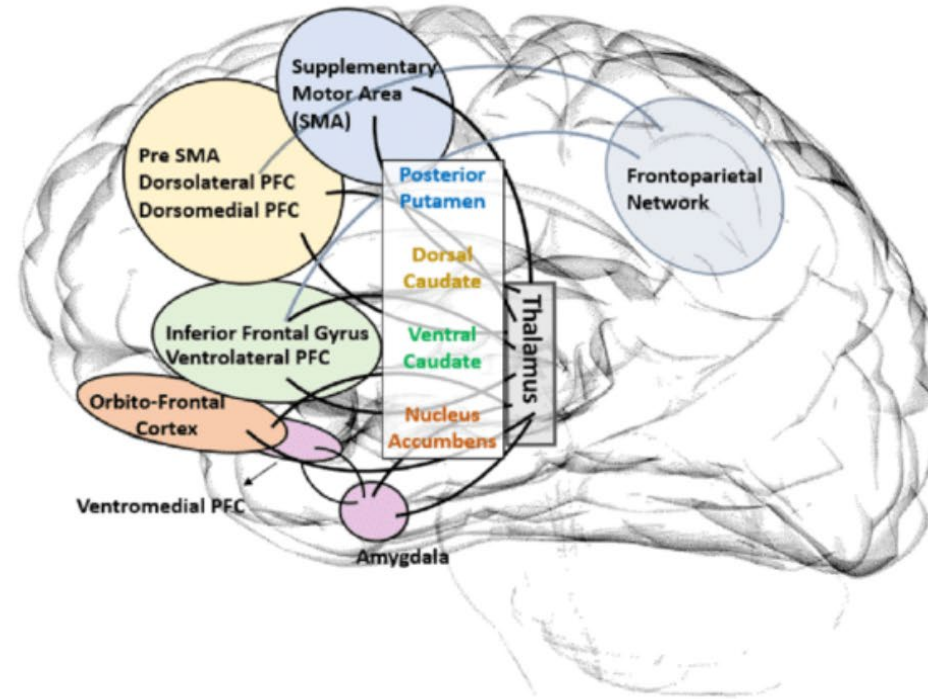
## Children's Yale-Brown Obsessive Compulsive scale (CY-BOC):

- Symptom Checklist
- 10-item scale:
  - Time occupied by OC symptoms
  - Level of distress
  - Functional impairment
- 0-7: subclinical
- 8-15: mild
- 16-23: moderate
- 24-31: severe
- 32-40: extreme

## Family Accommodation Scale for OCD

	None/ Never	1 day	2-3 days	4-6 days	Every day
1. I reassured my relative that there were no grounds for his/her OCD-related worries. <i>Examples: reassuring my relative that s/he is not contaminated or that s/he is not terminally ill.</i>	①	②	③	④	⑤
2. I reassured my relative that the rituals he/she already performed took care of the OCD-related concern. <i>Examples: reassuring my relative that s/he did enough ritualized cleaning or checking.</i>	①	②	③	④	⑤
3. I waited for my relative while s/he completed compulsive behaviors.	①	②	③	④	⑤
4. I directly participated in my relative's compulsions. <i>Examples: doing repeated washing or checking at my relative's request.</i>	①	②	③	④	⑤
5. I did things that made it possible for my relative to complete compulsions. <i>Examples: driving back home so my relative can check if the doors are locked; creating extra space in the house for my relative's saved items.</i>	①	②	③	④	⑤
6. I provided my relative with OCD with items s/he needs to perform rituals or compulsions. <i>Examples: shopping for excessive quantities of soap or cleaning</i>	①	②	③	④	⑤

# Neurobiology: Cortico- striatal- thalamic circuits (CSTC)



Circuits
Cognitive Domains
'Sensorimotor' CSTC Circuit
stimulus-response based habitual behavior
'Dorsal Cognitive' CSTC Circuit*
working memory, planning, emotion regulation
'Ventral Cognitive' CSTC Circuit*
response inhibition
'Ventral Reward' CSTC Circuit
stimulus-outcome based motivational behavior
'Fronto-Limbic' Circuit
anxiety processing, extinction learning

\*with the frontoparietal network

Multiple Brain Circuits Contribute to OCD

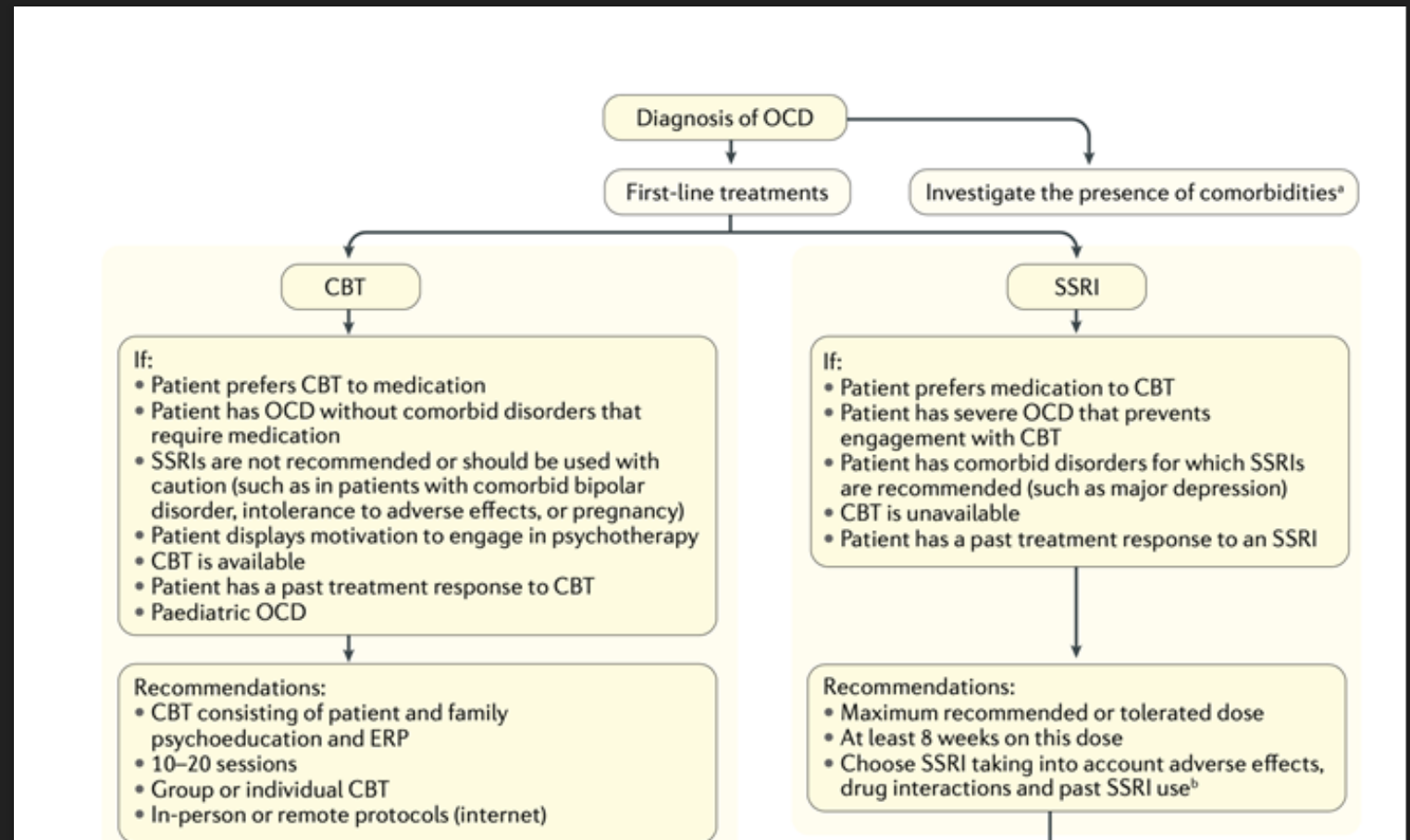
Hyperactivity (fear and habitual response)  
Hypoactivity (response inhibition, executive function)  
-Serotonin, glutamate and dopamine

# Treatment

## Pediatric OCD Treatment Study (POTS, published 2002)

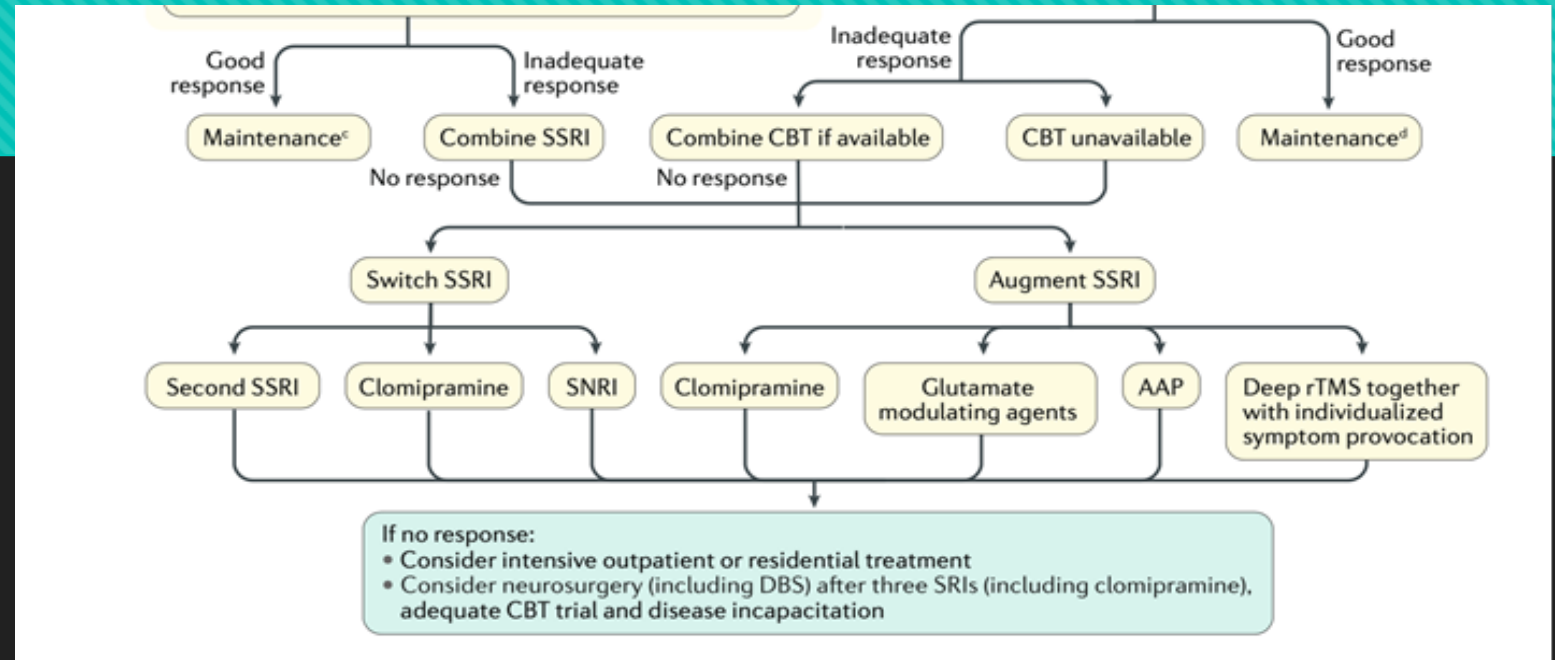
### Results:

- Combined sertraline and CBT treatment was statistically superior to all the other groups for CY-BOCS outcome measure (CBT, Sertraline, CBT+Sertraline, Placebo)
- Monotherapy groups were not significantly different from each other.
- Remission rate, sertraline did not differ from placebo; CBT alone was superior to placebo.



# Medications

- SSRI (first-line)
  - Start low and go slow (tolerability), increase every 1-2 weeks.
  - Adequate trial (if tolerating) for 8-12 weeks
  - High doses- close monitoring
- Clomipramine (TCA)
  - Cardiac monitoring/risk
  - Study limitations
- SNRI- only venlafaxine
- Augmenting SSRI and clomipramine: increase of both drug levels, Serotonergic syndrome, seizures, heart arrhythmia.



- Glutamatergic agents:
  - N-acetylcysteine (NAC)
  - Memantine, riluzole, minocycline, ketamine
- Antipsychotics- metabolic side effects, variable study results, no mono studies "off-label"
- Treatment of PANS- steroids, antibiotics

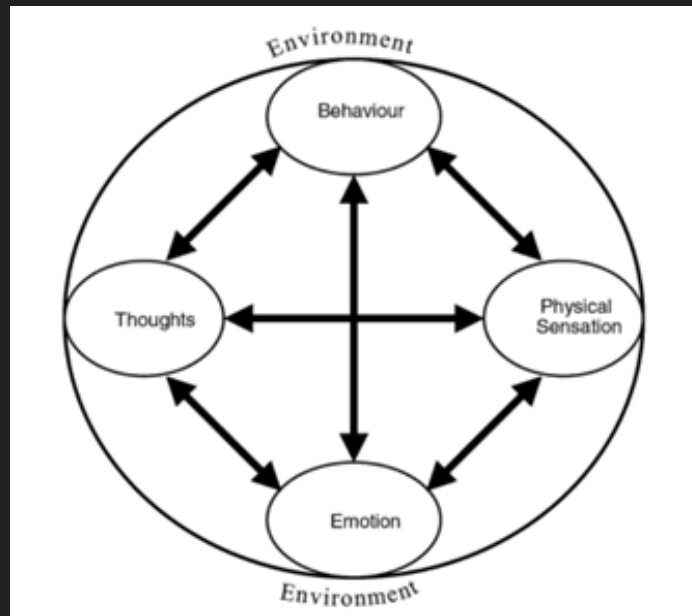


# Therapy:

## CBT and Exposure and Response Prevention (ERP)

### ERP:

- Repeated, prolonged exposure to feared stimuli/situation
- Abstinence from compulsive ritual
- Hierarchy of feared situation
- Focus on anxiety-provoking aspects of situation
- 60-85% response rate
- IOP or Residential

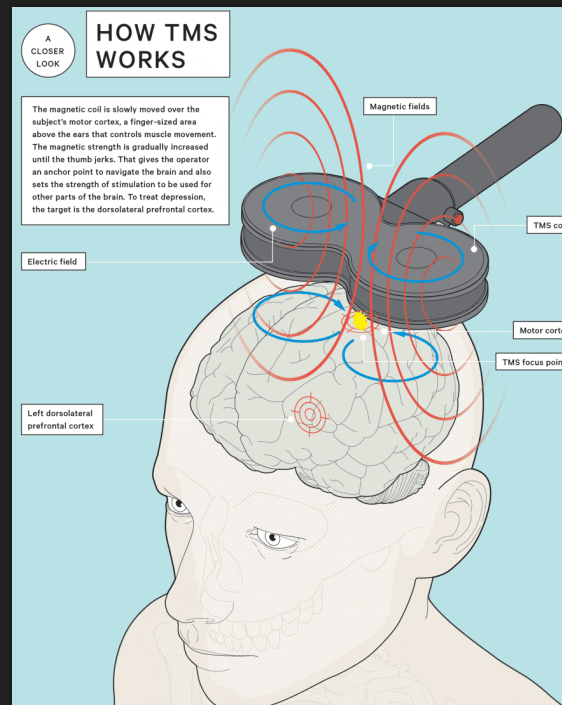


Study: ERP, Clomipramine, or their combination (published 2005)

- All three active treatments were superior to placebo.
- ERP monotherapy and ERP+clomipramine were superior to clomipramine monotherapy.
- Limitations: Reporting bias? Excluded pt w/MDD (limiting generalizability), used TCA

# Neuromodulation

- Repetitive TMS (rTMS)-FDA approved (2018) as adjunctive treatment for OCD
- Deep Brain Stimulation
  - 30-60% response rate



## Box 4 | Selection criteria for neurosurgery for intractable OCD<sup>1,77</sup>

### Inclusion criteria

- Obsessive-compulsive disorder (OCD) must be the main diagnosis
- Yale-Brown Obsessive-Compulsive Scale score  $\geq 28$  (or  $\geq 14$  if only obsessions or only compulsions are present)
- 5 years of severe OCD symptoms despite adequate treatment trials
- Independent confirmation of refractoriness to treatment
  - 3 adequate<sup>a</sup> trials with a serotonin reuptake inhibitor (at least one with clomipramine)
  - 2 adequate augmentation strategies (such as antipsychotics or clomipramine)
  - 20 hours of OCD-specific cognitive-behaviour therapy (such as exposure and response prevention)<sup>b</sup>
- Age 18–75 years<sup>c</sup>
- Ability to provide informed consent
- Appropriate expectations of the outcomes of surgery

### Exclusion criteria

- Comorbid mental or substance use disorder that may impair treatment (for example, severe personality disorder or psychosis)
- Clinically meaningful condition affecting brain function or structure
- Intellectual disability
- Past history of head injury with post-traumatic amnesia
- Recent suicide attempt or active suicidal ideation

<sup>a</sup>Minimum duration of 8 weeks at the maximum recommended or tolerated dose. <sup>b</sup>Participation for shorter times may be permitted if nonadherence is due to symptom severity rather than to noncompliance. <sup>c</sup>Increasing age is a relative contraindication.

# Effect on Quality of life

- Relief by being told what they have are a common disorder with increasing understanding and available treatments
- Associated with comorbidities
- Associated with decrease in QOL in all domains as well as the relatives and care givers
- Health Disparities
- International OCD foundation- great resource!





# Resources

<https://ysph.yale.edu/familyaccommodationocd/about/>

<https://www.seattletimes.com/seattle-news/mental-health/it-took-me-12-years-to-get-a-proper-mental-health-diagnosis-that-needs-to-change-mental-health-perspectives/>

Stein, D.J., Costa, D.L.C., Lochner, C. et al. Obsessive-compulsive disorder. *Nat Rev Dis Primers* **5**, 52 (2019).

<https://doi.org/10.1038/s41572-019-0102-3>

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7082239/>

<https://projectteachny.org/wp-content/uploads/2017/09/CYBOCS.pdf>

[https://www.google.com/search?q=tms&tbm=isch&ved=2ahUKEwiA7Zro0pT2AhWIAjQIHYYOrC74Q2-cCegQIABAA&og=tms&gs\\_lcp=CgNpbWcQAzIECAAQZlICAAQgAQQsQMMyCAgAEIAEELEDmgUIABCABDIFCAAQgAQyBQgAEIAEMgUIABCABDIFCAAQgAQyBQgAEIAEMgUIABCABDIECAAQGDOLCAAQgAQQsQMwE6CAgAELEDEIMBUPgHWM0JYJcLaABwAHgAgAGzAYgBnQOSAQMzLjGYAQCGAQGgAQtd3Mtd2l6LWltZ8ABAQ&sclient=img&ei=RloVYoC7CoiF0PEPg9eu8As&bih=969&biw=1920&rlz=1C1GCEB\\_enUS966US966#imgsrc=5VEi\\_PpqpbuZfM](https://www.google.com/search?q=tms&tbm=isch&ved=2ahUKEwiA7Zro0pT2AhWIAjQIHYYOrC74Q2-cCegQIABAA&og=tms&gs_lcp=CgNpbWcQAzIECAAQZlICAAQgAQQsQMMyCAgAEIAEELEDmgUIABCABDIFCAAQgAQyBQgAEIAEMgUIABCABDIFCAAQgAQyBQgAEIAEMgUIABCABDIECAAQGDOLCAAQgAQQsQMwE6CAgAELEDEIMBUPgHWM0JYJcLaABwAHgAgAGzAYgBnQOSAQMzLjGYAQCGAQGgAQtd3Mtd2l6LWltZ8ABAQ&sclient=img&ei=RloVYoC7CoiF0PEPg9eu8As&bih=969&biw=1920&rlz=1C1GCEB_enUS966US966#imgsrc=5VEi_PpqpbuZfM)

<https://peaceofmind.com/culture-and-diversity-in-ocd/>

[https://www.uptodate.com/contents/pandas-pediatric-autoimmune-neuropsychiatric-disorder-associated-with-group-a-streptococci?search=OCD%20differential&source=search\\_result&selectedTitle=2~150&usage\\_type=default&display\\_rank=2#H14](https://www.uptodate.com/contents/pandas-pediatric-autoimmune-neuropsychiatric-disorder-associated-with-group-a-streptococci?search=OCD%20differential&source=search_result&selectedTitle=2~150&usage_type=default&display_rank=2#H14)

[https://www.uptodate.com/contents/obsessive-compulsive-disorder-in-children-and-adolescents-epidemiology-pathogenesis-clinical-manifestations-course-assessment-and-diagnosis?search=OCD%20duration&source=search\\_result&selectedTitle=1~150&usage\\_type=default&display\\_rank=1#H86799339](https://www.uptodate.com/contents/obsessive-compulsive-disorder-in-children-and-adolescents-epidemiology-pathogenesis-clinical-manifestations-course-assessment-and-diagnosis?search=OCD%20duration&source=search_result&selectedTitle=1~150&usage_type=default&display_rank=1#H86799339)

50 studies every Psychiatrist Should know: Ish P. Bhalla, Rajesh R. Tampi, and Vinod H. Srihari. 2018.

**Thank You!**

