

Assessment and Treatment of Obsessive Compulsive Disorder in Children and Adolescents

Martha J. “Molly” Faulkner,
PhDc, CNP, LISW
University of New Mexico Health Sciences Center
Children’s Psychiatric Center - Cimarron Clinic
February 28, 2013

Louise

16 year old African American female with history of washing hands until they are raw, wiping herself after urinating or a bowel movement until she is raw as she never feels “clean”, grooming the cat (picks out whitish hairs) until he scratches her. She has to arrange her room for hours sometimes at night until it is “just right” and then she’s able to go to bed, which often makes her late in the morning for school.

Common Obsessions and Compulsions:

Obsessions

1. Concern w/order
2. Counting
3. Fear of acting on aggressive impulses (30%)
4. Fear of dirt, germs & contamination (35%)

Compulsions

1. Repetitive hand washing (75%)
2. Checking & rechecking
3. Repetitive actions such as stepping only on the cracks in the sidewalk
4. Concern with arranging.

OCD: Prevalence and Course

- Prevalence

- 1-3% of children and adolescents
- Ratio of boys to girls is 3:2 in childhood; equalizes in adolescence
- 40% Chronic course of illness
- 70% Comorbid mental illnesses
- 80% of all cases have childhood onset

- Course

- Age of onset
 - Males 6 - 15 years; Females 20 - 29 years
- Onset typically gradual, some acute
- Chronic waxing and waning of symptoms
- 2 peaks at age 11 and early adulthood
- Stress exacerbates symptoms
- Estimated that 15% display progressive deterioration in social & occupational functioning

The Development of OCD

- OCD symptoms typically begin during the teenage years or in early adulthood.
- However, children can develop the disorder at earlier ages, even during the preschool years.
- Early studies suggested that at least one-third of all cases of OCD in adults began in childhood. More recent figures suggest that as many as 80% begin in childhood (Storch, 2007)
- OCD strikes people of all ethnic groups.
- It is equally common in males and females.

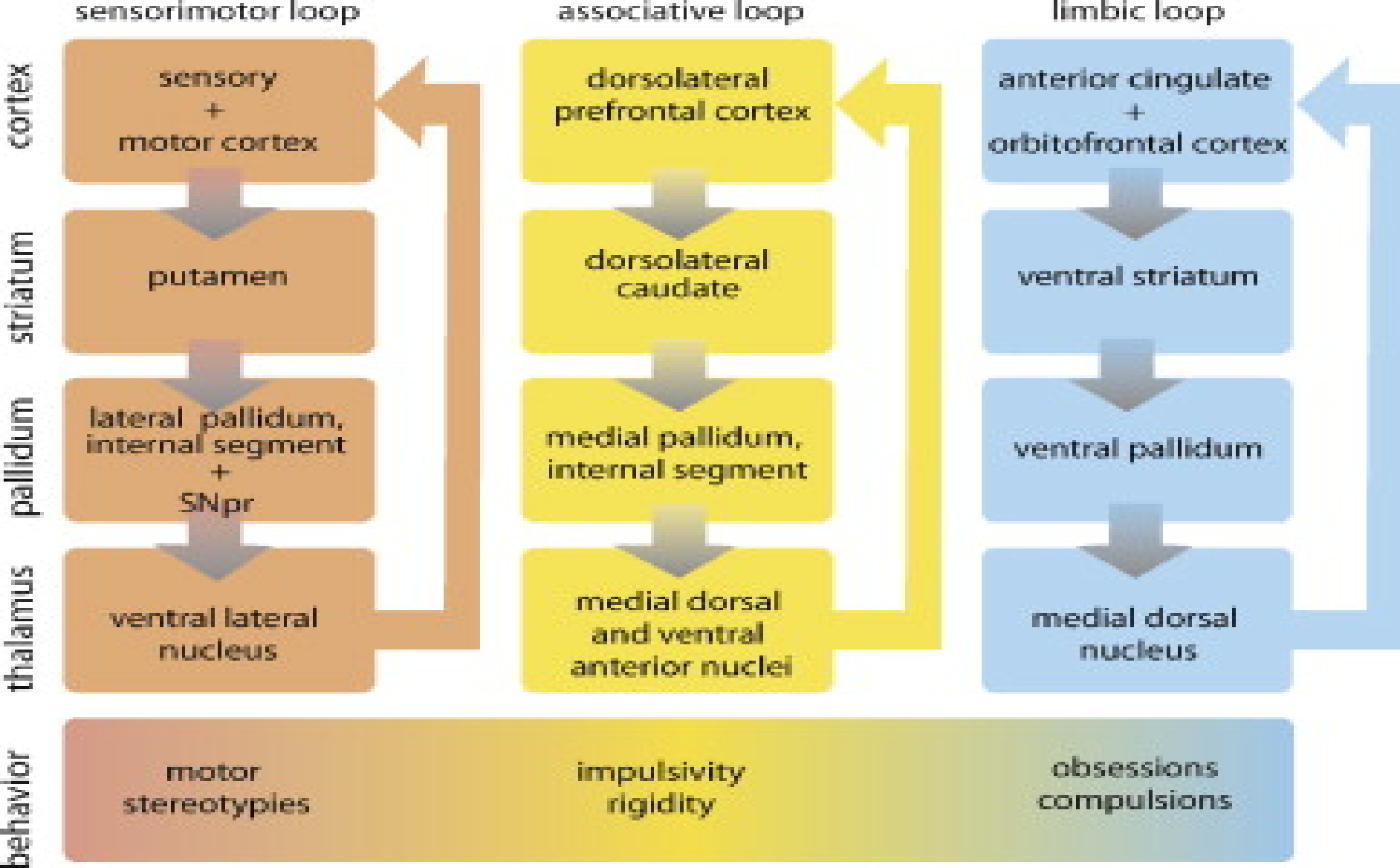
The Nature of OCD

Symptoms

- Compulsions often seem intended to ward off harm to the person with OCD or others they are close to.

Note License Plate Counter

- While performing these rituals often provides a sense of relief , this relief is usually only temporary.
- **While adults with this disorder often have insight into the irrational nature and senselessness of their obsessions and compulsions, this is much less common in younger children.**
- Symptoms may become less severe over time and there may be intervals where symptoms are less problematic.
- However, for most individuals the disorder tends to be chronic in nature.



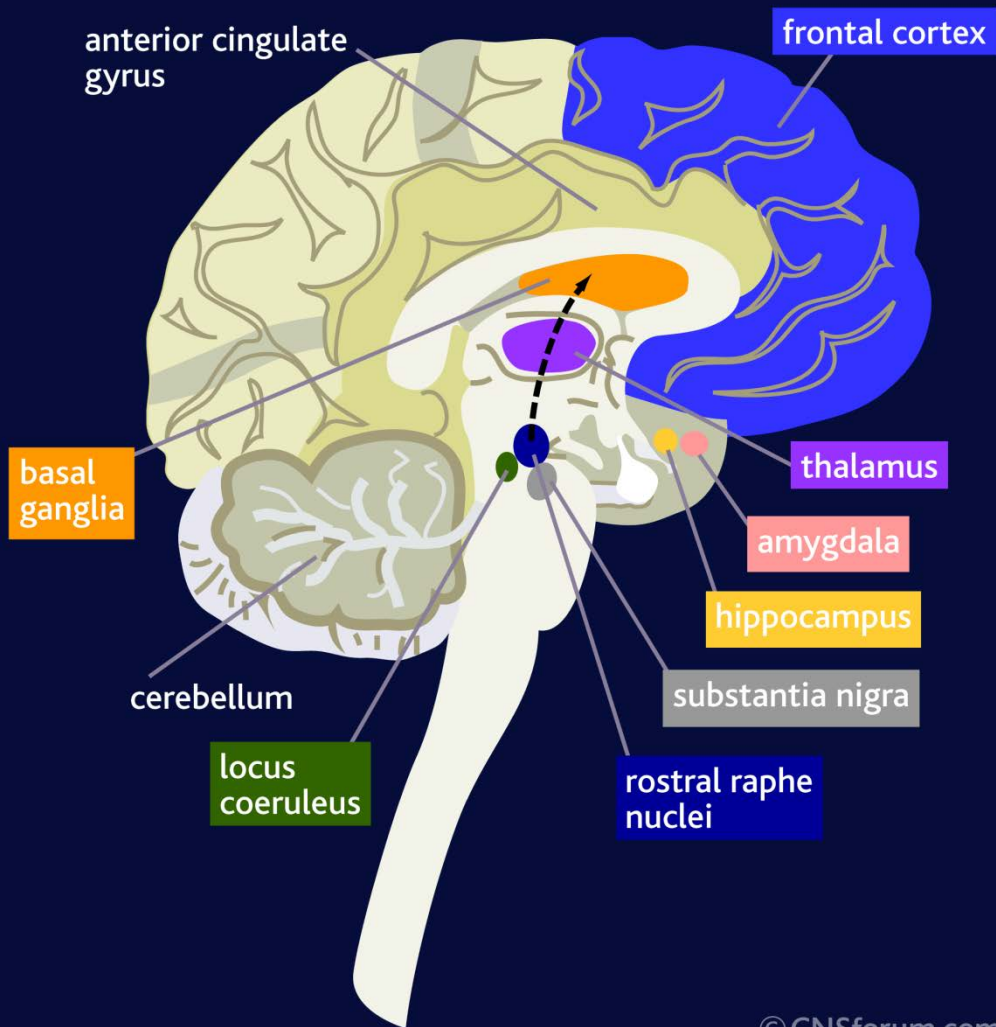
~Parallel corticostriatal macro-circuits with their main input, relay and output regions.

~Abnormal repetition of behavior can result from *damage to any of the corticostriatal circuits*, where the *exact location of the disruption (i.e. which loop is involved)* determines what type of repetitive behavior is seen.

OCD: Genetics

- 1st degree relatives of children and adolescents with OCD are 3 to 12 x more likely to have dx
- Earlier age on onset more frequently relatives are affected
- Twin studies greater heritability of OCD sx in children
- Later OCD occurs greater role of environmental conditions and trauma
- Disturbance of info processing in cortico-striatothalamo-cortical circuits

OCD Brain



1. Sensorimotor loop is primarily involved in abnormal stereotypical motor behavior: continuously repeating identical movements without pursuing a goal

2. Associative loop is likely to be associated with inappropriate repetition of a goal, expressed in a relatively varied behavioral repertoire (as in obsessive-compulsive behavior).

3. Limbic loops (lateral orbital loop and anterior cingulate loop) are implicated in motivational aspects of behavioral control, including impulsive behavior (difficulty in suppressing behavior even when consequences are negative); response to reward; and obsessive and compulsive behavior (including compulsive drug-taking). (SNpr = substantia nigra pars reticulata).

OCD: Etiology

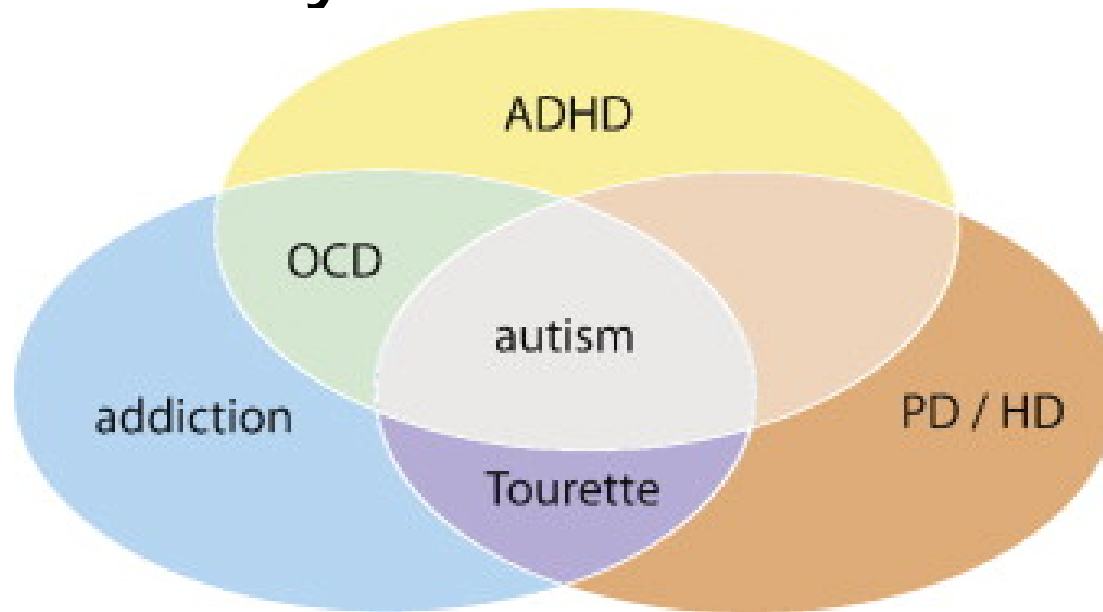
- There is growing evidence that biological factors are a primary contributor to OCD.
- The fact that individuals with OCD respond to drugs that affect the neurotransmitter serotonin seems to *suggest that* the disorder may have a neurobiological basis.
- Research also suggests that OCD seems to have a significant genetic contribution, with genetic links to both ADHD and Tourette's disorder.

OCD: Etiology

- Recent research has also shown that OCD symptoms may develop or worsen after a strep infection.
- In these instances, the child may develop OCD with no previous family history.
- MRI studies have suggested that individuals with obsessive-compulsive disorder have significantly less white matter than normal control subjects.
- This may suggest a generalized brain abnormality in OCD

OCD: Comorbidity

-



Schematic representation of how behavior resulting from problems in one of the three macro-circuits (sensorimotor, associative or limbic) may group together in symptom clusters as seen in various psychiatric and neurological disorders.

(ADHD = attention deficit hyperactivity disorder; OCD = obsessive-compulsive disorder; PD = Parkinson's disease; HD = Huntington's disease).

Comorbidities- the Rule rather than the exception

- Depression,
 - Other anxiety disorders
 - Attention deficit hyperactive disorder,
 - Tourette' s and Tic disorders
 - Trichotillomania (the repeated urge to pull out scalp hair, eyelashes, eyebrows or other body hair),
 - Co-existing disorders can make OCD more difficult both to diagnose and to treat anxiety
- More severe the OCD more likely to find a comorbid disorder

OCD: Comorbidity

Co-occurrence of Tourette's Disorder and OCD- common with a common set of genetic factors contribute to both disorder

- Limited evidence demonstrates a strong and significant association between substance use disorders and anxiety disorders

40% to 90% of adolescents with substance abuse disorders have comorbid psychiatric diagnoses, with anxiety disorders being a common co-occurrence

Anxiety disorders begin in childhood, there is increased risk for the development of substance abuse during adolescence and adulthood.

- When active substance use begins, it interferes with the detection of the anxiety disorder

Anxiety disorders - increase the risk for the development of eating disorders in adolescent girls,¹ including anorexia nervosa and binge eating in children.

Obsessive-Compulsive Disorder

DSM Criteria

DSM IV Criteria

A. Either obsessions or compulsions:

Obsessions as defined by (1), (2), (3), and (4):

1. Recurrent and persistent thoughts, impulses, or images that are experienced, at some time during the disturbance, as intrusive and inappropriate and that cause marked anxiety or distress
2. The thoughts, impulses, or images are not simply excessive worries about real-life problems
3. The person attempts to ignore or suppress such thoughts, impulses, or images, or to neutralize them with some other thought or action
4. The person recognizes that the obsessional thoughts, impulses, or images are a product of his or her own mind (not imposed from without as in thought insertion)

Obsessive-Compulsive Disorder

DSM Criteria

Compulsions as 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 person 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 distress or preventing some dreaded event or situation; however, these behaviors or mental acts either are not connected in a realistic way with what they are designed to neutralize or prevent or are clearly excessive

Obsessive-Compulsive Disorder

DSM IV-TR Criteria

- B. At some point during the course of the disorder, the person has recognized that the obsessions or compulsions are excessive or unreasonable. Note: This does not apply to children.
- C. The obsessions or compulsions cause marked distress, are time consuming (take more than 1 hour a day), or significantly interfere with the person's normal routine, occupational (or academic) functioning, or usual social activities or relationships.
- D. If another Axis I disorder is present, the content of the obsessions or compulsions is not restricted to it.
- E. The disturbance is not due to the direct physiological effects of a substance (e.g., a drug of abuse, a medication) or a general medical condition

Common Obsessions and Compulsions

- Obsessions

- Contamination
- Harm to self or others
- Need for symmetry/order
- Religious or moral concerns
- Sexual or aggressive
- Lucky or unlucky numbers

- Compulsions

- Cleaning
- Checking, counting, repeating
- Ordering, straightening
- Praying, confessing, reassurance seeking
- Touching, tapping, or rubbing
- Hoarding

Anxiety: 3 Interrelated Systems

1. Cognitive

- Anxious thoughts develop in response to cognitive distortions in the attention, interpretation, and memory components of information processing

2. Physical

- Brain sends messages to sympathetic nervous system: fight or flight response
- Symptoms are excessive in intensity or duration

3. Behavioral

- Action (or inaction) that individuals take to prevent exposure to feared stimuli or to reduce anxiety associated with exposure to the feared stimuli

Case Example

- “Ashley, 16, reports that each time she leaves a classroom, passes the principal's office or leaves school, she has to imagine the number 12 on a clock and say the words "good luck" to herself.
- She reports that she can't stop thinking about the words "good luck." If she tries to stop herself from thinking about these words, she becomes very anxious and worries that she'll have a heart attack.
- In the classroom, she is often frozen in her seat, unable to respond. She worries that any decision she makes will result in something dreadful happening to her parents.
- Before going to sleep, she closes the bedroom door four times, turns the lights on and off four times and looks out the window and under her bed twelve times.”

OCD: Treatment

- Children with OCD are most commonly treated with a combination of psychotherapy and medication.
- The most common form of psychotherapeutic treatment is behavioral in nature and often takes the form of exposure and response prevention.
- With this approach, the patient is encouraged to **confront the feared object** or idea, either directly or via imagery.
- At the same time he/she is strongly encouraged to **refrain from engaging in compulsive behavior**.

Nature of Response Prevention

- Here a compulsive hand washer may be encouraged to touch an object believed to be contaminated, and then avoid washing until the anxiety that has been elicited has diminished.
- Treatment proceeds on a step-by-step basis, with the therapy being guided by the patient's ability to tolerate the anxiety and control compulsive acts.
- As treatment progresses, patients gradually experience less anxiety from obsessive thoughts and are able to resist the compulsive urges.
- While there have been more studies with adults than children, studies of response prevention have found it to be quite effective for the those who complete therapy.

Response Prevention: A Case Illustration

- An early child case example (Stanley, 1980) involved treatment of an 8 year-old girl whose ritualistic behavior and obsessional checking severely restricted her every day activities.
 - Had to fluff pillows 3 times before undressing at night.
 - Bed covers had to be placed so that the fringes only just touched the floor all the way around,
 - At night, after removing her shoes, she banged them them on the floor upside down – the right side up three times and then placed them parallel under the bed,
 - She went to the toilet 3 times before going to bed,
 - and woke up at night to carry out these same rituals.

Response Prevention: Case Illustration

- All dressing was done 3 times (even after going to the toilet).
- Toys had to be checked and re-checked before leaving the room where they were kept.
- Before carrying out each of these rituals she had to sing a specific nursery rhyme.
- These behaviors occurred every day and consumed a great deal of her time, making it impossible for her to engage in other activities.

Response Prevention: Approach to Treatment

- In treatment, parents and other family members were encouraged **not to reinforce** any compulsive behavior.
- Response prevention involved working with the girl and parents and arranging for her to be **prevented** from engaging in any of her ritualistic behaviors more than one time.
- This was followed by developing a **graded** series of situations that tended to elicit compulsive behavior.
- These were graded in terms of their “upset value” for the girl.

Response Prevention: Approach to Treatment

- These situations were presented in graded order, beginning with the mildest situation first.
- They then moved on to those where she might become very upset if she could not carry out her compulsions.
- In each situation, parents prevented her from carrying out the compulsive behavior –
- Hence the term “Response Prevention”.

Response Prevention: Outcome

- These procedures were quite successful.
- Symptoms disappeared after 2 weeks of treatment and there was no recurrence of compulsive behavior at 1-year follow-up.
- Extinction is probably largely responsible for the decrease in compulsive behavior and the reduction in anxiety associated with this procedure.
- While seemingly effective for dealing with compulsions, it may be more difficult to apply it to obsessional behavior.

Behavioral Treatment

- There is evidence that the effects of behavior therapy endure after treatment has ended.
- For example, an early review of outcome studies by Foa & Kozak (1996) found that, of 300+ patients treated by exposure and response prevention, approximately 76 % showed clinically significant relief from symptoms 3 months to 6 years after treatment.
- Studies have also found that incorporating follow-up sessions after the completion of therapy contributes to the maintenance of treatment effects (Hiss, Foa, and Kozak, 1994).

Cognitive Behavioral Treatment

- Cognitive behavior therapy involves a structured approach for teaching family members how to respond to symptoms.
- Major elements of CBT are exposure and response prevention.
- Another major element is teaching objective thinking strategies.
- Here the child is trained to identify and correct anxiety provoking cognitions.

Cognitive Behavioral Treatment

- Cognitive behavior strategies are most useful with somewhat older children.
- Here these strategies are designed to provide children with objective ways to “talk back” to anxiety provoking obsessions that relate to compulsive behavior.
- A major focus is on helping the child reframe their thoughts and learn coping statements to deal with the cognitive aspects of this anxiety-related disorder.

Cognitive Behavioral Treatment

- Such cognitive behavioral treatment has been shown to be highly successful in modifying childhood OCD.
- The University of Florida has an Intensive outpatient OCT treatment program.
- Programs allow families to temporarily relocate to Gainesville for several weeks to receive CBT treatment and pharmacological treatment.
- Studies have shown that when compared to medication alone, CBT tends to be more effective than medication used in isolation (Storch, 2007).

OCD: Drug Treatments

- Clinical trials have shown that drugs that impact on serotonin can significantly decrease OCD symptoms.
- Examples of these SRIs include the following;
 - **clomipramine (Anafranil)**
 - **flouxetine (Prozac),**
 - **fluvoxamine (Luvox),**
 - **Paroxetine (Paxil)**
 - **sertraline (Zoloft).**
- Studies have shown that more than 3/4 of patients are helped by these medications to some degree.
- In more than $\frac{1}{2}$, medications relieve symptoms by diminishing the frequency and intensity of the obsessions and compulsions.
- Side effects can be an issue (Weight gain, dry mouth, nausea, diarrhea)

OCD Treatment

- Antibiotic therapy can also be useful in cases where OCD is linked to streptococcal infection.
- Again, it should be emphasized that the most effective treatment is likely to be one that involves both pharmacological and behavioral approaches to intervention.

(POTS I)

Predictors and Moderators of Treatment Outcome in the Pediatric Obsessive Compulsive Treatment Study

Marrs Garcia, Ph.D., Jeffrey J. Sapyta, Ph.D., Phoebe S. Moore, et al
JOURNAL OF THE AMERICAN ACADEMY OF CHILD & ADOLESCENT PSYCHIATRY
1024 www.jaacap.org VOLUME 49 NUMBER 10 OCTOBER 2010

Objective: To identify predictors and moderators of outcome in the first Pediatric OCD Treatment Study (POTS I) among youth (N = 112)

Randomly assigned to

1. sertraline
2. cognitive
3. behavioral therapy (CBT)
4. both sertraline and CBT (COMB)
5. or a pill placebo

Method:

Potential baseline preOutcome measure adjusted week 12 predicted score for the Children's Yale Brown Obsessive Compulsive Scale (CY-BOCS).

POTS I

Results and Conclusions

Youth with

1. Lower obsessive-compulsive disorder (OCD) severity
2. Less OCD-related functional impairment,
3. Greater insight
4. Fewer comorbid externalizing symptoms
5. Lower levels of family accommodation showed **greater improvement**

across treatment conditions than their counterparts after acute POTS treatment

Youth with

1. If family history of OCD – more than a ***sixfold decrease in effect size in CBT*** monotherapy compared to youth without family history of OCD

Conclusions:

1. Need to build *optimized intervention strategies* for more ***complex youth*** with OCD.
2. Youth with a *family history of OCD* ***not likely to benefit from CBT unless offered in combination with an SSRI.***

The Pediatric OCD Treatment Study (POTS)

- Most extensive study of pediatric OCD
- 4 treatment arms over a 12-week period:
 - 1) CBT-alone
 - 2) Sertraline-alone
 - 3) CBT & Sertraline
 - 4) Placebo
- **All 3 treatment arms** were found to be **superior to placebo**
- #1 Combined treatment was superior to either CBT or sertraline alone.
- Remission rates were 53.6% for the combined group
- CBT only group 39%
- Sertraline only group 21%
- Placebo group 4%

N-Acetylcysteine (NAC)

- Selective serotonin reuptake inhibitors (SSRIs) are effective for obsessive-compulsive disorder (OCD)
- Many patients fail to respond adequately
- Few evidence-based second-step options (largely, augmentation with antipsychotics).
- Investigators in Iran randomized 48 patients with treatment-refractory OCD (Yale-Brown Obsessive Compulsive Scale [Y-BOCS] scores, ≥ 16 after 12 weeks of SSRI or clomipramine) to 12 weeks of continued antidepressant plus the glutamatergic modulator N-acetylcysteine (NAC; 600–2400 mg/day) or placebo.

N-Acetylcysteine for Refractory OCD

N-acetylcysteine add-on treatment in refractory obsessive-compulsive disorder: A randomized, double-blind, placebo-controlled

NAC-

1. Derivative of cysteine
2. With glutamate-modulating properties,
3. Provides modest benefits to patients who are symptomatic after an initial antidepressant trial

Results

- Response ($\geq 35\%$ reduction in Y-BOCS score) was significantly greater with NAC (53%) than placebo (15%).
- NAC was well tolerated, with modest adverse effects of diarrhea and nausea/vomiting in one third of patient

Findings

- Findings are consistent with results from multiple studies implicating glutamate in the pathophysiology of OCD via cortico-striato-thalamo-cortical circuitry
- Previous small randomized controlled trials showing efficacy of N-acetylcysteine in related OCD-spectrum conditions such as pathological gambling and trichotillomania.
- The low placebo response rate is consistent with treatment resistance and validates the treatment-refractory nature of the studied population.

What is Life Like for Children and Teens Who Have OCD?

• **Disrupted Routines:** OCD can make daily life very difficult and stressful for kids and teens. In the morning, they feel they *must* do their rituals right, or the rest of the day will not go well. In the evenings, they must finish all of their compulsive rituals before they go to bed. Some kids and teens even stay up late because of their OCD, and are often exhausted the following day.

Problems at School: OCD can affect homework, attention in class, and school attendance. If this happens, you need to be an advocate for your child. It is your right under the Disabilities Education Act (IDEA) to ask for changes from the school that will help your child succeed.

Physical Complaints: Stress, poor nutrition, and/or the loss of sleep can make children physically ill.



- **Social Relationships:** The stress of hiding their rituals from peers, times spent with obsessions and compulsions, and how their friends react to their OCD-related behaviors can all affect friendships.

Problems with Self-Esteem :Kids and teens worry that they are "crazy" because their thinking is different than their friends and family. Their self-esteem can be negatively affected because the OCD has led to embarrassment or has made them feel "bizarre" or "out of control."

Anger Management Problems: Parents might become unwilling (or are unable!) to comply with the child's OCD-related demands. Even when parents set reasonable limits, kids and teens with OCD can become anxious and angry.

Additional Mental Health Problems: Kids and teens with OCD are more likely to have additional mental health problems than those who do not have the disorder

By S. Evelyn Stewart, M.D.

Assistant Professor of Psychiatry, Harvard Medical School

International OCD Foundation Scientific Advisory Board

Pediatric Symptom Checklist

- FREE (e.g. Bright Futures website)
- Parent and youth version, ages: 4-16
- Simple to score and interpret
- Helps identify those in need of further mental health evaluation and intervention
 - 2/3 with positive score will have moderate to serious mental health problem
 - 6-16 yrs: positive ≥ 28
 - 4-5 yrs: positive ≥ 24
- Helps to screen out those not in need
 - 95% accurate
- Does not provide a diagnosis

SCARED

- Screen for Child Anxiety Related Disorders
- FREE (schoolpsychiatry.org)
- Age 8+; parent and youth versions
- 5 minutes to fill out
- Scoring easy but needs a few minutes, interpretation fairly straightforward
 - Still need a comprehensive evaluation
- Five factors that suggest specific, mostly DSM anxiety disorders: GAD, Separation Anxiety, Social Anxiety, School Avoidance
- PTSD and OCD are not screened

Resources - Web-based

Websites:

1. Anxiety Disorders Association of America, www.adaa.org
2. Children's Center for OCD and Anxiety, www.worrywisekids.org
3. Child Anxiety Network, [www.childanxiety.net/Anxiety Disorders.htm](http://www.childanxiety.net/Anxiety_Disorders.htm)
4. American Academy of Child and Adolescent Psychiatry, facts for families on anxiety, [www.aacap.org/cs/root/facts for families?the anxious child](http://www.aacap.org/cs/root/facts_for_families?the_anxious_child)
5. US Department of Health, <http://mentalhealth.samhsa.gov/publications/allpubs/CA-0007/default.asp>
6. Bright Futures www.brightfutures.org
7. School Psychiatry www.massgeneral.org/schoolpsychiatry/
8. American Association of Child and Adolescent Psychiatry
www.aacap.org
Facts for Families-includes brief handout about what to expect from a child psychiatry evaluation
9. School Psychology http://www.schoolpsychology.net/p_01.html

References

- Marris Garcia, et al (2010). Predictors and Moderators of Treatment Outcome in the Pediatric Obsessive Compulsive Treatment Study (POTS I). **Journal of the American Academy of Child & Adolescent Psychiatry** p. 1024 www.jaacap.org **VOLUME 49 NUMBER 10**
- **S. Evelyn Stewart, M.D.**
Assistant Professor of Psychiatry, Harvard Medical School
International OCD Foundation Scientific Advisory Board

References (cont'd.)

- Clinical Trials Registration Information – Treatment of Obsessive Compulsive Disorder (OCD) in Children,
- <http://www.clinicaltrials.gov>, NCT00000384. J. Am. Acad. Child Adolesc. Psychiatry, 2010;
- 49(10):1024 –1033.