Understanding Obsessive-Compulsive Disorder in Students with Autism Spectrum Disorder

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Presentation Overview

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Autism Spectrum Disorder: Historical Perspective
Autism: Historical Perspective

- First described by Dr. Leo Kanner in 1943
- Publication of ‘Autistic Disturbance of Affective Contact’
- Originally called ‘Infantile Autism’, the diagnosis later became known as Autism
- One case study of a child named Donald noted:

  The child was “happiest when he was alone... drawing into a shell and living within himself... oblivious to everything around him.” Donald had a mania for spinning toys, liked to shake his head from side to side and spin himself around in circles, and he had temper tantrums when his routine was disrupted.

When Kanner met Donald, his suspicions were confirmed. In addition to the symptoms the letter described, Kanner noted Donald’s explosive, seemingly irrelevant use of words. Donald referred to himself in the third person, repeated words and phrases spoken to him, and communicated his own desires by attributing them to others.
Autism: Historical Perspective

In his 1943 report, Kanner described the clinical features of autism:

- Stereotypic movements, including hand gestures and head movements
- Repetitive speech/Self-talk
- Scripted language
- Self-reference in the third-person
- Echolalia
- Marked rigidity with daily routines

Autism: Historical Perspective

In a letter to Dr. Kanner, Don’s mother stated:

“Don is still indifferent to much that is around him. His interests change often, but always his absorbed in some kind of silly, unrelated subject. His literal-mindedness is still very marked, he wants to spell words as the sound and to pronounce letters consistently. Recently, I have been able to have Don do a few chores around the place to earn picture show money.

He really enjoys the movies now, but not with any idea of a connected story. He remembers them in the order in which he sees them. Another of his recent hobbies is with old issues of Time magazine. He found a copy of the first issue of March 3, 1923, and has attempted to make a list of the dates of publication of each issue since that time. So far he has gotten to April, 1934. He has figured the number of issues in a volume and similar nonsense.”

Autism: Historical Perspective

- Asperger’s syndrome was named after Austrian pediatrician, Hans Asperger
- Based on the clinical characterization of pediatric cases
- Chronologically concurrent with the similar works for Leo Kanner in Autism
- Early observations noted:
  - Socially odd, naïve, inappropriate, detached
  - Markedly egocentric, highly sensitive to criticism
  - Poor non-verbal communication, monotone and peculiar voice intonation
  - Deep interest in limited range of subjects
  - Difficulty learning by traditional means, despite seemingly normal intelligence
  - Poor motor coordination
  - Lacking common sense

Autism: Historical Perspective

Based on his case study observations, Dr. Asperger hypothesized:

- Affected children failed to assimilate to the automatic routines of daily life.
- Followed their own spontaneous interests regardless of environmental constraints.
- Parents often did not note any abnormalities until age 3 or sometimes not even until grade school.
- He felt that these traits were lifelong, but did not impede success or adaptation into a “niche.”
- Some of the children he followed into adulthood became quite successful and one won the Nobel Prize in Astronomy.

Diagnostic Criteria: Autism

A. **Persistent deficits in social communication and social interaction** across multiple contexts, as manifested by the following, currently or by history (examples are illustrative, not exhaustive, see text):
1. Deficits in **social-emotional reciprocity**, ranging, for example, from abnormal social approach and failure of normal back-and-forth conversation; to reduced sharing of interests, emotions, or affect; to failure to initiate or respond to social interactions.
2. Deficits in **nonverbal communicative behaviors** used for social interaction, ranging, for example, from poorly integrated verbal and nonverbal communication; to abnormalities in eye contact and body language or deficits in understanding and use of gestures; to a total lack of facial expressions and nonverbal communication.
3. Deficits in **developing, maintaining, and understanding relationships**, ranging, for example, from difficulties adjusting behavior to suit various social contexts; to difficulties in sharing imaginative paly or in making friends; to absence of interest in peers.

B. **Restricted, repetitive patterns of behavior**, interests, or activities, as manifested by at least two of the following, currently or by history (examples are illustrative, not exhaustive; see text):
1. **Stereotyped or repetitive motor movements**, use of objects, or speech (e.g., simple motor stereotypies, lining up toys or flipping objects, echolalia, idiosyncratic phrases).
2. **Insistence on sameness, inflexible adherence to routines, or ritualized patterns or verbal nonverbal behavior** (e.g., extreme distress at small changes, difficulties with transitions, rigid thinking patterns, greeting rituals, need to take same route or eat food every day).
3. **Highly restricted, fixated interests** that are abnormal in intensity or focus (e.g., strong attachment to or preoccupation with unusual objects, excessively circumscribed or perseverative interest).
4. **Hyper- or hyporeactivity to sensory input or unusual interests in sensory aspects of the environment** (e.g., apparent indifference to pain/temperature, adverse response to specific sounds or textures, excessive smelling or touching of objects, visual fascination with lights or movement).

http://www.cdc.gov/ncbddd/autism/hcp-dsm.html
Diagnostic Criteria: Autism

C. **Symptoms must be present in the early developmental period** (but may not become fully manifest until social demands exceed limited capacities, or may be masked by learned strategies in later life).

D. **Symptoms cause clinically significant impairment in social, occupational, or other important areas of current functioning.**

E. These disturbances are not better explained by intellectual disability (intellectual developmental disorder) or global developmental delay. Intellectual disability and autism spectrum disorder frequently co-occur; to make comorbid diagnoses of autism spectrum disorder and intellectual disability, social communication should be below that expected for general developmental level.

**Note:** Individuals with a well-established DSM-IV diagnosis of autistic disorder, Asperger’s disorder, or pervasive developmental disorder not otherwise specified should be given the diagnosis of autism spectrum disorder. Individuals who have marked deficits in social communication, but whose symptoms do not otherwise meet criteria for autism spectrum disorder, should be evaluated for social (pragmatic) communication disorder.

**Specify if:**
- With or without accompanying intellectual impairment
- With or without accompanying language impairment
- Associated with a known medical or genetic condition or environmental factor

http://www.cdc.gov/ncbddd/autism/hcp-dsm.html
Diagnostic Criteria: Autism

Severity level

Level 3
"Requiring very substantial support"

Social communication

**Severe deficits** in verbal and nonverbal social communication skills cause severe impairments in functioning, very limited initiation of social interactions, and minimal response to social overtures from others. For example, a person with few words of intelligible speech who rarely initiates interaction and, when he or she does, makes unusual approaches to meet needs only and responds to only very direct social approaches.

Restricted, repetitive behaviors

Inflexibility of behavior, extreme difficulty coping with change, or other restricted/repetitive behaviors **markedly interfere** with functioning in all spheres. **Great distress/difficulty** changing focus or action.

Level 2
"Requiring substantial support"

Social communication

**Marked deficits** in verbal and nonverbal social communication skills; social impairments apparent even with supports in place; limited initiation of social interactions; and reduced or abnormal responses to social overtures from others. For example, a person who speaks simple sentences, whose interaction is limited to narrow special interests, and how has markedly odd nonverbal communication.

Restricted, repetitive behaviors

Inflexibility of behavior, difficulty coping with change, or other restricted/repetitive behaviors appear frequently enough to be obvious to the casual observer and interfere with functioning in a variety of contexts. **Distress and/or difficulty** changing focus or action.

Level 1
"Requiring support"

Social communication

Without supports in place, deficits in social communication cause noticeable impairments. Difficulty initiating social interactions, and clear examples of atypical or unsuccessful response to social overtures of others. May appear to have decreased interest in social interactions. For example, a person who is able to speak in full sentences and engages in communication but whose to-and-fro conversation with others fails, and whose attempts to make friends are odd and typically unsuccessful.

Restricted, repetitive behaviors

Inflexibility of behavior causes significant interference with functioning in one or more contexts. **Difficulty** switching between activities. Problems of organization and planning hamper independence.

http://www.cdc.gov/ncbddd/autism/hcp-dsm.html
Understanding the term “spectrum”
Understanding the term “spectrum”

OCD and comorbid disorders
Brain Development in the ASD Population
Clinical Background: Etiology

- From the time the brain starts growing *in utero* to two years of age, brain development is concentrated on the right side.

- Right brain deficiency is more common than left brain deficiency.

- Risk factors for suboptimal right brain development include:
  - Prenatal complications
  - Difficult birth
  - Environmental adversity during first two years
  - Illness during first two years

Clinical Background: Etiology

Functional aspects of right brain

- Posture, gait, balance, spatial awareness (proprioception)
- Nonverbal communication
- Emotional regulation and interpretation of emotions of others (EQ)
- Emotional sensory input from insula cortex (gut, heart, lungs) that enable the “feeling” associated with emotions
- Empathy
- Sense of smell, taste, auditory interpretation
- Avoidance, fear, anger, disgust
- Attention, impulse control, inhibition
- Regulation of immune system - inhibits and prevents body from overreacting
- Digestion and heartbeat

Clinical Background: Etiology

Clinical presentation of right brain deficiency:

- Poor muscle tone, posture, spatial awareness, odd gait
- Delayed and poor gross motor skills
- Odd social skills, saying inappropriate things without realizing
  - Picky eaters- don’t like foods most neurotypical kids like
  - Good at reading words, but not at interpreting them
  - Good with numbers, but struggle with higher level abstraction
  - Poor attention, impulsive, anxious, and compulsive
- Environmental & somatic complications:
  - Asthma
  - Food sensitivities/allergies
  - Poor digestion
  - Rapid heartbeat

Clinical Background: Etiology

Diagnoses associated with right brain deficiency:

- ADHD/ADD
- Autism Spectrum Disorder
- Tourette’s Syndrome
- Obsessive Compulsive Disorder
- Oppositional Defiant Disorder
- Developmental Coordination Disorder
- Conduct Disorder

Clinical Background: Etiology

Functional aspects of left brain:

- Fine motor skills
- Control of throat muscles that enable speech
- Translation of sounds of letters/syllables into language
- Reading/writing/speaking interpretation
- Conscious thoughts (talking to yourself)
- Linear and logical functions (math, interpreting a book)
- Pattern recognition, what comes next, video games
- Verbal intelligence and IQ
- Loves repetition, doesn’t like new things
- Activation of immune system

Clinical Background: Etiology

Clinical presentation of left brain deficiency:

- Shyness, withdrawn behaviors
- Lack of motivation
- Poor language skills
- Problems with reading/spelling
- Trouble understanding math
- Poor handwriting
- Concerned with their look and dress
- May be popular kids, who show leadership abilities
- Prone to chronic infections like colds, ear infections
- May have irregular heartbeat
Clinical Background: Etiology

Diagnoses associated with left brain deficiency

- Dyslexia
- Processing disorders
- Central auditory processing disorder
- Dyspraxia (poor motor skills)
- Dysgraphia (poor handwriting)
- Learning disability
- Language disorder
- Reading disorder
- Acalculia (poor calculating skills)
- Selective mutism

Physiological Responses
Physiological Responses

Stress response in ASD:
Research examining the physiological stress response in individuals with autism has revealed several interesting findings.

First, brain imaging studies of individuals with autism have shown variations in the **amygdala** volume and possible correlations with nonverbal social impairments and anxiety. The **amygdala** is the portion of the brain that assists with perceived threats.

Physiological Responses

Second, researchers have found that levels of endorphins and adrenocorticotropic hormone (ACTH) are significantly higher in individuals with autism than in individuals with intellectual delays or typically developing peers.

This finding suggests a heightened response to stress. In another study, individuals with autism showed more variations in their levels of cortisol throughout the day.

Physiological Responses

Finally, cortisol levels of children with autism in integrated settings were higher than those of their peers without autism, indicating perhaps that the integrated environment was more stressful for them than for their peers.

Although small increases in cortisol have a positive effect and provide quick energy, heightened memory, increased immunity, and lower sensitivity to pain, an overly responsive system can lead to anxiety.

Behavioral Responses
Behavioral Responses

**Phenotype**: The scientific term for how something “looks.”

**Topography**: The behavior analytic term for the form or “look” of a certain behavior.

It is important to note that anxiety has both internalized and externalized processes and behavioral topographies may differ across subjects. Examples include:

1. Fear
2. Anger
3. Irritability
4. Isolation/Withdrawal
5. Fatigue
BF Skinner is one of the founding fathers of the science of human behavior. He founded the Experimental Analysis of Behavior and proposed the foundation of what became the current field of Applied Behavior Analysis (ABA).

Skinner proposed that human emotion, aversion, avoidance and anxiety all serve as factors that contribute the behaviors of individuals. The internal experience of these processes evoke behaviors that cause adaptive challenges for the individual.

Behavioral Responses

Behavior is purposeful. When we see an individual engaging in problem behavior, the intent is some interaction with the environment that will yield a response.

When a child is facing anxiety or OCD symptoms, the maintaining variable is often escape:

- Specific fear/phobia (e.g. germs)
- Need for sameness or control of the environment
- Mental distress of an illogical nature (sometimes hard for the child to articulate)
Behavioral Responses

The distress associated with an intrusive and repetitive OCD thought (obsession) will require the individual to engage in a behavior or ritual (compulsion) to relieve the distress.

This behavior is often done with high levels of anxiety until the person achieves some degree of relief or escape. This is sharply contrasted to stereotypic movements associated in ASD, which do not have the associated distress.
Assessment & Intervention
Epidemiology of ASD

Prevalence

• About 1 in 68 children has been identified with autism spectrum disorder (ASD) according to estimates from CDC's Autism and Developmental Disabilities Monitoring (ADDM) Network.

• ASD is reported to occur in all racial, ethnic, and socioeconomic groups. ASD is almost 5 times more common among boys (1 in 42) than among girls (1 in 189).

• Studies in Asia, Europe, and North America have identified individuals with ASD with an average prevalence of about 1%.

http://www.cdc.gov/ncbddd/autism/data.html
## Identified Prevalence of Autism Spectrum Disorder

**ADDM Network 2000-2008**  
Combining Data from All Sites

<table>
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<tr>
<th>Surveillance Year</th>
<th>Birth Year</th>
<th>Number of ADDM Sites Reporting</th>
<th>Prevalence per 1,000 Children (Range)</th>
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<td>2002</td>
<td>11</td>
<td>14.7 (5.7 – 21.9)</td>
<td>1 in 68</td>
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</table>

Epidemiology of OCD

Obsessive-compulsive disorder (OCD) is characterized by distressing, intrusive obsessive thoughts and/or repetitive compulsive physical or mental acts. Once believed to be rare, OCD was found to have a lifetime prevalence of 2.5%
Diagnostic Criteria: OCD

The American Psychiatric Association defines OCD as the presence of obsessions, compulsions, or both. Obsessions are defined by (1) and (2) as follows:

• Recurrent and persistent thoughts, urges, or images that are experienced, at some time during the disturbance, as intrusive and unwanted, and cause marked anxiety and distress
• The person attempts to suppress or ignore such thoughts, impulses, or images or to neutralize them with some other thought or action

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

• Repetitive behaviors (e.g., hand washing, ordering, checking) or mental acts (e.g., praying, counting, repeating words silently) in response to an obsession or according to rules that must be applied rigidly
• 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 way that could realistically neutralize or prevent whatever they are meant to address, or they are clearly excessive

Assessment of Pediatric OCD

To fully understand the clinical presentation and to develop an individualized treatment plan, we must assess:

- **Obsessions & Compulsions**
  - Frequency
  - Duration
  - Severity

- **Interference**
  - School
  - Home
  - Relationships

Assessment of Pediatric OCD

Categories of assessment include:

**Obsessions**
- Contamination Concerns
- Aggressive Obsessions
- Sexual Obsessions
- Hoarding/Saving
- Magical Thoughts/Superstition
- Somatic
- Religious
- Miscellaneous Obsessions
  - Need to know/remember
  - Fear of saying certain things
  - Intrusive images
  - Intrusive sounds, music, numbers


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Assessment of Pediatric OCD

Categories of assessment include:

**Compulsions**
- Washing/Cleaning
- Checking
- Repeating Rituals
- Counting
- Ordering/Arranging
- Hoarding/Saving
- Superstitious Behaviors
- Rituals involving other people
- Miscellaneous compulsions
  - Mental rituals
  - Need to tell, ask, or confess
  - Ritualized eating behaviors
  - Trichotillomania

Assessment of Pediatric OCD

Stereotypic behavior vs. OCD

- Stereotypic behavior has a repetitive nature to its presentation, but should not be confused with OCD.

- OCD should be regarded as having:
  - Intrusive thoughts that occur against one’s will
  - Cause marked distress
  - Compel the individual to perform some behavior to relieve their distress

- Stereotypic behavior is often not meeting these criteria and is generally not associated with the same level of distress.
Assessment of Pediatric OCD

Stereotypic behavior vs. OCD

- Some children have repetitive questions
  - They are looking for reassurance
  - Occurs frequently when in doubt/stress
  - Limbic system activation; “fight or flight”
- Environment and thoughts in competition
  - Comfort from escape vs. reinforcement
  - Feeling vulnerable or threatened
Behavioral Treatment of OCD
Behavioral Treatment of OCD

Cognitive Behavioral Therapy (CBT)
• Exposure and Response Prevention (ERP)
• Mindfulness-Based CBT

Applied Behavior Analysis (ABA)
• Escape Extinction
• Response Blocking/Incompatible Behaviors
• Behavior Shaping

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Behavioral Treatment of OCD

Cognitive Behavioral Therapy (CBT)
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Applied Behavior Analysis (ABA)
- Escape Extinction
- Response Blocking/Incompatible Behaviors
- Behavior Shaping
Exposure and Response Prevention (ERP) Therapy

- CBT is made up of many different kinds of therapies. The most important therapy in CBT for OCD is called “Exposure and Response Prevention” (ERP)

- The “Exposure” in ERP refers to confronting the thoughts images objects and situations that make a person with OCD anxious

- The “Response Prevention” in ERP refers to making a choice not to do a compulsive behavior after coming into contact with the things that make a person with OCD anxious

http://iocdf.org/about-ocd/treatment/cbt/
Exposure and Response Prevention (ERP) Therapy

• This strategy may not sound right to most people. Those with OCD have probably confronted their obsessions many times and tried to stop themselves from doing their compulsive behavior only to see their anxiety skyrocket.

• With ERP a person has to make the commitment to not give in and do the compulsive behavior until they notice a drop in their anxiety. In fact it is best if the person stays committed to not doing the compulsive behavior at all. The natural drop in anxiety that happens when you stay “exposed” and “prevent” the “response” is called habituation.

http://iocdf.org/about-ocd/treatment/cbt/
Exposure and Response Prevention (ERP) Therapy

Great, but how does this work with kids?

• Bridging strategies between ERP and ABA
• Using schedules of reinforcement
• Shaping “successive approximations” of target behavior
• Tracking data
• Going at the right pace is essential!
Exposure and Response Prevention (ERP) Therapy

• One of the first steps in treatment is the development of the hierarchy

• This is the ordered listing of triggers/behaviors from least- to most-distressing

• The hierarchy serves as the roadmap for treatment and relies on data collection & practice
Exposure and Response Prevention (ERP) Therapy

- The hierarchy uses **subjective units of distress (SUD)** as its measurement unit
- This is usually 0-10 or 0-100, where zero means no distress and the highest number represents the maximum level of stress imaginable (e.g. call 911)

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<td>Scary stuff on TV</td>
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<td>Hearing about death</td>
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Exposure and Response Prevention (ERP) Therapy

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Exposure and Response Prevention (ERP) Therapy

- Exposure practice and data collection are discussed and explained by the therapist
- Data can be graphed to show incremental progress and can be useful for other treatment professionals to review overall progress

Graph showing progress over time in various areas such as suspicious food, touching sticky things, bugs, negative self-statements, zombies, being alone, scary stuff on TV, and hearing about death.
Exposure and Response Prevention (ERP) Therapy

The use of reinforcement is an effective way to shape and maintain desired behaviors

• Addition of some desired tangible item (e.g. edibles, money)

• Access to a preferred activity

• Accumulation of tokens

• Points towards an event/outing
Exposure and Response Prevention (ERP) Therapy

Different forms of exposure are developed, depending on the trigger

• Fear of heights

• Fear of flying

• Imaginary/superstitious rituals

• Physiological responses (e.g. Emetophobia)

• Depersonalization
Exposure and Response Prevention (ERP) Therapy

Extinction refers to the gradual fading of undesired behaviors

- It is possible that the behaviors recede towards low levels, but still may be present
- Extinction bursts, or sudden re-emergence of old behavior patterns are not uncommon
- Staying the course with exposure therapy is the recommended intervention
Conclusion: Take Away Messages

• OCD is a significant component in the ASD spectrum and requires a very specific intervention
• Understanding the developmental trajectory of the student is imperative, as treatment will need to tailored to the individuals abilities
• ERP is the gold-standard treatment for OCD and when combined with elements of ABA, it can be efficacious
THANK YOU!

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