Autism Spectrum Disorder in School Aged Children: Assessment and Management

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Learning Objectives

- At the end of this presentation, the learner will be able to
  - Use DSM-5 criteria to identify children with possible ASD
  - Distinguish ASD from other related conditions
  - Identify potential comorbidities in youth with ASD
  - Identify evidenced based treatments for ASD
ASD Identification
Person First Language?

- **Individual with ASD**: Person first language emphasizes the value of the person
  - Often preferred by parents
  - Similar to other disease models (cancer)

- **ASD individual**: Identity first language recognizes ASD as an integral part of the person’s identity
  - Often preferred by self-advocates
  - “These are not qualities or conditions that I have. They are part of who I am. Being Autistic does not subtract from my value, worth, and dignity as a person. Being Autistic does not diminish the other aspects of my identity.”

DSM-5 Autism Spectrum Disorder

- Autism
- Childhood Disintegrative Disorder
- PDD-NOS
- Asperger’s Disorder
Social Communication Deficits

Restricted, Repetitive Behaviors

Autism Spectrum Disorder
ASD is a Syndrome\(^1\)

- \(^1\)A collection of symptoms that tend to occur together, typically without known cause.

Observations of multiple patients

Statistical analyses of large databases

\(^1\)A collection of symptoms that tend to occur together, typically without known cause.
ASD Exists on a Continuum

IQ < 40  Cognitive Functioning  IQ > 130
ASD Exists on a Continuum

aloof\textsuperscript{1} \hspace{1cm} Social Skills/Motivation \hspace{1cm} active but odd\textsuperscript{1}

ASD Exists on a Continuum

All consuming

RRBs

Present but not impairing
“Neurotypical” People Fall on a Spectrum Too

Clinical Pearl: Some children fall on the border between ASD and non-ASD (esp. those that are seen in psychiatry)
### Social Communication Skills (All 3 Must be Present)

<table>
<thead>
<tr>
<th>Social emotional reciprocity</th>
<th>Nonverbal communication</th>
<th>Social Relationships</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Unusual/absent social approach (hand as tool; invasive; only initiates around own needs and interests)</td>
<td>• Poor use of facial expressions, gestures, eye contact</td>
<td>• Prefers to play alone</td>
</tr>
<tr>
<td>• Unusual/absent social response (no response to name; cringes from affection)</td>
<td>• Poor understanding of nonverbal communication</td>
<td>• Difficulty understanding social rules</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Friendships tend to center on shared interests only</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Preference for younger/older children</td>
</tr>
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</table>
Restricted Repetitive Behaviors (2 of 4 Must Be Present)

**Repetitive Behavior**
- Speech (echolalia, pronoun reversal)
- Motor movements (flapping, spinning, tensing)
- Use of objects

**Routines & Rituals**
- Negative reaction to small changes
- “Stickiness” – can’t move from one thing to next
- Insistence on following specific routines

**Intense Interests**
- Excessive focus on one topic (Disney, Minecraft, trains)
- Unusual interests (vacuums, car models, letters)

**Sensory Differences**
- Negative reactions to normal stimuli/avoidance
- Excessive seeking of sensory input
- May affect sight, sound, touch, taste, smell, movement
Common Profiles for Later Identification (6+)

- **The mildly impaired child**
  - Symptoms present from early childhood but very low intensity
  - Symptoms become more obvious and interfering as social world becomes more complex

- **The passive child**
  - “Sweet”; no behavioral challenges; no “bell ringer” symptoms (e.g. hand flapping)
  - ASD symptoms are otherwise quite clear

- **Child with severe to profound cognitive delays**

- **Child with significant medical complexity**
  (or psychosocial complexity)

- **The ‘diagnostic whirlwind’**
  - Severe behavioral challenges from an early age
  - Diagnostic overshadowing by ODD/ ADHD/OCD/Anxiety/DMDD/Tics
Late Diagnosis Challenges

- Some individuals can learn to mimic gestures and conversational style of others; “masking”

- Diagnosis in girls
  - Core symptoms may manifest differently (e.g. obsessions with people rather than objects)
  - Assumption that girls with poor social skills are shy are “shy”

- Earlier rule-out evaluations may complicate the picture
  - Milder symptoms may not become problematic until social demands increase
Common Differential Diagnoses

- Social phobia
- Selective mutism
- ADHD/ODD
- Emerging thought disorder
- Mood disorder
- Intellectual Disability/Global Developmental Delay*
- Tourette Syndrome*
- Obsessive compulsive disorder*

Clinical Pearl: A "textbook presentation" of one disorder does not definitively rule out ASD (high rates of
ID VS. ASD

- Compare adaptive, cognitive and motor skills to social and communication skills
  - Social communication deficits > deficits in others domains
- Cognitive mental age vs. social milestones
  - Newborn - comforted by caregiver
  - 2 months - smiles at people; pays attention to faces
  - 4 months - imitates facial expressions
  - 5 months - initiates play
  - 6 months - recognizes strangers; recognizes name; responds to emotions
<table>
<thead>
<tr>
<th>Feature</th>
<th>Tics</th>
<th>Stereotyped Movements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Typical Onset</td>
<td>5-7</td>
<td>&lt;2</td>
</tr>
<tr>
<td>Common Movements</td>
<td>Blinking, grimacing, jerking</td>
<td>Waving, jiggling or posturing of hands and fingers</td>
</tr>
<tr>
<td>Rhythm</td>
<td>Quick, sudden, aimless</td>
<td>Rhythmic</td>
</tr>
<tr>
<td>Duration</td>
<td>Intermittent, short, abrupt</td>
<td>Intermittent, repeated, prolonged</td>
</tr>
<tr>
<td>Premonitory Urge</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Response to Treatment</td>
<td>Positive with neuroleptics and others; Habit reversal</td>
<td>Limited response to medication or behavior therapy</td>
</tr>
<tr>
<td>Reaction</td>
<td>Often accompanied by distress or discomfort</td>
<td>Often appears enjoyable</td>
</tr>
</tbody>
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## OCD vs. ASD

<table>
<thead>
<tr>
<th></th>
<th>OCD</th>
<th>ASD</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Common obsessions</strong></td>
<td>Aggression, sex, symmetry, <strong>somatic</strong></td>
<td>Hoarding, need to know/topics</td>
</tr>
<tr>
<td><strong>Emotional Response to obsessions</strong></td>
<td>Discomfort (intrusive, unwelcome)</td>
<td>Not bothered; often enjoyable</td>
</tr>
<tr>
<td><strong>Common compulsions</strong></td>
<td>Cleaning, checking, counting, <strong>repeating</strong></td>
<td>Repeat, order, hoard, touch</td>
</tr>
<tr>
<td><strong>Emotional Response to compulsions</strong></td>
<td>Engages in behavior to avoid anxiety</td>
<td>Finds pleasure in behavior</td>
</tr>
<tr>
<td><strong>Social deficits</strong></td>
<td>Mild (subclinical ASD common)</td>
<td>Significant</td>
</tr>
</tbody>
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High Risk for Comorbidities (69%-79% Lifetime Risk of at Least One)

- Irritability, tantrums, self injury (85%)
- Sleep disorders (50%-80%)
- Mood disorders
- Anxiety (14%-55%)
- Suicidal behavior
- Feeding disorders
- ADHD (37%-40%)
- Seizures (7%-10%)
- Intellectual Disability (31%)
- Learning Disabilities
- Language Disorders
- GI Disturbance
- Tics
- Catatonia (rare)
- Psychosis (rare) (1%-2%)

Source: Howes et al., 2018; Houghton, Ong, Bolognani (2017).
Systematic Approach to Psychiatric Assessment
I/PB in ASD: A practice pathway for pediatric psychiatry

Crisis Management

- Crisis begins at first sign of escalation (clearly defined)
- Consider whether parent needs individual therapy focusing on remaining calm in a crisis
- What to expect in ED
- Crisis management plan at home
  - Posted plan
  - Posted information for first responders
- Crisis management plan in the community
  - Handicap parking pass
  - Emergency supply of food, drink, change of clothing, calming items
  - Information cards for bystanders and/or first responders (many copies!)
Assessment

- History and onset of behavior? Sudden?
- When and where does the behavior happen? When does it not happen?
- Systematic assessment to determine tx targets
  - Parent
  - Teachers
  - Self?
  - Vanderbilt ADHD Scales (free)
  - Behavior Assessment System for Children, 3rd ed. (BASC-3)
  - Child Behavior Checklist (CBCL)
Address Current Medical Problems First!

- Pain (ear infection? headache?)
- Seizures
- Chronic issues such as allergies, constipation, GERD, etc.
- Routine dental care
- Vision/hearing
- Adolescent girls: menstrual discomfort and PMS symptoms
- Evaluate/manage sleep issues

Evaluation of Disruptive Behaviors

- Functional communication concerns
- Current psychosocial stressors (esp. change)
  - Maltreatment?
- Situational demands and reinforcement patterns
  - When and where is the behavior most and least likely?
  - What usually happens after the behavior?
- Setting Events
  - Hunger? Task demands outside skill level? Fatigue?
- Comorbidities
  - Anxiety, Depression, ADHD, OCD

Pharmacotherapy
Almost 50% of children with ASD* prescribed psychotropics in a given year (vs. 7.7% in general peds population)

Source: Madden et. al, 2017. *n=7901
Almost 50% of children with ASD* prescribed psychotropics in a given year (vs. 7.7% in general peds population)

- 30.2% ADHD medications (2/3 stimulants)
- 20.5% antipsychotics
- 17.8% antidepressants
- 10% mood stabilizers (primarily anticonvulsants)
- 4% benzodiazepines
- 3% anti-anxiety
- 0.2% hypnotics

Source: Madden et. al, 2017.
* n=7901
Psychopharmacology

- No treatment for core ASD symptoms
  - Several in early stages of testing

  - Dopamine receptor blockers may also decrease lethargy, social withdrawal, hyperactivity, stereotyped movements, and obsessive behaviors
## Evidence for Other Medication Classes

<table>
<thead>
<tr>
<th>Class</th>
<th>Evidence</th>
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</table>
| **SSRIs**                                  | Mixed evidence for reducing repetitive behaviors (very limited success in children)  
No support for treating anxiety or OCD  
Widely prescribed for depression in ASD but no rigorous trials |
| **Methylphenidate**                        | Clearly effective for ADHD  
BUT perhaps less so (and with greater side effects) than in children without ASD |
| **Atomoxetine**                            | Similar effect sizes to methylphenidate for hyperactivity                 |
| **Alpha-2 A Receptor Agonists (Clonidine, Guanfacine)** | Similar effect sizes to methylphenidate for hyperactivity |
| **Melatonin**                              | Improved sleep duration and onset  
Little impact on middle of the night/early morning awakenings  
Improved efficacy with addition of CBT |
## British Association for Psychopharmacology Consensus Recommendations

<table>
<thead>
<tr>
<th>Symptom</th>
<th>Approach</th>
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<tbody>
<tr>
<td>Mood Disorders</td>
<td>SSRIs</td>
</tr>
<tr>
<td>Anxiety</td>
<td>1) SSRI; 2) Risperidone</td>
</tr>
<tr>
<td>Sleep</td>
<td>Melatonin with behavioral intervention</td>
</tr>
<tr>
<td>Irritability</td>
<td>1) Behavioral intervention; 2) risperidone or aripiprazole</td>
</tr>
<tr>
<td>ADHD</td>
<td>1) Methylphenidate; 2) atomoxetine or alpha-2A receptor agonist</td>
</tr>
</tbody>
</table>

Module: Pharmacotherapy

Source: Howes et al., 2019.
Up and Coming?

- Some positive data
  - Atypical antipsychotics
  - Oxytocin
  - Several companies have drugs for core symptoms in various stages of clinical trials (e.g. Roche)

- Not looking good
  - Arbaclofen
  - Amantadine
Evidenced-based Treatments (Non-pharmacological)
Established Treatments (Non-Pharmacological)

- Behavioral Interventions
- Comprehensive Behavioral Treatment for Young Children*
- Cognitive behavioral intervention package*
- Language Training (production)
- Joint Attention Training*
- Modeling
- Naturalistic Teaching Strategies
- Parent Training*
- Peer Training
- Pivotal Response Treatment
- Scripting
- Schedules
- Self-management
- Social Skills*
- Story-based Intervention

Cognitive Behavior Therapy (CBT)

- Overwhelming support for treatment of anxiety
  - Can also help depression, stress, anger, aggression, social skills deficits
- Children with average IQ/language
- Concrete behavioral strategies
- Challenging irrational beliefs
  - “I can’t control my own behavior”
- Work with the family is essential
Social Skills Interventions

- Short-term social gains in some children/adolescents
- But...limited generalization of isolated skill approaches
- Work best when the participant is motivated to learn and change
- UCLA PEERS*
  - 16 week programs for adolescents, young adults and preschoolers
  - Includes parent/partner and child sessions
  - Teaches concrete skills
    - Handling bullying, arranging get togethers, reading social cues, etc.

*Program for the Education and Enrichment of Relational Skills.
Behavioral Interventions

- Over 450 studies to support effectiveness
  - Joint Attention Intervention
  - Chaining
  - Differential Observing Response (DOR)
  - Forward Chaining
  - Function-based Intervention
  - Imitation Training
  - Reinforcement Schedule
  - Response Interruption and Redirection
  - Repeated Practice
  - Standard Echoic Training

www.polyoxo.com
Behavioral Interventions

- Can improve skills
  (social skills, language, motor, academic, self-help)
  - E.g. Premack principle or “grandma’s law”

- Can decrease problem behaviors
  (self injury, aggression, tantrums)
  - E.g. Functional Behavior Assessment
Functional Behavioral Assessment (FBA)*

- Assumes that behavior happens for a reason
  - Behaviors occur in response to an event (the antecedent)
  - Behaviors are a form of communication
  - Behaviors are made more or less likely by the response (the consequence)
  - Behaviors are made more or less likely by the context (hunger, change, signs)

- Take data to determine when and why a behavior is happening
  - Escape/avoidance of task demands?
  - Attention?
  - Automatic? Sensory seeking?

*Required in some cases by IDEA law.
Behavior Intervention Plan

Yelling, Profanity
Behavior Intervention Plan

Instruction(s) → Yelling, Profanity
Behavior Intervention Plan

Instructions → Yelling, Profanity → Removal from class
Behavior Intervention Plan

Instructions → Yelling, Profanity → Removal from class

Demands → Yelling, Profanity → Escape
Behavior Intervention Plan

- Developed based on results of the FBA

**Logical BIP**

- Modify difficulty/intensity of demands
- Visually pair demands with preferred tasks (task board; timer)
- Teach break requests
- Teach to make requests for help

**Instructions** → **Yelling, Profanity** → **Removal from class**

*Required in some cases by IDEA law.*
Complementary and Alternative Medicine

Slides (56-
Complementary Alternative Treatments

- Elimination diets (Gluten-free Casein-free, sugar free, removal of dyes/artificial ingredients)
- Probiotics
- Medical marijuana**
- CBD oil
- Dietary supplements

- Acupuncture
- Yoga
- Pet therapy
- Chiropractic care
- Hyperbaric oxygen treatments
- Chelation

**studies X X X
Recent Reviews

- Some emerging evidence for
  - Music therapy
  - Sensory integration therapy
  - Acupuncture
  - Massage
- Little evidence for other CAM interventions

Working with Families

- 28% of families use CAM treatments at any given time
- CAM usage most common among Caucasian, high SES families
- Remember to ask
  - Patients report not telling their doctors about CAM treatments
  - Trust is essential - don’t punish honesty
- Anecdotes are more salient than “research”
“It Can’t Hurt”

- Financial cost
- Time/energy/money diverted from other treatments
- Elimination diets can be particularly problematic
difficult already restrictive eaters
- Rarely, CAM interventions can be dangerous (e.g. chelation, supplements of unknown origins, etc.)
Teach Families to Conduct Their Own N=1 Studies

- Change 1 factor at a time
- Take objective data before, during and after
  - Keep it simple!
- Consider having a blind rater if feasible/safe
- Commit to evaluation after a certain time period
Recent Reviews of Evidence


