Understand Mental Health Needs and Challenging Behavior in Intellectual Disabilities & Autism Spectrum Disorders: 
Growing Up Uniquely

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How To Talk Bostonian......

▶ Cuber
  ▶ Island south of Florida; capital is Havanner.

▶ Foddy
  ▶ The numbah aftah thirdy-nine

▶ Blinkah
  ▶ Turning signal on your cahhh
  ▶ Rarely used in Massachusetts

▶ Wicked good
  ▶ We say this when we really like something!

▶ Sam Adams......

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A Bee-Ahh
Autism Spectrum Disorder

- Highly variable presentations with common features/challenges in...
  - Functional communication, with delayed or atypical speech development
  - Sometimes unusual pattern of speech (tone, volume, prosody) with repetitive speech and echolalia
  - Social cognition, social awareness and social-emotional communication challenges
  - Repetitive behaviors, sometimes a narrow range of interests
  - Executive deficits—even without ID
  - Atypical sensory profile, sensory sensitivities

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What Is Autism?

“Although diagnosed by virtue of the presence or absences of set behavioral indicators, autism is biologically based and arises from an altered trajectory of brain development that begins very early in ontogeny.”

- It is a NEURODEVELOPMENTAL disorder

- @ 10%-20% of younger sibs of children with ASD will themselves develop the disorder

Leo Kanner, 1943

- Described 11 Children
  - Difficulty relating to other people
  - Failed to use language to convey meaning
  - Obsessive desire for sameness
- Congenital - symptoms evident very early on, unlike schizophrenia
- Large head circumference in @ 50%
- Anxiety played a key role in behavior
- Unusual talents in some areas
Temple Grandin

▶ http://www.makers.com/temple-grandin
What is Autism?

“Autism spectrum disorder (ASD) and autism are both general terms for a group of complex disorders of brain development.”

- Autism Speaks has a lot of great info!
- https://www.autismspeaks.org/what-autism/learn-signs

- We now use the term and diagnosis of ASD as we learned that the older sub types were not reliable.

- People with an ASD may have more or less severe symptoms of the syndrome.
Revised criteria include only two symptom domains
- social-communication
- restricted repetitive interests and behaviors

Eliminates subtypes of ASD
- Focus on describing individual’s unique profile

Describes individual differences in severity in the 2 domains, re to:
- developmental levels
- chronological age
DSM-V
Developmental Referents

- Characteristics seen in most individuals with ASD across ages & skill:
  - unusual social use of gaze
  - less subtle socially directed facial expressions
  - limited or awkward gestures
Lord & Bishop, 2010

- Treatment needs do differ across individuals with ASD
  - More d/t degree individuals are affected by the disorder and affected by other disorders (including ID, communication-language disorders, ADHD, and disruptive behaviors) vs. by the subtype into which they happen to be categorized
How Common is Autism?

- U.S. Centers for Disease Control and Prevention (CDC)
- 1 in 68 American children -- on the autism spectrum in earlier reports
- Latest reports show increased rates
Estimated Autism Prevalence 2018

*Centers for Disease Control and Prevention (CDC) prevalence estimates are for 4 years prior to the report date (e.g., 2018 figures are from 2014).
Prevalence in ASD

- Boys - 4 x’s more likely to be diagnosed vs girls (1 in 37 versus 1 in 151) in 2014,
- Difference was narrower than in 2012, (boys 4.5 x’s > vs girls)
- “This appears to reflect improved identification of autism in girls - many of whom do not fit the stereotypical picture of autism seen in boys.”

What Causes Autism?

- No single cause
- A number of rare gene changes, or mutations are associated with ASD.
- “A small number of these are sufficient to cause autism by themselves.
- Most cases of autism, however, appear to be caused by a combination of autism risk genes and environmental factors influencing early brain development”
  - Before birth
ASD - How does it emerge?

- Core social communicative features emerge in the second year of life
- Not yet discernable at birth (or even in later infancy)
- But, also-Does not appear abruptly “as with the flip of a switch when a child reaches a certain age”
- “Multiple facets of vulnerability aggregate into the phenotype of ASD over time.”
Laura Pina-Camacho • Sonia Villero • David Fraguas • Leticia Boada • Joost Janssen • Francisco J. Navas-Sa´nchez • Maria Mayoral • Cloe Llorente • Celso Arango • Mara Parellada

“Functional MRI and DTI findings support the notion that the brains of patients with ASD share a global pattern of abnormal structural and functional connectivity and synchronization within different brain networks.”

► P 1331
Research Using Brain Imaging

- MRI >. early brain overgrowth reported by multiple independent research groups

- Children with ASD:
  - Greater white and gray matter volumes v neurotypical, ID
  - Head circumference data - ASD
    - >> head growth trajectory similar to typically developing community controls through infancy
    - divergence and overgrowth @ 12 mos.

- “A machine learning approach to diagnostic classification, applied to features of surface area growth from 6 to 12 months, predicted diagnostic outcome at age 24 months with 88% sensitivity and 95% specificity.”
Understanding biological substrate

- Most freq. subcortical finding = amygdala overgrowth in toddlers with ASD
- Altered structural and functional connectivity
- “Considered together, these observations suggest that autism may arise from a broad disturbance in central nervous system development that begins very early and has downstream effects on neural plasticity and specialization..”

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Developmental OUTCOMES

- 25 major studies reviewed
- Cognitive scores remain stable
- Adaptive skills and ASD symptoms improved over time
- Social outcomes >>> generally poor for many
- Early IQ and language predicted outcomes; but with large individual differences
ASD Developmental Trajectory

“......from childhood to adulthood, there is a general tendency of modest improvement and symptom decline across studies despite wide variation in designs, measures, and diagnostic criteria.”

Early social withdrawal may be replaced by social engagement that is awkward

Mathias was in the 6th grade.

He was a tall and very large boy for his young age (12).

Mathias was having a lot of "behavior" per his teacher.

Mathias would push other kids, and have explosive outbursts sometimes ending up on the floor yelling.

Mathias was also seen as hyperactive and non-compliant.

His mother nearly lost her job because she had to pick him up from school many times.

Mathias was diagnosed with ADHD and ODD (Oppositional Defiant Disorder).

Charlot, 2018
Missed Diagnosis: ASD in Adults

- A significant number of adults may have an undiagnosed autism spectrum disorder.

  “Antipsychotic medication is unlikely to have an impact on the thought patterns that are characteristic of autism spectrum disorders, and people with these disorders seem to be very sensitive to the side effects of all psychotropic medications.”

Missing the ASD in Adults

- Recent studies show that adults with ID may have ASD but it has been missed

- Use of paper screens rather than full assessments and changes in phenomenology in adults may cause ASD to be missed

- Also, clinicians working mainly with adults may have less experience with diagnosing
  - Misunderstandings regarding social behavior may be key
Variability in ASD Presentation

- The behaviours that are common ASD - linked to differences in thinking ability.

- “We assessed autistic adolescents and found that social communication difficulties and the presence of restricted and repetitive behaviours related to difficulties in understanding other peoples’ minds (theory of mind). In contrast, these behaviours were not associated with the general thinking abilities involved in planning and executing tasks (executive function).”

Executive Function Challenges

- EF weaknesses cause limited ability to regulate emotional states but is “likely to be seen by others ... as argumentativeness, noncompliance and rebelliousness.”
- WISV-IV VCI -55 (vocab, abstract reasoning, expressive language. Most compromised)
- Working memory very variable and task related
- WISC-IV PRI 86 (with lots of variability even within the PRI tasks performances)
  - Processing speed very compromised
  - 5-6th grade reading
  - Math about 2.5 grade equiv
- EF impaired with little evidence of her having a conduct disturbance
ASD and Theory of Mind

“Suggests that people with autistic spectrum disorders do not develop the ability to understand that their own thoughts and beliefs about the world may be different to those of other people. This means that when faced with a social situation people may find it difficult to understand or ‘read’ the social situation and thus social interactions become anxiety provoking.”

Oliver, C., Moss, J., Collis, L., & Petty, J. Behavioral challenges in children and adults with CdLS.
SALLY ANN TEST:
Theory of Mind

- The capacity for understanding “competing perspectives” usually develops between 3 and 5 years of age
- Same time as many “real-world” social-cognitive skills emerge
  - Pretending
  - Lying
  - Playing games like hide-and-seek
  - Keeping secrets
  - Developing peer relationships
  - Understanding moral culpability
- In people with ASD and some other IDDs, overall IQ is not necessarily connected to this kind of ability

https://www.youtube.com/watch?v=QjkTQtggLH4
MATHIAS - I cannot tell a lie,
*The role of deception in antisocial behavior or psychopathy*
Lack of Empathy

https://www.youtube.com/watch?v=nXcU8x_xK18

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So then I was bad again and then good after that again.

It's like I'm so mixed up, I'm on the grey side of the force ya know?

I hear ya brother.
The mirror mechanism and its potential role in ASD

- A mirror neuron is a neuron that fires both when an animal acts and when the animal observes the same action performed by another.

- This system “…allows a direct comprehension of others’ goals and motor intentions, enabling …a link between individuals……

- “Impaired understanding of others’ intentions, sensations, and emotions …..could be linked to an alteration of the mirror mechanism

COGNITIVE FLEXIBILITY

- **Cognitive flexibility** = brain’s ability to transition from thinking about one concept to another.
  - Faster/easier you can shift thinking from one dimension (e.g. color of an object) to another (e.g. shape of an object) the better is your level of cognitive flexibility

- Cognitive flexibility is important to **self-regulation** and is impaired in many people with IDD

- What kinds of things might increase a problem with shifting?

- How well can YOU shift and switch?
Perseverative responses and errors (difficulty switching) found to be significantly higher in ASD versus controls, irrespective of the IQ level.
Misinterpretation of facial expressions of emotion in verbal adults with autism spectrum disorder

- Adults with autism spectrum disorder uniquely misinterpreted happy faces as neutral....
  - Were significantly more likely than typical volunteers to attribute negative valence to non-emotional faces

- “The over-attribution of emotions to neutral faces was significantly related to greater communication and emotional intelligence impairments...”


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The first step in making reliable and valid psychiatric diagnoses in patients with an ASD is to understand ASD

- The most difficult aspect of differential diagnosis relates to determining what are exaggerated core features of ASD or ASD symptoms under stress, and what are co-occurring psychiatric symptoms

- The better you understand ASD itself (in all its varied forms) the more you will understand:
  - Risk for psychiatric symptoms, problems and syndromes
  - When a problem behavior is a sign of mental illness and when it is more simply, an exaggerated expression of a core ASD feature, worsened by stress

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Developmental Effects on Psychiatric Disorder

- Individuals may present with developmental features similar to younger neurotypical children
- To establish psychopathology, **departure from usual behavior for the individual** (sleep)
  - AND usual for developmentally driven expected behavior
- This may be variable even between domains of functioning
  - Socially may present like much younger Individual while able to perform complex cognitive tasks
    - Computer skills at adult level
    - Socially similar to preschool aged Individual
The first step in making reliable and valid psychiatric diagnoses in patients with an ASD is to understand ASD

- The most difficult aspect of differential diagnosis relates to determining what are exaggerated core features of ASD or ASD symptoms under stress, and what are co-occurring psychiatric symptoms

- Understand ASD itself....to understand:
  - Risk for psychiatric symptoms, problems and syndromes
  - How ASD features may change surface features of psychiatric syndromes
  - When a problem behavior is a sign of mental illness and when it is more simply, an exaggerated expression of a core ASD feature, worsened by stress

- **Treatment needs do differ across individuals with ASD**
  - More d/t degree individuals are affected by the disorder and affected by other disorders (including ID, communication-language disorders, ADHD, and disruptive behaviors)
Communication

- Just because you can say a lot of words does not mean you can communicate.
- Some Children with ASD
  - meaningful expressive speech,
  - large vocabulary, appropriate syntax - but NO ability to participate in a conversation
  - “Tony the Tiger...”
- When speech is present it is unusual
  - Lacking in the pragmatics of language or social use of language
Problems Related to Communication Challenges

- Lack of functional communication
- Misunderstanding what others are saying
- Missing social context - concrete interpretations of what others say
- Annoying peers by interrupting and not following topics raised by others
  - Peers may tease, retaliate or reject
Communication and Emotional Expression

- Children with ASD
  - may have a more restricted range of emotional expression (but this varies!)
  - sudden laughing, smiling or crying can occur seeming w/o connection to what is going on
    - More pronounced under stressful circumstances
    - May be seen as a sign of a “mood disorder”
SOCIAL-EMOTIONAL COMMUNICATION

“Children with ID without autism, have delays in social and emotional skills, commensurate with other areas of their development and behaviour (Kraijer, 2000).

i.e. a 10 year old child with an ID... functioning cognitively at the level of about a 6 y/o.... would be likely to have social and emotional skills also at the level of 6 y/o.

In contrast, children with ASD have delays in social and emotional skills more than expected given their development in other areas (Bolte & Poustka, 2002; Kraijer, 2000).

i.e. a 10 year old child with ASD and intellectual disability who is functioning cognitively at the level of about 6 y/o would be likely to have social and emotional skills at the level of about a 2-3 y/o.
Variations in Patterns of Information Processing

- Slower processing speeds in adults with ASD
- May contribute to impairments in social communication skills.
- Interventions that improve processing speed might improve social communication abilities -
Language Pragmatics: Social Components of Language

- Turn taking - knowing the timing of the give and take in conversation
- Silent signals that we are having a conversation
- Gestures and tone of voice are used to convey meaning (just as words are)
- Topic maintenance
Helping improve social abilities

- Social skills can be acquired
- Social stories can be helpful
- Games
Games to Teach Social-Emotional Skills

https://www.thepathway2success.com/using-games-to-teach-social-emotional-skills/