Autism Awareness

Juvenile Justice Vision 20/20 Conference

Jamie Owen-DeSchryver, Ph.D.
Grand Valley State University,
Autism Education Center, START Project
(owendesj@gvsu.edu)

Scott Schuelke
Autism Safety Specialist,
Autism Alliance of Michigan
(scott.schuelke@aaomi.org)
National News

• 1 in 88 (CDC, 2012)

• Call for a National Strategic Plan (Autism Speaks, 2012)
Michigan Students with an ASD Eligibility
* Based on 2011 MDE, OSE Eligibility Count

Number of students

Autism Spectrum Disorder
DSM-5 Criteria

- Stereotyped speech or motor movements
- Insistence on sameness, inflexible adherence
- Fixated interests
- Hyper or hypo-reactive to sensory input

- Social-emotional reciprocity
- Nonverbal communication
- Relationships

Behavior

Social/Communication
In the DSM-5:

- Autism Spectrum Disorder includes both Autism and Asperger Syndrome
Continuum of the Autism Spectrum

Cognitive Ability
Severe ID  Gifted

Social Interaction
Aloof  Passive  Interested/Odd

Communication
Non-verbal  Verbal

Motor Skills Fine & Gross
Awkward  Agile

Sensory
Hyposensitive  hypersensitive

Adapted from the Advocate (2003)
History of ASD Diagnoses

Autism
- First described by Leo Kanner in 1943
- “Obsessive desire for the maintenance of sameness”
- Diagnosis entered DSM in 1980

Asperger Syndrome
- First described by Hans Asperger in 1944
- “autistic psychopathy”; autistic (self); psychopathy (personality)
- His work was translated into English in 1981; Diagnosis entered DSM in 1994
Wide Range of Abilities & Challenges
ASD is a Brain Disorder

Parts of the Brain Affected by Autism

Cerebral Cortex:
A thin layer of gray matter on the surface of the cerebral hemispheres. Two-thirds of this area is deep in the tissues and folds. This area of the brain is responsible for higher mental functions, general movement, perception, and behavior reactions.

Basal Ganglia:
This is gray masses deep within the cerebral hemisphere that connects the cerebrum and the cerebellum. It helps regulate automatic movement.

Corpus Callosum:
This consists of closely packed bundles of fibers that connect the right and left hemispheres of the brain and allows them to communicate with one another.

Cerebellum:
This is located at the back of the brain. It fine tunes motor activity, regulates balance, body movements, coordination and the muscles used for speaking.

Brain Stem:
The Brain Stem is located in front of the cerebellum and serves as a relay station, passing messages between various parts of the body and the cerebral cortex. It controls the primitive functions of the body essential to survival including breathing and heart rate.

Hippocampus:
This makes it possible to remember new information and recent events.

Amygdala:
This is responsible for all emotional responses including aggressive behavior.
ASD is a Brain Disorder

• Strong genetic influence

• Differences in brain development may occur as early as the 2nd – 3rd trimester during pregnancy
ASD is a Brain Disorder

• Unusual activity of genes that control how neurons organize in the developing brain (Geschwind, 2011, Nature)
• 67% more neurons in the prefrontal cortex than typical children (Courchesne, 2011, JAMA)
• Amygdala differences
Brain Differences Result in Differences in Behavior
“Black and White” Thinking

• Rigidity and adherence to the one, “right” way
• May inhibit creativity, play, social engagement
Social Thinking

- How we think about people affects how we behave, which affects how others respond to us, which affects our own emotions.

- Most of us have developed our social thinking skills from birth by observing and acquiring social information and learning how to respond to people. However for individuals with ASD, this process may not come naturally.
Social Thinking Differences

• Earliest representation – impairments in joint attention
Social Thinking Differences

• Theory of Mind
  – http://www.youtube.com/watch?v=QjkTQtggLH4
Social Thinking affects Attributions

• Every day we must guess how people will act, often from small shreds of evidence.
• We do this through a form of social cognition called attribution.
• As we observe others, we make inferences about them. We attribute people’s behavior to various causes.
• Whether we are right or wrong about the causes of their behavior, our conclusions affect how we act.
Social Attribution Task

Attention to the Big Picture

• “Weak central coherence”
• May have a hard time knowing intuitively what needs to be done, may not do something unless specifically asked
Social Interactions

• Difficulty using and understanding nonverbal communication; Inability to read social cues could send the wrong signal to others (eye contact, body space)

• May have odd or unique behaviors which causes the individual to become a target for negative responses by others
My teacher says I’m rude. I think I’m honest. I don’t understand why I can’t tell someone that they have bad breath, ugly hair, or to go away because I’m busy.
Social Deficits and Cognitive Skills

“People expect cognition and social functioning to be equally developed. When kids with Asperger’s Syndrome experience difficulty, they wrongly assume it is deliberate misconduct.”

(A. Klin and F. Volkmar, 1997)
Poor Problem Solving

• What is learned in one situation may not be easily transferred to another
• Executive functioning
Motivation

• High motivation in interest areas; low motivation in other areas

• This is common in most people but occurs at a higher intensity in people with ASD
Stress and Anxiety

• Problems handling stressful situations, multi-tasking, and/or sensory overload
To understand autism, we should also consider...
“Autism helps to offset the excessive number of boring people here on earth...”

“Autism – it’s not a processing error, just a different operating system”

-- Authors Unknown
“What would happen if the autism gene was eliminated from the gene pool? You would have a bunch of people standing around in a cave, chatting and socializing and not getting anything done” -- Temple Grandin