Characteristics of Asperger Syndrome: A Brief Overview

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A Sign of Our Failure

• A study of 114 adults
• Measure outcome
  – Good: (a) employed or engaged in education/vocational training, (b) living independently, (c) two or more friends/steady relationship
  – Fair: (a) or (b)
  – Poor or very poor outcome: neither (a) or (b)

Billstedt Gillberg, & Gillberg, 2005

A Sign of Our Failure

• A study of 114 adults
• Good Outcome: (a) employed or engaged in education/vocational training, (b) living independently, (c) two or more friends/steady relationship
• 0

Billstedt Gillberg, & Gillberg, 2005

A Sign of Our Failure

• A study of 114 adults
• Fair: Either (a) employed or engaged in education/vocational training, (b) living independently, (c) two or more friends/steady relationship
• 8%

Billstedt Gillberg, & Gillberg, 2005

A Sign of Our Failure

• Are about three times as likely to live in poverty with (<$15,000 per annum) than those without disabilities
• Never interact with friends (33%)
• Have not been invited to social events during the past year (44%)

Billstedt Gillberg, & Gillberg, 2005

Myles, 2008
Goals and Challenges

• To learn social skills and engage in social interactions
• To gain daily living skills
• To understand self, particularly as it relates to sensory and emotional needs
• To learn problem-solving skills
• To learn academic content

Imitation

• One of the most basic modes of learning
• Imitation is used across the lifespan and across environments
• Mirror neurons impact imitation
  – When attempting to engage in an activity by modeling
  – When observing someone engaging in an activity

Mirror Neurons

• EEG traces showing mu rhythm modulation during rest, execution of a grasping movement, and passive observation of a human model performing a grasping movement. It can be seen that mu rhythm amplitude decreases during both action execution and action observation.

Under Connectivity

• Weak central coherence
• Hyperspecificity
• Impaired complex processing

Connectivity and Brain Protein

• A missing brain protein may be one of the culprits behind autism and other brain disorders. The protein helps synapses develop. Synapses—through which neurons communicate with one another—underlie our ability to learn and remember.

Brain activation in response to faces reveals that individuals with ASD use areas that typically process objects

Myles, 2008
Intelligence

- Average IQ
- No verbal/performance split
- 22% have IQs in the superior or very superior range
- Low comprehension scores may reflect poor social judgment, failure to take responsibility, immaturity, concrete thinking

Maturity

- Children with AS are generally considered to have the social maturity of someone 1/3 to 2/3 of their age.

Adaptive Behaviors

- Adaptive behavior challenges are similar to those experienced by individuals with cognitive disabilities

Social

- Poor eye contact
- Proximity challenges
- Difficulty making and keeping friends
- Naive, taken advantage of, bullied

Theory of Mind

- Difficulty in …
  - Predicting
  - Reading intentions
  - Understanding emotions
  - Explaining own behavior
  - Perspective or reference
  - Reading and reacting to others’ interests
  - Understanding social interactions

Myles, 2008
Logic and Inferences
- Tend to enjoy systems, predictability, logic, "pseudo-logic"
- Can make inferences about physical states (how things/objects look), but not about mental states (how people feel)

Sensory Problems Impact ...
- Reading
- Writing
- Math
- Spelling
- Problem-solving
- Sequencing
- Ability to conceptualize
- Independent living skills
- Independent work habits
- Spontaneous social interactions
- Creativity
- Concentration

Sensory Problems Impact ...
- Ability to form meaningful relationships
- Eye-hand skills
- Mastery of environment
- Feelings of adequacy
- Directionality
- Emotional stability
- Behavior control
- Body skills
And many other skills too numerous to mention!

Sensory Systems
- Tactile
- Vestibular
- Proprioceptive
- Auditory
- Visual
- Gustatory
- Olfactory

Myles, 2008
Tactile
- Allows us to gain information while giving us the ability to determine if something is dangerous. Serves two basic purposes
  - Protection
  - Discrimination

Tactile
- Provides information about:
  - Pressure
  - Texture
  - Hard
  - Soft
  - Sharp
  - Dull
  - Hot
  - Cold
  - Pain

Vestibular
- Provides us with information regarding eye movements, speed and direction of head movements, security we feel when we move against gravity, and planning/coordinating movement of both sides of the body and executing it smoothly.

Proprioception
- Provides information from the muscles and joints to let us know when muscles are contracting and stretching, and when and how joints are bending, extending, or being pulled or compressed. Allows us to know how each body part is moving without have to see it.

The Power Senses
- Tactile
- Vestibular
- Proprioceptive

Auditory
- Allows us to discriminate, associate, and filter sounds
  - Volume
  - Pitch
  - Rhythm
  - Distance

Myles, 2008
Visual

• Allows us to interpret information about our environment through various types of perception (depth, spatial orientation, figure ground, etc). Also serves to reinforce others types of sensory input.
• Provides information about objects, persons, time and space boundaries

Gustatory

• Allows us to discriminate and associate tastes
  – Sweet
  – Sour
  – Bitter
  – Spicy
  – Salty

Olfactory

• Allows us to discriminate and associate smells
  – Musty
  – Acris
  – Flowery

Sensory Problems Most Often Seen in Children with Asperger Syndrome

Tactile

• Expresses distress during grooming
  – Bathing
  – Combing hair
  – Getting hair cut
  – Toothbrushing
• Is sensitive to particular food textures/temperatures, fabrics

Tactile (cont)

• Has difficulty standing in line or close to others
• Expresses discomfort at dental work
• Has rigid rituals in personal hygiene

Myles, 2008
Vestibular (Movement)

• Seeks sedentary play options
• Poor endurance/tires easily
• Dislikes activities where head is upside down
• Rocks unconsciously during activities
• Becomes overly excited after a movement activity

Proprioception (Body Position)

• Seems to have weak muscles
• Tires easily especially when standing or hold a particular position
• Has a weak grasp
• Seeks opportunities to fall without regard for personal safety

Auditory

• Is distracted or has trouble functioning in noise
• Responds negatively to loud or unexpected noise
• Appears not to hear what you say

Visual

• Looks away from tasks to notice all actions
• Has a hard time finding objects in competing backgrounds
• Avoids eye contact
• Expresses discomfort at bright lights

Taste & Smell

• Avoids certain tastes/smells
• Routinely smells objects
• Shows preference for certain tastes

Children with AS have more difficulties with **MODULATION (SELF REGULATION)** and emotional reactivity when compared to their counterparts with autism

From Dunn, 1999; Dunn, Myles, & Orr, 2002; Rinner, 2000

Myles, 2008
Emotional Reactivity
• Displays emotional outbursts when unsuccessful
• Is stubborn or uncooperative
  – Often gets “stuck” in a situation
• Is overly sensitive
• Reacts overtly when sensory systems needs are not met

Language and Social Challenges
• Nonverbal communication
• Initiating and maintaining social interactions
• Literalness
• Perspective taking
• Hidden curriculum
• Cause/effect relationships
• Difficulty conveying own thoughts
• May not use social “niceties”

Central Coherence
• Idiosyncratic focus
• Preference for the known
• Difficulty in choosing and prioritizing
• Difficulty seeing connections
• Lack of compliance

Problem Solving
• “One way of viewing a problem”
• Stuck thinking
• Sees facts instead of a whole
• Problems with cause and effect
• Does not see problems as having more than one option
• Problem solving is often literal

Predictability
• Strong need for sameness
• Enjoys and relies on routines
• Becomes upset when routines are changed
• Change = unknown = chaos = fear
• Has obsessions that are often used to maintain a predictable environment

Pseudo-Logic
• Is extremely logical, but the logic is very unique based on that student’s perspective
• Using context to integrate information

Myles, 2008
Literal Approach to Life

- People say exactly what they mean
- People mean exactly what they say
- There is no need to look for other meanings

Auditory and Visual Systems

- Has rote memory for auditory information
- Has challenges in meaningful memory
- Can repeat a phrase, paragraph, request, command, or rule … but cannot do it

Executive Function

- Difficulty in …
  - Perceiving emotions
  - Imitating others
  - Planning
  - Starting and stopping
  - Organizing (time, self, space, thoughts)

Special Interests and Obsessions

- Narrow interests
- Not permanent
- Often appear "uncontrollable"
- Role of the interest: interest; fun; security, comfort; relaxation; stress reduction

Complex Situations

- Do not report having social/behavioral/academic challenges; parents and teacher report a similar profile, but parents see behaviors as more challenging
- May be able to generate solutions to problems, but cannot evaluate them
- Cannot discern relevant from irrelevant stimuli

Complex Situations

- Attribute failure and success to external causes
- Have negative attributions that can be related to depression levels

Myles, 2008
Emotional Vulnerability

- Prone to tantrums, rage, and meltdowns
- Little tolerance for mistakes
- Becomes overwhelmed easily
- Difficulties self-regulating
- Problems with attribution
- Has unusual fear responses

Myles, 2008

Flexibility

- Problems dealing with unanticipated events or changes or delays in schedules
- Why?
  - Fear of the unknown
  - Does have the cognitive resources to cope with change
  - Inflexibility of thought
  - Does not know what to do instead of …

Ketty Gonzalez, 2005

Sense of Social Justice

- The good guys always win.
- Rules are meant to be followed.

You can’t bring food into the theater!

Just, Minshew, Keller, Cherkassky & Roth, 2004

Generalization

- Problems generalizing across situations without practice
- Shared focus activities are more likely to promote generalization
- Lack of flexibility in thinking
- May not generalize information that others do

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Academic Challenges

- Reading comprehension
- Written expression
- Mathematical reasoning and calculation
- Need to assess whether tasks are “rote” or “meaning-based”
Some Co-Morbid Conditions

• Attention Deficit Hyperactive Disorder
• Oppositional Defiant Disorder
• Depression (including major depression)
• Obsessive Compulsive Disorder
• Tourette Syndrome
• Elective Mutism
• Bipolar Disorder

Strengths and Skills

• Each person with ASD has strengths that occur across all areas
  – Social
  – Behavior, Interests and Activities
  – Communication
  – Sensory
  – Cognitive
  – Motor
  – Emotional
  – Other

Individual Strengths and Skills Inventory (ISSI)

Ruth Aspy, Ph.D.
Barry G. Grossman, Ph.D.

All Areas of Functioning are Impacted

• According to Nancy Minshew, a specialist in psychiatry and neurology at the University of Pittsburgh School of Medicine: “... you cannot compartmentalize ASD. They are [sic] much more complex.”