Autism

EDS 248
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Acknowledgement

Adapted from…

Presentation Outline

- Introduction: Reasons for Increased Vigilance
- Diagnostic Classifications and Special Education Eligibility
- Educator Roles, Responsibilities, and Limitations
- Case Finding
- Screening and Referral
- Assessment: Diagnostic and Psycho-educational Evaluation
Introduction: Reasons for Increased Vigilance

- Autistic spectrum disorders are much more common than previously suggested.
  - 60 (vs. 4 to 6) per 10,000 in the general population (Chakrabarti & Fombonne, 2001).
  - 600% increase in the numbers served under the autism IDEA eligibility classification (U.S. Department of Education, 2003).
  - 95% of school psychologists report an increase in the number of students with ASD being referred for assessment (Kohrt, 2004).

Explanations for Changing ASD Rates in the General Population

- Changes in diagnostic criteria.
- Heightened public awareness of autism.
- Increased willingness and ability to diagnose autism.
- Availability of resources for children with autism.
- Yet to be identified environmental factors.


Total Number of Student Classified as Autistic and Eligible for Special Education Under IDEA by Age Group

- 6 – 11 years
- 12 – 17 years
- 18 – 21 years
Explanations for Changing ASD Rates in Special Education

- Classification substitution
  - IEP teams have become better able to identify students with autism.
  - Autism is more acceptable in today's schools than is the diagnosis of mental retardation.
  - The intensive early intervention services often made available to students with autism are not always offered to the child whose primary eligibility classification is mental retardation.

Increased Prevalence in Special Education (U.S. Department of Education, 2005)

Reasons for Increased Vigilance

- Autism can be identified early in development, and...
- Early intervention is an important determinant of the course of autism.
Reasons for Increased Vigilance

Not all cases of autism will be identified before school entry.
- Average Age of Autistic Disorder identification is 5 1/2 years of age.
- Average Age of Asperger's Disorder identification is 11 years of age. (Howlin & Asgharian, 1999).

Most children with autism are identified by school resources.
- Only three percent of children with ASD are identified solely by non-school resources.
- All other children are identified by a combination of school and non-school resources (57 %), or by school resources alone (40 %). (Yeargin-Allsopp et al., 2003).

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Diagnostic Classifications

Pervasive Developmental Disorders

- Autistic Disorder
- Asperger's Disorder
- PDD-NOS
- Rett's Disorder
- Childhood Disintegrative Disorder

In this lecture the terms “Autism,” or “Autistic Spectrum Disorders (ASD)” will be used to indicate these PDDs.

Special Education Eligibility: IDEIA Regulations

1. IDEIA 2004 Autism Classification
   - P.L. 108-446, Individuals with Disabilities Education Improvement Act (IDEIA), 2004
   - USDOE Regulations for IDEA 2004 [§ 300.8(c)(1)]
     - Autism means a developmental disability significantly affecting verbal and nonverbal communication and social interaction, generally evident before age three, that adversely affects a child’s education performance. Other characteristics often associated with autism are engagement in repetitive activities and stereotypical movements, resistance to environmental change or change in daily routines, and unusual responses to sensory experiences. (i) Autism does not apply if a child’s educational performance is adversely affected primarily because the child has an emotional disturbance, as defined in paragraph (c)(4) of this section. (ii) A child who manifest the characteristics of autism after age three could be identified as having autism if the criteria in paragraph (c)(1)(i) of this section are satisfied.

2. Special Education Eligibility
   - For special education eligibility purposes distinctions among PDDs may not be relevant.
   - While the diagnosis of Autistic Disorder requires differentiating its symptoms from other PDDs, Shriver et al. (1999) suggest that for special education eligibility purposes “the federal definition of ‘autism’ was written sufficiently broad to encompass children who exhibit a range of characteristics” (p. 539) including other PDDs.
However, it is less clear if students with milder forms of ASD are always eligible for special education. Adjudicative decision makers almost never use the DSM IV-TR criteria exclusively or primarily for determining whether the child is eligible as autistic (Fogt et al., 2003). While DSM IV-TR criteria are often considered in hearing/court decisions, IDEA is typically acknowledged as the "controlling authority." When it comes to special education, it is state and federal education codes and regulations (not DSM IV-TR) that drive eligibility decisions.

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**Educator Roles, Responsibilities, and Limitations**

1. All educators need to be more vigilant for symptoms of autism among the students that they serve, and better prepared to assist in the process of identifying these disorders.
2. Case Finding

- All educators should be expected to participate in case finding (i.e., routine developmental surveillance of children in the general population to recognize risk factors and identify warning signs of autism).
  - This would include training general educators to identify the risk factors and warning signs of autism.

3. Screening

- All school psychologists should be prepared to participate in the behavioral screening of the student who has risk factors and/or displays warning signs of autism (i.e., able to conduct screenings to determine the need for diagnostic assessments).
- All school psychologists should be able to distinguish between screening and diagnosis.

4. Diagnosis

- Only those educators with appropriate training and supervision should diagnose a specific autism spectrum disorder.

5. Special Education Eligibility

- All special educators should be expected to conduct the special education eligibility evaluations that determine educational needs.
- NOTE:
  - The ability to conduct such assessments will require special educators to be knowledgeable of the accommodations necessary to obtain valid test results when working with the child who has an ASD.
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Case Finding

- Known Risk Factors
  - High Risk
    - Having an older sibling with autism.
  - Moderate Risk
    - The diagnosis of tuberous sclerosis, fragile X, or epilepsy.
    - A family history of autism or autistic-like behaviors.

Case Finding

- Currently there is no substantive evidence supporting any one non-genetic risk factor for ASD.
- However, given that there are likely different causes of ASD, it is possible that yet to be identified non-heritable risk factors may prove to be important in certain subgroups of individuals with this disorder.
Case Finding

Infant & Preschooler Warning Signs

- Absolute indications for an autism screening
  + No big smiles or other joyful expressions by 6 months.b
  + No back-and-forth sharing of sounds, smiles, or facial expressions by 9 months.b
  + No back-and-forth gestures, such as pointing, showing, reaching or waving bye-bye by 12 months.a
  + No babbling at 12 months.a, b
  + No single words at 16 months.a, b

Sources: aFilipek et al., 1999; bGreenspan, 1999; and cOzonoff, 2003.

Case Finding

Infant & Preschooler Warning Signs

- Absolute indications for an autism screening
  + No 2-word spontaneous (nonecholalic) phrases by 24 months.a, b
  + Failure to attend to human voice by 24 months.c
  + Failure to look at face and eyes of others by 24 months.c
  + Failure to orient to name by 24 months.c
  + Failure to demonstrate interest in other children by 24 months.c
  + Failure to imitate by 24 months.c
  + Any loss of any language or social skill at any age.a, b

Sources: aFilipek et al., 1999; bGreenspan, 1999; and cOzonoff, 2003.

Case Finding

School-Age Children Warning Signs

Social/Emotional Concerns

- Poor at initiating and/or sustaining activities and friendships with peers
- Playtime is more isolated, rigid and/or repetitive, less interactive
- Atypical interests and behaviors compared to peers
- Unaware of social conventions or codes of conduct (e.g., seems unaware of how comments or actions could offend others)
- Excessive anxiety, fears or depression
- Atypical emotional expression (emotion, such as distress or affection, is significantly more or less than appears appropriate for the situation)

Sources: Adapted from Asperger’s Syndrome A Guide for Parents and Professionals (Attwood, 1998), Diagnostic and Statistical Manual of Mental Disorders, 4th ed. (APA, 1994), and The Asperger Syndrome Diagnostic Scale (Myles, Bock and Simpson, 2000).
Case Finding

School-Age Children Warning Signs

Communication Concerns
- Unusual tone of voice or speech (seems to have an accent or monotone, speech is overly formal)
- Overly literal interpretation of comments (confused by sarcasm or phrases such as “pull up your socks” or “looks can kill”)
- Atypical conversations (one-sided, on their focus of interest or on repetitive/unusual topics)
- Poor nonverbal communication skills (eye contact, gestures, etc.)

Behavioral Concerns
- Excessive fascination/perseveration with a particular topic, interest or object
- Unduly upset by changes in routines or expectations
- Tendency to flap or rock when excited or distressed
- Unusual sensory responses (reactions to sound, touch, textures, pain tolerance, etc.)
- History of behavioral concerns (inattention, hyperactivity, aggression, anxiety, selective mute)
- Poor fine and/or gross motor skills or coordination

Sources: Adapted from Asperger’s Syndrome A Guide for Parents and Professionals (Attwood, 1998), Diagnostic and Statistical Manual of Mental Disorders, 4th ed. (APA, 1994), and The Apserger Syndrome Diagnostic Scale (Myles, Bock and Simpson, 2000).

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Screening and Referral

- Screening is designed to help determine the need for additional diagnostic assessments.
- In addition to the behavioral screening (which at school should typically be provided by the school psychologist), screening should include medical testing (lead screening) and a complete audiological evaluation.

Behavioral Screening for ASD

- School psychologists are exceptionally well qualified to conduct the behavioral screening of students suspected to have an ASD.
- Several screening tools are available
  - Initially, most of these tools focused on the identification of ASD among infants and preschoolers.
  - Recently screening tools useful for the identification of school aged children who have high functioning autism or Asperger’s Disorder have been developed.
Behavioral Screening of Infants and Preschoolers

**Modified Checklist for Autism in Toddlers (M-CHAT)**
- Designed to screen for autism at 24 months of age.
- More sensitive to the broader autism spectrum.
- Uses the 9 items from the original CHAT as its basis.
- Adds 14 additional items (23-item total).
- Unlike the CHAT, however, the M-CHAT does not require the screener to directly observe the child.
- Makes use of a Yes/No format questionnaire.
- Yes/No answers are converted to pass/fail responses by the screener.
- A child fails the checklist when 2 or more of 6 critical items are failed or when any three items are failed.

The M-CHAT was used to screen 1,293 18- to 30-month-old children. 58 were referred for a diagnostic/developmental evaluation. 39 were diagnosed with an autism spectrum disorder (Robins et al., 2001).

Will result in false positives.
Data regarding false negative is not currently available, but follow-up research to obtain such is currently underway.

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**Modified Checklist for Autism in Toddlers**

Please fill out the following about how your child usually is. Please try to answer every question. If the behavior is rare (e.g., you've seen it once or twice), please answer as if the child does not do it.

1. Does your child enjoy being swung, bounced on your knee, etc.? Yes No
2. Does your child take an interest in other children? Yes No
3. Does your child like climbing on things, such as stairs? Yes No
4. Does your child enjoy playing peek-a-boo/hide-and-seek? Yes No
5. Does your child ever pretend, for example, to talk on the phone or take care of a baby? Yes No
6. Does your child ever use his/her index finger to point, to ask for something? Yes No
7. Does your child ever use his/her index finger to point, to indicate interest in something? Yes No
8. Can your child play properly with small toys (e.g., cars or blocks) without just touching them? Yes No
9. Does your child ever bring objects over to you to show you something? Yes No
10. Does your child look you in the eye for more than a second or two? Yes No
11. Does your child ever seem oversensitive to noise? (e.g., plugging ears) Yes No

Robins et al. (2001, p. 142)
**Modified Checklist for Autism in Toddlers**

**M-CHAT Scoring Instructions**

A child fails the checklist when 2 or more critical items are failed OR when any three items are failed. You must answer with a Yes or No response. Below are listed the failed responses for each item on the M-CHAT. Bold capitalized items are CRITICAL items.

Not all children who fail the checklist will meet criteria for a diagnosis on the autism spectrum. However, children who fail the checklist should be evaluated in more depth by the physician or referred for a developmental evaluation with a specialist.

<table>
<thead>
<tr>
<th>Item</th>
<th>Response</th>
</tr>
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<tbody>
<tr>
<td>1. No</td>
<td>Yes</td>
</tr>
<tr>
<td>6. No</td>
<td>Yes</td>
</tr>
<tr>
<td>11. Yes</td>
<td>Yes</td>
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<td>16. No</td>
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<td>18. Yes</td>
<td>Yes</td>
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<tr>
<td>23. No</td>
<td>No</td>
</tr>
</tbody>
</table>

Robins et al. (2001)
Behavioral Screening of School Age Children

- **Childhood Asperger Syndrome Test (CAST)**
  - A screening for mainstream primary grade (ages 4 through 11 years) children.
  - Has 37 items, with 31 key items contributing to the child’s total score.
  - The 6 control items assess general development.
  - With a total possible score of 31, a cut off score of 15 "NO" responses was found to correctly identify 87.5 (7 out of 8) of the cases of autistic spectrum disorders.
  - Rate of false positives is 36.4%.
  - Rate of false negatives is not available

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**Childhood Asperger Syndrome Test**

- From Scott et al. (2002, p. 27)

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**Childhood Asperger Syndrome Test**

- From Scott et al. (2002, pp. 27-28)
Childhood Asperger Syndrome Test

http://www.autismresearchcentre.com/tests/cast_test.asp

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Autistic Disorder Diagnostic Criteria

A total of six (or more) items for (1), (2), and (3), with at least two from (1), and one each for (2) and (3):

1. qualitative impairment in social interaction, as manifested by at least two of the following:
   - marked impairment in the use of multiple nonverbal behaviors such as eye-to-eye gaze, facial expression, body postures, and gestures to regulate social interaction
   - failure to develop peer relationships appropriate to developmental level
   - a lack of spontaneous seeking to share enjoyment, interests, or achievements with other people (e.g., by lack of showing, bringing, or pointing out objects of interest)
   - lack of social or emotional reciprocity
Autistic Disorder Diagnostic Criteria

A. A total of six (or more) items for (1), (2), and (3), with at least two from (1), and one each for (2) and (3):

(2) qualitative impairments in communication as manifested by at least one of the following:
- delay in, or total lack of, the development of spoken language (not accompanied by an attempt to compensate through alternative modes of communication such as gesture or mime)
- in individuals with adequate speech, marked impairment in the ability to initiate or sustain a conversation with others
- stereotyped and repetitive use of language or idiosyncratic language
- lack of varied, spontaneous make-believe play or social imitative play appropriate to developmental level

B. Delays or abnormal functioning in at least one of the following areas, with onset prior to age 3 years:

(1) social interaction, (2) language as used in social communication, or (3) symbolic or imaginative play.

C. The disturbance is not better accounted for by Rett’s Disorder or Childhood Disintegrative Disorder.
Other ASDs

- Asperger’s Disorder
  - The criteria for Asperger’s Disorder are essentially the same as Autistic Disorder with the exception that there are no criteria for a qualitative impairment in communication.
  - In fact Asperger’s criteria require “… no clinically significant general delay in language (e.g., single words used by 2 years, communicative phrases used by 3 years”).

- Childhood Disintegrative Disorder (CDD)
  - Criteria are essentially the same as Autistic Disorder.
  - Difference include that in CDD there has been …
    (a) “Apparent normal development for at least the first 2 years after birth as manifested by the presence of age-appropriate verbal and nonverbal communication, social relationships, play, and adaptive behavior;” and that there is
    (b) “Clinically significant loss of previously acquired skills (before age 10 years) in at least two of the following areas:
      1. expressive or receptive language;
      2. social skills or adaptive behavior;
      3. bowel or bladder control;
      4. play;
      5. motor-skills.”

- Rett’s Disorder
  - Both Autistic Disorder and Rett’s Disorder criteria include delays in language development and social engagement (although social difficulties may not be as pervasive).
  - Unlike Autistic Disorder, Rett’s also includes
    - head growth deceleration,
    - loss of fine motor skill,
    - poorly coordinated gross motor skill, and
    - severe psychomotor retardation.
Symptom Onset

- Autistic Disorder is before the age of three years.
  - Before three years, there must be delays or abnormal functioning in at least one of the following areas: (a) social interaction, (b) social communicative language, and/or (c) symbolic or imaginative play.
- Asperger’s Disorder may be somewhat later.
- Childhood Disintegrative Disorder is before the age of 10 years.
  - Preceded by at least two years of normal development.
- Rett’s Disorder is before the age of 4 years.
  - Although symptoms are usually seen by the second year of life.

Developmental Course

- Autistic Disorder:
  - Parents may report having been worried about the child’s lack of interest in social interaction since or shortly after birth.
  - In a few cases the child initially developed normally before symptom onset. However, such periods of normal development must not extend past age three.
  - Duration of Autistic Disorder is typically life long, with only a small percentage being able to live and work independently and about 1/3 being able to achieve a partial degree of independence. Even among the highest functioning adults symptoms typically continue to cause challenges.

- Asperger’s Disorder:
  - Motor delays or clumsiness may be some of the first symptoms noted during the preschool years.
  - Difficulties in social interactions, and symptoms associated with unique and unusually circumscribed interests, become apparent at school entry.
  - Duration is typically lifelong with difficulties empathizing and modulating social interactions displayed in adulthood.

- Rett’s and Childhood Disintegrative Disorders:
  - Lifelong conditions.
  - Rett’s pattern of developmental regression is generally persistent and progressive. Some interest in social interaction may be noted during later childhood and adolescence.
  - The loss of skills associated with Childhood Disintegrative Disorder plateau after which some limited improvement may occur.
Associated Features

- Asperger's Disorder is the only ASD not typically associated with some degree of mental retardation.
- Autistic Disorder is associated with moderate mental retardation. Other associated features include:
  - unusual sensory sensitivities
  - abnormal eating or sleeping habits
  - unusual fearfulness of harmless object or lack of fear for real dangers
  - self-injurious behaviors
- Childhood Disintegrative Disorder is associated with severe mental retardation.
- Rett's Disorder is associated with severe to profound mental retardation.

Age Specific Features

- Chronological age and developmental level influence the expression of Autistic Disorder.
  - Thus, assessment must be developmentally sensitive.
  - For example, infants may fail to cuddle; show indifference or aversion to affection or physical contact; demonstrate a lack of eye contact, facial responsiveness, or socially directed smiles; and a failure to respond to their parents' voices.
  - On the other hand, among young children, adults may be treated as interchangeable or alternatively the child may cling to a specific person.

Gender Related Features

- With the exception of Rett's Disorder, which occurs only among females, all other ASDs appear to be more common among males than females.
  - The rate is four to five times higher in males than in females.
Developmental and Health History

Health History (pre- and perinatal factors)
- General obstetric status
  - Given the suggestion that there is some prenatal cause of autism and there is no strong relationship with any specific factor, summary measures have been considered (Newschaffer et al., 2002).
  - Greater maternal age and threatened miscarriage were the strongest factors (Glasson et al., 2004).
- Maternal infections
  - Measles, Mumps, & Rubella; Influenza; Cytomegalovirus; Herpes; Syphilis; HIV (Newschaffer et al., 2002).
- Drug exposure
  - Thalidomide and Valproate taken early (20 to 24 weeks) in the pregnancy (Newschaffer et al., 2002).

Health History (infancy & childhood factors)
- Infections (Newschaffer et al., 2002)
  - Case studies have documented sudden onset of ASD symptoms in older children after herpes encephalitis.
  - Infections that can result in secondary hydrocephalus, such as meningitis, have also been implicated in the etiology of ASD.
  - Common viral illnesses in the first 18 months of life (e.g., mumps, chickenpox, fever of unknown origin, and ear infection) have been associated with ASD.
- Chemical exposure and MMR?
  - Available data does not support these as risk factors (Madsen et al., 2002).

Health History (infancy & childhood factors)
- Head circumference (Courchesne et al., 2003)
  - Slightly reduced head size at birth
  - Excessive increase between 1 to 2 and 6 to 14 months.
  - “A complete medical history and review of systems are important, with an emphasis on symptoms relevant to medical conditions known to be related to autism” (Hansen & Hagerman, 2003, p. 100).
Developmental and Health History

- Medical History
  - Vision and hearing
  - Chronic ear infections (and tube placement)
  - Immune dysfunction (e.g., frequent infections)
  - Autoimmune disorders (e.g., thyroid problems, arthritis, rashes)
  - Allergy history (e.g., to foods or environmental triggers)
  - Gastrointestinal symptoms (e.g., diarrhea, constipation, bloating, abdominal pain)

Developmental and Health History

- Diagnostic History (Deisinger, 2001)
  - ASD is sometimes observed in association other neurological or general medical conditions (APA, 2000).
    - Mental Retardation (up to 80%, APA, 2000)
    - Epilepsy (3-30%, APA, 2000; Hansen & Hagerman, 2003)
      - May develop in adolescence
      - EEG abnormalities common even in the absence of seizures
    - Genetic Disorders (Hansen & Hagerman, 2003)
      - 10-20% of ASD have a neurodevelopmental genetic syndrome
        - Tuberous Sclerosis (found in 2-4% of children with ASD)
        - Fragile X Syndrome (found in 2-8% of children with ASD)

Developmental and Health History

- Family History (Hansen & Hagerman, 2003)
  - Epilepsy
  - Mental Retardation
  - Genetic Conditions
    - Tuberous Sclerosis Complex
    - Fragile X Syndrome
    - Schizophrenia
    - Anxiety
    - Depression
    - Bipolar disorder
  - Other genetic condition or chromosomal abnormality
Developmental and Health History
- Developmental Milestones (Deisinger, 2001)
  - Normal motor development and delayed language development (Mayes & Calhoun, 2003)
  - Concerns about a hearing loss
- Social development
  - Atypical play
  - Lack of social interest
- Regression (Baird et al., 2003)

Developmental and Health History
- Behavioral History
  - Case finding questions

Diagnostic Assessments
- Indirect Assessment
  - Interviews and Questionnaires/Rating Scales
    - Easy to obtain
    - Reflect behavior across settings
    - Subject to interviewee/rater bias
- Direct Assessment
  - Behavioral Observations
    - More difficult to obtain
    - Reflect behavior within limited settings
    - Not subject to interviewee/rater bias
Psycho-educational Assessment

- Purposes
  - Develop goals and objectives (which are similar to those developed for other children with special needs).
  - To make progress in social and cognitive proficiencies, verbal and nonverbal communication abilities, and adaptive skills.
  - To minimize behavioral problems.
  - To generalize competencies across multiple environments.

Testing Accommodations

- The core deficits of autism can significantly impact test performance.
  - Impairments in communication may make it difficult to respond to verbal test items and/or generate difficulty understanding the directions that accompany nonverbal tests.
  - Impairments in social relations may result in difficulty establishing the necessary joint attention.
- Examiners must constantly assess the degree to which tests being used reflect symptoms of autism and not the specific targeted abilities (e.g., intelligence, achievement, psychological processes).

Behavioral Observations

- Students with ASD are a very heterogeneous group, and in addition to the core features of ASD, it is not unusual for them to display a range of behavioral symptoms including hyperactivity, short attention span, impulsivity, aggressiveness, self-injurious behavior, and (particularly in young children) temper tantrums.
- Observation of the student with ASD in typical environments will also facilitate the evaluation of test taking behavior.
- Observation of test taking behavior may also help to document the core features of autism.
Next Week

- Research normal early and middle childhood development.
- Read Ormrod, chapter 11.
- From assigned reading and/or independent research write 3 discussion questions.