ASSESSMENT OF AUTISM SPECTRUM DISORDERS

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Overview

• Autism Spectrum Disorders
• Evidenced Based Assessment
• Screening vs. Diagnostic Assessment
• Referrals
DSM-IV-TR (APA, 2000)  
Pervasive Developmental Disorders  

- Autistic Disorder  
- Asperger’s Disorder  
- Pervasive Developmental Disorder NOS  
- Rett’s Disorder  
- Childhood Disintegrative Disorder
Autism Spectrum Disorders

• Defined by deficits in 3 core areas:
  – Reciprocal social interaction
  – Communication
  – Repetitive behaviors and interests

• Impact across the 3 areas varies widely
Autistic Disorder

• Deficits in all three areas:
  – Social deficits
  – Communication deficits
  – Repetitive and restricted behaviors

• Onset of delays / deficits before age 3
Asperger’s Disorder

- Associated with the social and behavioral deficits of autism
- Absence of language delay, mental retardation, or adaptive behavior deficits
- Diagnosed after age 3
Pervasive Developmental Disorder NOS

- Also called “Atypical Autism”
- Used when individuals meet some of the criteria of Autistic D/O or Asperger’s
- Usually have fewer and milder symptoms
DSM V Overview
Autism Spectrum Disorder

• A. Persistent deficits in social communication and social interaction across contexts, not accounted for by general developmental delays, and manifest by all 3 of the following:

  1. Deficits in social-emotional reciprocity; ranging from abnormal social approach and failure of normal back and forth conversation through reduced sharing of interests, emotions, and affect and response to total lack of initiation of social interaction

  2. Deficits in nonverbal communicative behaviors used for social interaction; ranging from poorly integrated-verbal and nonverbal communication, through abnormalities in eye contact and body-language, or deficits in understanding and use of nonverbal communication, to total lack of facial expression or gestures
3. Deficits in developing and maintaining relationships, appropriate to developmental level (beyond those with caregivers); ranging from difficulties adjusting behavior to suit different social contexts through difficulties in sharing imaginative play and in making friends to an apparent absence of interest in people.
Autism Spectrum Disorder

• B. Restricted, repetitive patterns of behavior, interests, or activities as manifested by at least two of the following:

  1. Stereotyped or repetitive speech, motor movements, or use of objects; (such as simple motor stereotypies, echolalia, repetitive use of objects, or idiosyncratic phrases)

  2. Excessive adherence to routines, ritualized patterns of verbal or nonverbal behavior, or excessive resistance to change; (such as motoric rituals, insistence on same route or food, repetitive questioning or extreme distress at small changes)
DSM V Overview
Autism Spectrum Disorder

• B. Restricted, repetitive patterns of behavior, interests, or activities as manifested by at least two of the following:
  3. Highly restricted, fixated interests that are abnormal in intensity or focus; (such as strong attachment to or preoccupation with unusual objects, excessively circumscribed or perseverative interests).
  4. Hyper-or hypo-reactivity to sensory input or unusual interest in sensory aspects of environment; (such as apparent indifference to pain/heat/cold, adverse response to specific sounds or textures, excessive smelling or touching of objects, fascination with lights or spinning objects).
DSM V Overview
Autism Spectrum Disorder

• C. Symptoms must be present in early childhood (but may not become fully manifest until social demands exceed limited capacities)

• D. Symptoms together limit and impair everyday functioning

• Must meet criteria A, B, C, and D:
Statistics

• 1 in 110 children in the United States have an autism spectrum diagnosis (CDC, 2009)

• Four times more likely to occur in boys (1 in 70)

• Affects all racial, ethnic, and socioeconomic groups
Diagnostic Delays

• Numerous studies have found that autism can be reliably diagnosed by age 2 (CDC; Bishop et al., 2008; Lord & Spence, 2006)

• Diagnosis of ASD at age 2 can be seen as accurate and stable over time (Charman et al., 2005; Eaves & Ho, 2004; Lord et al., 2006)
Diagnostic Delays

- CDC study (2006) found that the average age of initial evaluation of children later diagnosed with an ASD was 4 yrs. with the final diagnosis being made at age 5.1 yrs.

- Howlin and Moore (1997) found that in 1,300 families in UK surveyed, the avg. age of diagnosis of an ASD was 6 yrs. despite parental concerns about possible symptoms at 18 mos. and they usually sought medical help by age 2.
Why Are We Missing This?

- Providers are worried about labeling or misdiagnosing children
- Worries about stressing a family
- Hope that children will “grow out of it”
- Looking for signs of “classic autism”
- Initial referrals are for other complaints
- Variability in individual development
Importance of Early Diagnosis

• Early Diagnosis = Early Treatment = Significantly Improved Outcomes

• Significant improvements in speech, developmental progress, cognitive ability, behavioral deficits, etc. with intensive early intervention (Filipek et al., 1999)
Importance of Early Diagnosis

• Improvements in outcomes only seen for children who receive 2 or more years of intensive early intervention in the preschool years (Filipek et al., 1999)

• Critical time period for maximal outcomes
Evidenced Based Assessment

• “Best Practices for the Diagnosis and Evaluation of Autism” (Filipek et al., 1999)
  – Published by the Child Neurology Society and American Academy of Neurology
  – Document written by multidisciplinary Consensus Panel after systematic review of over 2,500 scientific articles in literature
Best Practices for the Diagnosis and Evaluation of Autism

• Professional Societies
  – American Academy of Pediatrics
  – American Academy of Child and Adolescent Psychiatry
  – American Academy of Neurology
  – American Psychological Association
  – American Psychological Society
  – Society of Developmental Pediatrics
  – American Academy of Audiology
  – American Occupational Therapy Association
  – American Speech-Language Hearing Association
Best Practices for the Diagnosis and Evaluation of Autism

• Recommended a dual level approach:
  – Level 1 - Routine developmental surveillance and screening for autism
  – Level 2 - Diagnosis and evaluation of autism
Routine Developmental Surveillance and Screening

• Level 1 – All professionals involved in early child care must be aware of signs of autism

• Developmental screening should be performed at every well visit on all children through infancy, toddlerhood, preschool, and every age after if concerns are raised about social behavior, learning, and language
Routine Developmental Surveillance and Screening

- In 2007, the American Academy of Pediatrics mandated that all children be screened for autism by their physician twice by age 2 (18 mos. & 24 mos.)
- AAP also recommends that treatment be started upon suspected diagnosis rather than waiting for a formal diagnosis
Routine Developmental Surveillance and Screening

- The Communication and Symbolic Behavior Scales Developmental Profile Infant-Toddler Checklist (Pierce et al., 2011)

- Assesses babies based on emotion, eye contact, communication, gestures, sounds, words, understanding and object use
Routine Developmental Surveillance and Screening

• 137 pediatricians used this checklist to screen 10,479 babies
• 184 infants who failed the screening were then evaluated every 6 months until age 3
• Checklist was able to diagnosis 75% of infants with specific problems
  – 32 with autism
  – 52 with language delays
  – 9 with developmental delays
Appropriate Level 1 Screening Tools

• Ages and Stages Questionnaire – 3rd Ed.
• BRIGANCE Early Childhood II Screens
• Child Development Inventories (CDIs)
  – Infant Developmental Inventory
  – Child Development Review - Parent
• Parents’ Evaluation of Developmental Status (PEDS)
Routine Developmental Surveillance and Screening

• Denver Developmental Screening Test II no longer recommended as the main screening tool in primary care settings

• Research shows that it is significantly insensitive and lacks specificity
Absolute Indications for Immediate Evaluation

• No babbling, pointing or other gestures by 12 mos
• No single words by 16 mos
• No 2 word spontaneous (not echolalic) phrases by 24 mos.
• Any loss of any language or social skills at any age
Level 1
Laboratory Investigations

• Formal Audiologic Evaluations
  – Hearing
  – Language

• Lead Screening
  – Developmental delays
  – Pica
**Level 1**

Specific Screening for Autism

- Modified Checklist for Autism in Toddlers (M-CHAT)
- Social Communication Questionnaire
- Pervasive Developmental Disorders Screening Test II – Stage 1 or 2
Modified Checklist for Autism in Toddlers (M-CHAT)

• Developed as a Level 1 screening tool for autism/PDD for children 16-30 mos. at their pediatric well visit in U.S.
• Parent report measure
• Contains first 9 items from the CHAT and 21 new items to include more PDD symptoms
• Eliminates physician observations of CHAT
Social Communication Questionnaire (SCQ)

- Formerly known as Autism Screening Questionnaire (ASQ)
- 40 item parent measure for children 4 yrs. up with a mental age of 2+ yrs.
- Evaluates communication and social functioning in children who may be on autism spectrum
Pervasive Developmental Disorders Screening Test II – Stage 1

• Parent measure that screens for autism/PDD in ages 12 to 48 mos.
• Stage 1 is screener for use in PCP setting
• Responsive to typical vs. atypical development
• Also available for use in developmental (stage 2) and autism clinics (stage 3)
Level 2: Diagnosis and Evaluation of Autism

• Once child screens positive, refer for complete diagnostic evaluation
• Evaluation done only by clinicians experienced in the diagnosis of autism
• Multidisciplinary approach and coordination of services
Level 2: Expanded Medical / Neurological Evaluation

- Pregnancy / Perinatal history
- Medical history
- Developmental history
- Family history
- Neurological exam
- Comorbid conditions
Level 2: Autism Diagnostic Tools

- Diagnostic criteria (DSM-IV-TR)
- Parental interview regarding symptoms
- Measures of parent report
- Formal observations and interactions
- Formal assessment tools
  - Autism rating scales
  - Cognitive assessment
  - Adaptive functioning
Diagnostic Parental Interviews and Questionnaires

- Gilliam Autism Rating Scale – 2nd Edition (GARS-2)
- Pervasive Developmental Disorders Screening Test II – Stage 3 (PDDST II)
- Autism Diagnostic Interview – Revised (ADI-R)
- Asperger’s Syndrome Diagnostic Scale (ASDS)
Gilliam Autism Rating Scale 2 (GARS-2)

• 42 item parent rating scale used for children 3 to 22 yrs.
• Used to identify and estimate severity of symptoms of autism
• Items grouped into 3 subscales:
  – communication
  – social interaction
  – stereotyped behaviors
Pervasive Developmental Disorders Screening Test II

• Autism Clinic Severity Setting – Stage 3
  – Used by professionals completing a full diagnostic evaluation
  – Has only 12 items used for ages 12-48 mos.
  – Positive screen indicates a higher probability of having autism
  – Helps direct differential diagnosis for Autistic Disorder, Asperger’s Disorder, or PDD NOS
Autism Diagnostic Interview-Revised (ADI-R)

- Semi-structured diagnostic interview to assess behaviors related to autism or ASD
- Assesses child’s early development, communication, social interaction, and patterns of behavior
- Gold standard along with ADOS in research protocols
- Takes between 1 ½ - 3 hours and requires specialized training
Asperger’s Syndrome Diagnostic Scale (ASDS)

- Parent/teacher rating scale for high functioning children (5 - 18 years)
- 50 yes/no items drawn from five specific areas of behavior: cognitive, maladaptive, language, social, and sensorimotor
- The total score identifies individuals with Asperger Syndrome
Diagnostic Observation Instruments

- Childhood Autism Rating Scale – Second Edition (CARS-2)
- Autism Diagnostic Observation Schedule (ADOS)
Childhood Autism Rating Scale – Second Edition (CARS-2)

- Structured interview and observation tool
- Used for children 24 mos. + in age
- 15 items rated on a 4 pt. scale to indicate degree behavior deviates from norm
- Ratings include frequency of the behavior intensity, peculiarity, and duration
- Helps differentiate between autism vs. those with developmental delays and HFA
Autism Diagnostic Observation Schedule (ADOS)

• Semi-structured standardized observation
• Assessment of communication, social interaction, and play or imaginative use of materials
• Used in nonverbal toddlers - verbal adults
• Four modules depending on language abilities
Autism Diagnostic Observation Schedule (ADOS)

- Module 1 – Non-verbal to primarily single words and occasional phrases
- Module 2 – Some phrase speech but not verbally fluent (i.e., 3 word phrases)
- Module 3 – Verbally fluent children and younger adolescents (that enjoy playing with toys)
- Module 4 - Verbally fluent adolescents and adults (not interested in toys – more questions)
Autism Diagnostic Observation Schedule (ADOS)

- Investigator directs activities to elicit behaviors that assess:
  - Communication
  - Reciprocal social interaction
  - Play / Creative play
  - Use of gestures
  - Stereotypic behavior
  - Restricted interests
  - Other abnormal behaviors
Autism Diagnostic Observation Schedule (ADOS)

- Cutoff scores for both a narrow classification of autism and a broader classification of ASD or non-spectrum
- Does not provide a DSM diagnosis
Other Level 2 Assessments

• Need to make differential diagnoses of autism from other developmental disorders

• Need to assess psychiatric co-morbid disorders
  – Achenbach Child Behavior Checklist (CBCL)
Other Level 2 Assessments

• Speech and Language Evaluation
  – Speech / Expressive & Receptive language
  – Observation of language in social situations

• Occupational Therapy Evaluation
  – Motor / Functional / Occupational skills
  – Sensory processing issues

• Adaptive Behavior Evaluation
  – Vineland Adaptive Behavior Scales – 2\textsuperscript{nd} Ed.
Other Level 2 Assessments

• Cognitive Assessments
  – Assess overall cognitive functioning
  – Rule out cognitive disability
  – Should assess verbal and non-verbal abilities
  – Should be appropriate for mental and chronological age
  – Should include overall index of ability
Cognitive Assessments

• Bayley Scales of Infant and Toddler Development, 3rd Edition (Bayley-III)
• Mullen Scales of Early Learning
• Wechsler Scales (WPPSI-III & WISC-IV)
• Leiter International Performance Scale-Revised (Leiter-R)
• Stanford-Binet Intelligence Scales – 5th Edition (SB-5)
Other Level 2 Assessments

- Neuropsychological / Behavioral
- Academic (school)
- Family functioning
- Laboratory Investigations
  - Metabolic Testing
  - Genetic Testing (DNA for Fragile X)
  - Electrophysiologic Testing
Next Steps

• Referrals to Early Intervention (0-3 yrs.)
  - “Help Me Grow” in Ohio
• Referrals to local school district
  - Special Ed. Services (3 yrs. Up)
• Referral to autism centers and organizations
  • UT Center of Excellence in Autism
  • Autism Society of Northwest Ohio
  • Mercy Children’s Autism Services (CHIP)
Next Steps

• Referrals to appropriate specialists for treatment
• Reevaluation within a year of diagnosis
• Continued monitoring over time
Helpful Web Resources

Autism Speaks:
www.autismspeaks.org

First signs:
www.firstsigns.org

Practice Parameters Report:
www.neurology.org/content/55/4/468.full

Centers for Disease Control and Prevention:
www.cdc.gov/ncbddd/autism/data.html