Diagnosing autism spectrum disorders in children with hearing loss: How the *DSM-5* can benefit children and families

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Presentation Goals

- Overview of ASD characteristics; research summary
- Compare and contrast social language characteristics of children with ASD and children who are DHH
- Characteristics of ASD in the DSM-5
  - What’s new in DSM-5
  - Using DSM-5 severity specifiers
- Strategies for utilizing a team approach in making a differential diagnosis
- Case study discussion
- Resources / screening tools
Autism Spectrum Disorders

A group of developmental disorders characterized by impairments in social interaction and communication, and by restricted, repetitive, and stereotyped patterns of behavior.
The number of children identified with ASD at 8 years of age (in 11 communities) 1 in 68
30% higher than the estimate in 2008
Varies from 1:175 in Alabama to 1:45 in New Jersey
Boys were almost 5 times more likely to be identified with ASD than girls. (1 in 42 boys; 1 in 189 girls).
About 1 in 63 white children, 1 in 81 black children, and 1 in 93 Hispanic children were identified with ASD.
Almost half (46%) of children identified with ASD had average or above average intellectual ability (IQ > 85).

Less than half (44%) of children identified with ASD were evaluated for developmental concerns by the time they were 3 years old.

On average, children were not diagnosed until after age 4, even though ASD can be diagnosed as early as age 2.

20% of children identified with ASD had documented symptoms of ASD in their records, but had not yet been classified as having ASD by a community professional.
Children who are DHH with ASD

- Prevalence estimates of co-morbid diagnoses of ASD and range from 4-20% of the ASD child population.
- Children with HL are frequently diagnosed with an ASD much later than their ASD peers with normal hearing.
Children who are DHH with ASD

- Prevalence:
  - Gallaudet Research Institute Annual Survey: 1 in 53
  - CDC: 1 in 110

- Prevalence of profound hearing loss in children with ASD is 10 times higher than general public (Rosenhall et al., 1999).

- Larger percentage of deaf children with profound HL and ASD than any other degree of HL.
Differential Diagnosis

- Initial symptoms of ASD are subtle and can be confused with symptoms of hearing loss.
  - HL diagnosis ~2-3 months of age
  - ASD diagnosis ~3-4 years of age

- The audiology clinic is likely one of the first clinical locations in which children with ASD will be seen as parents seek answers.

- Determining presence of HL and ASD can be particularly challenging.
## Early Characteristics

(remember... behaviors seen across a spectrum)

<table>
<thead>
<tr>
<th>Children with HL</th>
<th>Children with ASD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Delayed speech and language development</td>
<td>Delayed speech and language development</td>
</tr>
<tr>
<td>May or may not babble</td>
<td>Often does not babble</td>
</tr>
<tr>
<td>Visually alert (if no vision loss)</td>
<td>Inconsistent visual alertness</td>
</tr>
<tr>
<td>Will establish joint attention</td>
<td>Rarely establishes joint attention</td>
</tr>
<tr>
<td>Engages in reciprocal play activities</td>
<td>Inconsistent reciprocal play</td>
</tr>
<tr>
<td>Responds to or shows empathy to others’ emotions</td>
<td>Inconsistent show of empathy</td>
</tr>
</tbody>
</table>

Utah State University
What’s new in *DSM-5* and how can the new language benefit families and improve services to children with ASD and HL?
DSM IV –TR to DSM 5

- Four separate disorders.
  - Autistic Disorder
  - Aspergers
  - Childhood Disintegrative Disorder
  - Pervasive Developmental Disorder – Not Otherwise Specified

- There is now a single condition called Autism Spectrum Disorder (ASD), which incorporates the four previous separate disorders.
Autism spectrum disorder is a new DSM-5 name that reflects a scientific consensus that four previously separate disorders are actually a single condition with different levels of symptom severity in two core domains.

ASD is now characterized by
- 1) deficits in social communication and social interaction
- 2) restricted repetitive behaviors, interests, and activities (RRBs).

Because both components are required for diagnosis of ASD, social communication disorder may be diagnosed if no RRBs are present.
DSM IV –TR to DSM 5

3 areas to consider
- Social-Reciprocity
- Language
- Restricted-Repetitive Behavior

2 areas to consider
- Social-Reciprocity
- Restricted-Repetitive Behavior
DSM-IV

Social Reciprocity/Language

- Qualitative impairment in social interaction, as manifested by two of the following:
  - Marked impairment in multiple nonverbal behaviors
  - Failure to develop age-appropriate peer relationships
  - Lack of spontaneous seeking of shared interactions
  - Lack of social or emotional reciprocity

- Qualitative impairment in communication, as manifested by at least one of the following:
  - Delayed development of spoken language
  - Impaired ability to initiate or sustain conversation
  - Repetitive use of language or idiosyncratic language
  - Lack of pretend or social play
DSM-5
Social-Reciprocity

Client needs to meet **ALL** criteria **across multiple contexts**

- Deficits in social-emotional reciprocity
- Deficits in nonverbal communicative behaviors
- Deficits in developing, maintaining and understanding relationships
DSM – IV
Restricted–Repetitive

- Restrictive repetitive and stereotypic patterns of behavior, interests, and activities, as manifested by at least one of the following:
  - Preoccupation with interest that is abnormal either in intensity or focus
  - Inflexible adherence to routines or rituals
  - Stereotyped or repetitive motor mannerisms (hand or finger flapping, complex whole body movements)
  - Persistent preoccupation with parts of objects
DSM – 5
Restricted-Repetitive

- Client needs to meet **AT LEAST 2**
  - Stereotyped or repetitive motor movements
  - Insistence on sameness, inflexible adherence to routines, patterns
  - Highly restricted, fixated interests, abnormal in intensity
  - Hyper- or hyporeactivity to sensory input
New in the *DSM* - 5

- Specify current severity
  - Level 3 - “Requiring very substantial support”
  - Level 2 - “Requiring substantial support”
  - Level 1 - “Requiring support”
DSM IV – TR to DSM 5

- DSM IV
  - Behaviors evident before age 3

- DMS 5
  - Behaviors current or by history
DSM IV – TR to DSM 5

- DSM IV
  - No diagnosis of ADHD with ASD
  - No diagnosis of Language disorder with ASD

- DSM 5
  - Now able to include all other diagnoses a child exhibits
Comprehensive Diagnosis

- Child does / does not have ASD
  - With or without accompanying intellectual impairment
  - With or without accompanying language impairment
  - Associated with a known medical or genetic condition or environment factor
  - Associated with another neurodevelopmental, mental, or behavioral disorder
Interdisciplinary Evaluation

Team members
- Parents/family, teacher(s), audiologists, speech-language pathologist, psychologists, medical providers, occupational / physical therapy

Evaluate in multiple contexts
- Standardized, observational, parent report

Feedback to family

Recommendations specific to community in which child lives
- Resources
Case Study-Questions

- Allan did not pass the initial (OAE) screen at birth but passed auditory brainstem response (ABR) screening at 3 weeks of age.
- How does this relate to hearing loss?
- How does this relate to autism?
Referral questions from Mr. & Mrs. Dell state that Allan displays delays in social behaviors such as lack of eye contact, lack of parallel play, and interacting with peers.

- How does this relate to hearing loss?
- How does this relate to autism?
Case Study-Questions

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He was able to sit at 6 months, crawl at 7 months, and was starting to talk by 12 months, including phrases ("more milk please").

How does this relate to hearing loss?

How does this relate to autism?
Case Study-Questions

- There are also concerns with sensory issues and he has been slow to progress in multiple areas in school.
- How does this relate to hearing loss?
- How does this relate to autism?
At age 3 years 7 months, Allan was seen for a consideration of an autism spectrum disorder. At this time there were concerns about lack of eye contact, sensory issues, and a lack of parallel play. The physician noted a moderate to severe hearing impairment and suspicions of a global developmental delay and perhaps not an autism spectrum disorder. Recommendation was for additional assessment by a psychologist to determine Allan’s level of functioning.

- How does this relate to hearing loss?
- How does this relate to autism?
Case Study-Questions

- At 3 years 10 months he also was administered the Autism Diagnostic Observation Scale (ADOS). Allan was diagnosed with a Mixed Language Delay, Speech Delay, Fine Motor Coordination Problems, Sensory Integration Difficulties, and a provisional diagnosis of Pervasive Developmental Disorder Not Otherwise Specified.

- How does this relate to hearing loss?
- How does this relate to autism?
Case Study-Questions

- At age 4 years, 10 months, the preschool had concerns with Allan's behavior in the classroom and during therapy activities. Allan demonstrated multiple developmental problems including language delay, social pragmatic delays, and delays in fine and gross motor skills. It also was noted that Allan "does not engage in interactive play skills consistent with his chronological age peers but rather manifests parallel play behaviors."

- How does this relate to hearing loss?
- How does this relate to autism?
Resources

- Modified Checklist for Autism in Toddlers (M-CHAT)
  - www.m-chat.org - free downloads


- Communication Social Behavioral Scales, Developmental Profile, (CSBS-DP) Infant-Toddler Checklist-free
Resources

- Autism Speaks - [www.autismspeaks.org](http://www.autismspeaks.org)
- Video Glossary
- Center for Disease Control -
Conclusions

- Children with dual diagnosis will most likely be seen in the audiology office first because of the language delay
- Know the signs (see resource list)
- Know the collaborators in your area; where can you refer
- DSM assists in looking holistically at the child’s skills and needs
- The more knowledgeable we are, we can be part of closing the age to diagnosis for these children who are both ASD and D/HH
Thank you!

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