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Evaluation of Children with Hearing Loss and Suspected Autism Spectrum Disorder: An Early Intervention Perspective

Wendy Deters, MS, CCC-SLP, LSL Cert AVEd

Moderated by:
Amy Natho, MS, CCC-SLP, CEU Administrator, SpeechPathology.com

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Evaluation of Children with Hearing Loss and Suspected Autism Spectrum Disorder

Wendy Deters MS, CCC/SLP, LSLS Cert AVEd
wdeters@childsvoice.org
Introduction

- Child’s Voice - Wood Dale, IL
- EI/ School Professional Development Coordinator
- Provide initial evaluations and ongoing speech and AR services
- Specialize in 0-3, cochlear implants, AR, LSL
- Adjunct Professor

Who is here?

- Work environment?
- Caseload?
- Experience?
Why this topic?

Incidence: Hearing Loss and Additional Needs

- 40% of children with hearing loss have additional needs outside of hearing loss
- The incidence of ASD has been suggested to be equal to or higher in children with hearing loss than it is in the general population
  - 1 in 59 in the general population (CDC, 2019)
  - 1 in 59 in children with hearing loss (Gallaudet Research Institute, 2009)
Time Lag: Age of Identification

**ASD**
- Avg. Age of ID: Around 3.10 y/o
- Avg. Age of ID for PDD: 4.8 y/o
- for Asperger: 5.7 y/o

**HL & ASD**
- Avg. age of initial diagnosis: Around 4.5 y/o
- Confirmatory diagnosis: Around 6 y/o

Professional Challenges

- Professionals may not be crossed trained in both disorders
- No established tool for dual diagnosis
- The ADOS may need modification or may not be appropriate for children with HL
- Counseling for concerns regarding dual diagnosis is challenging
- Delays in progress with hearing loss identification, amplification, and intervention
- “Wait and see” due to technology/ HL
Learning Outcomes

After this course, participants will be able to:

▪ Describe the similarities and differences in the expected communication development between children with hearing loss and those with Autism Spectrum Disorder (ASD).

▪ Identify evaluation tools that can assist in monitoring and assessing communication development in children with hearing loss, in order to aid in differential diagnosis between hearing loss and ASD.

▪ List the child-specific and environmental factors that influence listening skill development in a child with hearing loss, post-amplification.

Autism Spectrum Disorder - Triad of Needs

[Diagram showing the Triad of Needs: Social Interaction, Communication, Activities and Interests]
Challenges in dual diagnosis

- Confirming the ASD diagnosis through a medical diagnostic evaluation in a timely manner
- Using data to identify specific areas of concern that do not relate to hearing loss
- Addressing concerns with parents
- Others from the audience?

Ruling out other communication disorders:
- ADHD
- Sensory Integration Disorder
- Cognitive delay/ disorder
- Trauma/ environmental factors

Red Flags

- Lack of communicative intent
- Lack of joint attention
- Lack of progress in therapy (all communication modalities)
- Lack of progress post amplification
- Lack of play skills

Challenges in dual diagnosis

<table>
<thead>
<tr>
<th>Child Factors</th>
<th>Environmental Factors</th>
<th>Therapeutic/Educational Factors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age of Identification</td>
<td>Parent education</td>
<td>Availability of services</td>
</tr>
<tr>
<td>Age of Amplification</td>
<td>SES – access to resources</td>
<td>Quality of services</td>
</tr>
<tr>
<td>Degree and type of hearing loss</td>
<td>Environmental factors</td>
<td>Parents mental health</td>
</tr>
<tr>
<td>Medical History</td>
<td>Extended family support</td>
<td>Family participation</td>
</tr>
<tr>
<td>Etiology of hearing loss</td>
<td>Family Culture</td>
<td>Consistency of services</td>
</tr>
<tr>
<td>Additional medical needs</td>
<td>Grief</td>
<td>Carry over to home environment</td>
</tr>
<tr>
<td>Additional developmental needs</td>
<td>Language environment – quantity and quality</td>
<td></td>
</tr>
<tr>
<td>Cognition</td>
<td></td>
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<tr>
<td>Temperament</td>
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<tr>
<td>Non Verbal IQ</td>
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</tbody>
</table>
Evaluation

“Best practice relies on informed clinical opinion based on interpretation of data gathered from multiple sources (Szarkowski, et. al, 2014).”
Evaluation - what can we do?

- Obtain a complete case history including the hearing loss, medical, and developmental growth
- Understand typical progression of children with hearing loss with and without amplification
- Working relationship with Audiologist and the child’s therapy team
- Obtain and share information and data on: listening skills, speech, language, play, and social skill development

Initial Evaluations

- Complete medical history
  - prenatal and birth history
  - gender
  - prematurity
  - genetic disorder (ex. Fragile X)
  - family history
  - other medical needs
- Developmental History
  - social milestones
  - communication milestones
  - motor milestones
Initial Evaluations

Hearing Loss history
- Degree of hearing loss
- Etiology
- Identification and Amplification
- Access to sound/ device use
- Family support
- Intervention

Understanding Hearing Loss Progress

- Factors that influence progress
- Listening skill development
- What to expect post CI
Factors that influence progress

**Child Factors**
- Age of Identification
- Age of Amplification
- Degree and type of hearing loss
- Medical History
- Etiology of hearing loss
- Additional medical needs
- Additional developmental needs
- Cognition
- Temperament
- Non Verbal IQ

**Environmental Factors**
- Parent education
- SES – access to resources
- Parents mental health
- Extended family support
- Family Culture
- Grief
- Language environment – quantity and quality

**Therapeutic/Educational Factors**
- Availability of services
- Quality of services
- Family participation
- Consistency of services
- Carry over to home environment

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What to expect post CI

Varies by child due to previously listed factors as well as mapping success and device use

- Under 2 years old
- for 12 months subtract 1-2 months
- For over 2 years old add 2-3 months
- For over 3 years old add 3-6 months

Adapted from:
Sunshine Cottage School for Deaf Children. Cottage acquisition scales for listening, language, & speech (CASLLS). San Antonio, TX: Sunshine Cottage School for Deaf Children.

### What to expect post CI

<table>
<thead>
<tr>
<th>0-3 months</th>
<th>4-6 months</th>
<th>7-9 months</th>
<th>10-12 months</th>
<th>13-15 months</th>
<th>16-18 months</th>
<th>19-24 months</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Establish full-time device use</td>
<td>• Responds to name most of the time</td>
<td>• Localizes sounds side to side and below</td>
<td>• Localizes side-to-side, below, and above</td>
<td>• Continued language development, more words, phrases, songs, and sounds have meaning</td>
<td>• Auditory memory of 2 items</td>
<td>• By 24 months should have 250-300 words</td>
</tr>
<tr>
<td>• Responses to environmental sounds</td>
<td>• Sounds begin to have meaning; excited when the phone rings, quiet when the dog barks, stops crying when mom speaks</td>
<td>• Localizes a variety of environmental sounds</td>
<td>• Responds to verbal requests</td>
<td>• Processes simple language</td>
<td>• Understands early syntax structures</td>
<td></td>
</tr>
<tr>
<td>• Responses to voices</td>
<td>• Identifies a variety of environmental sounds</td>
<td>• Understands and can identify ELTL sounds</td>
<td>• Can discriminate speech from environmental sounds</td>
<td>• Discriminates between songs/ nursery rhymes and phrases</td>
<td>• Understands prepositions and pronouns</td>
<td></td>
</tr>
<tr>
<td>• Detection of high frequencies should be established by 3-4 months</td>
<td>• Understands some words: ex. family members, favorite things, byebye</td>
<td>• Localizes sounds side to side and above</td>
<td>• Starts to have words in a variety of categories (about 50 words)</td>
<td>• Understands some prepositions and pronouns</td>
<td>• Consonant and vowel discrimination</td>
<td></td>
</tr>
<tr>
<td>• Should see an increase in &quot;listening behavior&quot;</td>
<td>• May see some increase in babbling</td>
<td>• Identifies a variety of environmental sounds</td>
<td>• Responds consistently to name</td>
<td>• More consistent following directions</td>
<td>• Listening in noise and distance improves</td>
<td></td>
</tr>
<tr>
<td>• Auditory perception suprasegmentals</td>
<td>• Should be able to identify all 6 Ling sounds</td>
<td>• Responds to name most of the time</td>
<td>• Performs routine activities (high five)</td>
<td>• Follows one step directions consistently</td>
<td>• More consistent following directions</td>
<td>• May start consonant and vowel discrimination</td>
</tr>
</tbody>
</table>
Professional Relationships

Non Verbal Communication Milestones

- First Words Project
- ASHA
- Healthy Children
- Zero to Three
- Linguisystems: Communication Milestones
  - (Lanza & Flahive, 2012)
Communication Assessment

- Assessments should take place every 3 months
- More often than EI typically requires
- Progress should be tracked over time
- Rate of growth is important!
- The language gap should begin to close as listening skills develop
- Standardized assessments, Criterion Referenced assessments, and informal measures should all be used
- Consider assessing cognition, social emotional skills, and adaptive behavior

Assessment

What do you use?

- Language
  - vocabulary
  - syntax
  - pragmatics
- Communication
- Development
  - cognition
  - social emotional
  - adaptive behavior
Team Approach for Assessment

- May be a series of conversations
- Open and honest
- Validate and encourage
- Help caregivers recognize behaviors’
- May use data to back up concerns
  - anticipate responses
- Have a plan of action ready
Communication modality must be based on the skill/preferences of the child - this may change over time
- Parents may have to adjust initial expectations
- No one method is best for all children with ASD/Hearing Loss
- All communication modalities should be considered
- Behavior, learning style, sensory needs, and basic communication must be addressed alongside with traditional Deaf Ed. programming
Treatment: Potential Strengths and Challenges

- Communication Options:
  - Listening and Spoken Language
  - ASL
  - Total Communication
  - Picture Exchange Communication (PECS)
  - Augmentative and Alternative Communication (AAC) Device
- Combination of all modalities

Treatment: Listening Skills

- Listening Skill Development should continue to be a priority but may need to shift from the main focus
- Amplification needs may require a multidisciplinary approach
- A clear understanding of the child’s motivators is helpful in teaching listening skills
- Intervention strategies and expectations should be flexible and based on child’s needs
Treatment: TEAMWORK

Questions, Comments?
References

*Please see PDF