

Language of Young Deaf and Hard-of-Hearing Children: What's Missing?



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Today's Topic

- # Examine the strengths and limitations in the language skills of children who are deaf/hard of hearing at 12 to 36 months of age

Participants

- # 535 deaf and hard-of-hearing children
 - # Children assessed on 1 to 6 occasions
 - # Total number of assessments = 935
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Inclusion Criteria

- # Bilateral hearing loss (mild to profound)
 - # English or ASL as the primary language of the home
 - # No additional disabilities thought to impact speech/language development (based on parent/interventionist report)
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Participant Characteristics

Chronological Age

- 12 to 35 months
- Mean = 24 months

Gender

- Boys = 52%
 - Girls = 48%
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Primary Contributing States (each > 5% of the database)

- # Colorado – 39%
 - # Idaho – 20%
 - # Arizona
 - # Indiana
 - # Texas
 - # Wisconsin
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Secondary Contributing States ($< 5\%$ of the database)

- # California
 - # Florida
 - # Maine
 - # Minnesota
 - # New Mexico
 - # North Dakota
 - # Oregon
 - # Utah
 - # Wyoming
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Type of Amplification Used

| Type of Amplification | % |
|-----------------------|-----|
| None | 8% |
| Hearing aid | 72% |
| Cochlear implant | 18% |
| Bone conduction aid | 3% |

Communication Mode of Primary Caregiver

| Communication mode (parent) | % |
|----------------------------------|-----|
| Spoken language only | 25% |
| Spoken with very occasional sign | 48% |
| Sign + spoken language | 23% |
| Sign only | 3% |

Mother's Level of Education

| Highest degree completed | % of primary caregivers |
|--------------------------|-------------------------|
| Less than HS | 7% |
| High school diploma | 35% |
| Vocational or Associates | 18% |
| Bachelor's degree | 26% |
| Graduate degree | 13% |

(Minnesota) Child Development Inventory

- # 12 months to 6 years
 - # Expressive language most sensitive from 15 months to 3½ years
 - # Language Comprehension most sensitive from 12 months to 3½ years
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(Minnesota) Child Development Inventory

- # Parent report
 - # Parents respond “yes” or “no” to a variety of statements about their child
 - # Examples:
 - “Has a vocabulary of 20 or more words”
 - “Uses the word ‘not’ in sentences
 - Expresses likes and dislikes in words
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(Minnesota) Child Development Inventory

- # Selected items examined from 4 subscales
 - Expressive Language
 - Language Comprehension and Conceptual Language
 - Social
 - Numbers
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Determining Language Quotient

- # Language Age/Chronological Age x 100
 - If $LQ = 100$, Language Age = CA
 - If $LQ < 100$, Language Age < CA
 - If $LQ > 100$, Language Age > CA

 - # LQs of 80+ are within the normal range compared to hearing children
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Results: Language Quotients

Expressive Language

- Median = 95
- LQ of 80 and above = 79%

Comprehension and Conceptual Language

- Median = 87
 - LQ of 80 and above = 65%
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Determining Item Age Level

- # Group children into 3-month age brackets (e.g., “12 month group” = 12 to 14 months)
 - # Find the first age group at which 75% of the children achieve a given item
 - # These same procedures followed in the test’s normative sample
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Linguistic skills at age level

Non-verbal communication

- “Points”
- Asks for drink or food using words or sounds

Early verbal communication (first 20 to 40 words)

- Uses at least 10 words
 - Greets people with “hi” or similar expression
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Linguistic skills at age level

Basic comprehension

- Follows simple instructions
- Understands the meaning of “up” and “down”

Rote language

- Says/signs “please” and “thank you”
 - Greets people with “hi” or similar expression
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Linguistic skills: Mildly delayed

- # Comprehension of early conceptual vocabulary
 - Understands what “off” & “on” mean
 - Understands what “open” & “close” mean
 - # Concrete, single word utterances
 - Names a few familiar objects in picture books
 - Uses 50 or more different words
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Linguistic skills: Moderately delayed

- # Early number concepts
 - Understands “one” and gives you just one when you ask for “one”
- # Use of first pronoun (“mine” or “my”)

Linguistic comprehension skills: Severely delayed

Prepositions

- Understands the meaning of at least 3 location words (“in,” “on,” “under,” etc.)

Complex comprehension

- Follows 2-part instructions
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Linguistic production skills: Severely delayed

- # Pronoun use
 - # Use of negative forms (not, don't, won't, can't, etc.)
 - # Conceptual vocabulary
 - “Points to/names the bigger of 2 objects”
 - “Expresses feelings in words”
 - Says/signs when something is heavy
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Linguistic production skills: Severely delayed

Grammar

- Uses plural words (e.g., “girls,” “cats”)
 - Asks questions with ‘what’ or ‘where’
 - Uses the words “a,” “an,” and “the”
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Summary

- # The majority of the 12- to 18-month level language items are demonstrated at or close to on schedule
 - # Children who are d/hoh demonstrated delays on almost all language items at or above the 21-month level
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Summary

- # Average language scores for a group of children from birth to 3 typically underestimate the skill level of children below 2 yrs of age and overestimate the skills of children above 2 yrs of age
 - # Research and accountability data for this age range should divide the children into two age groups
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