An Analysis of Phonological Process Use in Young Children with Cochlear Implants

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RESULTS

RESEARCH QUESTION

Figure a shows the box plot for KLPA-2 standard scores and indicates that there is variability within standard scores for all participants. Although the average standard score on the KLPA-2 is 100, the majority of participants (#2, #3, and #4) attained standard scores which were at least 2 standard deviations below the mean. However, scores for Participants #1 and #5 fell within the average range (95 and 99).

Box plots (Figure b and c) reveal that the majority of participants have great variability in phonological skills. As seen in the figure b, all of the participants attained percentile ranks that were below average (50th percentile) based on their chronological ages (CAs).

The use of standardized measures in research to determine phonological skills of children with CIs has not yet been investigated, yet more children with CIs are being mainstreamed into typical classroom settings. It is expected that standardized tools will be used increasingly to assess phonological competence of children with CIs. Additionally, standardized assessments are norm referenced and allow for comparisons to typically developing children.

The purpose of the present study is to examine the overall phonological systems of children who use CIs as measured by a standardized assessment. Furthermore, the researchers investigated whether or not children implanted before age three suppress phonological processes the same as their peers.

PARTICIPANTS

- Participants:  
  5 children (3 females; 2 males) with CIs  
  Chronological ages: Ranged from 51—57 months  
  Hearing ages: ranged from 22—43 months

PROCEDURES

- Procedures:  
  Basic auditory ability when using a CI assessed using the Ling 6 Sound Test  
  Administration of the GFTA-2  
  Responses transcribed phonetically  
  Converted responses to the KLPA-2  
  Percent of occurrence (POC) for phonological processes determined for each participant

DISCUSSION

Clinically, the findings of this research imply that many factors must be considered when examining the phonological systems of young children with CIs including: the proximity of CA to HA which appears to indicate a more ideal outcome of CI and the development of phonological abilities in children with CIs. Overall, there is great variability among all of the KLPA-2 values. This suggests that the participants of this study have less sophisticated articulation and phonological skills than those of their typically-developing peers. However, if articulation and phonological skills were examined with respect to HA rather than CA, all participants of this study may have revealed more age appropriate or average abilities.

Ideal outcome of cochlear implantation and the development of phonological abilities of children with CIs. This research suggests that a child with a short duration of hearing may utilize sound simplification patterns that are characteristically used by children aged 3 years or younger.

Future research in this area should include a larger sample size and should examine the differences in phonological processes use of children implanted at various ages (e.g., before age 2 and after age 4).

REFERENCES