



An Investigation of the Relationship Between Hours of Hearing Aid Use and Phonological and Morphological Development

Monica Weston, M.S. CCC-SLP Karen Muñoz, Ed.D. CCC-A Kristina Blaiser, Ph.D. CCC-SLP
 Department of Communicative Disorders and Deaf Education; EEJ College of Education

Early Hearing Loss Identification

Early identification provides an opportunity to maximize child developmental outcomes. However, disparities have been found in speech-language abilities of children, even when they are early-identified (Ching et al., 2013; Slinger, Grimes and Christensen, 2010)

Hearing aid data logging has revealed inconsistent use for young children. This is a concern because speech-language development is differentially affected by restricted auditory access (Moeller, Hoover, Peterson & Stelmachowicz, 2009)

Additionally, children who perform well may not be eligible for speech-language services to support their continued development. Typically, standardized assessments are used as the primary basis for determining eligibility for speech education services (U.S. Department of Education, n.d.)

Case Study

Purpose: To explore speech-language performance, using standardized assessments and informal measures, and hours of hearing aid use.

Participants: Nine children, 3-6 years of age, with mild to severe bilateral hearing loss

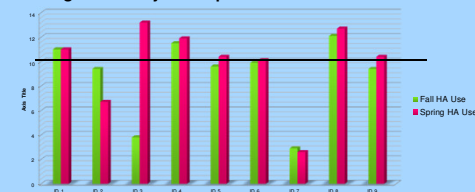
Procedures: Speech-Language assessments were completed August and May of the 2012-2013 school year and hearing aid data logging was recorded. Speech-Language assessments included:

- Goldman Fristoe Test of Articulation 2 (GFTA-2)
 - Sound Analysis by Frequency Range
- Clinical Evaluation of Language Fundamentals Preschool- Second Edition (CELF-Preschool-2)
 - Word Structure Subtest Item Analysis



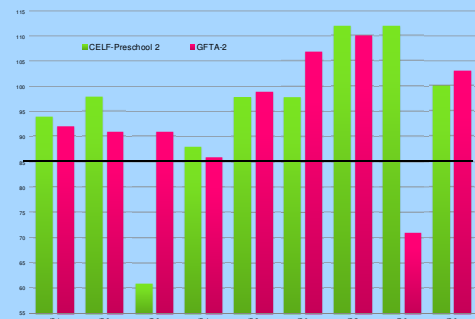
Results

Hearing Aid Use by Participant



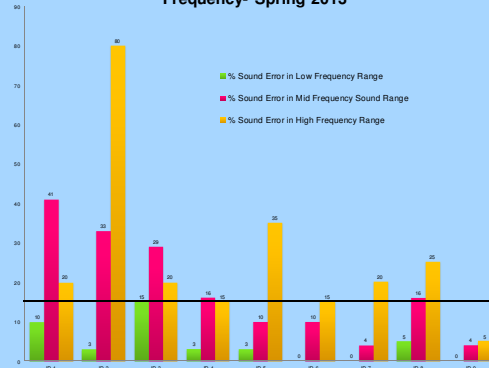
- 33% used hearing aids 10-12 hours per day for 33% at the beginning of the study; by end of study it was 78%

Standardized Assessment Scores by Participant Spring 2013



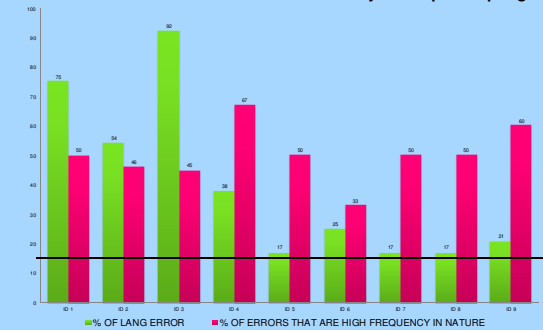
- Seven participants demonstrated an 85 or better standard score on two commonly used assessment measures

GFTA Analysis by Participant: Distribution of Errors by Frequency- Spring 2013



- Eight participants produced > 15% high frequency articulation errors
- Five participants produced > 15% mid frequency articulation errors

CELF-P Word Structure Subtest Raw Score by Participant- Spring 2013



- All participants demonstrated > 15% error when identifying morphological language forms on the CELF-P Word Structure subtest.
- Of those errors, eight participants produced > 45% high frequency language errors

Discussion

- Hearing aid use improved once data logging monitoring was incorporated into routine care.
- Standardized assessment results revealed 78% of the children would not qualify for services if only standard measures were used to monitor performance.
- Informal assessments revealed gaps in performance for mid and high frequency articulation, and development of morphological language forms.

