Phonological profiles of 2-year-olds with expressive-only and expressive and receptive language delay: A pilot study

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Phonological Profiles in 2-year-olds with Expressive-Only and Expressive-Receptive Language Delay: Pilot Study

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Background

- Late Talkers (LTs): Under age of 3 with language delay
  - Fewer than 50 words; no/ few 2-word phrases
  - Not secondary/other conditions (e.g., Autism, hearing impairment)

- Two subgroups:
  - Expressive-only (E-O): Expressive-Receptive (E-R)
  - E-O LTs speech sounds less developed than peers (Carson et al., 2003; Rescorla & Ratner, 1996; MacRoy-Higgins et al., 2012)
  - Know little about speech sound development of E-R LTs, expect to be less developed since overall exhibit less expressive communication
    - Decreased use of gestures (Thai, Tobias, Morrison, 1991; Thal & Tobias, 1992)

- Theoretical basis:
  - Bidirectional system (Gershkoff-Stowe & Hahn, 2007)
  - Connectionist model (Storkel & Morrissette, 2002)

- Important for:
  - Clinical implications: Identification and appropriate early intervention
  - Role of comprehension: Potential influence of an expressive speech sound output

Phonological profile analyses:

- Percent Consonants Correct-Revised (PCC-R): Percent of consonant sounds accurately produced when compared to adult target sounds (relational analysis)
- Phonetic Inventory: Sounds produced without regard to accuracy or comparison to adult speech (independent analysis)

Research Questions:

- Are there differences in phonetic repertoires between 2-year-old toddlers: Children identified as expressive-only language delayed and 2-year-old toddlers identified as expressive and receptive language delayed?

- Are there differences in terms of percent consonant correct compared to the adult target word forms between 2-year-old toddlers: identified as expressive-only language delayed and 2-year-old toddlers identified as expressive and receptive language delayed?

Methods

- 8 participants: Ages 2.0 months to 2.7 months (Mean: 2.3; SD: 2748); 5 E-O; 3 E-R
- 15-minute speech sample with parent at child’s home (M = 15.15 minutes; SD = .87)
- Video-recorded and transcribed by faculty advisor and graduate student independently; each using International Phonetic Alphabet (IPA)
  - All vocalizations (including babble) transcribed
  - Frequently noted session times
  - Only vocalizations interpreted as same by both included in analyses

Preliminary conclusions

Phonetic Inventory:

- Both groups of late talking children exhibited smaller phonetic inventories compared with typically developing 2-year-olds (11 initial consonants; 6 final consonants)
- Phonetic inventories of E-O LTs in present study relatively consistent with previous research findings for this population (Carson et al., 2003; Rescorla & Ratner, 1996)
- Contrary to expectations, phonetic inventory of E-R LTs was slightly larger than that of the E-O LTs in the present study; due to individual differences in small sample and inclusion of; included speech sounds produced in babbling and jargon, not just true words; may indicate rich babble and jargon features prior to increased use of true word productions.

Percent Consonants Correct (PCC-R):

- Both groups of late talking children exhibited lower PCC-R scores compared with typically developing 2-year-olds (approximately 89-65%)
- PCC-R scores of E-O LTs in present study relatively consistent with previous research findings for this population (MacRoy-Higgins et al., 2012; Perry et al., 1997)
- Consistent with expectations, PCC-R scores of E-R LTs was lower than that of E-O LTs; indicating a relatively more impaired functional phonological profile for E-R LTs.

Overall:

- Both E-O and E-R LTs appear to be delayed in both areas of expressive vocabulary and phonological development.
- Present study adds support to notion that underlying weakness in phonological development may contribute to delayed vocabulary development for this population
- Children identified as E-R LTs may have more delayed phonological development compared to E-O LTs indicating role of comprehension in phonological development.
- More research is needed.

Limitations and Future Directions:

- Small sample size allow results of one participant to potentially skew data; Replicate larger study with a larger group comparison
- Inclusion of babble and jargon may have inflated phonetic inventory; Replicate study and analyze only true word productions
- Small number of phonological profile features investigated; examine additional aspects such as syllable structure and/or percent vowels correct
- Culturally/linguistically homogenous sample; recruit more culturally/linguistically diverse participants in future studies

Selected References:


