Emerging Reading Skills in Children with Cochlear Implants

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Disclosure

• None
Background

  - predictive of early reading skill development
  - phonological awareness, general knowledge and receptive vocabulary

  - significant effect on literacy measures
Background

- Maternal sensitivity is an important predictor of language development (Niparko et al, 2010)

- Literacy behaviors at home have a bearing on language performance (Ceh, et al, 2013)
Study Goal

• Study reading behaviors in the home and their impact on early reading and language abilities in a contemporary cohort of young children with early CI intervention.
Inclusion Criteria

• Received a CI prior to 24 months of age
• CI experience of 2 or more years
• English spoken in the home
Outcome Measures

• Language
  – Oral and Written Language Scales (OWLS)

• Reading
  – Test of Early Reading Ability – 3 (TERA-3)
    • Subtests: Alphabet, Conventions, Meaning
Independent Variables

• Questionnaire
  – Socioeconomic Status
  – Parental reading behaviors
• Videotaping parent reading with their child at home
  – Parental reading behaviors influencing early reading and language skills
Results
Characteristics of Study Cohort (N=18)

- Gender: 10M:8F
- Age at Diagnosis: 5.4m (0-18)
- Age at CI: 15.2m (10.3-24)
- CI Experience: 48.5m (27.1-84.2)
- Age at Study: 63.7m (38-103)
Early Reading Skills

Reading Quotient

No. subjects

June 15, 2016
Early Reading Skills

2/3 within 1 SD NH population
Language Performance

Mean -7.3±13m
Determinants of Reading Skills

Language

Correl. Coef. 0.57, p<.05

Correl. Coef. 0.49, p<.05
Determinants of Reading Skills

Reading Quotient

Reading Sessions

- <15 min
- 15-30 min

P < .005

Rhymes

- sometimes
- often

P < .05
Potential Confounder

Oral Composite vs. Reading Sessions (P < .05)

- <15 min
- 15-30 min

June 15, 2016
## Determinants of Reading Skills

### Dependent Variable: Reading Quotient

<table>
<thead>
<tr>
<th></th>
<th>Model I</th>
<th>Model II</th>
<th>Model III</th>
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<tbody>
<tr>
<td><strong>Listening Comprehension</strong></td>
<td>R=0.47 p&lt;.05</td>
<td>R=0.28 p&gt;.05</td>
<td>R=0.55 p&lt;.01</td>
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<tr>
<td><strong>Reading Session Length</strong></td>
<td></td>
<td>R=0.59 p&lt;.01</td>
<td></td>
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<tr>
<td><strong>Singing Rhymes</strong></td>
<td></td>
<td></td>
<td>R=0.53 p&lt;.05</td>
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<tr>
<td><strong>Explained Variance</strong></td>
<td>23%</td>
<td>54%</td>
<td>51%</td>
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Discussion

• Parent-child interactions through books
  – provide opportunity for improved language enrichment
  – and reading skills

• The duration of reading sessions appears to be an important predictor of reading skills
  – May reflect greater capacity for attention
  – Greater capacity of parent to engage child
  – Dose effect of exposure to books
Discussion

• Singing of Rhymes provides additional benefits
  – Engaging and playful introduction to books

• Possible interventions include
  – A program of increasing frequency and time spent reading
  – Supplemented by use of rhymes in play
  – Parent coaching on how to engage child’s attention
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