Use of a Family Characteristics Questionnaire to examine broader perspectives regarding pediatric cochlear implant users outcomes

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Disclosure

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The University of Melbourne, Department of Audiology and Speech Pathology receives research funding from Cochlear Limited.

Cochlear Limited is a member organisation of the HEARing Cooperative Research Centre.
Study Aims

1. To record changes in parent-reported shifts in communication modes used at home pre-operatively and 1 year post-operatively.
   - **Sign** (sign alone, sign and speech)
   - **Oral** (auditory-oral, auditory-verbal)
     (Archbold et al., 2000; Watson, 2006; Wheeler et al., 2009 – Communication journey changes over time)

2. To describe relationships between pre-existing child and family factors, as well as the child’s participation in family life, and child communication outcomes.
   - Child characteristics
   - Family characteristics
   - Child’s involvement in family activities
     (Geers & Brenner, 2003- FC Questionnaire methodology)
Family Characteristics Questionnaire

- Parent questionnaire
- Completed at time of standardised language assessment
- 39 items divided into 6 sections:
  - Demographic details
  - Hearing status of parents
  - Languages used at home
  - Communication mode(s) used at home and school
  - Early Intervention (type, frequency, hours)
  - Participation in Family Activities (9 items based on Geers and Brenner’s (2003) Home Activities Questionnaire)
Data Collection

- Cochlear Implant Clinic, The Royal Victorian Eye & Ear Hospital, Melbourne, Australia
- 410 FC Questionnaires collected during 2008 to 2014
- Data analysed to date:
  - 155 children (unilateral and bilateral CIs)
    (mean age at first CI= 2.1 years, SD=1.54)
  - 239 Family Characteristics Questionnaires
    (mean age when FC Questionnaire was completed= 4.8 years, SD=2.32)
  - Standardised language assessments
    - Preschool Language Scale
    - Peabody Picture Vocabulary Test
    - Clinical Evaluation of Language Fundamentals
Aim 1: Communication Mode Used at Home, n=60

To record changes in parent reported shifts in home communication modes used pre-operatively and 1 year post-operatively.
Aim 1: Shifts in Communication Mode used at Home

<table>
<thead>
<tr>
<th>Direction of change</th>
<th>Proportion</th>
</tr>
</thead>
<tbody>
<tr>
<td>No change</td>
<td>67%</td>
</tr>
<tr>
<td>Towards sign approach</td>
<td>20%</td>
</tr>
<tr>
<td>Towards oral approach</td>
<td>13%</td>
</tr>
</tbody>
</table>

Change towards sign approach, n=12

- Additional disabilities 33%
- Unknown 67%
Aim 2: Relationships between FC Questionnaire and Child Outcomes

To describe relationships between pre-existing child and family factors, as well as the child’s participation in family life, and child communication outcomes.
Aim 2: Language Outcomes and Age at First Implant

n=63

Language Results with 1 Year Duration of CI Experience

- 1 SD = 85 to 115
- 2 SD = 70 to 130

- Early CI
- Later CI

- t(54) = 3.39, p = 0.001
- t(55) = 3.64, p = 0.001
- t(47) = 2.86, p = 0.006
Aim 2: Aetiologies and Language Outcomes, n= 155

Mean Standard Scores

- Auditory neuropathy* (1%)
- Not specified/Unknown (39%)
- Genetic/Familial (25%)
- Pregnancy and Neonatal (8%)
- Syndromes (3%)
- Anatomical and Cochlear/Vestibular Abnormalities (8%)
- Premature (8%)
- Meningitis (2%)
- Other: Acquired (1%)

Mean Overall Language Scores
Mean Receptive Scores
Mean Expressive Scores
Aim 2: Language Outcomes and Child’s Participation in Family Life, n=155

Language Performance and Participation in Family Activities

1 SD = 85 to 115
2 SD = 70 to 130

r = 0.322, p = 0.00
r = 0.304, p = 0.00
r = 0.322, p = 0.00
Summary of Findings

1. Significant predictors of child communication and language outcomes:
   - Age at First Implant
   - Participation in Family Activities

2. Complex relationships exist between child, family factors, communication mode and communication outcomes
   - Cognition
   - Maternal Education
   - SES
   - Age aided
   - Primary Language

3. Using the Family Characteristics Questionnaire to facilitate discussion and therapy goals


Acknowledgements

Acknowledgements to the staff, clinicians and families from the Cochlear Implant Clinic, RVEEH, Melbourne, Australia.

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