Otitis Media, Conductive Hearing Loss and Literacy Skills of Urban Indigenous Australian School Children: A Glance at the Relationship

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Otitis Media (OM)
Hearing Loss

- Fluid can cause mild to moderate conductive hearing loss during an episode of OM (Marieb, 2007)
- OM is the most common cause of hearing loss in Indigenous Australian children (Aithal, Yonovitz, & Aithal, 2006)
- 80% Indigenous Australian Children have abnormal hearing (Aithal, et al., 2006)
- Indigenous children 22 times less likely to completely recover from OM (Williams, 2003)
Introduction to Literature

• Indigenous Australians have the second highest prevalence rate of OM in the world (WHO, 1996)
• 42% of Indigenous school aged children in Perth had OM between 1998 and 2004 (Williams, et al., 2009)
• 30% of Indigenous school aged children in Perth had OM in 2009 (Timms, et al., 2010)
HL and Literacy

- Is of particular concern in school aged children (Aithal, Yonovitz, & Aithal, 2008; Walker & Wigglesworth, 2001).
- 3 times more likely to have literacy problems than their peers in early school years (Hewer & Whyatt, 2006)
- In year 3, 40% of Indigenous Australian children achieved the national reading benchmark and 85% of non-Indigenous children reached the benchmark (Northern Territory Department of Employment Education and Training, 2006/2007)
Research Questions
Research Questions

Is there a significant difference in literacy outcomes of Indigenous children with OM/HL compared to Indigenous and non-Indigenous children without OM/HL?
### Participants

<table>
<thead>
<tr>
<th>Participants</th>
<th>Total</th>
<th>Indigenous</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-primary</td>
<td>32</td>
<td>18</td>
</tr>
<tr>
<td>Year 1</td>
<td>37</td>
<td>21</td>
</tr>
<tr>
<td>Year 2</td>
<td>30</td>
<td>20</td>
</tr>
<tr>
<td>Total</td>
<td>99</td>
<td>59</td>
</tr>
</tbody>
</table>
Procedure
Cultural Modifications

- Learning By doing
- Contextualisation
- Watch and learn
- Group Orientation
- Relevance
- Orientation to persons

- Aboriginal English (sounds, grammar, vocabulary etc)
Results
Results

• Phonological Awareness: 7-36 out of 36
• Grapheme to Phoneme Knowledge: 1-26 out of 26
• Spelling (non-word and real word): 0-2.45 out of 3
Comparison Between Groups on Total Score

Estimated Means: OMHL
Target: Total

Estimated Values

<table>
<thead>
<tr>
<th>Group</th>
<th>Total</th>
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<tbody>
<tr>
<td>As and Ps</td>
<td></td>
</tr>
<tr>
<td>Cs only</td>
<td></td>
</tr>
<tr>
<td>Non-Indigenous</td>
<td></td>
</tr>
<tr>
<td>Bilateral B's</td>
<td></td>
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<tr>
<td>Unilateral B's</td>
<td></td>
</tr>
</tbody>
</table>

OMHL
Comparison Between Groups on Total Score

Pairwise Contrasts

Unilateral B's and/or refers  Non-Indigenous

Cs only  As and Ps

Bilateral B's and/or refers
Comparison Between Groups on Spelling Score
Comparison Between Groups on Spelling Score

Pairwise Contrasts

Unilateral B's and/or refers  Non-Indigenous

Cs only

As and Ps

Bilateral B's and/or refers

Significant contrasts are shaded gold. The least significant difference adjusted significance level is .05.
Questions

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