Deaf Adolescents’ Health Knowledge and Health Literacy: Preliminary Findings

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Deaf Adults’ Health Literacy

- lower health literacy than predicted by their educational level (Pollard, 2009)

- poor cardiovascular health knowledge (Margellos-Anast, et al. 2006; McKee et al., 2011)
Poor Deaf Health Literacy During Adolescence

- might lead deaf people to experience
  - worse preventive health care than hearing individuals (Barnett et al., 2002)
  - more frequent Emergency Department visits (McKee et al., 2011)
  - higher rates of obesity and pre-diabetes (Barnett et al., 2011)

- little or no data regarding health literacy of deaf adolescents
Research Problem

- average deaf high school senior reads at 4\textsuperscript{th} grade level (Traxler, 2000)

- most measures of health literacy rely on functional reading skills

- to evaluate deaf adolescents’ critical and interactive health literacy, standard instruments must be translated into sign language
Research Objectives

- use linguistically valid measures to assess and compare deaf and hearing adolescents' health literacy
- identify subgroups of deaf adolescents who might be at increased risk for weaker health literacy
<table>
<thead>
<tr>
<th>Measures</th>
<th>Name</th>
<th>Construct</th>
<th>Translated</th>
</tr>
</thead>
<tbody>
<tr>
<td>Measures</td>
<td>Short Form of Test of Functional Health Literacy (S-TOFLHA) (Baker, et al., 1999)</td>
<td>Functional Health Literacy</td>
<td>Not translated</td>
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<tr>
<td>Measures</td>
<td>Comprehensive Heart Disease Knowledge Questionnaire (Bergman, et al. 2011)</td>
<td>Critical &amp; Interactive Health Literacy</td>
<td>Questions and answers</td>
</tr>
<tr>
<td>Measures</td>
<td>Single Item Literacy Screener (Chew, et al. 2004) and Original Critical and Interactive Health Literacy Items</td>
<td>Critical &amp; Interactive Health Literacy</td>
<td>Questions and answers</td>
</tr>
</tbody>
</table>
# Participants

National convenience samples from two summer university programs for high school students

<table>
<thead>
<tr>
<th>Total n = 253 adolescents</th>
<th>Deaf adolescents (n=156)</th>
<th>Hearing adolescents (n=97)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (M, SD)</td>
<td>17.0 (0.8)</td>
<td>15.9 (1.1)</td>
</tr>
<tr>
<td>Gender</td>
<td>53.8% male</td>
<td>35.4% male</td>
</tr>
<tr>
<td>Race/Ethnicity</td>
<td>53.6% white, non-Hispanic</td>
<td>43.4% white, non-Hispanic</td>
</tr>
<tr>
<td>Parent Education</td>
<td>66.4% college+</td>
<td>88.5% college+</td>
</tr>
<tr>
<td>Family Finances</td>
<td>53.4% few or no problems</td>
<td>71.1% few or no problems</td>
</tr>
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</table>
Demographics

- age became deaf
  - 82% became deaf before age 3

- language fluency
  - 65% fluent in sign language
  - 72% fluent in English
  - 38% fluent in both languages
Demographics

- **cultural identification**
  - 60% endorsed a deaf self-identity

- **educational background**
  - 40% currently attending schools with mostly deaf students
  - 40% in schools with mostly hearing students
  - 20% attend both types of schools
Overall Health Literacy

HLSI-S Scores

**Statistically significant difference at p<0.01, even after adjusting for age, gender, race/ethnicity, & SES
**Statistically significant difference at p<0.01, even after adjusting for age, gender, race/ethnicity, & SES
**Critical & Interactive Health Literacy: Heart Disease Knowledge**

**Statistically significant difference at p<0.01, even after adjusting for age, gender, race/ethnicity, & SES**
Critical & Interactive Health Literacy: 
*Confidence & perceived ability to deal with health information*

No statistically significant difference at $p > 0.05$
Adjusted for functional health literacy

Overall Health Literacy

Heart Disease Knowledge

Confidence & Perceived Ability to Deal with Health Information

Also adjusted for age, gender, race/ethnicity, & SES
*Statistically significant difference at p<0.05; Error bars are 95% CI
Adolescents with Stronger Health Literacy

- hearing
- white/non-Hispanic
- parents with higher education levels
- reported family history of high cholesterol, heart attack, or stroke
Deaf Adolescents with Stronger Health Literacy

- bilingual with capabilities for both oral and sign language communication
- endorse a deaf self-identity
Conclusions & Implications

- Deaf adolescents have weaker functional, critical, and interactive health literacy even when common demographic variables are controlled.

- General health literacy is less in deaf compared with hearing adolescents even when their functional health literacy skills are equivalent.
  - Role of barriers to incidental learning (Hauser et al., 2010; Pollard 1998)
Conclusions & Implications

- Deaf adolescents at increased risk for very weak health literacy:
  - racial/ethnicity minorities
  - lower socioeconomic status
  - those who are not bilingual
  - those who do not endorse a deaf self-identify
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  - University of Rochester Summer Campus Programs
  - National Center for Deaf Health Research
  - Deaf Studies Laboratory

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Questions, Feedback, Comments?

Thank you very much!!!