THE DEVELOPMENT OF PRAGMATICS IN CHILDREN WITH HEARING LOSS

Christine Yoshinaga-Itano PhD
Allison Sedey PhD
Rosalinda Baca PhD
Dianne Goberis MA
Amanda Abrisch BA
Molly Dalpes BA
Presentation Overview

- Background
  - Pragmatic skill development
  - Methods

- Results
  - Normal hearing data
  - Compare pragmatic skills of children with and without hearing loss

- Conclusions

- Future Directions
Research Questions

- When do children with hearing loss master specific pragmatic skills in comparison to their peers with normal hearing?

- How does development differ based on degree of hearing loss?
Pragmatics – Social Language Use

- ASHA Website:
  - Using language for different purposes
  - Changing language according to the needs of a listener or situation
  - Following rules for conversations and storytelling
Pragmatics

- Pragmatic language difficulties increase risk for victimization (Conti-Ramsden & Botting, 2004).
- Pragmatic difficulties increase risk for social and emotional deficits (Ketelaars, et al., 2009)
Children who are deaf or hard of hearing use more directive and less informative communicative functions than their normally hearing age-matched peers (Day, 1986; Nicholas, 2000; Nicholas & Geers, 1997)
Normal Hearing Group: Data Collection

- Pragmatics Checklist

- Online version of Pragmatics Checklist created on SurveyMonkey

- Solicited participants:
  - Posted on Hand and Voices website
  - Through E-mail
Hearing Loss Group: Data Collection

- U.S. Dept. of Education
  - Office of Education #H325D030031A, H324C030074 supported research project on language acquisition of children with hearing loss
  - Parents completed a printed version of the Pragmatics Checklist
  - Children were re-assessed annually
The Pragmatic Checklist (Goberis, D., 1999)

- 45 items
- Parents are asked to indicate whether or not a skill is present by selecting from the following choices:
  - Not present
  - Preverbal
  - 1-3 words
  - Complex language
Study Participants

- **Normal Hearing Group**
  - N=109
  - Age Range: 2-7 years
  - Normal hearing and cognition

- **Hearing Loss Group**
  - N=126
  - Age Range: 3-7 years
  - All Levels of hearing loss
  - Normal cognition
Study Participants

- Children in both groups were determined to have normal cognition
  - Normal hearing group: based on parent report
  - Hearing loss group: IQ ≥ 70 on the Leiter non-verbal intelligence test
Demographics: Gender

![Bar graph showing gender distribution in individuals with normal hearing and hearing loss.](image)
# Age

<table>
<thead>
<tr>
<th>Years</th>
<th>Age Range (Months)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 Years</td>
<td>1;6-2;5 years (18-29 months)</td>
</tr>
<tr>
<td>3 Years</td>
<td>2;6-3;5 years (30-41 months)</td>
</tr>
<tr>
<td>4 years</td>
<td>3;6-4;5 years (42-53 months)</td>
</tr>
<tr>
<td>5 years</td>
<td>4;6-5;5 years (54-65 months)</td>
</tr>
<tr>
<td>6 years</td>
<td>5;6-6;5 years (66-77 months)</td>
</tr>
<tr>
<td>7 years</td>
<td>6;6-7;5 years (78-89 months)</td>
</tr>
<tr>
<td>8 years</td>
<td>7;6 + years (90+ months)</td>
</tr>
</tbody>
</table>
Demographics:
Maternal Level of Education

![Bar chart showing maternal level of education by hearing status. The chart compares the levels of education (Below High School, High School, Associates, Bachelors, Masters, Doctorate, Not Specified) between those with normal hearing and hearing loss. The bars for Hearing Loss are consistently lower than those for Normal Hearing.](image-url)
Demographics:

Ethnicity

<table>
<thead>
<tr>
<th>Ethnicity</th>
<th>Normal Hearing</th>
<th>Hearing Loss</th>
</tr>
</thead>
<tbody>
<tr>
<td>Caucasian</td>
<td>60%</td>
<td>70%</td>
</tr>
<tr>
<td>Hispanic</td>
<td>10%</td>
<td>20%</td>
</tr>
<tr>
<td>Asian-American</td>
<td>5%</td>
<td>15%</td>
</tr>
<tr>
<td>Other</td>
<td>10%</td>
<td>10%</td>
</tr>
<tr>
<td>Not Specified</td>
<td>20%</td>
<td>0%</td>
</tr>
</tbody>
</table>

Percentage
Demographics:
Languages Spoken

- English Only
- Bilingual
- English & Sign Language
- Bilingual & Sign Language

Comparison:
- Normal Hearing
- Hearing Loss
Children in age groups were determined to have “mastered” a skill with use of complex language when 75% of the children achieved the skill.
Children with Normal Hearing

- 44% (20 of 45) of the items were mastered using complex language by 3 years of age
- 95.5% (43 of 45) of the items were mastered by 4 years of age
- 98% by 5 years
- 100% by 6 years
Final Items to Master for NH group

- Provides information on request
  - Name, date of birth, address (2 of 3 items)
- Makes promises
Children with Hearing Loss

- 6.6% (3 of 45) of the items were mastered with complex language by six years of age.
- 69% (31 of 45) of the items were mastered by 7 years of age.
Earliest Items to Master (HL Group)

- Makes polite requests
  - Uses words: please, thank you.
- Expresses needs
- Role plays with props
Items not Mastered by 7yrs (HL Group)

- Provides information on request
- Repairs incomplete sentences
- Ends conversations
- Interjects
- Apologies
- Request clarification
- Makes promises
- Ask questions to problem solve
- Asks questions to make predictions
- Retells a story
- Tells 4-6 picture story in right order
- Creates original story
- Explains relationships between objects-action-situations
- Compares and contrasts
Percentage of Items Mastered by Age for NH and HL groups
The proportion achieving 50% or more of the items with complex language
Conclusion

- Children who are deaf or hard of hearing begin to master pragmatic skills at 6 years of age; 3-year-old peers with normal hearing have already mastered nearly half of the checklist skills.

- By age 7, children who are deaf or hard of hearing have mastered approximately 2/3 of the checklist skills; almost all of the skills are mastered by hearing children by age 4.
Future Directions

- Larger sample of normal hearing with better matched experimental and control groups
  - Maternal level of education
  - Age

- Need to support pragmatic skill development in children with hearing loss to reduce risk for socio-emotional deficits and victimization.
References


