Supporting the social well-being of pediatric cochlear implant users

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Acknowledgments

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Rocky Mountain Ear Center

Data collection and analysis
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Consultants
- Nadine Connell, Emily Tobey, Lee Warner

Recruitment via local professionals
Participants and their families
What does it mean to have hearing loss?

- MILD
- MODERATE
- SEVERE
- PROFOUND
- WITHIN NORMAL LIMITS
What does it mean to have hearing loss?
What does it mean to have hearing loss?

Cochlear implants

- Allow access to sound for children with severe to profound hearing loss
- Foster development of speech, language, and hearing skills
- Result in vast variability in performance outcomes
MENTAL WELL-BEING
   Anxiety
   Self-esteem
   Depressive mood

PHYSICAL WELL-BEING
   Physical health
   Energy

SOCIAL WELL-BEING
   Family
   Peer relationships

QUALITY OF LIFE
Generic quality of life in adolescents with cochlear implants

Huber, 2005; Loy et al., 2010; Ravens-Sieberer & Bullinger, 2000.
Generic quality of life in adolescents with cochlear implants

No significant effect of auditory status (CI vs. TH) on self-reported overall QoL
Generic quality of life in adolescents with cochlear implants

Huber, 2005; Loy et al., 2010; Ravens-Sieberer & Bullinger, 2000.
Generic quality of life in children (8-11) with cochlear implants

Huber, 2005; Loy et al., 2010; Ravens-Sieberer & Bullinger, 2000.
Effect of chronologic age on generic quality of life in children with cochlear implants

Warner-Czyz et al., 2011.

* $p < .05$
Why does QoL decrease with age?

<table>
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<tr>
<th>Age group</th>
<th>Self-concept</th>
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<td>Critical evaluation; Self-doubt</td>
<td>Lower self-esteem</td>
<td>Extremely important</td>
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Why does QoL decrease with age?
Adolescents are different in general.

Percy-Smith et al., 2008; Sahli et al., 2009

Hearing loss compounds difficulties in adolescence.
Social issues in children with hearing loss compared to hearing peers

Less socially accepted
Greater difficulty making friends
Fewer relationships and social activities
More isolation and depression
Lower ratings of achievement (academic performance and peer relationships)

Altshuler et al., 1976; Davis et al., 1986; Knutson et al., 1997; Meadow & Trybus, 1979; Meserole et al., 2014; Moeller, 2007; Warner-Czyz et al., 2009; Wiefferink et al., 2012.
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<th>Social problems</th>
<th>Peer issues</th>
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<td>Prosocial behavior</td>
<td>Smaller social network</td>
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Social well-being

Loneliness
Friendships
Social participation
Peer victimization

Do children with HL experience peer relationships differently than hearing peers?
Loneliness in pediatric CI users

Pediatric CI users report:
- More peer problems
- Fewer friends
- Higher levels of loneliness

Negative effect on psychosocial well-being and quality of life

Brown & Cornes, 2014; Huber et al., 2015; Kouwenberg et al., 2012; Rich et al., 2013; Bauman & Pero, 2010; Percy-Smith et al., 2008; Punch & Hyde, 2011; Nicholas & Geers, 2003; O’Reilly et al., 2014; Schorr et al., 2009; Moog et al., 2011; Toe & Paatsch, 2013.
## Participants ($n = 141$)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Cochlear implant users ($n = 62$)</th>
<th>Typical hearing peers ($n = 79$)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender (Percent female)</td>
<td>56%</td>
<td>46%</td>
</tr>
<tr>
<td>Mean chronologic age (years)</td>
<td>11.7 (2.8)</td>
<td>12.1 (2.7)</td>
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<td>Mean age at device fit (years)</td>
<td>2.7 years (1.9)</td>
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**Self-reported communication competence**

*Loneliness and Social Dissatisfaction Questionnaire (LSDQ) (Asher & Wheeler, 1985)*
- Feelings of loneliness
- Perceptions of social competence
- Appraisals of peer relationships

Warner-Czyz, Evans, Loy, & Roby, in preparation. Participants recruited from CI summer camps, local professionals, and online listservs.
Perceived loneliness and social dissatisfaction by auditory status

LSDQ total score

Typical hearing peers

Cochlear implant users

LSDQ item score on social exclusion

Typical hearing peers

Cochlear implant users

Warner-Czyz et al., in preparation.

* p < .05; ** p < .01; ***p < .0001
Self-reported communication competence and perceived loneliness in pediatric cochlear implant users

Speech perception in noise
Speech intelligibility

Loneliness and social dissatisfaction

Warner-Czyz et al., in preparation.
Effect of auditory status on perceived loneliness and social dissatisfaction

No effect of auditory status on overall loneliness ratings

Pediatric cochlear implant users feel greater social isolation vs. hearing peers

Poorer self-reported communication skills associated with higher loneliness ratings
Friendships in children and adolescents with cochlear implants

- No friends
- One good friend
- A couple of friends
- Many friends
- Lots of friends
Participants ($n = 75$)

<table>
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<tr>
<th>Variable</th>
<th>Cochlear implant users ($n = 32$)</th>
<th>Typical hearing peers ($n = 43$)</th>
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<tr>
<td>Gender (Percent female)</td>
<td>50%</td>
<td>49%</td>
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<tr>
<td>Mean chronologic age (years)</td>
<td>14.1 (2.0)</td>
<td>13.8 (1.7)</td>
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<td>Mean age at device fit (years)</td>
<td>2.3 years (1.9)</td>
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Number of friends

- No friends
- One good friend
- A couple of friends
- Several friends
- Lots of friends

Typical hearing peers
Number of friends

- No friends
- One good friend
- A couple of friends
- Several friends
- Lots of friends

Typical hearing peers
Cochlear implant users
 Materials: *Friendship Quality Questionnaire*

Relationship with best friend

- *Validation and caring*
- *Conflict and betrayal*
- *Companionship and recreation*
- *Help and guidance*
- *Intimate exchange*
- *Conflict resolution*

Parker & Asher, 1993.
Materials: *Friendship Quality Questionnaire*

**Relationship with best friend**
- Validation and caring
- Conflict and betrayal
- Companionship and recreation
- Help and guidance
- Intimate exchange
- Conflict resolution

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<td>- Joe sticks up for me if others talk behind my back.</td>
</tr>
<tr>
<td>- Joe and I always tell each other our problems.</td>
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Parker & Asher, 1993.
Friendship quality by domain

- Companionship and recreation
- Conflict and betrayal
- Validation and caring
- Conflict resolution
- Intimate exchange
- Help and guidance

Parker & Asher (1993), 8-11 years (n = 484)
Whitehouse et al. (2009), 13-16 years (n = 35)
Warner-Czyz et al. (in prep.), TH, 12-18 years (n = 30)
Warner-Czyz et al. (in prep), CI, 12-18 years (n = 24)

Warner-Czyz et al., in preparation.
Friendship quality by domain

F(45) = 33.86, p < .001. * p < .05; ** p < .01; *** p < .0001
Self-reported communication competence and friendship quality in adolescent cochlear implant users

- Speech perception in quiet
- Speech perception in noise
- Speech intelligibility

- Friendship quality
  - Validation and caring
  - Intimate exchange

Warner-Czyz et al., in preparation.
Lower friendship quality in pediatric cochlear implant users versus hearing peers

Communication prowess

Language skills

Kouwenberg et al., 2012; Nicholas & Geers, 2003.
Lower friendship quality in pediatric cochlear implant users versus hearing peers

Communication prowess

Immature social skills
- Unequal turn-taking
- Discomfort entering social conversation

Language skills

Immature social skills

Kouwenberg et al., 2012; Nicholas & Geers, 2003.
Lower friendship quality in pediatric cochlear implant users versus hearing peers

Communication prowess

Immature social skills
- Unequal turn-taking
- Discomfort entering social conversation

Anecdotal reports from parents
- True friendship vs. acquaintance
- 1/3 could not name a best friend

Kouwenberg et al., 2012; Nicholas & Geers, 2003.
Peer victimization (a.k.a. getting bullied)

Unwanted aggressive behavior(s)
Power imbalance
Repeated multiple times

28% of students (grades 6-10) have been bullied at least once.

DeVoe & Murphy, 2011; Gladden et al., 2014; Robers, et al., 2013.
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Risk factors for peer victimization

Age
Gender
Perceived as weak or different

Children with special needs are different.

Increased risk for peer victimization
  - 2-3 times more frequently
  - Name calling, exclusion, rumors

Carter & Spencer, 2006; Dawkins, 1996; Gladden et al., 2014; Sullivan, 2006; van Cleave & Davis, 2006.
Peer victimization in children with HL

Increased risk for victimization

- Physical difference
- Communication difficulties
- Awkward social skills
- Personality factors
- Perceived weakness
- Preferential seating

Participants

Adolescents with hearing loss ($n = 56$)
- Mean chronologic age: 14.1 years (SD = 1.8)
- Mean age at id: 22.7 months (SD = 27.6)
- Mean age at device fit: 40.0 months (SD = 28.1)

Adolescents in the general population ($n = 4,326$)
- From DeVoe & Murphy (2011)

DeVoe & Murphy, 2011; Warner-Czyz, Loy, Pourchot, White, & Cokely, in press.
Materials: Peer victimization

School Crime Supplement to the National Crime Victimization Survey

- Made fun, called names, or insulted
- Spread rumors
- Threatened with harm
- Pushed, hit, kicked, spit on
- Coercion
- Excluded on purpose
- Property destruction

DeVoe & Bauer, 2011; DeVoe & Murphy, 2011; U.S. Department of Justice, 2011.
Effect of auditory status on prevalence of peer victimization


*School Crime Supplement to the National Crime Victimization Survey
Effect of auditory status on type of peer victimization

17.5% vs. 3.6%

26.4% vs. 4.7%


*School Crime Supplement to the National Crime Victimization Survey
Summary: Peer victimization in children with hearing loss

Higher prevalence of peer victimization in adolescents with HL vs. hearing peers
- Both groups experience teasing and rumors
- Higher rates of coercion and exclusion in the group with HL (similar to children with other special needs)

Social skills may affect victimization in children with HL

Carter & Spencer, 2006; Kouwenburg et al., 2012; Sullivan, 2006; Warner-Czyz et al., 2018.
How can we help support social well-being in children and adolescents with hearing loss?
What can clinicians do?

Routinely ask about peer relationship

- Ask child about friends.
- Ask if child feels afraid to go to school.
- Ask child directly if they have experienced bullying.

English, 2013; Squires et al., 2013.
What can clinicians do?

Target language, social, and pragmatic skills

English, 2013; Squires et al., 2013.
What can clinicians do?

Target language, social, and pragmatic skills

Address assertiveness and/or self-advocacy

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What can clinicians do?

Target language, social, and pragmatic skills

Address assertiveness and/or self-advocacy

Include a safe environment statement on educational plans

www.doe.mass.edu/bullying/considerations-bully.html

English, 2013; Squires et al., 2013.
What can parents do?

Target social and pragmatic skills

Address assertiveness and/or self-advocacy
What can parents do?

Target social and pragmatic skills

Address assertiveness and/or self-advocacy
What can parents do?

Frequent, open communication

Awareness of warning signs
What can children with hearing loss do?

ASSIST YOUR CHILD IN BECOMING THEIR OWN ADVOCATE BY HELPING THEM BUILD THEIR CONFIDENCE.

#speakup

SPECIAL ED RESOURCE.COM

Gladwell, 2013.

**Assertive Phrases for Kids**

- Friends don’t treat each other that way.
- I need a friend who will treat me kindly.
- That’s no way to treat a friend.
- Cut it out.
- Knock it off.
- Not cool.
- That was not funny.
- I can take a joke, but what you said was not funny. It was mean.
- I like the way I look.
- That sounds like a rumor to me.
- Friends don’t do that to friends.
- That’s bullying.
What can you do to improve social well-being in children and adolescents with hearing loss?