

# Supporting the social well-being of pediatric cochlear implant users

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# Acknowledgments

**E. Rhodes and Leona B. Carpenter Foundation grant (Warner-Czyz and Loy)**

**Dallas Cochlear Implant Program**

**Colorado Neurological Institute Cochlear Kids Camp**

**Rocky Mountain Ear Center**

**Data collection and analysis**

- Erika Cokely, Christine Evans, Sophie Assmann Jakubowich, Hannah Pourchot Neale, Lori Roby, Trissan White, Kathryn Wiseman

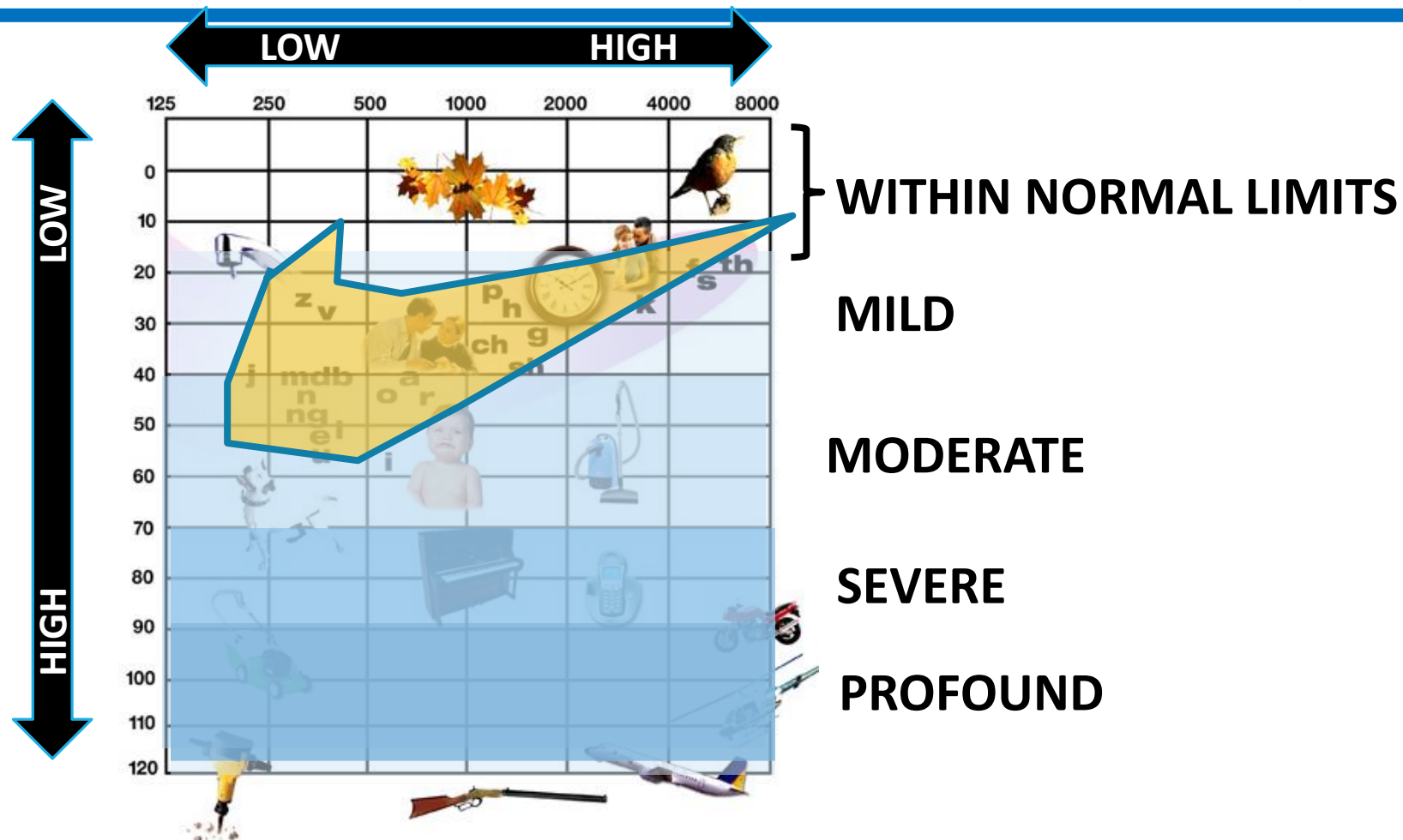
**Consultants**

- Nadine Connell, Emily Tobey, Lee Warner

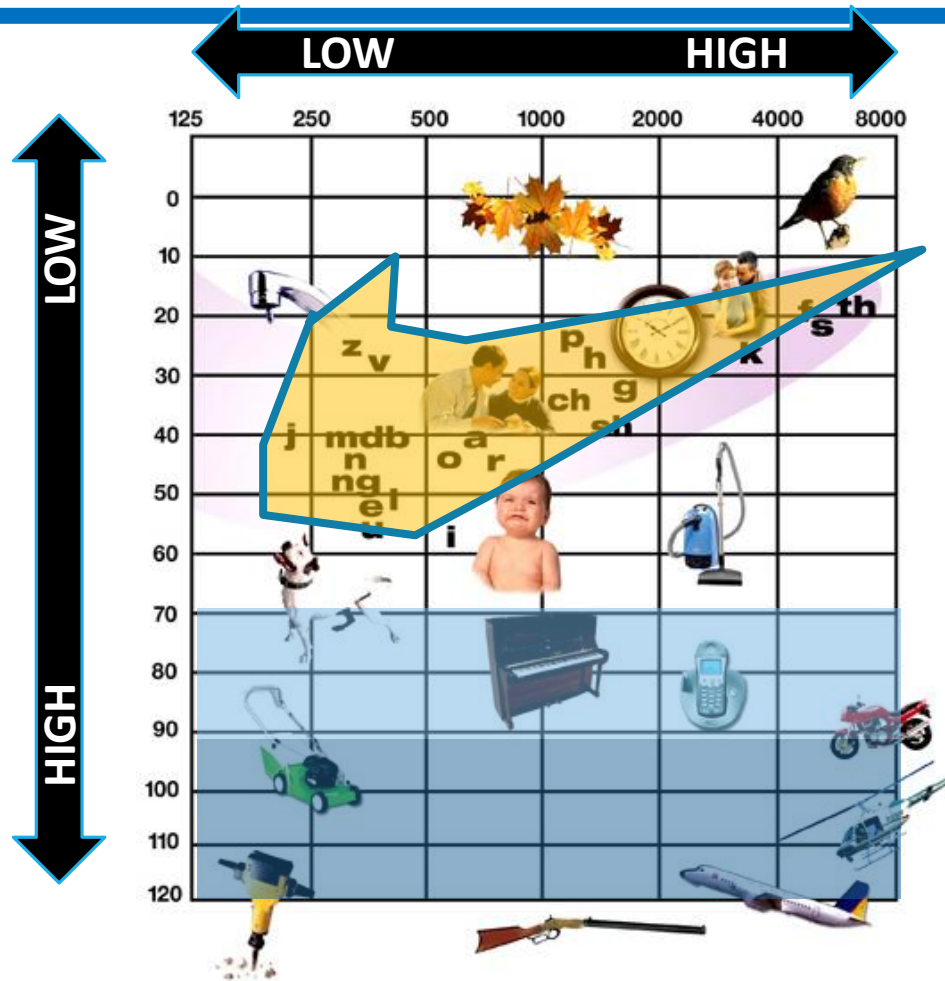
**Recruitment via local professionals**

**Participants and their families**

# What does it mean to have hearing loss?



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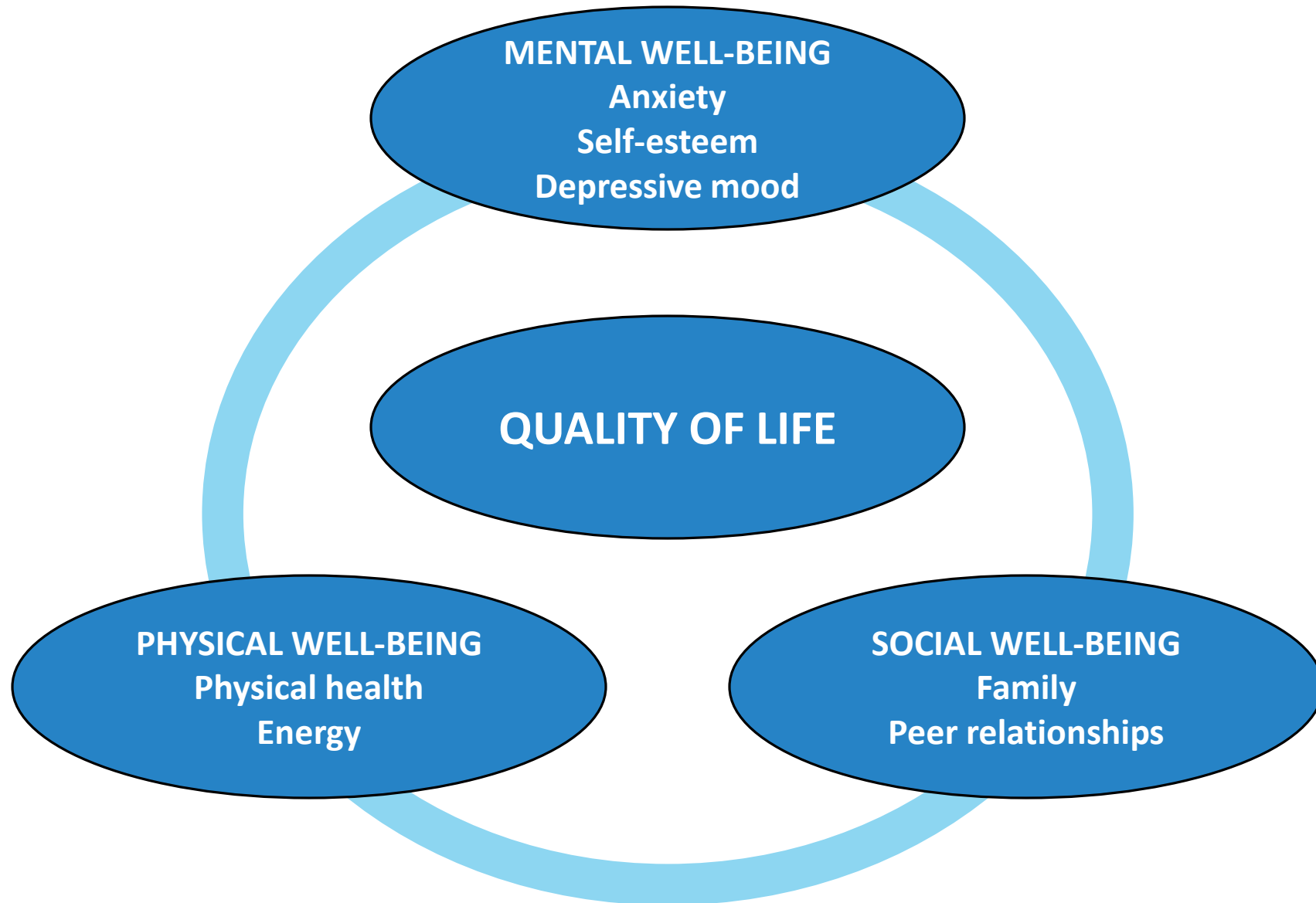


# What does it mean to have hearing loss?

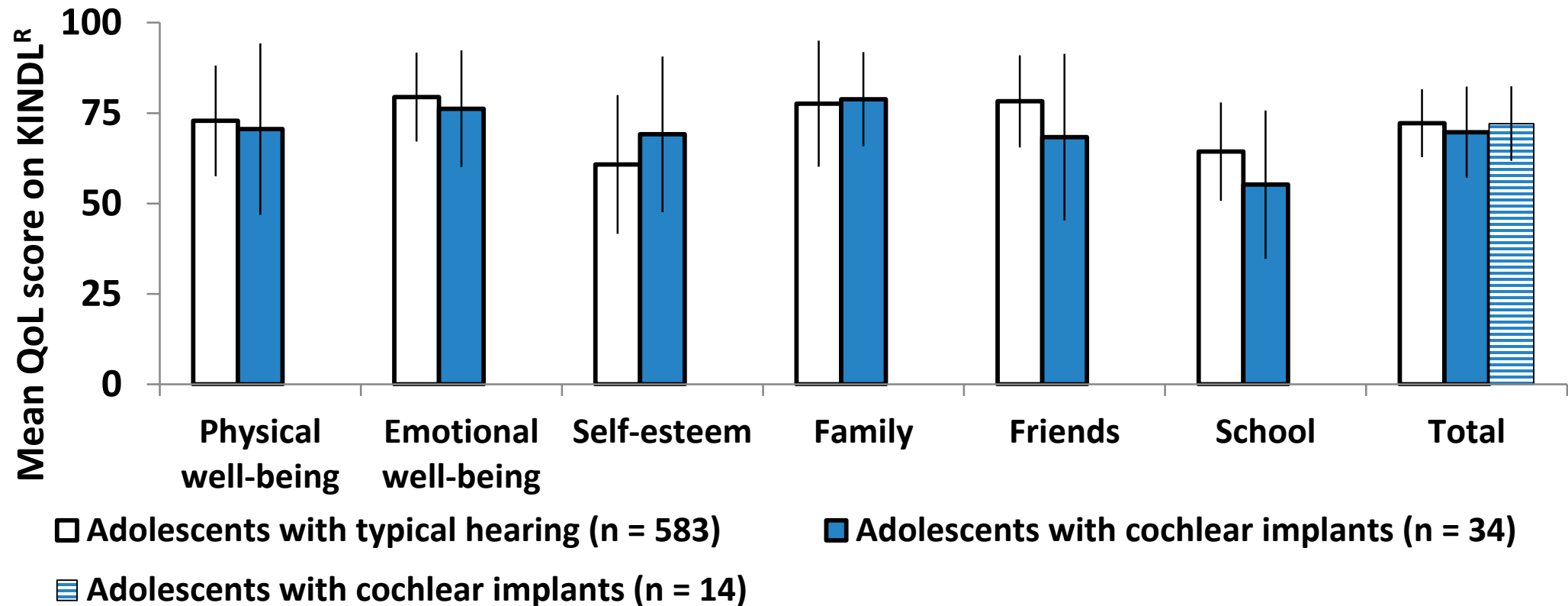
## Cochlear implants

- 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





# Generic quality of life in adolescents with cochlear implants



Huber, 2005; Loy et al., 2010; Ravens-Sieberer & Bullinger, 2000.



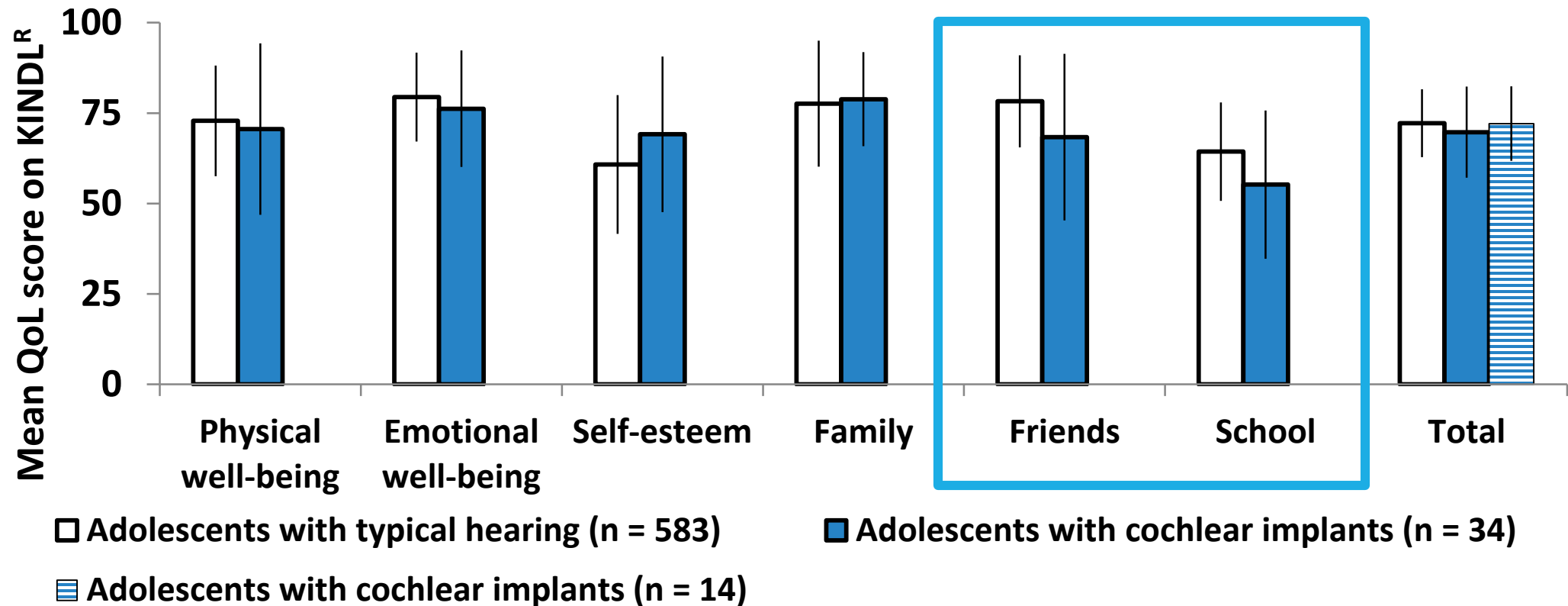
# Generic quality of life in adolescents with cochlear implants

**No significant effect of auditory status (CI vs. TH) on self-reported overall QoL**



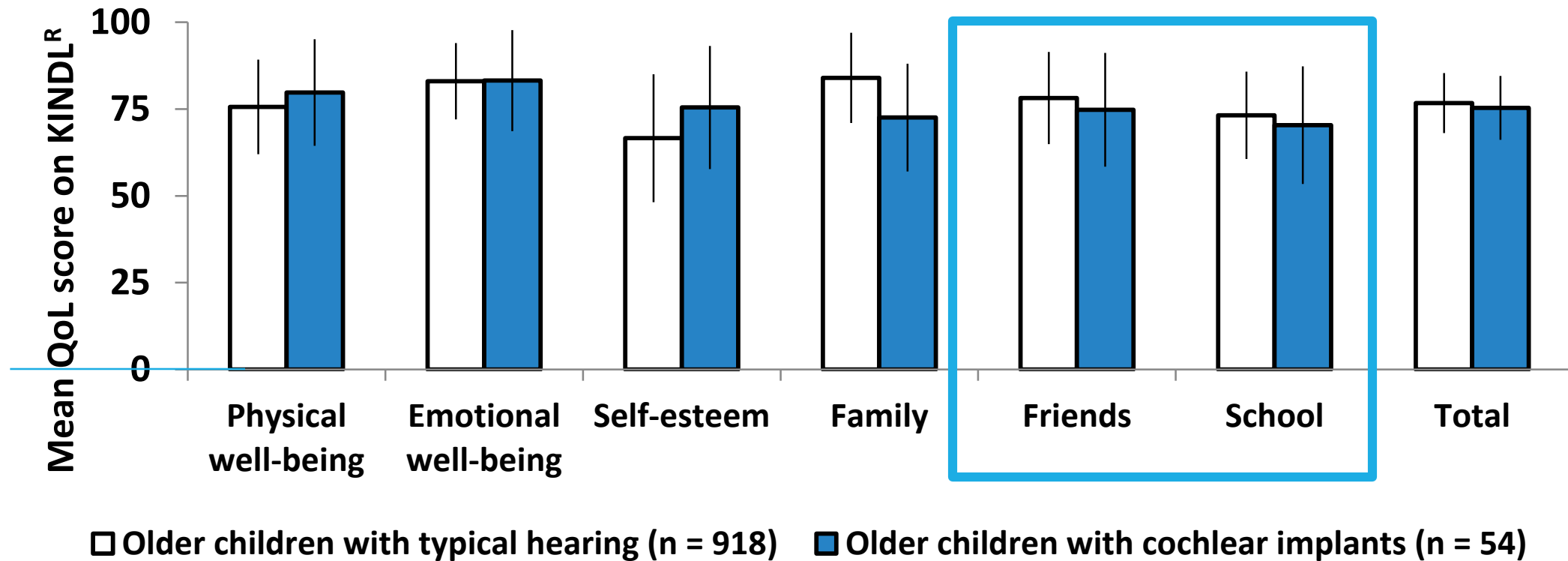


# Generic quality of life in adolescents with cochlear implants



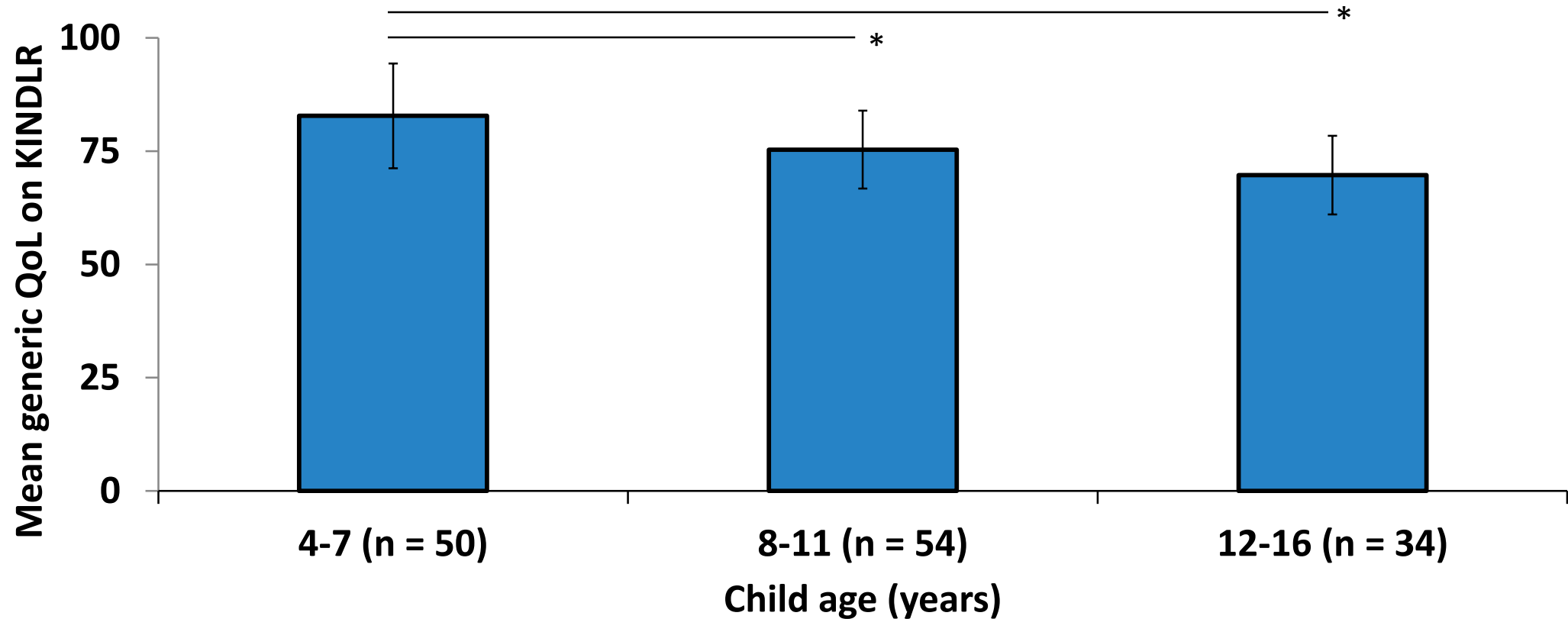
Huber, 2005; Loy et al., 2010; Ravens-Sieberer & Bullinger, 2000.

# 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



# Why does QoL decrease with age?

Age group	Self-concept	Self-esteem	Peers
Preschool	Egocentric; Subjective	Higher self-esteem	All are equal

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Middle childhood	Critical evaluation; Self-doubt	Lower self-esteem	Increased influence



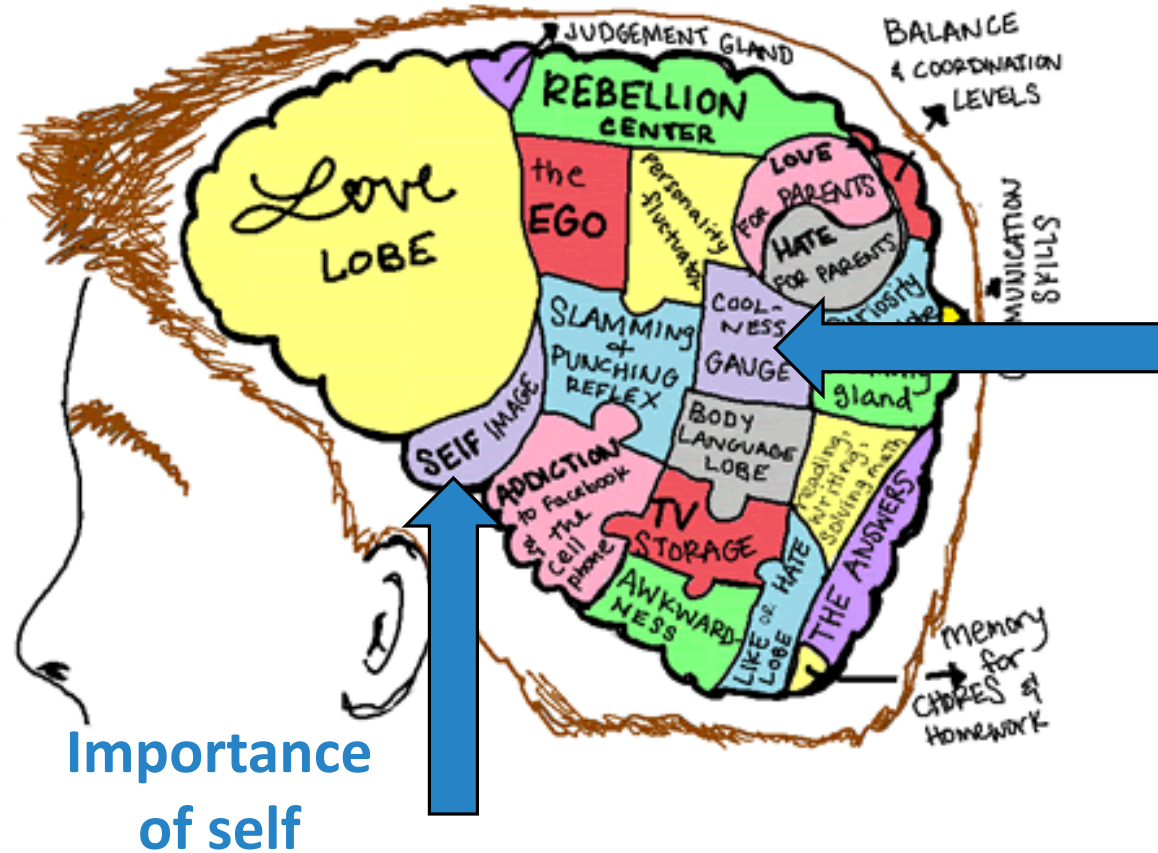
# Why does QoL decrease with age?

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Early childhood	Objective	Higher self-esteem	All are equal
Middle childhood	Critical evaluation; Self-doubt	Lower self-esteem	Increased influence
Adolescence	Critical evaluation; Self-doubt	Lower self-esteem	Extremely important

Gopinath et al., 2012; Helseth & Misvaer, 2010.

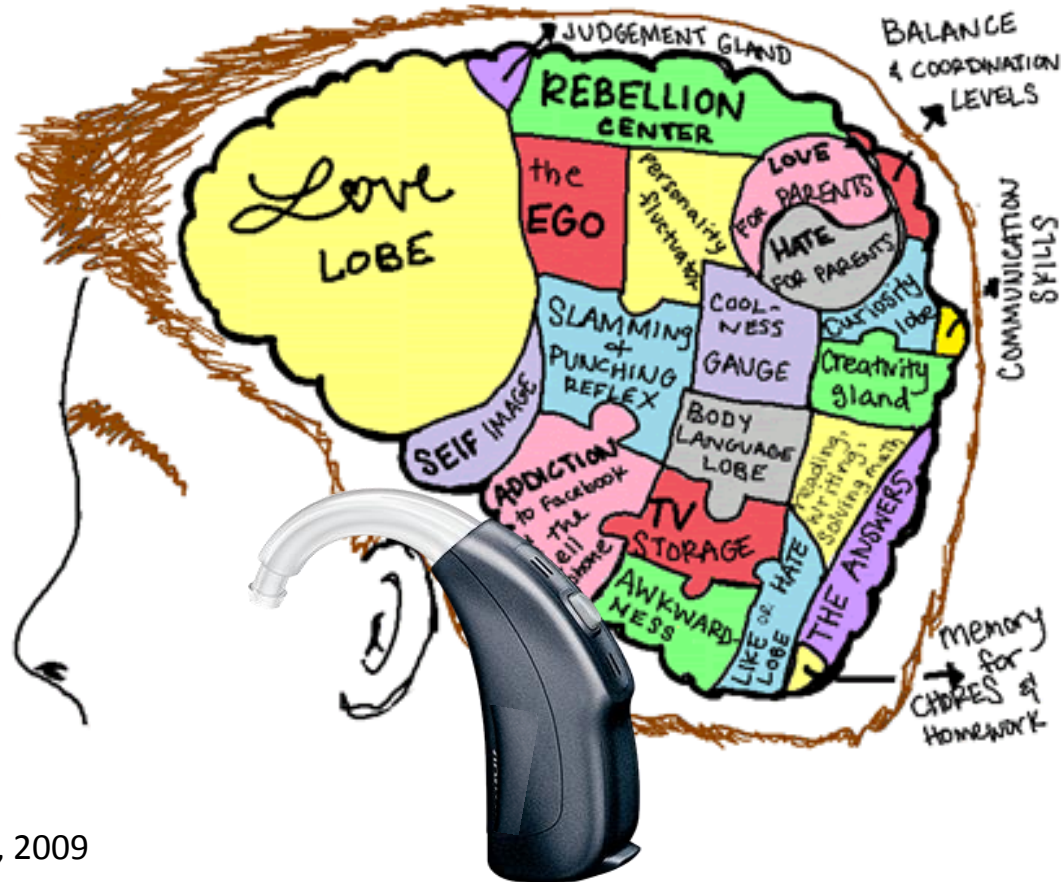
# Why does QoL decrease with age?

## THE AVERAGE TEENAGE BRAIN



# Adolescents are different in general.

## THE AVERAGE TEENAGE BRAIN



*Hearing loss compounds difficulties in adolescence.*

# **Social issues in children with hearing loss compared to hearing peers**

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**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.

# *Difficulties in peer relations*

**Social problems**

*Peer issues*

Prosocial  
behavior

*Smaller  
social network*

SOCIALLY  
“AWKWARD”

# **Social well-being**

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**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 ( $n = 141$ )

Variable	Cochlear implant users ( $n = 62$ )	Typical hearing peers ( $n = 79$ )
Gender (Percent female)	56%	46%
Mean chronologic age (years)	11.7 (2.8)	12.1 (2.7)
Mean age at device fit (years)	2.7 years (1.9)	

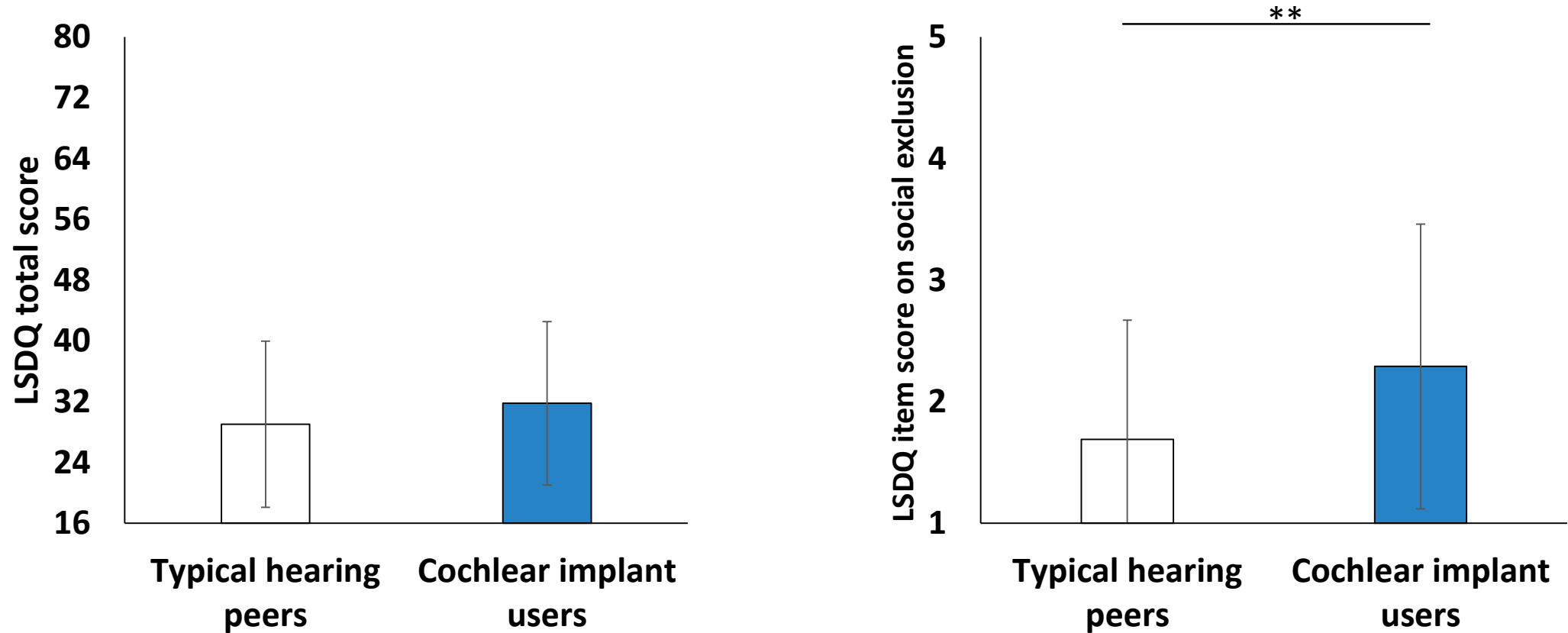
## *Self-reported communication competence*

### *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.

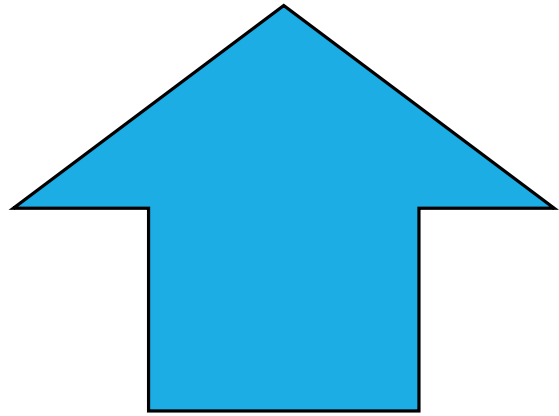
# Perceived loneliness and social dissatisfaction by auditory status



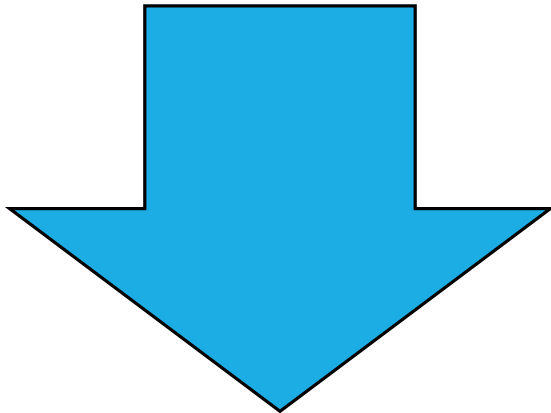
Warner-Czyz et al., in preparation.

\*  $p < .05$ ; \*\*  $p < .01$ ; \*\*\*  $p < .0001$

# **Self-reported communication competence and perceived loneliness in pediatric cochlear implant users**



**Speech perception in noise**  
**Speech intelligibility**



**Loneliness and social dissatisfaction**

# **Effect of auditory status on perceived loneliness and social dissatisfaction**

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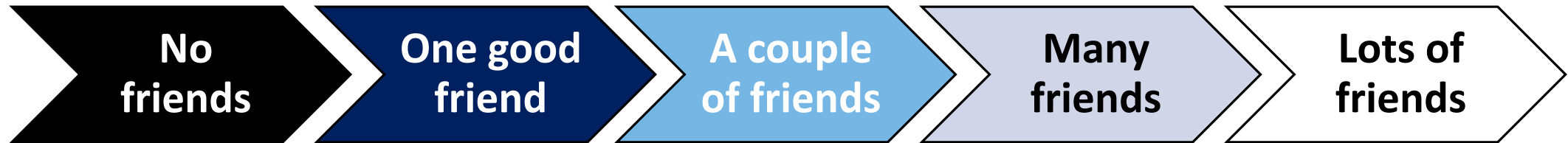
**No effect of auditory status on overall loneliness ratings**

**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

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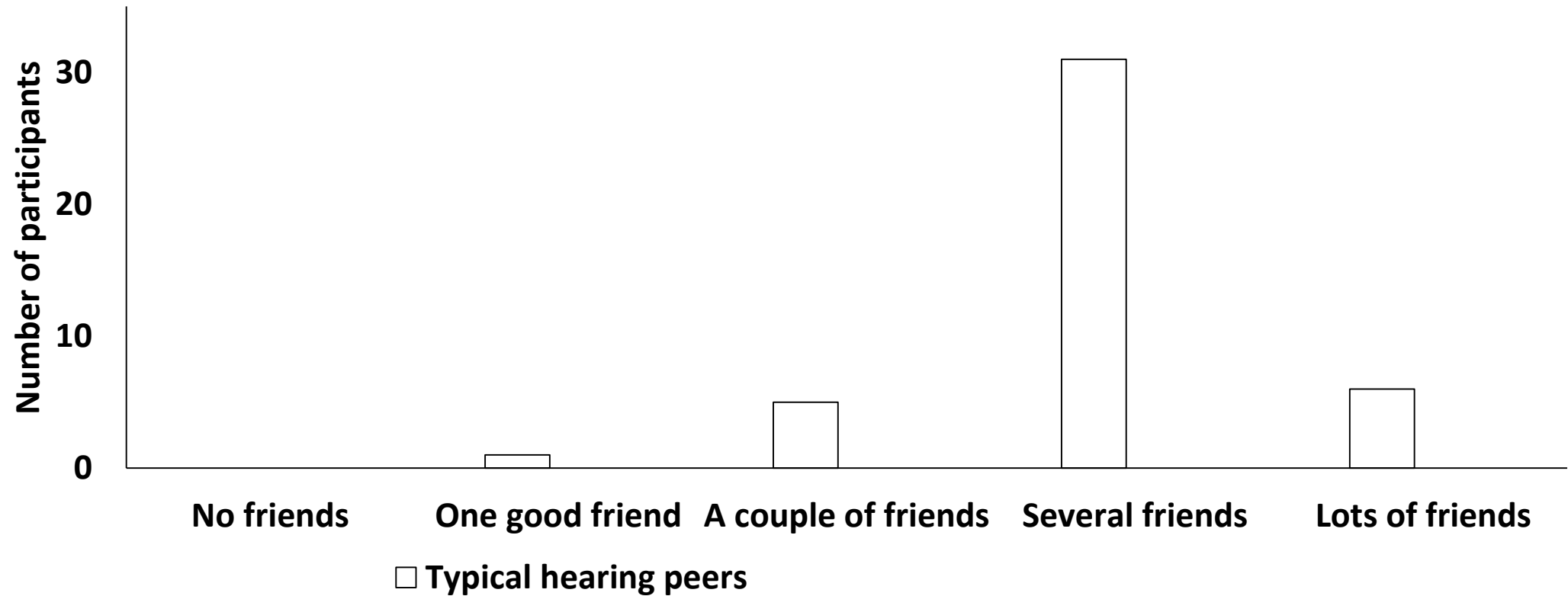


# Participants ( $n = 75$ )

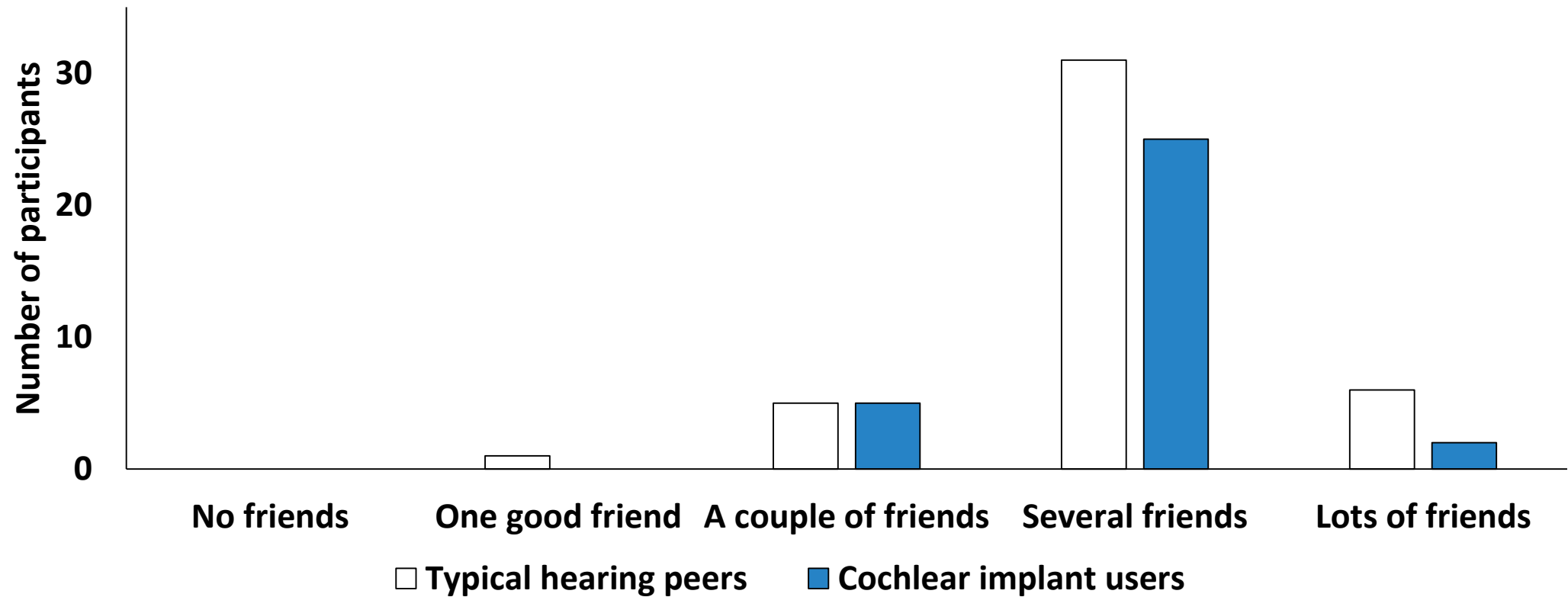
Variable	Cochlear implant users ( $n = 32$ )	Typical hearing peers ( $n = 43$ )
Gender (Percent female)	50%	49%
Mean chronologic age (years)	14.1 (2.0)	13.8 (1.7)
Mean age at device fit (years)	2.3 years (1.9)	

Warner-Czyz, Evans, & Loy, in preparation. Participants recruited from CI summer camps, local professionals, and online listservs.

# Number of friends



# Number of friends



# Materials: *Friendship Quality Questionnaire*

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## Relationship with best friend

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

# Materials: *Friendship Quality Questionnaire*

## Relationship with best friend

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

### Sample items

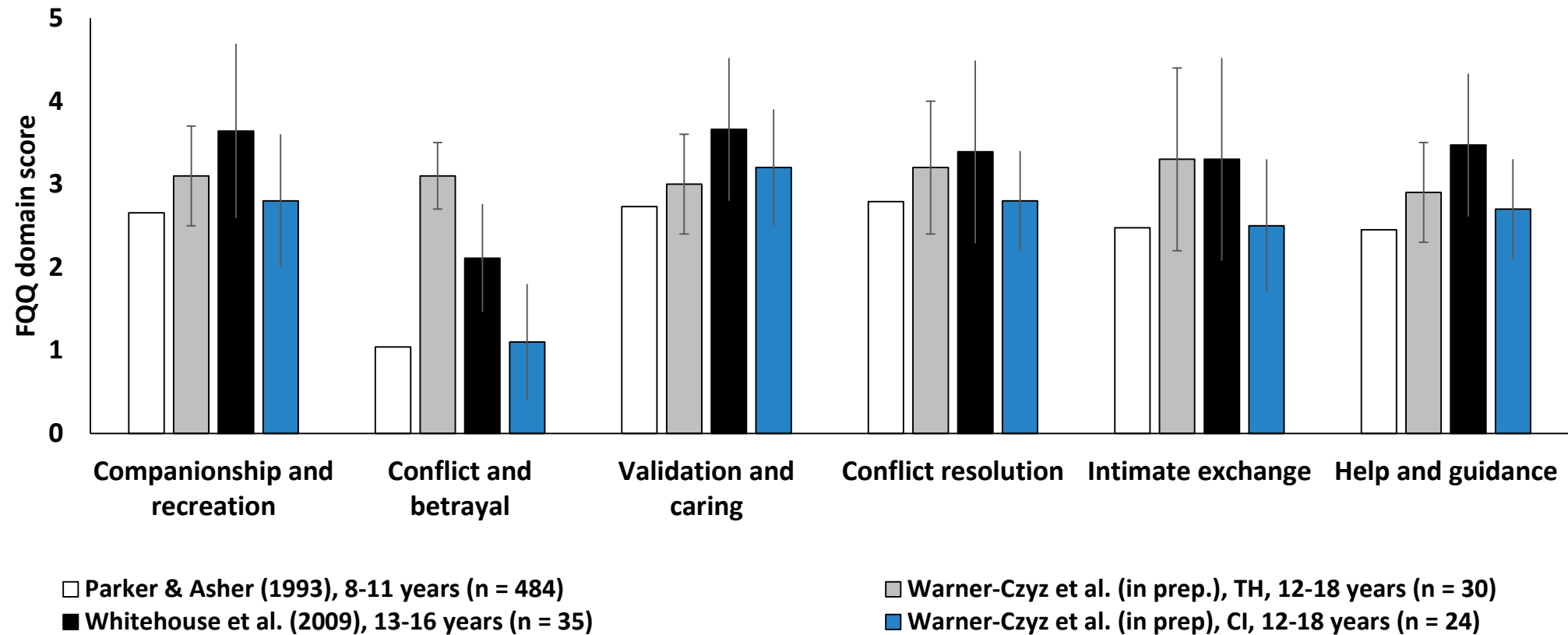
- *Joe sticks up for me if others talk behind my back.*
- *Joe and I always tell each other our problems.*

Not at all  
true



Really  
true

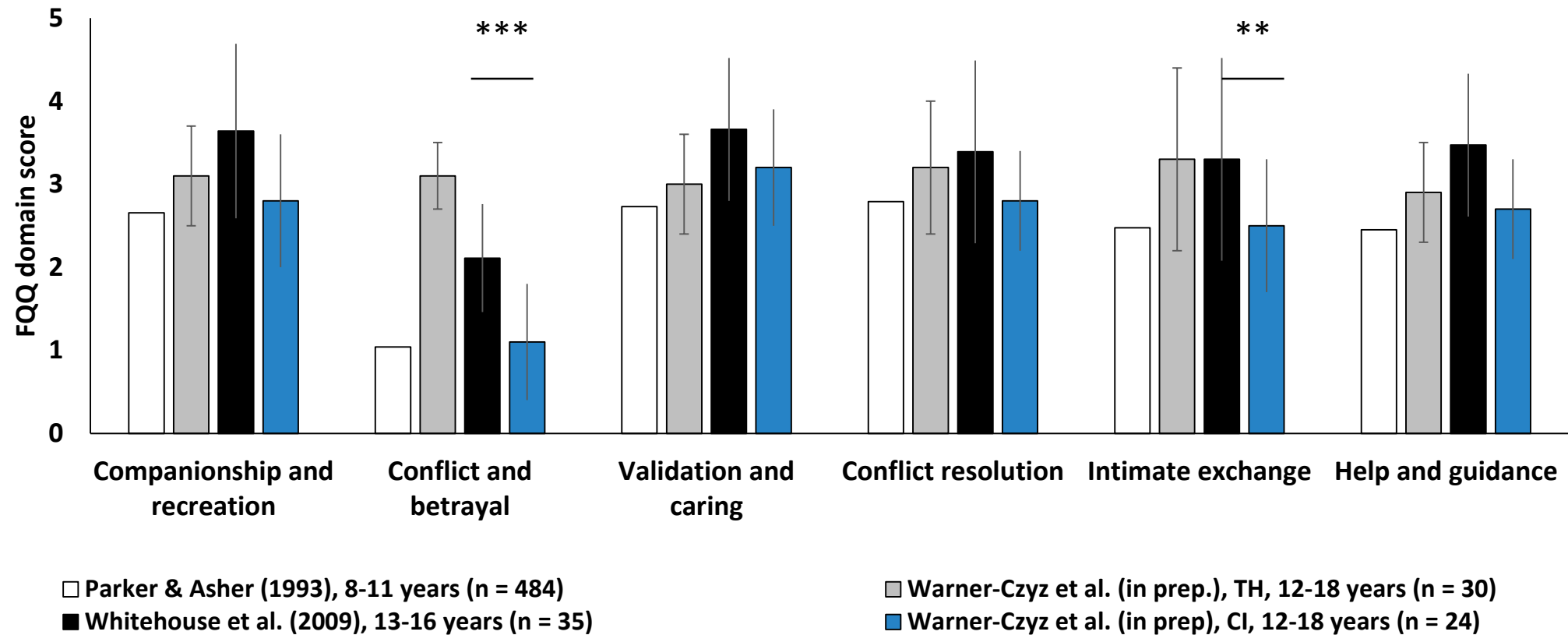
# Friendship quality by domain



Warner-Czyz et al., in preparation.



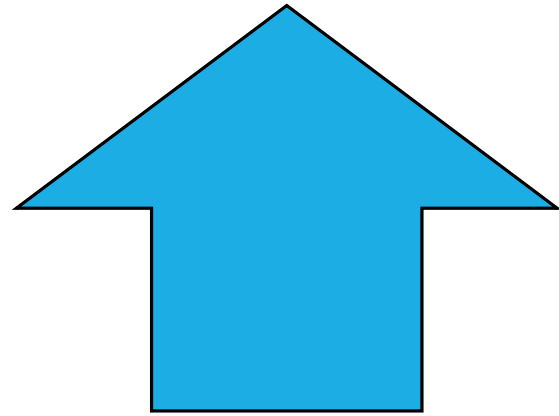
# Friendship quality by domain



Warner-Czyz et al., in preparation.

$F(45) = 33.86, p < .001$ . \*  $p < .05$ ; \*\*  $p < .01$ ; \*\*\*  $p < .0001$

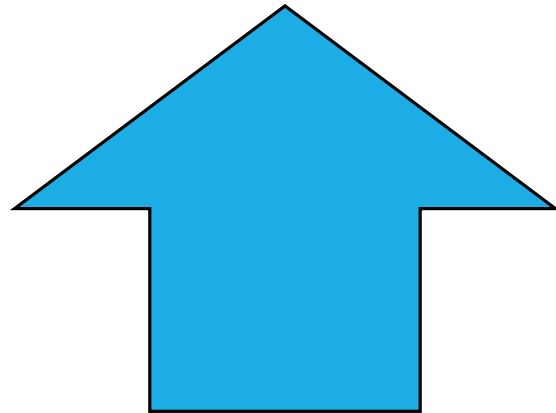
# Self-reported communication competence and friendship quality in adolescent cochlear implant users



**Speech perception in quiet**

**Speech perception in noise**

**Speech intelligibility**



**Friendship quality**

- **Validation and caring**
- **Intimate exchange**

# Lower friendship quality in pediatric cochlear implant users versus hearing peers

Communication prowess

Language  
skills

# Lower friendship quality in pediatric cochlear implant users versus hearing peers

**Communication prowess**

**Language  
skills**

**Immature social skills**

- Unequal turn-taking
- Discomfort entering social conversation

**Immature  
social skills**

# Lower friendship quality in pediatric cochlear implant users versus hearing peers

## Communication prowess

Language  
skills

## Immature social skills

- Unequal turn-taking
- Discomfort entering social conversation

Immature  
social skills

## Anecdotal reports from parents

- True friendship vs. acquaintance
- 1/3 could not name a best friend

Fewer true  
friends

# Peer victimization (a.k.a. getting bullied)

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**Unwanted aggressive  
behavior(s)**

**Power imbalance**

**Repeated multiple times**

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

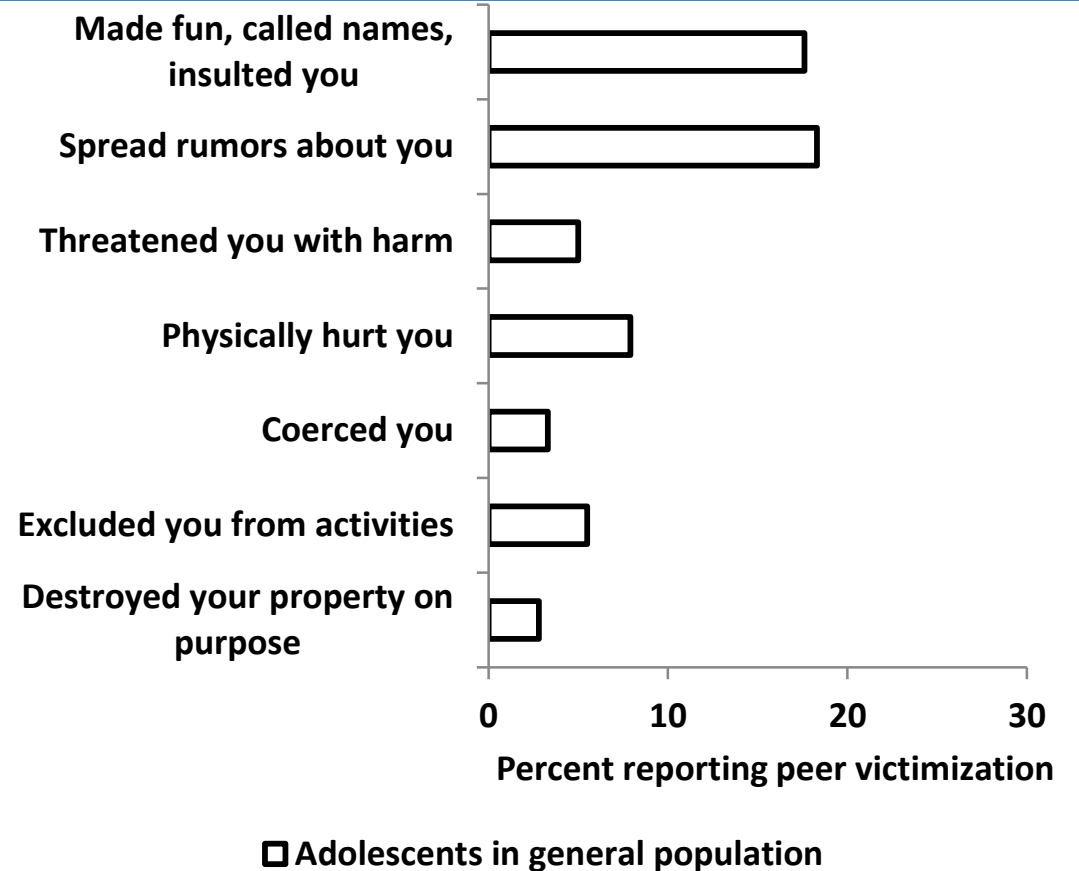
# Peer victimization (a.k.a. getting bullied)

Unwanted aggressive behavior(s)

Power imbalance

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



DeVoe & Murphy, 2011; Gladden et al., 2014; Robers, et al., 2013.

# 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



# Peer victimization in children with HL

## Increased risk for victimization

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



# Participants

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## 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)

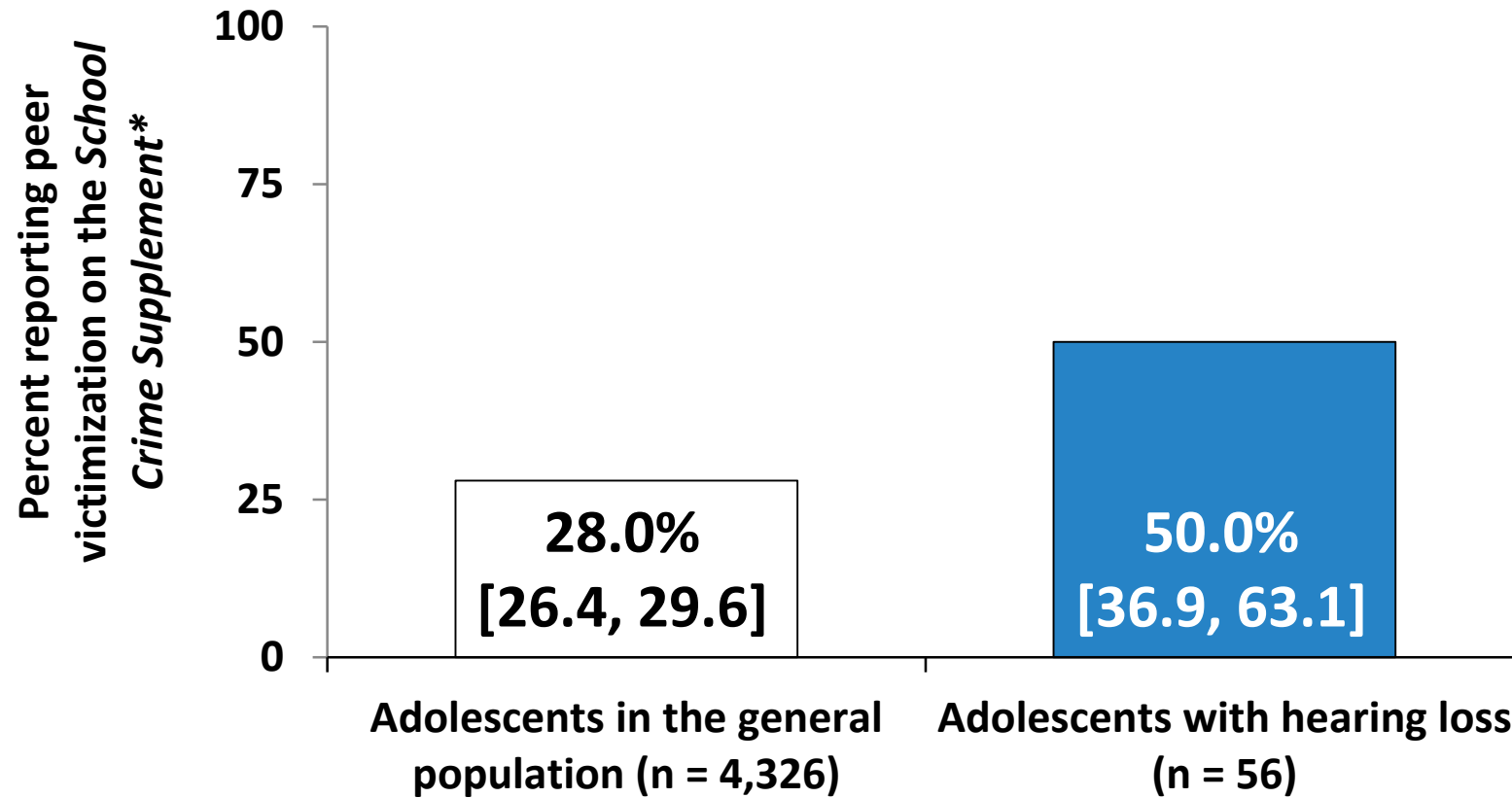
# Materials: Peer victimization

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## *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

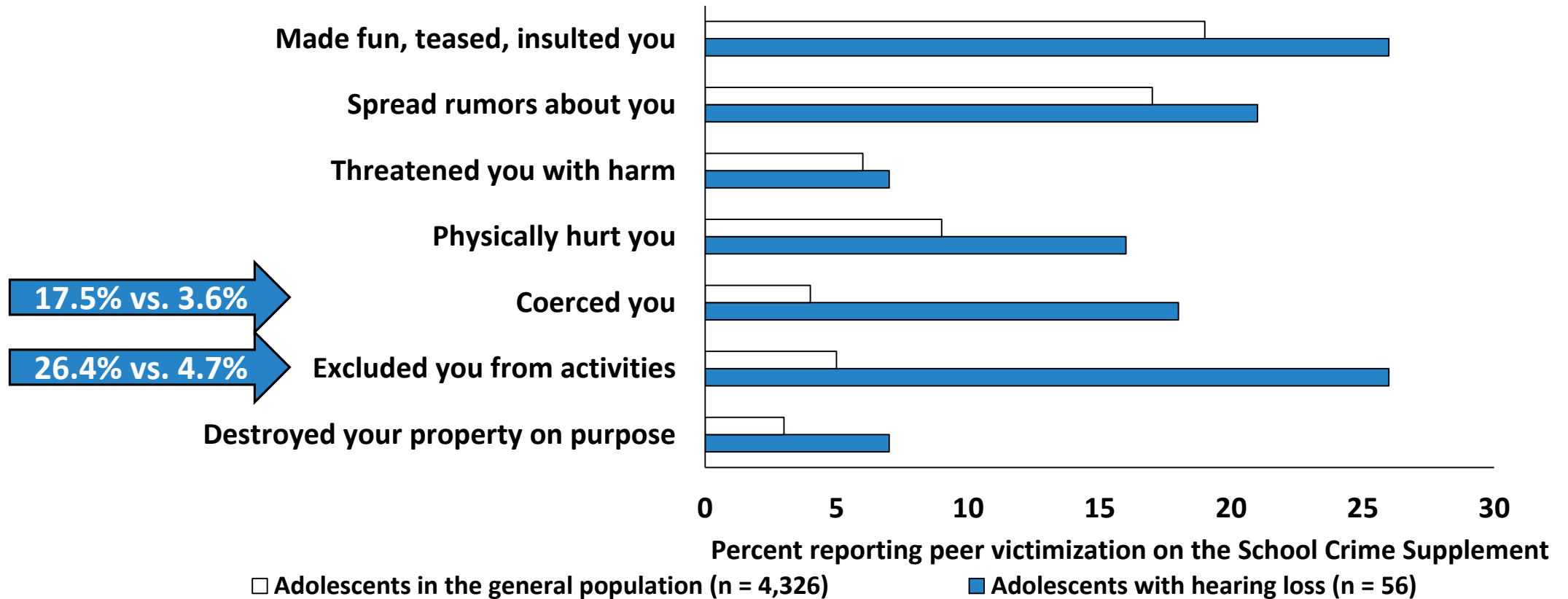
# Effect of auditory status on prevalence of peer victimization



Warner-Czyz, Loy, Pourchot, White, & Cokely, 2018.

*\*School Crime Supplement to the National Crime Victimization Survey*

# Effect of auditory status on type of peer victimization



# **Summary: Peer victimization in children with hearing loss**

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## **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**

*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.

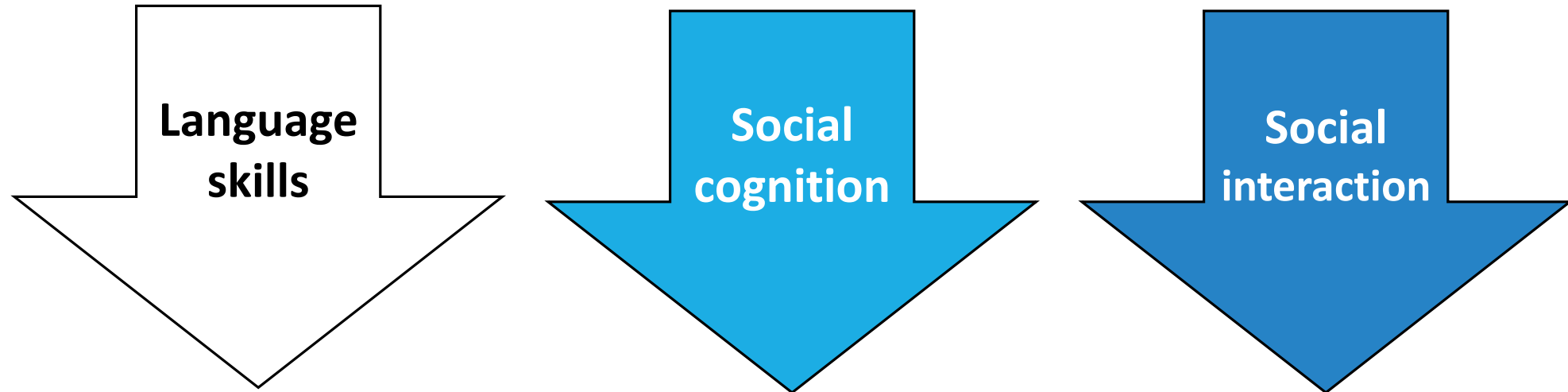
Ask child directly if they have experienced bullying.





# What can clinicians do?

Target language, social, and pragmatic skills





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**Address assertiveness and/or self-advocacy**



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**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](http://www.doe.mass.edu/bullying/considerations-bully.html)



# What can parents do?

**Target social and pragmatic skills**

**Address assertiveness and/or self-advocacy**





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Target social and pragmatic skills

Address assertiveness and/or self-advocacy





# What can parents do?

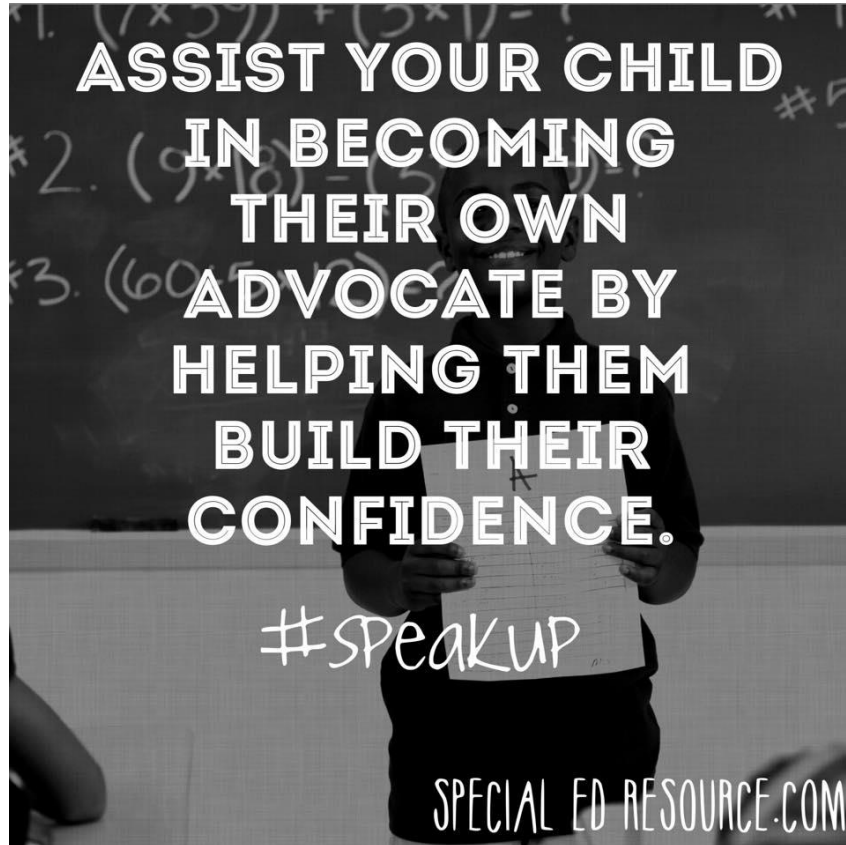


**Frequent, open communication**

**Awareness of warning signs**



# What can children with hearing loss do?



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?**

