Current state of knowledge: Quality of life in adolescents with cochlear implants

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No conflicts of interest to report

MENTAL WELL-BEING
- Anxiety
- Self-esteem
- Depressive mood

PHYSICAL WELL-BEING
- Physical health
- Energy

SOCIAL WELL-BEING
- Family
- Peer relationships

QUALITY OF LIFE

Generic QoL in adolescent CI users

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

Physical well-being in adolescents with hearing loss

Physical health
Fatigue

Self-ratings of physical health in adolescent CI users

No significant difference in overall physical well-being.
- I felt ill.
- I was in pain.
- I was tired and worn out.
- I felt strong and full of energy.
Fatigue in adolescent CI users

Sustained increased listening effort leads to increased stress and, subsequently, increased fatigue.
- Exacerbated in children with hearing loss and CI

Fatigue in adolescents with CI

Distractibility
Absenteeism

Attention
Concentration
School achievement

Mental well-being and adolescents with hearing loss

Higher risk to develop psychopathology

Anxiety

Similar levels of anxiety between adolescents with CIs and hearing peers
- Early CI, lower anxiety
- More social anxiety in children with HA vs. CI


Hornsby et al., 2017; Vare et al., 2010; Werfel & Hendricks, 2016. All outcomes are child-reported.

Hornsby et al., in preparation.

Higher risk to develop psychopathology

Theunissen et al., 2014.

Theunissen et al., 2012.
Depression

Higher rates of depressive symptoms in children with hearing loss versus TH peers
- Special education
- Sign use

Greater difficulties with coping in children with hearing loss versus TH peers

Brown & Cornes, 2018; Fellinger et al., 2009; Theunissen et al., 2014; van Eldik et al., 2005.

Self-esteem

Hearing loss may increase the risk of low self-esteem

Similar ratings of self-esteem in adolescents with HL vs. TH

Dukes & Martinez, 1993; Warner-Czyz et al., 2015.

Social issues in children and adolescents with hearing loss

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

Altshuler et al., 1976; Anmyret al., 2015; Brown et al., 2015; Davis et al., 1986; Huber et al., 2015; Knutson et al., 1997; Meadow & Trybus, 2001; Meserole et al., 2014; Moeller, 2007; Warner-Czyz et al., 2009; Wiefferink et al., 2012.

Social well-being in adolescents with hearing loss

Friendships in pediatric CI users

Number of friends
Friendship quality in adolescents with CI vs. TH

<table>
<thead>
<tr>
<th>Domain score on the Friendship Quality Questionnaire (Parker &amp; Asher, 1993)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parker &amp; Asher (1993), 8-11 years (n = 484)</td>
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<tr>
<td>Whitehouse et al. (2009), 13-16 years (n = 35)</td>
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<tr>
<td>Warner-Czyz et al. (in prep.), TH, 12-18 years (n = 30)</td>
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<tr>
<td>Warner-Czyz et al. (in prep.), CI, 12-18 years (n = 24)</td>
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</tbody>
</table>

Friendship quality relates to self-reported communication competence in adolescent CI users

<table>
<thead>
<tr>
<th>Perception in quiet</th>
<th>Perception in noise</th>
<th>Speech intelligibility</th>
</tr>
</thead>
<tbody>
<tr>
<td>Companionship and helping</td>
<td>.38</td>
<td>.23</td>
</tr>
<tr>
<td>Conflict and betrayal</td>
<td>.04</td>
<td>-.06</td>
</tr>
<tr>
<td>Validation and caring</td>
<td>.51**</td>
<td>.57**</td>
</tr>
<tr>
<td>Conflict resolution</td>
<td>.05</td>
<td>.25</td>
</tr>
<tr>
<td>Intimate exchange</td>
<td>.45*</td>
<td>.45*</td>
</tr>
<tr>
<td>Help and guidance</td>
<td>.53**</td>
<td>.31</td>
</tr>
</tbody>
</table>

**p < .01; ***p < .001

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.

40-68% of children with special needs have been bullied at least once.

Adolescents with hearing loss have an increased risk for peer victimization.

Effect of auditory status on type of peer victimization

<table>
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<th>Type of peer victimization</th>
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<td>Percent reporting peer victimization</td>
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</table>

Adolescents in the general population (n = 4,326)
Adolescents with hearing loss (n = 56)

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QUALITY OF LIFE
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