Music Perception in Elderly People with Hearing Aids

Experiences and Influencing Factors

Sophie Weber¹, Grit Böhme², Christa Schlenker-Schulte², Magdalena Schmidt², Agnes Weber³, Ulrike Weber³

¹Forschungsstelle zur Rehabilitation von Menschen mit kommunikativer Behinderung (FST) e. V. an der Martin-Luther-Universität Halle-Wittenberg (www.fst-halle.de)
²Corresponding author: sophie.weber@mailbox.org

The Project AutoRK aktiv hören

- Autonomie-Ressource Information und Kommunikation aktiv hören (AutoRK aktiv hören) (25/2019/07/89750)
- November 2019 to June 2022
- funding: European Union (EFRE) and federal state of Saxony-Anhalt
- part of the research network “Autonomie in Old Age (AA)"
- aims to minimize the negative consequences of elderly hearing impaired people not using their hearing aids, with a focus on the use and influence of information and communication
- results: webpage with detailed data and results, information brochures for elderly people

Method and Data

- mixed-methods design
- questionnaire:
  - based on the two Core Sets for Hearing Loss (CSHL-brief and CSHL comprehensive)¹
  - paper-pencil (42 %) and online-questionnaire (58 %)
  - N = 170 participants
  - 50 % male, 49 % female
  - aged 55 to 94 (mean age 73)
- semi-structured interviews:
  - 17 face-to-face-interviews
  - 6 participants surveyed via email or messenger due to Covid-19, inspired by dialogue journaling method²
  - 3 people participated in both face-to-face and email interviews
  - 6 male, 14 female
  - aged 43 to 90 (mean age 71)

Music Perception Experiences

- "I went to a concert [...] and was pleasantly surprised. The sound seemed almost natural." (Int01B1 pos. 68 | f | 74 y. | testing her first hearing aids)*
- "I was so pleased when I realised with the [...] devices, oh, I can enjoy music again. If it clangs a bit, well, that can happen sometimes with organ or brass instruments [...] But if the overall sound of the music is wonderful, that’s what’s so important to me." (Int1288 pos. 89 | f | 77 y. | wears hearing aids regularly)*
- "I knew that I wouldn’t want to go to a classical concert any more. Because the sound of classical music is simply different. [...] It sounds all metallic. That’s the way it is.” (Int01B1 pos. 74 | f | 60 y. | wears hearing aids regularly)*
- "We went to a concert once, it was great, [...] but it almost drove me crazy, it was too loud for me. [...] I can turn them [the hearing aids] down, I also have [...] sound filters [...] but it’s just not the fun I used to have.” (Int2202 pos. 72 | m | 76 y. | wears hearing aids regularly)*
- "If you go to classical concerts more often [...] then there’s also some better [hearing aid] quality. But for me, you know, music is music, right? [...] I don’t need all these finer details.” (Int1185 pos. 242 | f | 70 y. | wears hearing aids occasionally)*

"*all quotes own translation

Table 2: “When wearing hearing aids, can you understand in concerts?”

<table>
<thead>
<tr>
<th>yes % (n)</th>
<th>no % (n)</th>
<th>does not apply % (n)</th>
</tr>
</thead>
<tbody>
<tr>
<td>43,0 (109)</td>
<td>35,0 (85)</td>
<td>22,0 (56)</td>
</tr>
</tbody>
</table>

Table 2: “When wearing hearing aids, can you understand well in the following situations?”

<table>
<thead>
<tr>
<th>yes % (n)</th>
<th>no % (n)</th>
<th>does not apply % (n)</th>
</tr>
</thead>
<tbody>
<tr>
<td>75,0 (123)</td>
<td>25,0 (41)</td>
<td>0,0 (0)</td>
</tr>
</tbody>
</table>

Personal Factors

- neither age nor gender correlated with music perception
- hearing loss:
  - little difference between participants with mild versus moderate hearing loss
  - significantly poorer music perception experiences in participants with severe hearing loss (consistent with Looi et al. 2019³)

Hearing Aid Use

- no correlation between music perception and length of daily hearing aid use
- non-significant tendency between the ability to manage different hearing aid programs and having a good music experience

Fitting Process

- no statistical significant correlation between music perception and:
  - describing hearing situations to the audiologist
  - the frequency of visiting the audiologist
  - the information received

- Interview data would seem to suggest that satisfying music perception is positively influenced by:
  - being determined to continue to listen to music
  - expecting hearing aids to provide good music perception
  - testing devices in music-specific situations
  - making the quality of music perception a decisive criterion

Discussion

- results showed that satisfying music perception and enjoyment in elderly people with hearing aids is possible
- still insufficient explanation why in several cases proper music perception is not achieved
- further research:
  - targeting systematic identification of determinants for satisfying music perception
  - surveying the effects of special implementations, e.g. training in using music-adapted hearing aid programs or participating in a structured, music-specific testing and fitting process

Literature