Understanding Accessibility in Croatia – Perceived HA Satisfaction and Quality of Life

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April 5th 2019, Zagreb, Croatia
Quality of Life & Hearing Impairments

- heterogeneous – congenital/early acquired hearing loss, and adults/elderly with acquired hearing loss

  psychosocial well-being

  perceived HA satisfaction  self-esteem, satisfaction with life, mental health, cultural identity
Hearing Aids as a Rehabilitative Option

• hearing aids (HAs) represent the crucial element of contemporary aural rehabilitation for adults and the elderly with acquired hearing loss
  ▪ the most common „functional” rehabilitative option (Pacala and Yueh, 2012)
  ▪ positive effect on communication and psycho-social well-being is well documented (Chisolm et al., 2007)
  ▪ great rehabilitative potential, composed of the HA satisfaction (Arakawa et al., 2010) and the communication benefit (Freiberger et al., 2013)
Components of HA Outcome

• HA satisfaction (HAS) is the outcome of the HAs communication performance evaluation against initial expectations (Wong et al., 2003)

• perceived HA benefit (PHAB) is the everyday communication benefit yielded by the device (Uriarte et al., 2005)

• both HAS and PHAB are subjective measures of HA outcome, and represent very important information to the HA fitting process (Vestergaard Knudsen et al., 2010; Kochkin, 2000a)
What Influences the HA Outcome?

• The increase in the PHAB can lead to a higher HAS (depending on the amount of the hearing impairment) (Kochkin, 2003)

• The HAS may be influenced by experience, expectation, personality and attitude of their users, usage itself, the degree of hearing loss, the type of HA, sound quality, listening situations, and problems in HA use (Wong et al., 2003; Uriarte et al., 2005)

• The PHAB may be influenced by residual communication difficulties (Cox and Alexander, 1999)

• Visibility of the HA was marked as one of the potential declining contributors to HAS

• The regular usage was marked as one of the potential inclining contributors to the HAS/PHAB (Laperuta and Fiorini, 2012)
The Study

• investigate the relation between
  • the type of HA and the characteristics of their usage, and
  • the HAS/PHAB

• if the HAS/PHAB are influenced by the type of HA
  → the visibility is important factor in subjective HA outcome measurement
Participants

- 15 men, and 15 women

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<th>Age</th>
<th>30 to 93 years (M=68.5 years, ± 17.6 years)</th>
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| 4 frequency better-ear-pure-tone-average | 40 to 87 dBHL  
(59.5 dBHL on average, ± 12.8 dBHL) |
| Experience with the HA use | 7 months to 14 years  
(M=6.3 years, ± 4 years) |
| One digital HA | 17 |
| Two digital HAs | 13 |
| Behind-the-ear HA (BTE) | 11 |
| In-the-canal HA (ITC) | 19 |
| HA usage | 5 to 12 hours per day  
(M=9 hours, ± 1.8 hours) |
HAS/PHAB Assessment

• second version of the Aural Rehabilitation Outcome Profile (PIRS) (Šulja et al., 2017)
• self-assessment 5-point Likert-type scale (almost never, rarely, sometimes, often, and almost always)
• it quantifies hearing difficulties in regards to:
  ▪ acoustic environment and speaker features (sections 1, 3, and 5)
  ▪ compensation strategies, and socio-emotional consequences of hearing loss (section 4);
  ▪ the influence of hearing loss on everyday activities (section 2);
  ▪ the HA performance (section 5)
• only the fifth section of the PIRS was analyzed
• audiological and personal data were obtained through the interview
Results (Descriptive Analysis)

- sound localization in **noisy environments** and the **visibility** of the HA are the most dissatisfying aspects of HA use
- ITC users are more dissatisfied with their HA, especially regarding the ease of HA installation, manipulation and maintenance, as well with the PHAB in respect to the investment
- the use of two HAs is associated with better sound quality/clarity, less problems in noisy environments, greater PHAB, and with less installation, manipulation and maintenance difficulties
- HAS/PHAB are higher among BTE users and those who use two HAs
Results (LMR Analysis, & Mann-Whitney U Test)

- age, BEPTA and the daily HA usage are the significant contributors to the HAS/PHAB:
  - lower (more positive) HAS/PHAB scores were associated with lower age and BEPTAs and greater daily HA use (regression coefficients significant at p<0.05)
- the BTE users report significantly greater HAS/PHAB (U=55,000; p=0.0248).
- no significant differences in the HAS/PHAB with respect to number of used HAs
- the number of years of the HA use did not have effect on the HAS/PHAB (correlation analysis)
Conclusions

• younger and regular HA users with better residual hearing report significantly higher HAS/PHAB

• participants who use two HAs tend to report higher HAS/PHAB

• it seems that the experience with HA use does not influence the HAS/PHAB among participants of this study

• it seems that the BTE HAs elicit more HAS/PHAB

• the data partly suggest that smaller HAs may be more desirable, but regular HA use, age and BEPTAs overpower the visibility of the HAs as the predictors of the overall HAS/PHAB in this study
Back to the Quality of Life

• multiple components of psychosocial well-being in the HoH
  • self-esteem (SE)
  • satisfaction with life (LS)
  • mental health (MH)
  • cultural identity (hearing, marginal, deaf and bicultural)

• cultural identity is related to SE and LS in HoH (Maxwell-McCaw, 2001; Hintermair, 2008)

• significant predictors of SE, LS & MH (Möhr Nemčić, Bradarić-Jončić, 2016)
  • identification with Deaf culture
  • language competences in both sign and spoken language
  • cultural knowledge of the Deaf and hearing culture

• based on population heterogeneity → QoL of HoH needs to be examined from different aspects in addition to device management
Thank you for your attention!