A feasibility study assessing physical health outcomes in hearing aid users

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1. Background

- Hearing loss in middle- and older-aged adults is associated with physical inactivity. This could influence poorer health outcomes across a range of domains.
- Hearing aids have the potential to improve cognitive function and psychosocial wellbeing, but there is little evidence regarding physical health.
- Qualitative and observational research has shown mixed evidence as to whether hearing aids improve physical activity, with users reporting them as both a barrier and facilitator.
- There is a need for high quality evidence to assess whether hearing aids can support adults with hearing loss to be more physically active.
- Hearing aids could be an additional management tool for reducing the risk of chronic conditions (diabetes, dementia)

2. Methods

Aim: To assess the feasibility of a study that aims to assess physical health outcomes in first-time and existing hearing aid users.

Participants
- Recruited through Boots Hearing Care
  - 45-75 years old
  - First-time or existing hearing aid user
  - No dementia, Fluent English

Method
- A pre-/post-observational study.
- Participants attended 2 assessments. During the 1st assessment, asked to wear a wrist-worn accelerometer (ActiGraph GT9X) for 6 weeks.

Main outcome
- Feasibility: A traffic light system to determine feasibility was used.
  - Green (proceed to full trial), Amber (adjustments required), Red (full trial should not occur).
- Acceptability: Likert scale and open-ended questions were asked at follow-up

Trial outcome measures:
- Physical Activity (self-report, accelerometry)
- Cardiovascular health, physical function, cognitive function, cognitive fatigue, psychosocial wellbeing (depression, loneliness, social isolation, mental wellbeing)

3. Results

- 10 participants (6 male), aged 51-75 years (M = 65.9, SD = 8.1) took part in the study. Most (60%) had mild-to-moderate hearing loss, 20% had moderately severe and 20% had severe.
- 5 participants were existing hearing aid users, there were no statistically significant baseline differences for demographics between new and existing hearing aid users (p ≥ 0.095).
- Wilcoxon signed-rank tests showed no significant differences between baseline and follow-up for any outcomes (p ≥ 0.051).
- Note: This feasibility study was not powered to test for significant differences.

4. Feasibility & Acceptability

- Recruitment - The 2 week window between assessment and hearing aid fitting made recruitment difficult.
- Implementation - Some (20%) participants reported difficulties charging the ActiGraph.
- Fidelity - Most (80%) participants wore the ActiGraph for the duration of the trial.
- Retention - All (100%) participants completed both assessments.
- All participants reported enjoying the study overall (agreed or strongly agreed)
  - Most (70%) enjoyed using the ActiGraph.
  - Most stated they were confident using the ActiGraph and chargers (90%), plus accompanying booklet (80%)
  - No adverse events related to the study were reported

5. Conclusions

- Overall, the study was well received by participants, with good retention and fidelity.
- Participant recruitment was challenging - for a future trial, could include NHS recruitment sites.
- With some adjustments to the design, a full-scale efficacy trial assessing the impact of hearing aids on physical activity would be possible.

References:
- Goodwin et al. (2023). A qualitative study assessing the barriers and facilitators to physical activity in adults with hearing loss. Br. J. Health Psychol

Meet The Team!

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