

Impact of Service Delivery Models and Technology Levels on Hearing Aid Skills

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Introduction

- The purpose of this study is to examine the influences of hearing aid service models and technology levels on hearing aid skills acquisition by using the Practical Hearing Aid Skills Test (PHAST-R).
- Part of a larger randomized clinical trial
- Three service models:
 - AUD group: Audiologists fitted prescription hearing aids using best practices
 - OTC+ group: Over-the-counter hearing aids with in-person audiologist support
 - OTC group: Over-the-counter hearing aids with no audiologist support
- Hearing aid technology models:
 - High technology
 - Low technology

Methods

- Participants were adults aged 55 and older with mild to moderate hearing loss and no prior experience using hearing aids
- Hearing aid skills measured at 7 weeks post-fitting using PHAST-R

PHAST-R

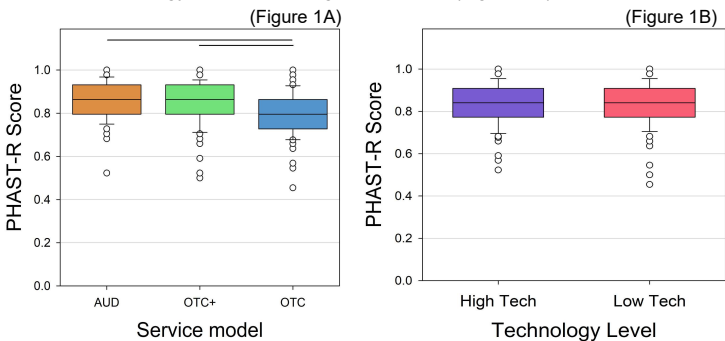
The PHAST-R is a standardized assessment tool used to evaluate a person's ability to use and manage their hearing aids.

- Three scoring options:
 - 0 points: Participant cannot complete task
 - 1 point: Participant completes task in a non-traditional way
 - 2 points: Participant completes task in the correct audiologist recommended way
- Example of scoring rubric below:

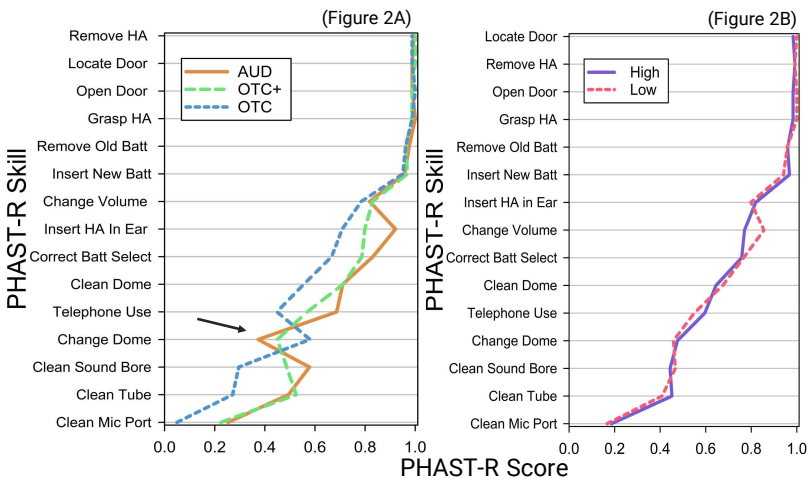
PHAST-R Topic	0 points	1 point	2 points
Change Dome	Cannot change dome.	Is able to remove old dome and put on a new one but is done in an unconventional way.	Hold the hearing aid slim tube and gently pull off the old dome. Then, align the new dome with the tube and press it securely into place.

Results

- 245 participants completed the study; 124 men [50.6%]; mean age = 67.7 years, SD = 8.1
- PHAST-R score results:
 - AUD group scored significantly higher than the OTC group, and the OTC+ group outperformed the OTC group (Figure 1A)
 - Technology Level has no significant effect (Figure 1B)



- At the individual PHAST-R item level, the AUD group generally outperformed the OTC+ group, which in turn outperformed the OTC group. The opposite pattern was observed for the Change Dome skill, where the OTC group and OTC+ group outperformed the AUD group (Figure 2A).
- No differences were found between High- and Low-Technology groups at the individual PHAST-R item level (Figure 2B).



- All service models share the same lowest scored item (Table 1).
- Both technology levels share the same lowest scored item (Table 2).

(Table 1)

	AUD	OTC+	OTC
Most missed	Clean mic port	Clean mic port	Clean mic port
Second most missed	Change dome	Change dome	Clean tube
Third most missed	Clean tube	Clean sound bore	Clean sound bore

(Table 2)

	Low	High
Most missed	Clean mic port	Clean mic port
Second most missed	Clean tube	Clean sound bore
Third most missed	Change dome	Clean tube

Limitations

- The PHAST-R was designed to assess skills for traditional audiologist fit hearing aids so it may not fully account for the skills required for OTC hearing aids.
- Participants only had 7 weeks of hearing aid experience, which limited time to develop certain skills and may have minimized the need to clean the devices.
- Scores may be lower for the AUD group because clients rely on the audiologist rather than learning the skills themselves. However, this is not necessarily negative, as better skills do not always mean better outcomes, and lower skills do not necessarily lead to poor outcomes.

Conclusion

- Audiologist support matters
 - First-time hearing aid users developed better skills with audiologist-led orientation
- Limited support helps
 - No significant difference between the AUD and OTC+ groups shows that even minimal in-person audiologist support improves outcomes
- Technology Level
 - No effect found
- Clinical & Policy Implication
 - Results have relevance for shaping future hearing healthcare practices and policies.

Acknowledgment

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