

Targeted Re-Instruction for Hearing Aid Use and Care Skills

Carly C.M. Alicea & Karen A. Doherty
Syracuse University

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BACKGROUND

- Hearing aids (HAs) are the most common treatment for sensorineural hearing loss
- HAs improve communication, reduce the psychosocial consequences of hearing loss, and mitigate some of the effects of hearing loss on cognitive function (Amieva, Ouvrard, Giulioli, Meillon, Rullier, & Dartigues 2015; Bisgaard & Ruf 2017; Chisolm et al 2007; Ciorba et al 2012; Ferguson, Kitterick, Chong, Edmondson-Jones, Barker, & Hoare 2017)
- Despite the benefits of HAs, there is a high prevalence of HA non-use
 - Only 30% of adults over age 70 who could benefit from HAs wear them (NIDCD 2014)
 - 25-30% of hearing aid owners report that they don't use their HAs (Popelka et al 1998; Lupsakko et al 2005; Vuorialho et al 2006)

Reasons for HA Non-Use

- Difficulty with HA use, care, and maintenance is one of the most frequently reported reasons for HA non-use and
 - was reported in 8/10 studies included in McCormack & Fortnum's (2013) scoping study
 - was the most common reason for non-use reported by Oberg et al. (2012) (n = 346 older adults)
 - accounted for more than 20% of the non-users in Lupsakko et al. (2005)
 - was cited as one of the reasons 59% of non-users in Gianopoulos (2002) stopped wearing their hearing aids

How to Improve HA Use, Care, & Maintenance

- Several studies have suggested informational counseling and re-instruction could address this issue (Ferguson et al. 2016; McCormack & Fortnum 2013; Vuorialho et al. 2006; Gianopoulos et al. 2002)
- Typically provided during a HA orientation
 - HA orientations are beneficial (Kemker & Holmes 2004; Humes et al. 2017), but patients are likely to forget the information (Margolis 2004; Kessels 2003; Reese & Hnath-Chisolm 2005)
- Measures have been developed to identify the HA information people forget or incorrectly learn

Measures to Assess HA Use & Care Skills

- Bennett et al (2015) assessed 12 surveys to evaluate HA use & care skills
 - Practical Hearing Aid Skills Test - Revised (PHAST-R; Desjardins & Doherty 2009; Doherty & Desjardins 2012) was found to be most thorough and psychometrically sound
 - Evaluates 8 basic but essential hearing aid use & care skills
- Recently, Saunders et al (2018) developed Hearing Aid Skills and Knowledge (HASK) test
 - Added knowledge component
- PHAST-R app was developed in 2018 and is currently the only app available for electronic administration of a survey to evaluate HA use & care skills

The PHAST-R App

For iPhone, iPad, & Android



This app can be used to identify the specific HA skills an individual needs targeted re-instruction on.

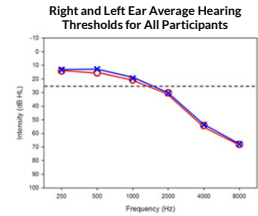
PURPOSE

- Determine if using the PHAST-R app to identify HA use & care skills that need to be targeted during a hearing aid orientation will improve HA use & care skills
- Assess factors that may influence an individual's learning and remembering HA use & care skills
- Assess the amount of time using the PHAST-R app and providing targeted re-instruction adds to a HA orientation

METHODS

Participants

- 26 adults (13 control and 13 experimental)
- Ages 60 to 85 years (M = 71, SD = 6.02)
- Inclusion Criteria:
 - Mild to severe SNHL
 - Never worn or tried HAs before
 - Normal cognitive function (SPMSQ)
 - Normal dexterity (9-Hole Peg Test)
 - Native English speakers



Session #1

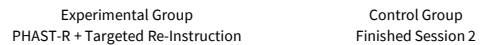
- Determined if participants met inclusion criteria
 - Mild to severe SNHL
 - Never worn or tried HAs before
 - Normal cognitive function (SPMSQ)
 - Normal dexterity (9-Hole Peg Test)
 - Native English speakers

Participants who met the criteria:

- Administered subjective questionnaires (HHQ and HARQ) and Reading Span test to assess working memory

Session #2 - Hearing Aid Fitting & Orientation

- Fit hearing aid
 - Resound Linx 3D 962
 - DSL-prescribed gain
 - Verified all fittings with real ear
- Hearing aid orientation - scripted and video recorded
- "Do you have any questions or concerns?"
- HASK administered by independent examiner to all participants → outcome measure
- Randomly assigned participants to the experimental and control group



Session #3 - 2 Weeks Post-HA Fitting

- All participants responded to following written statement about HA satisfaction:

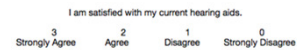


- HA adjustments based on user feedback → "Tell me about the last two weeks with your hearing aids. What did you like and what did you dislike?"
- Real ear measures
- "Do you have any questions or concerns?"



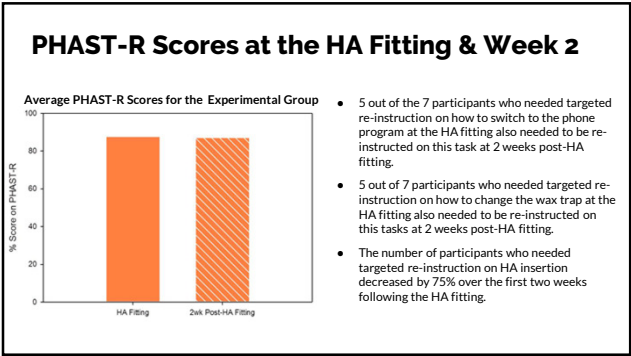
Session #4 - 4 Weeks Post-HA Fitting

- All participants responded to the following written satisfaction statement again:

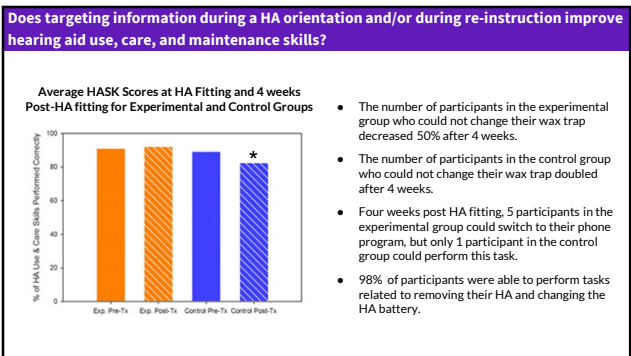


- Re-administered subjective questionnaires (HHQ and HARQ)
- HASK administered to all participants by independent examiner
- Returned hearing aids

RESULTS



- ### Tasks Included on Both PHAST-R and HASK
- 1) HA removal (PHAST-R item #1, HASK item #1)
 - 2) Opening of battery door (PHAST-R item #2, HASK item #2)
 - 3) Selection of correct battery (PHAST-R item #2, HASK item #3)
 - 4) Changing of HA battery (PHAST-R item #3, HASK item #4)
 - 5) Cleaning of HAs (PHAST-R item #4, HASK items #5 and #11v)
 - 6) HA insertion (PHAST-R item #5, HASK item #6b)
 - 7) Volume increase (PHAST-R item #6, HASK item #7)
 - 8) Telephone use (PHAST-R item #7, HASK item #8)



Which factors influence learning and remembering HA use & care skills?

None of the factors explored in this study were found to be significantly correlated to HASK performance, including:

- Age
- Hearing thresholds
- Reading Span score
- Level of hearing handicap
- Hearing aid-related attitudes

How long does it take to use the PHAST-R app and provide targeted re-instruction?

Average time it takes to administer the PHAST-R app and provide targeted re-instruction: **9 minutes and 15 seconds (SD = 3 minutes and 13 seconds)**

Minimum time it takes to administer the PHAST-R app and provide targeted re-instruction: **4 minutes and 34 seconds**

Maximum time it takes to administer the PHAST-R app and provide targeted re-instruction: **18 minutes and 24 seconds**

Conclusions

- Targeted re-instruction prevented a decline in HA use and care skills after four weeks of HA use.
- Non-targeted re-instruction resulted in a decline in HA use and care skills after four weeks of HA use.
- It takes an average of less than 10 minutes to administer the PHAST-R app and provide targeted re-instruction.

Future studies should explore how hearing aid use and care skills change over a longer period of time with targeted and non-targeted hearing aid orientations and re-instruction.

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