

# OBJECTIVE VERIFICATION OF HEARING AID USERS' ABILITY TO USE AND CARE FOR THEIR HEARING AIDS

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# HEARING AID ORIENTATION



- ❖ **Definition:** Instructing and orienting clients on how to use and care for their hearing aids
- ❖ **Patient-related information**
  - Realistic expectations
  - The nature of hearing loss
  - Adjusting to amplification
- ❖ **Device-related information**
  - Hearing aid features (multiple programs, telephone coil, directional microphone, volume control)
  - Insertion/Removal
  - Battery use (size, how to change)
  - Care and cleaning
  - Telephone use

# IMPORTANCE OF HEARING AID ORIENTATION

- ❖ A hearing aid orientation program is recommended as part of the best practices for fitting hearing aids (AAA Task Force, 2009)
- ❖ An effective orientation program has been shown to reduce hearing aid returns by half (Kochkin, 1999).
- ❖ A hearing aid user who can manage his or her hearing aids is more likely to be a consistent user of amplification (Baumfield & Dillon, 2000; Hickson et. al., 1986; Humes, 2006).

# TYPICAL APPROACH TO HEARING AID ORIENTATION

- ❖ In most clinical settings, hearing aid clients are simply asked if they have any trouble using and/or caring for their hearing aids.

❖ **Hearing aid users' perceived ability and actual ability to manipulate their hearing aids has been shown to be inconsistent (*Desjardins & Doherty, 2009*).**

- hearing aid users' were asked to self- report how well they knew how to use their hearing aids.
- 96% responded they knew how to use their hearing aids well,
- BUT only 48% of these individuals were able to demonstrate excellent or even good performance on the Practical Hearing Aid Skills Test (PHAST)

# WHY DO HA USERS HAVE TROUBLE USING THEIR HEARING AIDS?

- Hearing aid clients may forget the information presented to them at their hearing aid orientation session and not know that they are using their hearing aids incorrectly.
  - Reese and Hnath-Chisolm (2005) found that hearing aid clients did not recognize 25% of the content presented at their initial hearing aid orientation session.
- Hearing aid clients may have trouble manipulating hearing aid controls due to manual dexterity issues.
  - Kumar et. al. (2000) found that manual dexterity of the hand was correlated with the successful use of a hearing aid.

# PURPOSE

- 1) To determine the influence of working memory and manual dexterity function on PHAST-R performance.
- 2) To assess the PHAST-R with hearing aid clients who have different levels of hearing aid experience.

# PRACTICAL HEARING AID SKILLS TEST REVISED (PHAST-R)

❖ An objective measure of a hearing aid users' ability to perform tasks representative of critical hearing aid use and care functions.

The eight tasks on the PHAST-R cover the following skills:

- (1) hearing aid insertion
- (2) hearing aid removal
- (3) opening the battery door
- (4) changing the hearing aid battery
- (5) cleaning the aid
- (6) manipulating the volume control
- (7) telephone use
- (8) use of the noise program



## PHAST-R INSTRUCTIONS

•Place the following items in front of the patient: A telephone, batteries, magnetic tool, cleaning brush, cleaning cloth, and wax loop.

•Complete the entire PHAST-R.

•Re-instruct patients on the tasks that he/she received a score of 1 or 0.

### PRACTICAL HEARING SKILLS TEST - REVISED (PHAST - R)

Name: \_\_\_\_\_ Date: \_\_\_\_\_ Age: \_\_\_\_\_ Hearing Aid: \_\_\_\_\_

Audiologist: \_\_\_\_\_ Score: \_\_\_\_\_

**Instructions :**

Place the following items in front of the patient: A telephone, Different size batteries (10, 312, 13, etc.), Magnetic tool for battery removal, Cleaning tools: brush, cloth, wax loop.

Complete the ENTIRE PHAST (Reinstruct on items AFTER the PHAST is completed). Reinstruct patients on the tasks that he/she received a score of 1 or 0.

**Scoring:**

2 Performs the task without any problems.

1 Performs the task using 'deviant' means (e.g., takes aid out to adjust VC), needs some re-instruction.

0 Cannot perform task.

1	Ask the patient, "Please take out your hearing aid."			Comment		
	a Can he/she grasp the aid?	<input type="radio"/> 0	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> N/A	
	b Can he/she remove aid properly?	<input type="radio"/> 0	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> N/A	
2	Ask the patient, "Open up the battery door."					Comment
	a Can he/she locate the door on first try?	<input type="radio"/> 0	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> N/A	
	b Can he/she open the door without difficulty?	<input type="radio"/> 0	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> N/A	
3	Ask the patient, "Please show me how you change your hearing aid battery."					Comment
	a Can he/she Remove old battery?	<input type="radio"/> 0	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> N/A	
	b Did he/she choose correct battery size?	<input type="radio"/> 0	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> N/A	
	c Can he/she remove battery tab?	<input type="radio"/> 0	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> N/A	
	d Can he/she correctly place new battery in battery compartment?	<input type="radio"/> 0	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> N/A	
4	Ask the patient, "Please show me how you clean your hearing aid."					Comment
	a Can he/she clean sound bore or replace wax guard?	<input type="radio"/> 0	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> N/A	
	b Can he/she brush microphone port?	<input type="radio"/> 0	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> N/A	
	c Can he/she clean the vent?	<input type="radio"/> 0	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> N/A	
	d Can he/she clean open fit mold?	<input type="radio"/> 0	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> N/A	
5	Ask the patient, "Please put your hearing aid back in your ear."					Comment
	a Can he/she grasp aid?	<input type="radio"/> 0	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> N/A	
	b Can he/she place the aid properly in the ear?	<input type="radio"/> 0	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> N/A	
6	Ask the patient, "Turn up the volume of your hearing aid."					Comment
	a Can he/she correctly manipulate the VC?	<input type="radio"/> 0	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> N/A	
7	Ask the patient, "Show me how you use the telephone with your HA.(hand phone to patient)					Comment
	a Can he/she choose correct program/t-coil?	<input type="radio"/> 0	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> N/A	
	b Can he/she correctly place the phone in relation to the aid?	<input type="radio"/> 0	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> N/A	
8	Ask the patient, "Show me how you would adjust your hearing aid when you are in a noisy environment."					Comment
	a Can he/she use correct program	<input type="radio"/> 0	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> N/A	

# PARTICIPANTS

## ➤ 15 - New Hearing Aid Users (NU) (< 45 days);

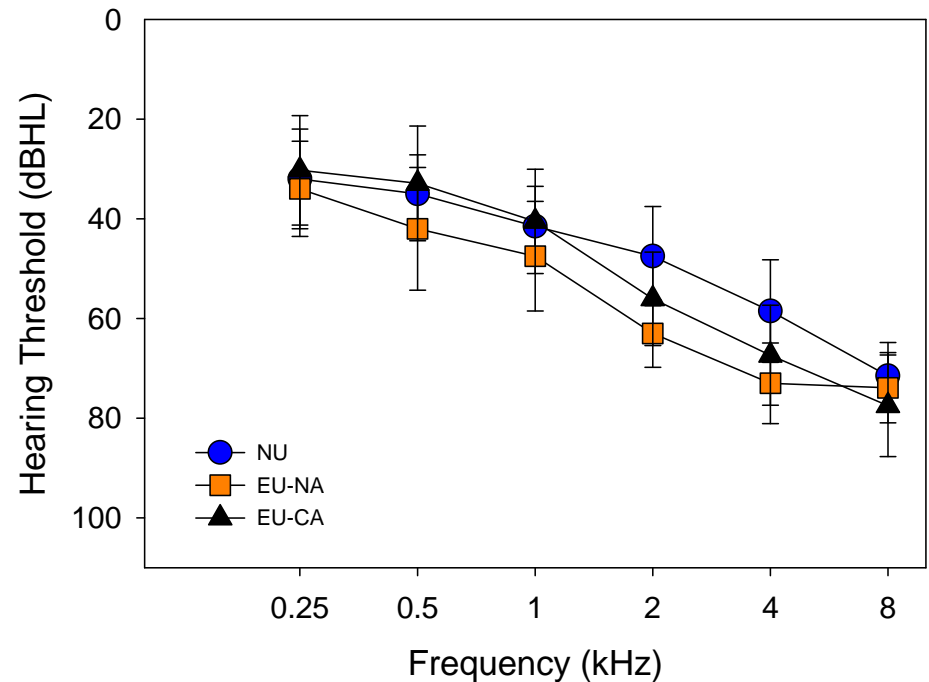
- 5 males, 10 females, 50-86 years of age (mean=73 yrs, SD= 11.5 yrs)

## ➤ 15 - Experienced Hearing Aid Users with New (< 45 days) Aids (EU-NA);

- 7 males, 8 females, 54-94 years of age (mean=77.8 yrs, SD= 11 yrs)

## ➤ 15 - Experienced Hearing Aid Users with Current (> 1 yr) Hearing Aids (EU-CA);

- 8 males, 7 females, 63-93 years of age (mean=78.8 yrs, SD= 10 yrs)



*\*\*All participants wore BTE hearing aids for an average of 8.2 hours/ day (SD = 4.3)*

*\*\*Experienced users (EU-NA & EU-CA) wore hearing aids for an average of 10.2 years (SD = 5)*

# TEST MEASURES

- PHAST-R (Doherty & Desjardins, 2012) to assess hearing aid users ability to use and care for their hearing aids
- Digit Span Test (Wechsler Adult Intelligence Scale- III, 1958) to assess working memory
- Nine Hole Peg Test (Mathiowetz, 2002) to assess manual dexterity
- Hearing Aid Questionnaire

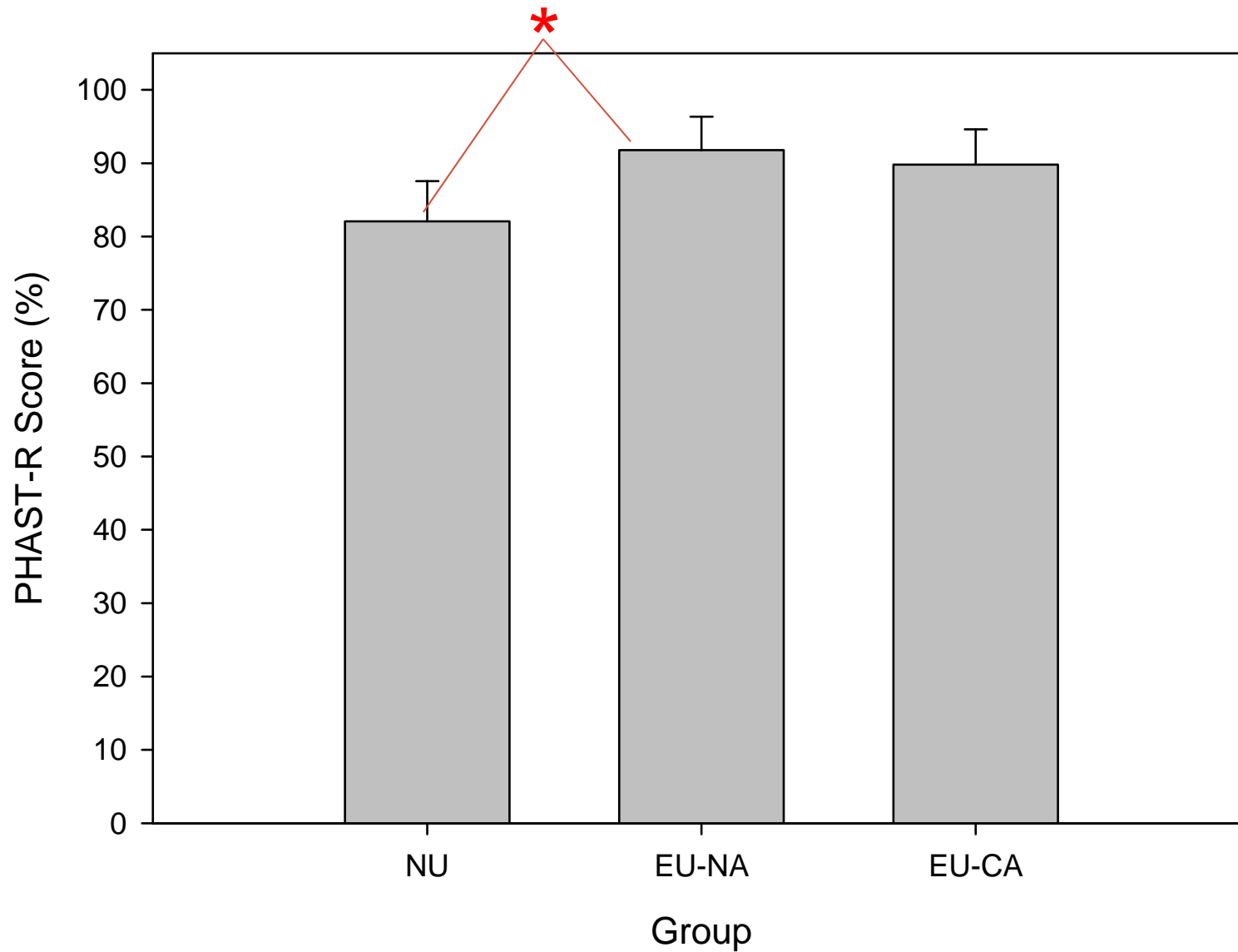
# PROCEDURE

- Participants were randomly selected from the Syracuse University Gebbie Hearing Clinic.
- NU & EU-NA were administered the test measures at their 30 day HA check appointment, and EU-CA at their yearly hearing evaluation appointment.

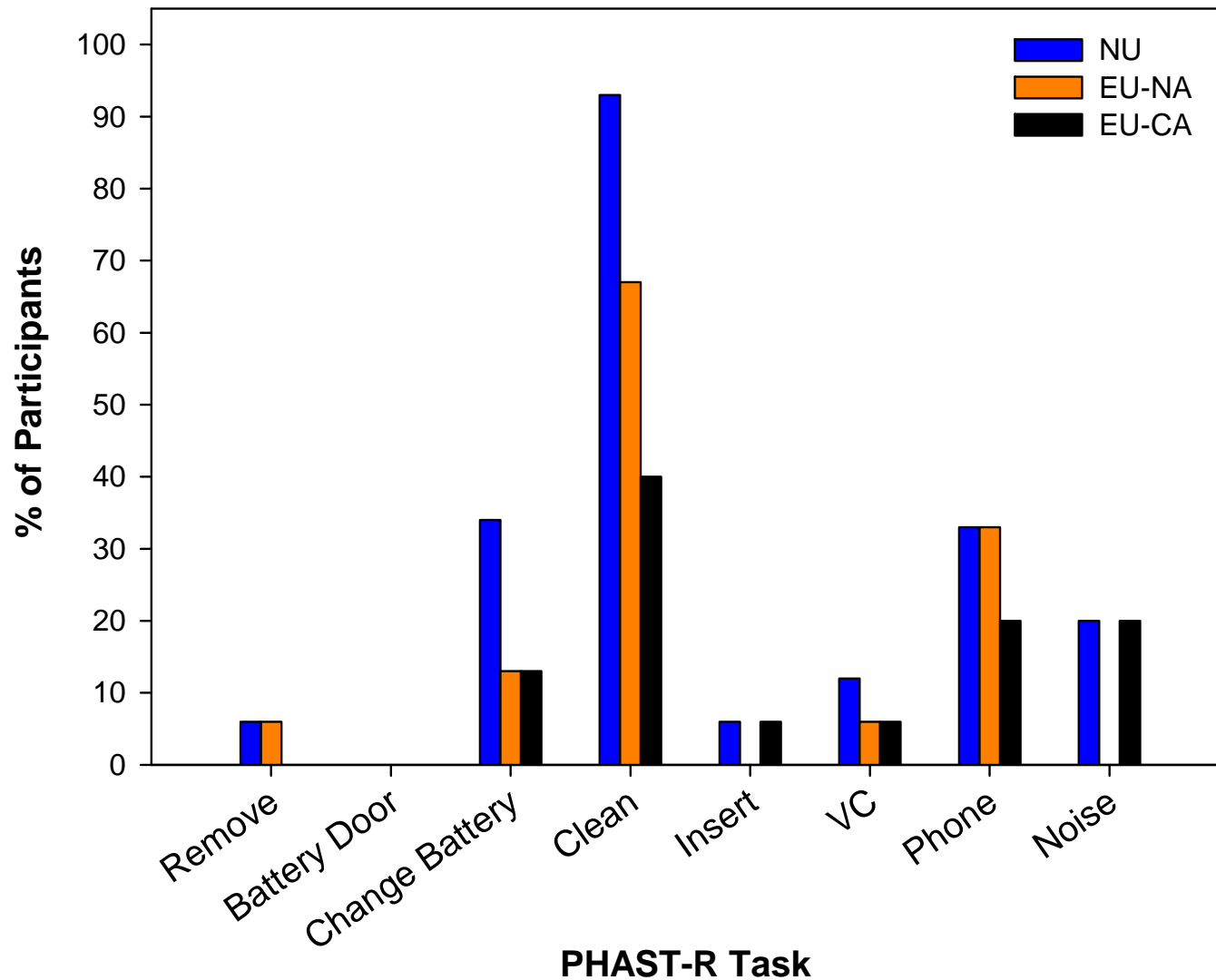


# RESULTS

# PHAST-R SCORES



# PARTICIPANTS' ERRORS ON THE PHAST-R



# RE- COUNSELING BASED ON PHAST-R PERFORMANCE

% PARTICIPANTS WITH PERFECT PERFORMANCE	# OF TASKS		
	0	1-2	3+
NU	0%	73%	27%
EU-NA	27%	67%	6%
EU-CA	34%	60%	6%



# RE-COUNSELING PHASE-R PER

% PARTICIPANTS WITH PERFECT PERFORMANCE

	#
	0
NU	0%
EU-NA	27%
EU-CA	34%

## Subjective vs. Objective

- % Participants who strongly agreed they know how to use their hearing aids well

80%

93%

94%

# REASONS FOR INCORRECT HA USE AND/OR CARE

## WORKING MEMORY

**YES** - Digit Span Test Scores ↓

**PHAST-R Scores** ↓

( $r = .410$ ,  $p = .002$ )

## MANUAL DEXTERITY

**NO** - No significant ( $p > .05$ )  
correlation between NHPT and  
PHAST-R scores

# CONCLUSIONS

- ❖ Although 89% of hearing aid patients strongly agreed or agreed that they know how to use their hearing aids, only 18% of them could correctly perform all of the PHAST-R tasks.
- ❖ 100%, 73%, and 66% of NU, EU-NA, EU-CA, respectively, needed re-counseling on one or more PHAST-R task.
- ❖ Cleaning and telephone use are the two PHAST-R tasks patients most frequently needed to be re-counseled on.
- ❖ PHAST-R scores decreased as performance on a working memory task decreased.
- ❖ There is no significant relationship between manual dexterity and performance on the PHAST-R.

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