

# Factors Affecting Successful Adoption of Connectivity Devices by Hearing Aid Users

Megan Frey, B.S., Anish Thakkar, B.A., & Nancy McKenna, AuD.

Speech and Hearing Sciences, Department of Allied Health, University of North Carolina at Chapel Hill



THE UNIVERSITY  
of NORTH CAROLINA  
at CHAPEL HILL

## Background

Hearing aid connectivity devices - referred to as HACDs in this poster - are widely marketed to both consumers and professionals in the field of Audiology as devices that can be used to improve communication. However, studies have shown that sales and acceptance of assistive devices is variable (Cranmer, 1991). Becoming informed about device capabilities, and properly learning - and retaining - such information can be difficult for older adults (Hartley, 2010). While major manufacturers advertise multiple capabilities for such devices, there is limited literature regarding patients' perceived benefit of the devices, and whether patients' needs are met (Lesner, 2003).

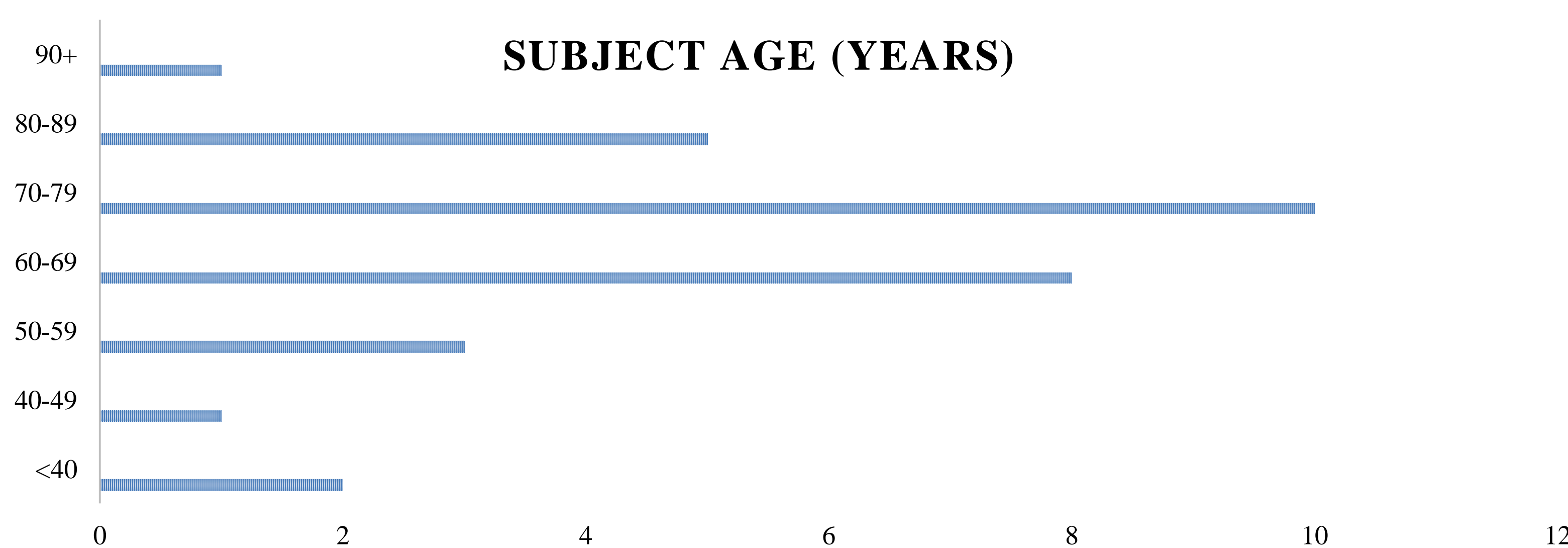
## Objectives

- To investigate factors that affect the choice to purchase the HACD and the successful adoption of the device.
- To evaluate patients' views regarding use, benefit, and satisfaction with connectivity devices.

## Methods

### Participants

- Adult patients who had purchased a connectivity device within the past 5 years (from 5 major manufacturers), excluding patients with known cognitive impairment.
- All participants had followed the UNC Hearing and Communication Center (UNC-HCC) fitting protocol for HACDs. This includes a diagnostic hearing evaluation and a Functional Communication Assessment (FCA).
- The FCA incorporates objective and subjective measures of communication difficulty, along with a thorough discussion of lifestyle and other factors, to provide the best options for improving communication given the patient's specific circumstances and needs.

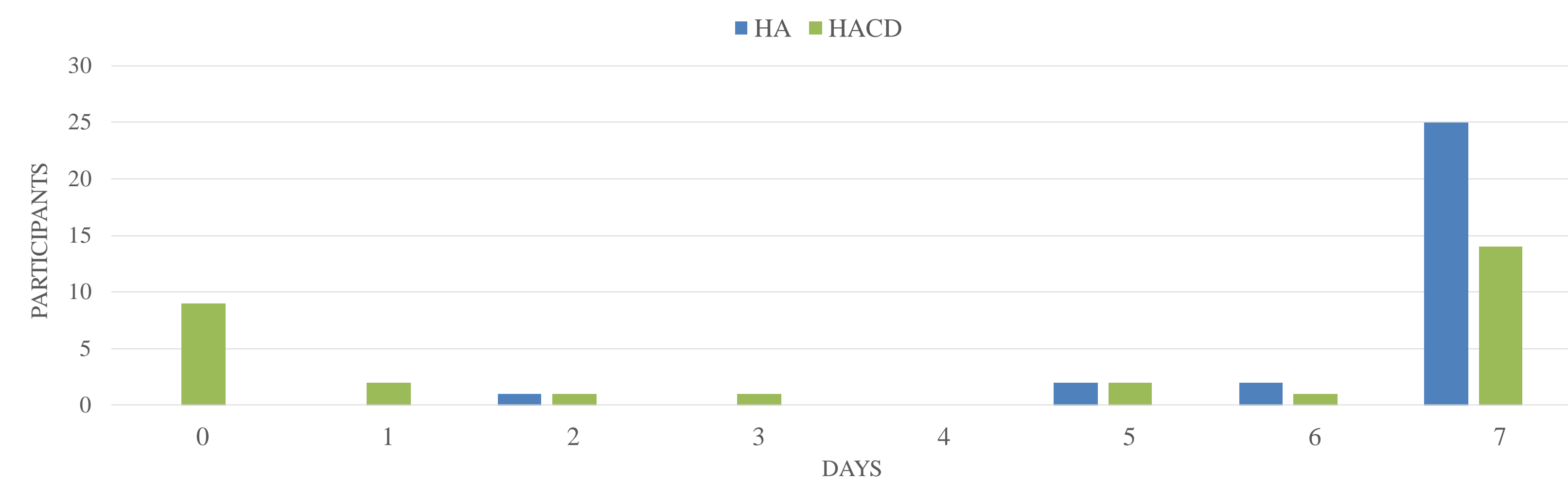


### Survey

- Subjects were contacted via telephone or in person in conjunction with a previously scheduled appointment. Once the subjects had given consent to participate, they verbally answered survey questions related to the HACDs.
- Surveys were completed by 30 (15 male, 15 female) out of 95 possible participants.
- The study was approved by the UNC Office of Human Research Ethics and was not funded.

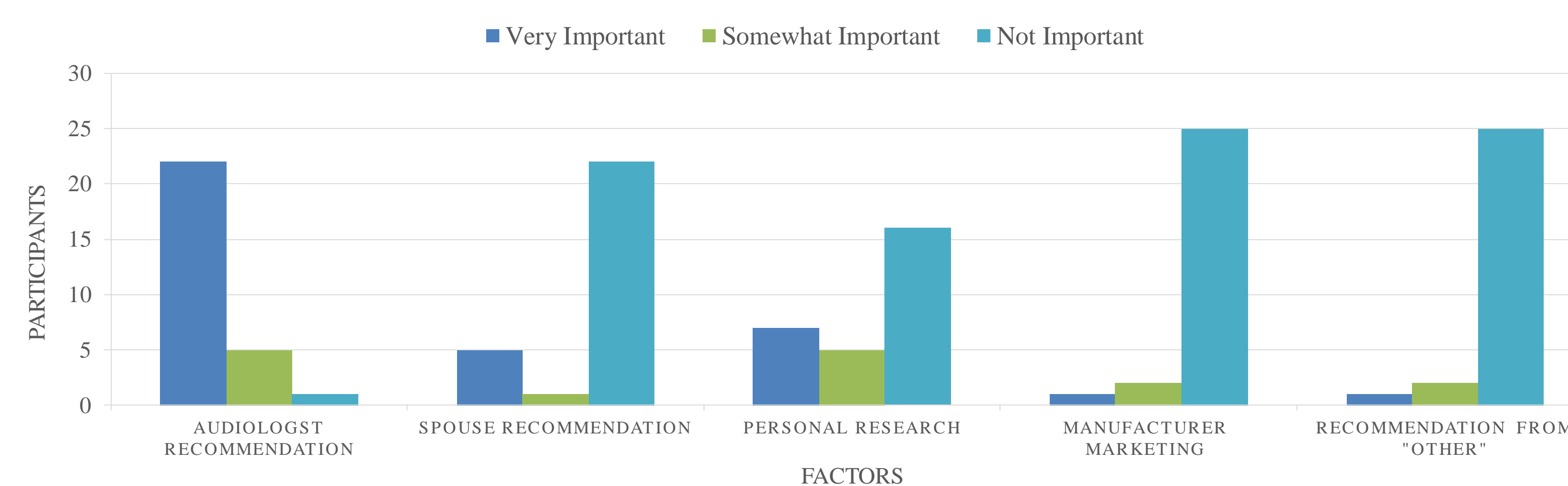
## Results

### FREQUENCY OF DEVICE USE



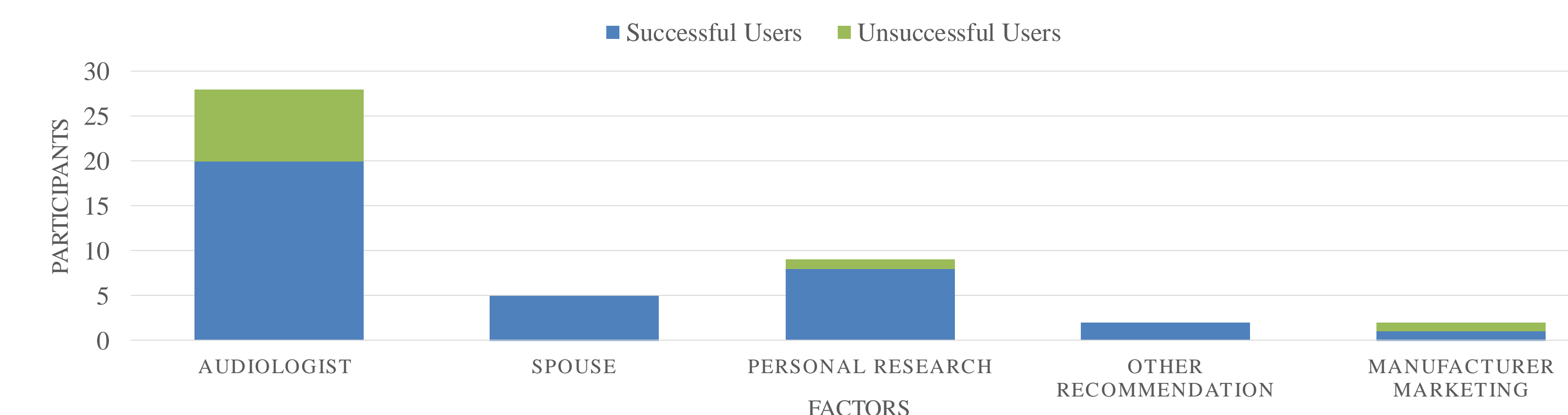
- Majority of subjects reported wearing their hearing aids 7 out of the 7 past days, and HA use was overall more frequent than HACD use

### FACTORS INFLUENCING PURCHASE



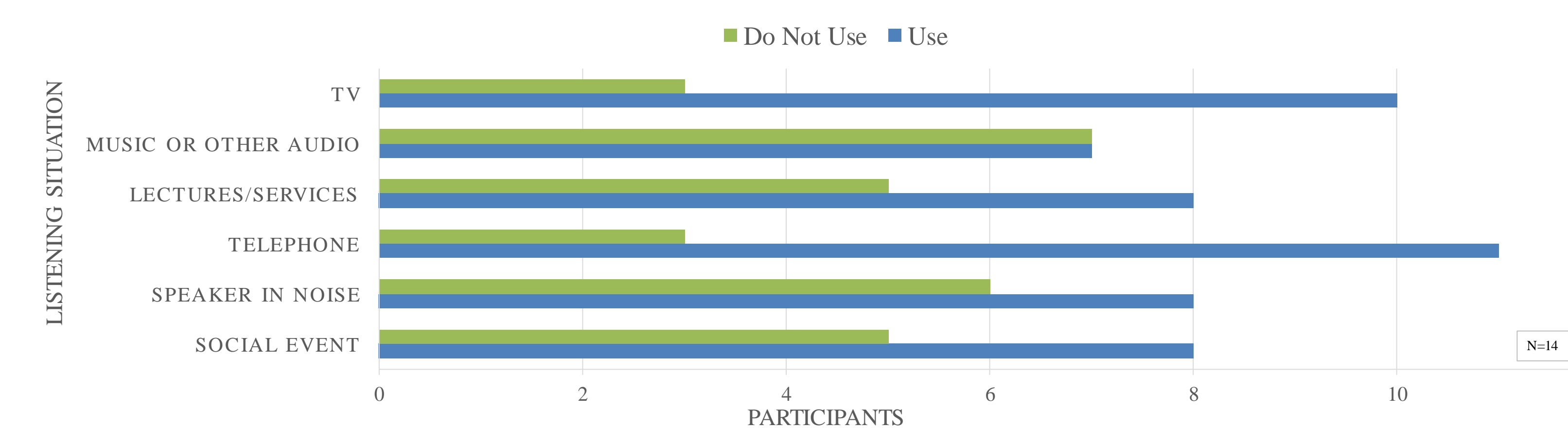
- Audiologist recommendation was the factor rated the most important by all subjects.

### FACTORS INFLUENCING PURCHASE AND USER SUCCESS



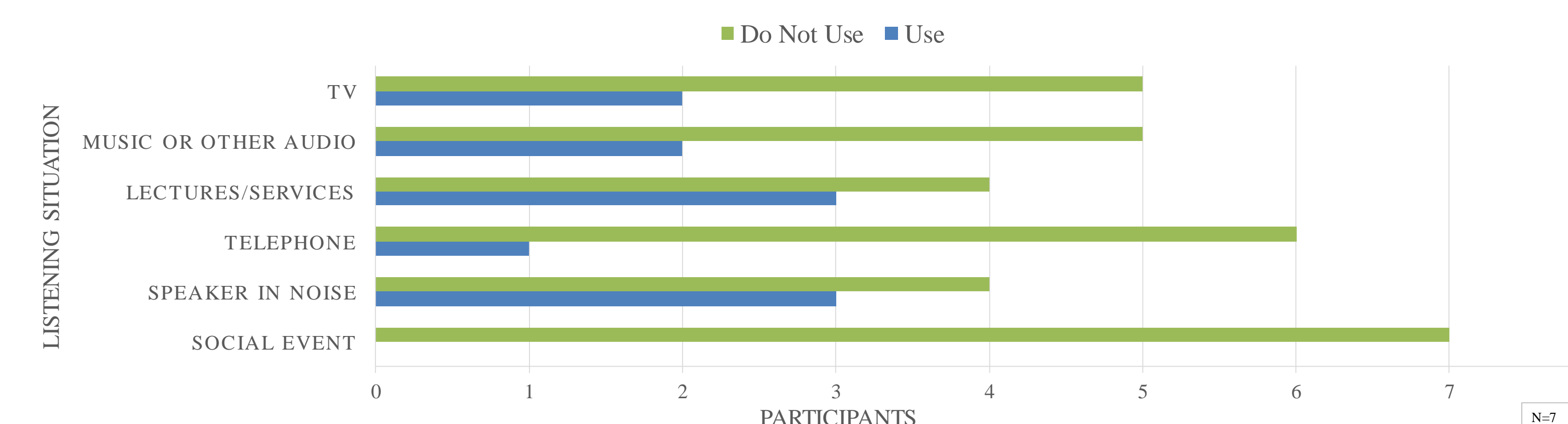
- Successful users were more likely to report the importance of personal research or outside recommendations than unsuccessful users

### HOW PARTICIPANTS REPORTING 7 DAYS/WEEK UTILIZE THEIR HACDS



- Most but not all participants use their devices for the telephone and TV, but other uses are also common.

### HOW PARTICIPANTS REPORTING <7 DAYS/WEEK UTILIZE THEIR HACDS



- Most minimal users utilize their device for a single environment/communication challenge. Telephone is the least frequently identified use.

## Results (Continued)

### GENDER DIFFERENCES

- The four subjects who reported that they would not recommend the device to others in their situation were all female.
- Female subjects were more likely than male subjects to report little or no benefit.
- Female participants were more likely to report that the device training was not adequate [4 female, 1 male].
- No gender differences were found for factors influencing HACD purchase.

### AGE EFFECTS

- The five subjects who returned the devices were all from different age groups.
- No effects of age on frequency of HA or HACD use were found

### PARTICIPANT COMMENTS

- Thought it worked well, but did not want an additional device*
- Not portable while running...wish it had a clip*
- Only used it for TV, and did not work as well as over the counter headset*
- Phone connectivity is terrible*
- Not easy to use, unsure of benefit*
- Does fine with HAs alone*

## Summary Points

- No age effect was found in the study cohort: some older users use the device as frequently as younger users.
- Female users were overall more critical of the devices.
- Outside recommendations for the device and personal research may be indicators of HACD success.
- Subjects who reported using their HACDs 7 out of the last 7 days were more likely to use their device in a variety of ways compared to subjects who reported less than 7 days/week use.
- Common complaints/reasons for limited use included: not liking the HACD design, poor quality of connectivity, and lack of benefit.
- Overall, subjects, even those who use HACDs daily, were critical of aspects of their devices.

## Implications and Future Research

- Additional scheduled support after the initial fitting may be essential for some users.
- Identification of possible predictors of successful use of HACDs such as: personal research before device purchase, spousal support, comfort with technology, may improve fitting success.
- The rise of tech savvy older adults, and increase in direct Bluetooth capability, may alter HACD fitting in the near future.

## References

- Cranmer K. (1991) Hearing instrument dispensing—1991. *Hear Instrum* 42, 6–13.  
 Lesner, S. A. (2003). Candidacy and management of assistive listening devices: special needs of the elderly. *Int J Audiol*, 42 Suppl 2, 2S68-76.  
 Hartley, D., Rochtchina, E., Newall, P., Golding, M., & Mitchell, P. (2010). Use of Hearing Aids and Assistive Listening Devices in an Older Australian Population. *Journal of the American Academy of Audiology*, 21(10), 642-653.