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Characterizing the burden of age-related hearing loss in a PACE Day Health Center

Sara K. Mamo, AuD, PhD^{1,2,†}, Samantha J. Mayhew^{2,§}, Matthew K. McNabney^{2,3}, Jack Rund³, Olivia Nirmalasari^{2,‡}, Esther S. Oh², Frank R. Lin^{1,2,4}

¹Johns Hopkins University, Center on Aging and Health, Baltimore, MD, USA

²Johns Hopkins School of Medicine, Baltimore, MD, USA

³Hopkins ElderPlus PACE, Baltimore, MD, USA

⁴Johns Hopkins Bloomberg School of Public Health, Baltimore, MD, USA

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To the Editor:

For the nearly 2/3 of adults over 70 years old with hearing loss¹, trying to understand speech in a noisy environment can be difficult and may lead to social withdrawal.^{2,3} Given the importance of social engagement to healthy aging⁴, enhancing communication for adults is important. The Program for All-inclusive Care for the Elderly (PACE) is a comprehensive healthcare program for adults who are ≥ 55 years, nursing home eligible, and living in the community at time of enrollment. This setting is ideal for exploring the functional impact of hearing loss on a group of older adults and staff due to the holistic approach to care, which includes meals, social activities, and recreation therapy. The goal of this qualitative study was to evaluate the hearing loss burden and communication needs of participants and staff at the Day Health Center (DHC) in order to develop a meaningful staff training and communication intervention that addressed the group needs—both observed and expressed.

Methods

Focus Groups.

Three focus groups were offered to all DHC staff (n=63). Fourteen staff members, including but not limited to medical technicians, recreation, transportation, and rehabilitatists,

Corresponding Author: Sara K. Mamo, 358 N. Pleasant St., Rm 201B, Amherst, MA 01003, smamo@umass.edu, (p) 413-545-0565.

[†]Present address: University of Massachusetts Amherst, Amherst, MA, USA

[§]Permanent address: University of Cincinnati School of Medicine, Cincinnati, OH, USA

[‡]Present address: Providence Elderplace PACE, Seattle, WA, USA

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participated. Focus groups lasted for 1.5 hours, were audio recorded, and transcribed by a third party. Consent was in accordance with the IRB.

Prior to focus group meetings, direct observation of DHC activities informed the topics of the focus guide. The focus group guide included the following topics: 1) what makes communication with participants difficult, 2) what strategies are used to overcome communication breakdowns, 3) what support/training might be helpful to improve communication, and 4) what is their comfort level and/or interest in using amplification with participants. An amplification headset (Williams Sound Pocketalker®, Eden Prairie, MN) was passed around the room to guide discussion.

Results

Focus Groups.

Through an iterative process with a small research team, nine codes were operationally defined and used to annotate all text passages. Analysis of the coded transcripts provided better understanding of the staff's perception of communication difficulties and how communication breakdowns impacted their work day. Positive strategies described by the staff included moving the participant to a quiet location before communicating and using team work when a participant became agitated as a result of communication breakdowns. The staff expressed an interest in communication training and suggested training content. The challenges and corresponding opportunities discussed are summarized in Table 1, including future directions for researchers and providers.

Discussion

This study identified the functional impact and perception of burden due to hearing loss among participants at the DHC. Through observations, we were able to catalog scenarios that will help to create ecologically valid training opportunities to improve communication in the DHC. In addition, gathering the staff's perceptions through focus groups provided insights into understanding what training topics be motivating for the staff. One example of a training opportunity developed through staff discussion was to address how to discern if the person could not hear them or could not understand them due to cognitive impairments when faced with a communication breakdown.

A previous study with informal caregivers of persons with dementia and hearing loss reported communication improvements when using a headset amplifier.⁶ A headset amplifier was provided for discussion during the focus groups as one accessible option for helping hearing and communication on a situational basis. Members of the staff who were involved with the intake/enrollment process felt that headset amplifiers should be available for one-on-one and small group consultations with individuals and families considering PACE. Further, the consensus was that if the personal care aides who work in the DHC were convinced that amplifiers are helpful, they would be more likely to use them.

In summary, a majority of participants attending day services for older adults are likely to have hearing loss. The staff in this study expressed an interest in learning how to recognize

hearing loss in the communication and behavioral patterns of older adults and welcomed the idea of training in communication strategies and amplification products to improve communication. In order to fully take advantage of the social engagement opportunities at the PACE DHC, identifying and treating hearing loss needs to be a key component of individualized care plans. While sending each individual for a diagnostic evaluation and custom hearing aids may create an undue burden and expense for the PACE program, there are group-oriented steps that can alleviate the burden of hearing loss. The results of this study provide insights into how to better prepare staff to communicate with participants who have hearing loss.

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References

1. Lin FR, Niparko JK, Ferrucci L. Hearing loss prevalence in the United States. *Arch Intern Med*. 2011 11 14; 171(20): 1851–1852. [PubMed: 22083573]
2. Pichora-Fuller MK. How social psychological factors may modulate auditory and cognitive functioning during listening. *Ear Hear*. 2016 Jul-Aug; 37(Suppl 1): 92S–100S. [PubMed: 27355776]
3. Lemke U, Besser J. Cognitive load and listening effort: Concepts and age-related considerations. *Ear Hear*. 2016 Jul-Aug; 37(Suppl 1): 77S–84S. [PubMed: 27355774]
4. Rowe JW, Kahn RL. Successful aging 2.0: Conceptual expansions for the 21st century. *J Gerontol B Psychol Sci Soc Sci*. 2015 7; 70(4): 593–6. [PubMed: 25878054]
5. Mui AC. The Program of All-Inclusive Care for the Elderly (PACE): an innovative long-term care model in the United States. *J Aging Soc Policy*. 2001; 13(2-3): 53–67.
6. Mamo SK, Nirmalasari O, Nieman CL, et al. Hearing care intervention for persons with dementia: A pilot study. *Am J Geriatr Psychiatry*. 2017; 25(1): 91–101. [PubMed: 27890543]

Table 1:

Analysis of focus group transcripts resulted in a series of communication challenges and corresponding opportunities as identified by the participants during discussion. The final column elaborates on future research/service plans to address these challenges and opportunities identified by the staff.

Challenge	Opportunity	Future Steps
Background noise	Create a quiet location 1) Through the use of a temporary partition 2) Through a personal use amplification system that also has noise cancelling headphones	One group option to consider is a headset amplifier with a telecoil setting and an induction loop system for the activity room. ¹ This approach provides substantial improvement in the signal-to-noise ratio.
Recognizing signs of hearing loss	Staff training 1) Info on age-related hearing loss and signs to detect hearing loss 2) Info on communication patterns common with dementia	Using an experiential learning approach and/or sensitivity training by creating a hearing loss with ear plugs for the staff members may help illuminate some typical hearing loss communication behaviors
Knowing how and when to use technology	1) Staff training 2) Use 1-2 options, so everyone can know how to use them 3) Assign 1-2 staff members to be in charge of the amplification units	Familiarize the staff with 1-2 simple amplification products and ample hands-on training including role-play opportunities to practice
Convincing participants to use amplification	Small group, communication therapy to help participants with hearing loss adjust to using the amplification	Identify a Communication Champion on the staff who is assigned to spend time practicing the use of the device with the participant

¹ See <http://www.hearingloss.org/content/loop-technology> for more information