Hearing Care Intervention for Persons with Dementia: A Pilot Study

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Objective: *Hearing loss is a commonly unmet need among adults with dementia that may exacerbate common dementia-related behavioral symptoms. Accessing traditional audiology services for hearing loss is a challenge because of high cost and time commitment. To improve accessibility and affordability of hearing treatment for persons with dementia, there is a need for unique service delivery models. The purpose of this study is to test a novel hearing intervention for persons with dementia and family caregivers delivered in outpatient settings.* **Methods:** *The Memory-HEARS pilot study delivered a 2-hour in-person intervention in an outpatient setting. A trained interventionist provided hearing screening, communication strategies, and provision of and instruction using a simple over-the-counter amplification device. Caregivers (N = 20) responded to questionnaires related to depression, neuropsychiatric symptoms, and caregiver burden at baseline and 1-month postintervention.* **Results:** *Overall, caregivers believed the intervention was beneficial, and most participants with dementia wore the amplification device daily. For the depression and neuropsychiatric outcome measures, participants with high symptom burden at baseline showed improvement at 1-month postintervention. The intervention had no effect on caregiver burden. Qualitative responses from caregivers described improved engagement for their loved ones, such as laughing more, telling more stories, asking more questions, and having more patience.* **Conclusion:** *The Memory-HEARS intervention is a low-cost, low-risk, nonpharmacologic approach to addressing hearing loss and behavioral symptoms in patients with dementia. Improved communication has the potential to reduce symptom burden and improve quality of life.* (Am J Geriatr Psychiatry 2017; 25:91–101)

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INTRODUCTION

There are 46 million individuals living with dementia worldwide, and the costs associated with caring for these individuals are currently estimated to be 818 billion dollars.[1] The risk of dementia increases with age, and because of the rising life expectancy around the world, the number of individuals with dementia is expected to increase up to 131.5 million by year 2050.[2] Hearing loss is highly prevalent in older adults, and poor communication and reduced social engagement because of hearing loss pose challenges to dementia care and symptom management.[3] Symptoms commonly associated with dementia (e.g., depression, agitation, anxiety, apathy, and irritability) may be exacerbated by poor communication resulting from age-related hearing loss.[4]

Treating hearing loss, which is prevalent in nearly two-thirds of adults over age 70 years, may represent a low-cost, low-risk approach that could improve communication and potentially reduce neuropsychiatric symptoms in patients with dementia. One study examining this issue measured caregiver-identified problem behaviors before and after hearing aid fitting in individuals with Alzheimer disease and found some improvements for all participants.[5] For persons with dementia, untreated hearing loss can masquerade as increased symptom burden because of communication difficulties inherent with hearing loss.

Despite potentially positive benefits, there are still inherent challenges in obtaining specialized hearing care services for the person with dementia, as fewer than 20% of adults with hearing loss report using hearing aids, which are the most common form of treatment.[6] Currently, best practice hearing care typically involves four to five visits to an audiologist and/or ear, nose, and throat physician over the course of 3–4 months and requires about $3,000–5,000 in out-of-pocket costs.[7] This endeavor can be challenging for any older adult but is particularly challenging and burdensome for individuals with dementia and their caregivers. In contrast, the intervention tested here relies on personal amplification devices that are available for about $100–350 direct to consumers. Although these devices offer less customization than a professionally fitted hearing aid, they can provide a basic level of amplification for individuals with age-related hearing loss.

We have developed a novel intervention that provides a basic level of hearing care to the individual with dementia and hearing loss that can be delivered in a regular clinical office setting by nonspecialists. The purpose of this intervention project is to test the feasibility of a basic hearing intervention delivered during a single visit to participants with dementia followed at an academic medical center. The intervention is designed to teach communication strategies and provide a basic, over-the-counter amplification device to alleviate symptom burden through improved hearing and communication. The outcome measures were used to examine the effect of intervention on behavioral symptoms associated with dementia.

METHODS

Participants

Participants were recruited from the Johns Hopkins Memory and Alzheimer's disease Treatment Center (i.e., Memory Clinic) and the Hopkins ElderPlus Program for All-Inclusive Care for the Elderly (PACE®). As part of routine clinical care, patients were offered a hearing screening during their regular Memory Clinic or ElderPlus Program appointment by a physician working in both clinical sites. A patient with hearing loss was invited to participate in the pilot intervention study based on whether the patient's physician believed the patient could benefit from the intervention (i.e., the patient was not too impaired or agitated to participate).

Thirty dyads participated in the study, and 10 withdrew before the intervention follow-up period was complete. Reasons for withdrawal included becoming ill during the 1-month postintervention (3 persons), being hospitalized during the follow-up period (2 persons), entering hospice care, being diagnosed with cancer, and being ineligible because of traumatic brain injury rather than dementia diagnosis. One person withdrew because he or she believed the intervention was not working. One person did not wish to use the listening device after consideration and the family withdrew. Table 1 provides descriptive characteristics of the 20 dyads completing the study.

All participants and caregivers provided consent in accordance with the Johns Hopkins School of Medicine Institutional Review Board. Participants and