

To Hear or Not to Hear

Hearing loss is common among older adults. Research has found a prevalence of 33% or higher of bilateral hearing loss in people 50 and older (Mitchell et al., 2011). Hearing loss has been associated with decline in both mental and physical health. Problems linked to hearing loss include lower cognitive functioning, functional status, and quality of life (Kiely, Gopinath, Mitchell, Luszcz, & Anstey, 2012; Lin et al., 2011). In addition, hearing loss has been associated with higher rates of falls, depression, anxiety, and mortality (Boi et al., 2012). Hearing aids can decrease negative consequences of hearing loss and improve communication, socialization, and quality of life (Kaplan-Neeman, Muchnik, Hildesheimer, & Henkin, 2012). Unfortunately, many older adults who purchase hearing aids do not achieve these potential benefits because they have difficulty adjusting to the devices. Nearly 50% of those who purchased hearing aids either never began wearing the devices or gave up on them after a short period (Hougaard & Ruf, 2011; Kochkin, 2000, 2010).

Several factors may contribute to low hearing aid use after purchase. Some people report the devices did not perform in the manner they expected, either by amplifying sound too much or by not clarifying speech. Potential users have complained of headaches, annoying loud noises, and a seeming avalanche of sound (Winsor, 2011). Sensory overload is a common concern about hearing aids. Sensory overload is correlated with the length of time the older adult has lived with uncorrected hearing loss (Lockey, Jennings, & Shaw, 2010). People often delay acquiring hearing aids because the loss occurs gradually, and people tend to compensate by ignoring and denying the loss (Lane, 2012). The delay in beginning hearing aid use makes adjustment to the devices more challenging.

Audiology research related to hearing loss has dealt with such concerns by improving hearing aid technology. This focus on technology development has been common in health research during the past few decades. Other research has addressed cosmetic appeal. These techniques

have improved programming and have partially addressed stigma by improving device size and appearance. One programming improvement has been the addition of compression to hearing aid programs, which pulls more amplification into the speech area. While this technological improvement potentially could contribute to increased use of hearing aids, many audiologists and hearing aid dispensers do not know how to accurately add compression to hearing aid programming or do not support hearing aids with this type of programming (Edwards, 2007; Hau & Andersen, 2012). Unfortunately, people who do not adjust to hearing aids often do not return to audiology providers, leaving audiologists with little awareness of the magnitude of hearing aid adjustment problems.

Audiology research has focused on rigorous experimental studies of technological advancements while failing to adequately address questions regarding adjustment and interventions that facilitate adjustment to daily use of hearing aids. Experimental studies have resulted in sophisticated devices that, unfortunately, are frequently not worn by older adults. Methodological limitations in extant research include lack of attention to patients' perspectives and inadequate follow up to determine hearing aid wear time. A further limitation is the scant attention to potential confounding factors, such as diverse chronic health problems among older adults. Attrition from hearing aid research may reflect participants abandoning the devices and should be more carefully tracked. Future research should include more diverse outcome measures, as well as consideration of potential mediating or moderating constructs. To target interventions to established needs and populations, groups that are less likely to wear a hearing aid and factors associated with not wearing the hearing aid warrant further study. Furthermore, much of the research that has been done with hearing impaired adults provides little explanation of how well the hearing loss was corrected prior to completion of research measures such as cognitive status. Anyone with an uncorrected hearing loss may answer

research questions inaccurately, thus limiting validity of findings. It is essential that all individuals with a hearing loss have that loss corrected in a measurable manner prior to any speech-related questionnaires (i.e., how much does the correction help the person accurately hear the spoken word). The corrected speech understanding scores should be reported in the literature.

Potential collaborative research among audiology and nurse researchers could address this existing gap in knowledge about how to help older adults adjust to hearing aids. Research that develops effective strategies to help older adults adjust to hearing aids is urgently needed to avoid the negative consequences of hearing loss. Possible interventions include self-monitoring of hearing aid use or increased support and reinforcement of hearing aid use and wear. It is unclear whether having wearers gradually and systematically increase daily wear time might be more effective than the common recommendation for new hearing aid owners to begin wearing the device all the time. Research is also needed to determine whether deliberately selecting the listening environment during early wearing would facilitate adjustment. For example, gradually increasing the complexity of the sound environment might be an effective strategy to increase the percentage of older adults with hearing aids who use the devices (Lane, 2012). Intervention studies that allow for individualization of interventions may be more effective than trials that rigidly maintain a specific intervention. Mixed-methods studies that both quantitatively assess the pattern of hearing aid wear time and older adults' perspectives on the challenges they encounter with the aids would be informative. This field of research is important to move technologically sophisticated devices into use.

Nurses manage older adults with hearing loss in diverse settings. They also have extensive experience educating and counseling older adults to manage chronic conditions. Their frequent interactions with older adults provide opportunities for nursing interventions to facilitate hearing aid use. Collaborative research by nursing and audiology could develop interventions to tackle the persistent problem of hearing aid disuse.

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