DEPARTMENT OF HEALTH

Hearing Loss and Cognitive Decline

This issue brief focuses on providing information to clinicians in Minnesota about how to screen for and treat hearing loss with the goal of reducing preventable dementia.

Who lives with Alzheimer's disease?

- In 2020, an estimated 101,900 Minnesotans 65 years and older had Alzheimer's disease. The numbers will only increase over time as the population gets older. National data suggest 2020 numbers may more than double by 2060.

How can we improve outcomes for dementia in Minnesota?

- Age and family history are important risk factors for dementia that we cannot change.
- Many risk factors for adults can be changed, including high blood pressure that is not well managed, diabetes, smoking, hearing loss, social isolation, and little or no physical activity.
- Hearing loss is one of the modifiable risk factors associated with the greatest potential for dementia risk reduction (Livingston, 2024). A growing body of evidence indicates that treating hearing loss may reduce dementia risk and decrease costs associated with dementia care.

The role of hearing loss in dementia

While the exact mechanism for how hearing loss may lead to dementia remains unclear, there are several possible theories:

- **Cognitive load hypothesis** (Uchida, 2019): Developed in 1998, this theory posits that the "cognitive load" or burden associated with perceiving incoming auditory signals for those with hearing loss becomes so overwhelming that very little cognitive reserve is leftover for processing information. This has been shown to lead to neurodegeneration, reinforcing a cycle of further cognitive decline.
- **Sensory deficit hypothesis** (Lin, 2014): Recent studies have demonstrated that adults who developed hearing loss after typical hearing impairment have accelerated rates of structural brain changes, including an overall decrease in brain volume and right temporal lobe size. This suggests the possibility that sensory deprivation may lead to brain atrophy that ultimately impacts cognitive function.
- **Social isolation** (Huang, 2023; Shukla, 2020): While it is difficult for researchers to distinguish between social isolation, loneliness, and perceived isolation, there are clear indications that people with hearing loss are at an increased risk of social isolation, which has been established as a risk factor for dementia.

We are still learning about the link between hearing loss and cognitive decline, but we do know that treating hearing loss improves communication, daily life, and overall health.

Who lives with hearing loss in Minnesota?

Seven percent of Minnesota adults report that they are deaf or have serious difficulty hearing. This percentage increases with age, with nearly one in five adults 65 years and older reporting severe hearing difficulties or deafness.

Known risk factors for hearing loss were associated with self-reported difficulty hearing or deafness including increasing age, male sex, lower educational attainment, veteran status, history of smoking, and diagnosis of diabetes.

In Minnesota, roughly one in five people reporting deafness or severe difficulties hearing have not seen a healthcare provider for hearing loss. Factors associated with lower rates of engaging a healthcare provider include: younger age, report of less severe hearing trouble, and lower educational attainment.

The most common barriers given for not being tested were not thinking the hearing loss was severe enough (45%) and not having insurance (22%).

Screening for hearing loss

Conflicting recommendations make it difficult for providers to have a clear understanding of when adults should be screened for age related hearing loss.

While the United States Preventive Services Task Force (USPSTF) does not recommend screening asymptomatic adults over age 50, the American Speech-Language-Hearing Association (ASHA) recommends screening every three years for this population.

The most important aspect for providers to understand is that screening can be a simple and quick process with low risks.

The Minnesota Age-Related Hearing Loss Task Force created a clear set of recommendations for 2015 to help determine how to screen patients:

Use a handheld audiometer to screen with a 40dB threshold. This screening requires minimal training, the device is calibrated, the screening happens in a quiet space, and the handheld audiometer is relatively affordable.

If an audiometer is not available, reliable (not perfect), fast, and free screening methods are to ask the global question: “Do you have difficulty hearing?” or ask family members or care partners about communications concerns.

If a patient does not pass their hearing screening or if you have concerns about hearing loss, referral to an audiologist for comprehensive diagnostic hearing evaluation and management is appropriate.

Hearing loss management

Once hearing loss is diagnosed, prompt treatment should be explored with the patient. Options include hearing aids and cochlear implants, depending on the extent of hearing loss. There are many barriers to hearing aid utilization, including stigma, self-perceived loss, and cost (Jenstad, 2011 and Kochkin, 2007). While expense is one of the primary barriers to hearing aids for patients, there are options available for hearing aid coverage depending on a patient's insurance.

Insurance coverage for hearing aids in Minnesota

In 2023, the Minnesota legislature passed Statute 62Q.675, which states that group insurance plans must cover the cost of hearing aids, regardless of age. Coverage required under this section is limited to one hearing aid in each ear every three years.

With this change, the required coverage options for hearing aids based on insurance provider are:

- Group Insurance Plans: Covered
- Self-Insured Plans: Not covered
- Medicaid: Covered
- Medicare: Not Covered
- Medicare Advantage: Varies depending on MA plan offerings

Resources:

Learn more:

Department of Human Services Deaf, Deafblind, and Hard of Hearing State Services Division (www.mn.gov/deaf-hard-of-hearing/hearing-loss/signs/)

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