Canadian Audiologist

The Official Publication of the Canadian Academy of Audiology

Toward Improving Accessibility and Affordability of Hearing Aids for Persons with Mild and Moderate Sensorineural Hearing Loss

Published March 3rd, 2020

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About 37 million Americans have hearing loss,[1] but only about one in five seeks help for the impairment[2] even though untreated sensorineural hearing loss (SNHL) is associated with reduced health-related quality of life, social isolation, depression, cognitive decline, and brain atrophy, particularly in the temporal lobe.[3–5] The primary treatment for SNHL is the use of hearing aids, which has been shown to reduce the probability of emergency room visits, hospitalizations, and number of nights spent in hospitals, which in turn lowers health care costs.[6] The cost of hearing aids is one reason posed as to why people do not pursue amplification.[7] The average price of one hearing aid in the US and Canada exceeds $2,000,[8,9] which is one of the largest expenditures people make next to a house or car.[7] The World Health Organization (WHO) stated that the purchase of hearing aids should not exceed 3% of one's annual income.[10] Unfortunately, many Americans and Canadians cannot afford to purchase one hearing aid, let alone two. For nearly 6 million low-income older adults, the high cost of advanced digital technology (ADT) hearing aids makes the likelihood of obtaining them very low.[11] In the US, the

Over-the-Counter Hearing Aid Act of 2017 was passed to introduce a new class of hearing aids that are to be sold over-the-counter (OTC) or direct-to-consumers (DTC) with the hope of increasing the accessibility and affordability of amplification for adults with mild and moderate SNHLs.[12] This legislation is a policy-driven market strategy aimed at helping to bring down hearing aid prices through increased competition and innovation within the hearing aid industry.

The WHO defines a mild hearing loss as a four-frequency pure-tone average of 26 to 40 dB HL, and a moderate loss as 41 to 60 dB HL.[13] A recent study found that about 90% of all hearing losses are either mild or moderate in degree and that mild losses are about twice as common as moderate losses.[1] Accordingly, many American adults with such hearing losses might be presumed to be candidates for OTC devices scheduled for release this year. However, most audiologists already know and persons with hearing loss and policy makers need to understand that those with mild SNHL are not “easy” cases to fit, nor should they assume that OTC devices will meet all of their hearing healthcare needs. It remains to be seen whether communication goals of persons with mild hearing losses can be met with OTC or DTC devices at the same rates as hearing aids that are delivered by professionals in tandem with rehabilitative services that provide training and clinical expertise to address functional issues that cannot be solved by amplification alone. These issues include (but are not limited to) services, counseling, and training on how to self-manage and leverage device features to optimize hearing in specific or difficult listening situations. Further, hearing loss may be in one or both ears and may present in a variety of configurations. Some patients may have other auditory pathologies (e.g., ear infections, tinnitus, and/or vestibular dysfunction) which need diagnosis and management by professionals, and which would be missed with OTC or DTC models of product delivery.

Many questions remain unanswered as to why MarkeTrak VIII and others have found that only one in 10 persons with mild SNHL gets hearing aids compared to four in 10 peers with moderate-to-severe losses.[14] Interestingly, 20 to 25% of MarkeTrak VIII responders reported that their family doctors, otolaryngologists, or audiologists told them that hearing aids would not help, which is certainly outdated and inaccurate, and would be an odious finding if indeed true.[14] About 35% of the respondents said their audiologist told them to get retested before considering amplification, a

recommendation that could effectively delay appropriate intervention at earlier stages of the disease.[14] Were those healthcare professionals reticent about recommending amplification to individuals with mild SNHL because of the cost of ADT hearing aids? Did they believe that mild SNHL did not warrant the purchase of hearing aids? Did they assume that adults with mild SNHL would only reap minimal benefit from amplification due to the mild nature of their losses? Some hearing healthcare professionals may even recommend OTC devices to these patients without having sufficient evidence to support their use. Hearing healthcare providers, persons with hearing loss, and policy makers all need to know what the evidence says about outcomes from hearing aid intervention for patients with mild SNHL. To date, there are essentially few high-quality studies conducted on the effectiveness of OTC or DTC devices for those with mild SNHL, and only sparse information for traditional hearing aids.

We recently conducted a systematic review with meta-analysis to characterize hearing aid outcomes for those with mild hearing loss.[15] Surprisingly, only 10 studies prior to 2014 reported outcomes for hearing aid wearers with mild SNHL. No study had reported outcomes for patients with mild SNHL who used ADT hearing aids. However, our own studies have revealed positive and compelling outcomes and that indeed these persons achieved significant benefit from and satisfaction with these devices and that they wore them about 10 hr/day.[16] Although the dispensing practice in our study provided exemplary follow-up care for its patients, those hearing aid wearers with mild SNHL still reported having low self-efficacy in the advanced handling of their devices and for aided listening in noisy situations as assessed by the Measure of Audiologic Rehabilitation and Self-Efficacy for Hearing Aids.[17] Thus, even though those patients were of relatively high socioeconomic status, some still required additional follow-up with a hearing healthcare provider for troubleshooting their devices and managing noisy situations. Issues relating to self-management of hearing aids may be even more pronounced in persons of lower socioeconomic status. Indeed, Willink and colleagues found that Medicare beneficiaries with low incomes tended to have twice as much difficulty with their hearing aids as their peers with higher incomes.[18] Therefore, it is reasonable to expect that elderly persons with low incomes who can only afford OTC devices will likely have problems managing those devices without support from hearing

healthcare professionals. In a recent study of hearing help seekers with low incomes who applied for assistance from a community hearing aid bank, we found that almost half of them could not afford OTC devices at a cost of even $400.[19]

Audiologists should view persons with mild SNHL as viable candidates for ADT hearing aids. The few studies available on hearing aid outcomes for persons with mild SNHL suggest that these patients should have an opportunity to try the latest technology, especially since most professional providers permit trial periods with these devices. If cost is a barrier to amplification, then positive outcomes may be obtained with entry-level ADT hearing aids and many providers can help with flexible payment plans, untapped insurance benefits, or other financial solutions. Patients with mild SNHL deserve to experience positive experiences with ADT amplification that is provided with adequate follow-up from hearing healthcare professionals. Early trials with amplification may help reduce the number of years that persons with mild hearing loss wait from the time they first notice a problem to when they seek assistance, which often is several years later when the loss may have worsened. Unfortunately, in both Canada and the US, hearing aid benefits vary from province to province and state to state, respectively, and patients with mild SNHL who do not qualify for subsidies may think that they only have OTC devices as a treatment option. It is unlikely that hearing aids will be provided at no cost to all Canadian and US citizens in the foreseeable future, and it is also improbable that OTC or DTC devices obtained by consumers without diagnostic and rehabilitative services from hearing healthcare professionals will be successful in meeting the needs of persons with mild or moderate SNHL. In the meantime, all states in the US should strive to provide at least entry-level ADT hearing aids for adults with mild SNHL through local, state, or federal programs (e.g., Medicaid or Medicare). Policy efforts in the US and Canada should focus on legislating uniform qualification and coverage for hearing healthcare provision through federal health programs to assure access to timely and effective interventions for hearing loss.

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