



Increased Utilization of Assistive Listening Devices in Healthcare



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Ten years ago, President Barack Obama signed the Twenty-First Century Communications and Video Accessibility Act (CVAA) into law. The CVAA updated federal communications law to increase access for persons with disabilities to modern communications. The CVAA updated accessibility laws to reflect 21st-century technologies including new digital, broadband, and mobile innovations.

This included closed captioning of a wide variety of audio and video content over television, internet, and other media to be accessible for people with disabilities. For individuals with hearing loss this meant closed captioning of a variety of different types of audio and video content in different contexts. How has 10 years of CVAA impacted how we as hearing health care providers (HHP) recommend hearing devices?

Assistive Listening Devices (ALDs) comprise different technologies. There are some devices like TV Ears and Pocket Talkers that improve listening in specific situations while devices like vibrating alarm clocks and doorbell systems alter the person to the presence of an incoming signal. These devices are sold directly to consumers via retail outlets. Some hearing health care providers also dispense ALDs through their practice. Many practices limit their device offerings to hearing aids, and hearing aid accessories like remote microphones, audio and television streamers. Often, patients do not have the opportunity to discuss assistive listening devices during their hearing device consultations, which typically tend to focus on hearing aids. Even when hearing health care providers discuss ALDs with their patients, the patients may not fully understand the information during the appointment. This often results in patients not actively discussing or pursuing assistive technology until much later in their journey with hearing aids. Most adults indicate that they would have taken action sooner or started with some assistive technology if they had been provided an opportunity to pursue it at the time of diagnosis. Missed opportunities such as these lead to feelings of mistrust and dissatisfaction with their hearing health care provider.

An effective way to ensure that a person understands their diagnosis and the available options to help mitigate their communication difficulties is shown below.



Fig 1. Recommended workflow for a typical hearing aid consultation.

In this model the patient has the opportunity to review materials, review different resources, and gain a better understanding of the technologies that can help them listen better in different environments. Providing links to resources that your patient can review in their own time helps develop trust in the specialist in hearing health care. It also creates opportunities for conversations on various technologies that will help patients with hearing loss in different environments. Over time the patient will be able to identify the best devices to help them hear in different situations.

Assistive Listening Devices as part of an amplification solution

A combination of hearing aids and ALDs can provide a comprehensive solution for the needs of a person with hearing loss. There are several options that improve hearing in different situations.

1. Remote microphone technologies can be used with hearing aids to provide improved audibility in environments with increased background noise, reverberation or poor visibility (large venues, arenas, houses of worship).
2. Amplified and captioned telephones can improve communication over the phone.
3. Television amplifiers can provide amplification for television programming.
4. Alerting devices can alert the individual to the presence of the doorbell, telephone ringing, and emergency indicators like smoke detectors and fire alarms.
5. Smartphone applications that can provide an amplified signal or captions during a conversation.

Stand-alone Assistive Listening Devices (ALD's), such as amplified telephones, television amplifiers, and Pocket Talkers, are underutilized in the management of people with hearing loss. Their ability to provide situation-specific help and can be a very effective tool in the management of hearing loss for the following reasons:

1. They can be used without hearing aids.
2. They are simple to operate and have easy to use controls.
3. They are much lower in cost than traditional hearing aids.
4. They provide opportunities for people with hearing loss to function independently.

2010 census data suggest that 29% of individuals over the age of 65 live alone with nearly half of them being over the age of 85. Living alone poses several challenges for people with hearing loss, who often have co-morbid conditions such as low vision, poor balance, and chronic health conditions (MT10: Powers and Rogin 2019).



Those with hearing difficulty are 3–5+ times more likely to have each of the conditions below.

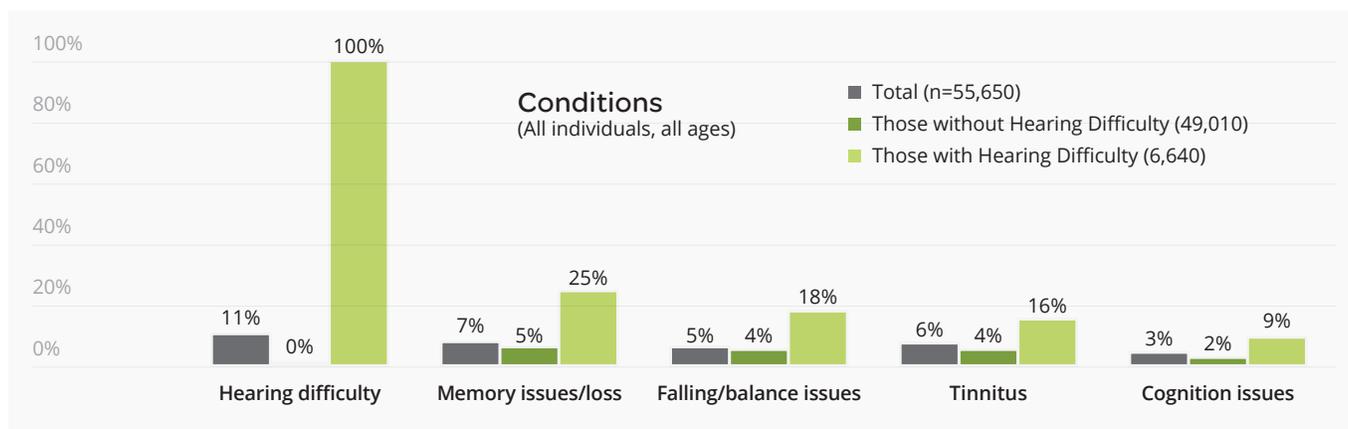


Fig 2. Common health conditions reported by adults with and without hearing difficulty (MT 10, Powers and Rogin, 2019)

For individuals with low vision and poor dexterity, hearing aids are not easy to manipulate due to their size and complexity of operation. The inability to insert and remove hearing aids and make adjustments is a primary cause for non-use of hearing aids by hearing-impaired adults. Being able to access communication easily and efficiently is key to living independently. Assistive technologies can be used effectively to help adults with their communication needs which in turn can allow them to live independently for a longer duration.

Healthcare technology needs and usage for the consumer

Consumers are increasingly adopting wearable devices for health care. These devices can monitor blood glucose, heart rate, oxygenation, acceleration, and other fitness metrics while sharing the data with their health care provider remotely through cloud based protocols. Smartphones are used for the majority of the integration of health devices with the internet. Almost 59% of seniors 65 years and older use a smart phone and the numbers continue to grow each year (Pew Research Center 2019). For people with hearing loss, connectivity to smart phones via their hearing devices allows participation with wearables even in challenging listening environments.

With increasing access to technology and the use of smartphones, hearing health care providers are working with a population that embraces technology and is able to combine different technologies for improved healthcare outcomes.

The importance of assistive technologies in telecommunication

Telecommunication is a great tool that provides a private, convenient, and safe alternative to face to face interaction. The telephone has been used by adults for over a hundred years for a variety of functions, including information, retail, banking, and emergency services. We can now add health care to the ever expanding list of services that are available to individuals via telecommunication.

As the world experiences a global pandemic, our response to continue services while sheltering in place has been to move to tele-services. Services like ordering groceries, medications, food, and communication with loved ones require access to a phone system that will work for people with hearing loss.

Hearing loss affects the ability to listen over the phone compared to face-to-face communication. This is due to the reduced bandwidth of the phone signal along with the absence of visual cues in the conversation. Kochkin (2013) showed that being able to hear on the telephone was the second most important need of hearing-impaired individuals following necessity to hear during face-to face communication.

Captioned telephones are a great resource to provide the visual assistance required by people with hearing loss during telephone use. Captioned telephones amplify the signal and provide a real time text of the ongoing conversation. Captioned conversations reduce the anxiety caused by not being able to hear, especially during a medical appointment or other important communication events. Individuals with hearing

loss can easily read instructions and respond to incoming information. This results in greater confidence for the listener and better outcomes for the conversations. Confidence in being able to participate in a telephone conversation is very important to individuals with hearing loss. Addition of an caption service is a simple step in the prescription process that can increase participation in a variety of daily activities by individuals with hearing loss.

Increased technology engagement of seniors

Increasingly, elderly adults spend a lot of their time on pursuits that require access to technology. A recent study from the Pew Research Center showed that adults over the age of 65 spent over 5 hours of their day watching television. This also included time watching YouTube videos and information-related videos. Use of the internet has also increased to about 73%. Improving auditory information via television streaming accessories or standalone devices like TV Ears or Bluetooth enabled headphones, improves the quality of the audio signal the individual experiences. Headphones are increasingly offering customization to compensate for the loss of peripheral hearing sensitivity. This allows listeners to adjust the sound output for greater clarity and comfort.

Assistive listening devices in emergency situations

Most hearing-impaired individuals do not wear hearing aids at bedtime. In an emergency where a person with hearing loss does not have their hearing aids on, assistive and alerting devices can play a critical role in saving lives. Being able to quickly access a telephone which does not require the individual to wear their hearing aids is critical during an emergency. It can build great confidence for seniors who would like to prolong the time that they can safely live independently.



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Situations that require hospitalizations or convalescence in medical settings are not conducive to hearing aid use. Use of captioning on smart phone devices and the addition of a device like Pocket Talkers, allow people with hearing loss to continue communicating with their medical providers and their families during these times. Patients are better able to communicate with their provider in these settings which in turn can improve patient outcomes due to improved adherence to care plans (Balachandran 2015).

Summary

Patient care is evolving as a function of rapid advances in telecommunications and cloud-based technologies. Our patient population is becoming more adept at using these technologies to become more involved in their own health care. The conditions created by the global pandemic has further increased the reliance on telecommunications for health care and other activities of daily living. Hearing solutions that incorporate different technologies are necessary for patients to participate fully in different environments.

Hearing health care providers can choose technologies to ensure that individuals with hearing loss can access services vital to letting them live independently and safely for longer periods of time. In this era of tele-services, providing access to a fully captioned telephone service can be a simple addition that can empower an individual with hearing loss to participate fully in their environment and contribute to their confidence to live independently. Hearing health care providers should inform patients of all relevant ALDs that support their effort to live independently. Several of the solutions can be simple and inexpensive additions that can enhance an individual's life and give them the confidence to participate better in their day-to-day lives.

References:

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