

How to Improve Audiology Services: The Patient Perspective

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BACKGROUND

Hearing aids (HAs) are a common management option in audiological rehabilitation, but HA use remain low as only 17% of people who need HAs use them (1). This is particularly concerning with nearly 2.5 billion people estimated to have with some degree of hearing loss by 2050 of whom at least 30% will require rehabilitation services (2). Treatments for hearing loss is increasingly indicating pervasive positive effects extending beyond only improving hearing to enhancing a person's well-being (i.e., cognitive, socio-emotional, physical), e.g., protecting from or slowing down cognitive decline, lowering the risk for depression, and ultimately improving quality of life (3-5).

It is important for audiologists to reconsider the potential barriers causing such low numbers of HA uptake and use. Numerous factors have been ascribed as reasons for the underutilization of HAs, from access and affordability (6), continued difficulty understanding speech in group or noisy situation even when wearing HAs (5), to the well-known factor of stigma associated with HAs (7, 8). However, HA devices itself do not constitute the whole of successful HA use and outcomes, as merely owning a HA does not necessarily result in HA use. There is a continuous interaction between the user, the HAs, and the hearing care professional (HCP) throughout the HA journey. This journey is defined by three stages, i.e., pre-fitting, during fitting, and post-fitting (9). Successful HA use and outcomes requires a partnership between patients and their HCP to ensure that the HA journey and rehabilitation program are personalised, have realistic goals, with continuous education, training, and support by the audiologist (10, 11). With the FDA releasing draft regulations for over-the-counter (OTC) hearing devices in October 2021, where people will be able to select, fit, and use OTC HAs without involvement of a HCP, the dawn of the OTC service delivery model is near (12). The substantial difference between the traditional pathway for obtaining and using HAs versus an OTC model lies within the professional services offered. Therefore, it is increasingly important for HCPs to examine factors that influence and could differentiate the quality of the services they deliver. This paper provides recommendations for improved audiology services from HA users experiences reported in qualitative studies.

STUDY DESIGN

Recently, we conducted a systematic review of qualitative studies, according to the Preferred Reporting Items for Systematic Review and Meta-Analyses (PRISMA 2020) statement (13) and the Synthesis Without Meta-analysis (SWiM) reporting guideline (14). The aim of the

review was to identify and integrate the most frequently reported concepts that HA owners use when they describe their experiences with HAs during the fitting and post-fitting stage of the HA journey. It was interesting to note that specific concepts were reported across these stages of the HA journey. These concepts were grouped as related to clinical service delivery, the hearing device(s), and to the HA owner. The results from the data extracted on the methodological aspects and the main findings of the 25 included studies are reported elsewhere (15). However, in this article we shift the focus to highlight the recommendations or suggestions that emerged from 19 of the 25 studies included during this systematic review on how to improve clinical audiological services from patients' perspectives.

RESULTS AND DISCUSSION

Table 1 summarizes the suggestions from HA users' perspectives to improve clinical audiological service delivery to improve HA use and experiences and ultimately HA outcomes.

Table 1. Recommendations to Improve Audiological Service Delivery to Enhance Hearing Aid Use, Experiences, and Outcomes from Qualitative Hearing Aid User Perspectives

Recommendation (n*)	Descriptions
Patient centered care (PCC) (14)	<ul style="list-style-type: none"> Understand the patient's attitude toward hearing loss and hearing aids (self-perceived need for hearing aids) Understand patient's self-perceived severity of his/her hearing difficulty Shared decision-making, goal setting and action plans based on client's needs and participation restrictions to improve communication and participation in daily living (well hearing = well-being) Recognize and consider individual needs, experiences: holistic approach — psychological, social, functional, technological, educational needs Hearing aid use goals: according to client's perceived benefit, functional abilities, daily activities, frequent listening environments Encourage clients to be active collaborator in their hearing health care
Schedule follow-up appointments (9) In-person or via tele-audiology/virtual	<ul style="list-style-type: none"> Fine tuning: improve hearing aid function and sound quality Hearing aids, accessories/ALD/apps: use, care, management, maintenance Ensure comfort and good fit of hearing devices Counseling: expectation management, information counseling Further referrals: where to go or contact for help/support
Information counseling: before and after fitting (8) Written information: accurate and simple language, only most important points Digital format	<ul style="list-style-type: none"> All available intervention/management options Shared decision-making based on patient's needs: selection, fitting, post-fitting Expectation management: benefits, limitations
Hands-on training (7)	<ul style="list-style-type: none"> HA handling, care and maintenance Enhance patient's self-confidence regarding HA use
Audiologist characteristics (5)	<ul style="list-style-type: none"> High level of professionalism Empathetic Considerate Enable/empower patient Reframe hearing aids positively Good interpersonal skills Good listener Sincere interest in patient Motivational: patient to take active role in personal hearing care plan Trustworthy: gain client's trust
Involvement of significant others and communication partners (2)	<ul style="list-style-type: none"> Pre-fitting, fitting, and follow-up
Aided hearing assessment (1)	<ul style="list-style-type: none"> Determine and explain difference/improvement in hearing
Aural rehabilitation (1)	<ul style="list-style-type: none"> Active listening and communication strategies

*Number in brackets indicate the number of studies which the implied recommendation was extracted from. Ordered from most to least for categories identified.
HA = hearing aid; ALD = assistive listening devices

The core: Patient-centered care

The reports from HA users across 14 studies recommended a patient-centered care (PCC) approach in audiology, emphasizing the importance of this service delivery model to support satisfactory experiences and positive outcomes for patients. The definition of patient-centered care reminds audiologists to be “respectful of and responsive to individual patient preferences, needs, and values . . . ensuring that patient values guide all clinical decisions.” (16). In practice, it implies that the audiologist and the patient should be equal partners in the hearing aid journey, with the audiologist being the expert in the field of audiology and hearing rehabilitation and the patient being the expert in his or her own experience of hearing loss and hearing needs (17). Audiologists can start implementing PCC during initial consultations by striving to understand the patient’s attitude towards hearing loss and HAs. This is important, because out of a group of 31 factors, self-perceived hearing difficulty was identified as the only factor that can positively affect help-seeking, HA uptake, HA use and satisfaction (9). Indeed, HA users reported that once they have accepted their hearing loss and realize the need for HAs, it leads to greater commitment to use their HAs (18-21).

When discussing rehabilitation options, audiologists should remember that patients want solutions for their specific hearing and communication challenges, not just amplification of sound. Audiologists can use a multi-dimensional model such as the World Health Organization’s International Classification of Functioning, Disability, and Health framework (WHO-ICF; 22), and more specifically the ICF Core Sets for Hearing Loss (23), to better understand patients’ needs and goals based on their activity limitations and participation restrictions in their most-frequent listening situations in their everyday life. Subsequently, the audiologist and the patient can use this information to make decisions together about all possible rehabilitation options (i.e., HAs, assistive listening devices, communication skills training) to improve the patient’s communication and meaningful participation in daily life. In this way, the audiologist can help the patient understand and experience how improved hearing can also improve well-being, tailored to each patient’s situation. HA users highly value audiologists that recognizes and consider their individual experiences and needs that they share and who actively involve them through shared decision-making throughout the HA journey (e.g., 20, 24, 25-27). In essence, when audiologists guide from a patient-centered approach, they encourage patients to be active collaborators in their hearing health care and well-being.

A journey, not a destination: Schedule follow-up appointments

The fitting of HAs is only a moment in the ongoing HA journey. Follow-up appointments are required to guide and support HA users along the initial days of getting used to their HAs as well as during the following long-term HA use. Not only do HA users report that they value follow-up appointments, moreover, they specifically voiced a need for scheduled follow-up appointments. Patients perceive this as a commitment from the audiologist in terms of ongoing availability and support, whether the consultation is in-person or via tele-audiology (24). From the HA user's perspective, several aspects are suggested to be addressed by the audiologist during these scheduled follow-up sessions, namely: training in the care, handling and maintenance of HAs; fine tuning of HAs to improve function and sound quality; ensuring a comfortable and good fit of the HA and/or sound delivery system (i.e., ear mold; slim tube and dome) and addressing issues of a proper fit with the use of glasses or face masks; expectation management; basic trouble shooting of HAs; and knowing who to contact or where to go when in need of support (19, 21, 24, 28). Thus, scheduled follow-up appointments are ideally situated for training and practicing of HA handling skills and repetition of useful information.

Information counselling: Before and after fitting

With health information being readily available from the internet, patients bring some information and expectations to the table. However, they still report a need that the audiologist should share accurate and comprehensible information on all available management options, but in a patient-centered way (19, 20, 29). As emphasized earlier, the core of audiology service delivery, i.e., PCC, should form the basis of all information counselling that audiologists give. Before HA fitting, patients want information counselling related to expectations of the chosen intervention option(s) e.g., discussing the benefits and limitations of HAs (27, 30). During fitting, counselling in the form orientation on the practical handling of hearing devices are vital (19, 24, 27, 30). After fitting, HA users report a need for continuous information counselling to review and repeat previous information and to reframe HAs positively with regards to how it positively affects the patient's purposeful engagement in everyday life (e.g., increased social connectedness and interactions) (31).

Further recommendations include providing informational counselling material in written format. For written material, HA users suggest that only the most important points be summarized in simple, yet accurate language to ensure understanding (20, 24). Audiologists

can even consider making information available in a digital format or through online videos or referral of patients to appropriate online content so that they can view and review it at a time and place convenient for them (32).

Hands-on to keep HAs on: Training on handling HAs

HA users' reports made it clear that they have a need for specific training on HA handling, care and maintenance, (24, 27, 28, 30, 33). Therefore, it is important that audiologists address the handling issues explicitly, especially during scheduled follow-up appointments

Audiologist can utilize behavior change techniques of instruction, demonstration, practice (e.g., role play) and rehearsal (31) to successfully facilitate hands-on training of these practical aspects. This can improve HA users' self-confidence to use and handle their hearing devices (20).

Audiologist characteristics: What patients value?

Patients report valuing specific characteristics in audiologists that may contribute to the quality of care and service delivery they experience and ultimately affect HA outcomes. From HA users' point of view, the following qualities were identified as important in an audiologist: being highly professional, yet portraying good interpersonal and listening skills; empathetic and considerate with a genuine interest in the patient; motivational to empower the patient to take an active role in his/her personal hearing healthcare as well as to reveal the positive effects HAs can bear for the HA user and his/her significant others (20, 24-26, 31).

The social network: Involve significant communication partners

Hearing loss can be a lonely experience because it negatively influences verbal communication. Yet, communication is an integral and vital aspect of daily functioning and is a social affair. As opposed to hearing loss being a lonely path, the hearing aid journey should not be. HA users report that they want their family members, significant others or close friends to be involved during their HA journey because this social support encourages adoption and use of their HAs (24, 26). It is well-known that involving significant others or communication partners throughout the HA journey is important to achieve and sustain successful HA outcomes (34). This is also aligned with PCC and can expand beyond involving only direct family members to also include persons with whom the hearing aid user communicates regularly (e.g., friends, children, grandchildren, colleagues, caregivers). Audiologists should strive to ensure that significant others/communication partners are active

collaborators in the patient's HA journey by providing opportunity to be part of conversations and shared decision making, welcoming and value their contributions, and acknowledge their experiences and needs (35).

Other considerations

Additional suggestions from HA users to improve audiological service delivery included conducting aided hearing assessments to help explain the improvement in hearing due to HA use (19). Audiologists should also offer or refer to aural rehabilitation (whether individual or in a group setting) where active listening and communication strategies can be taught (33). This is another strategy to support HA user's communication and meaningful participation in daily life.

CONCLUSION

Gaining insight from HA user's perspectives on how audiological service delivery can be enhanced to improve HA use, experiences, and outcomes can support audiology practice and patient satisfaction within a patient-centered care approach. Even though the recommendations that emerged from HA users' reports are not new, it is worthwhile to revisit these aspects from our patients' point of view. The most important pointers for audiologists from patient feedback included to serve and guide from a patient-centered and family-centered approach, book follow-up appointments to provide the needed information counseling and hands-on training, capitalize on the benefit of involving significant others, and enclose all of this in a trustworthy and sincere manner.

REFERENCES

1. Orji A, Kamenov K, Dirac M, Davis A, Chadha S, Vos T. Global and regional needs, unmet needs and access to hearing aids. *International Journal of Audiology*. 2020;59(3):166-72.
2. World Health Organization. *World Report on Hearing*. Geneva, Switzerland: World Health Organization; 2021.
3. Vercammen C, Ferguson M, Kramer SE, Meis M, Singh G, Timmer B, et al. Well-hearing is well-being. *Hearing Review*. 2020;27(3):18-22.
4. Livingston G, Huntley J, Sommerlad A, Ames D, Ballard C, Banerjee S, et al. Dementia prevention, intervention, and care: 2020 report of the Lancet Commission. *The Lancet*. 2020;396(10248):413-46.

5. Picou EM. MarkeTrak 10 (MT10) survey results demonstrate high satisfaction with and benefits from hearing aids. *Seminars in Hearing*. 2020;41(01):21-36.
6. Mamo SK, Nieman CL, Lin FR. Prevalence of untreated hearing loss by income among older adults in the United States. *Journal of health care for the poor and underserved*. 2016;27(4):1812.
7. Scharp KM, Barker BA. “I have to social norm this”: Making meaning of hearing loss from the perspective of adults who use hearing aids. *Health Communication*. 2021;36(6):774-81.
8. Kochkin S. MarkeTrak V: “Why my hearing aids are in the drawer” The consumers' perspective. *The Hearing Journal*. 2000;53(2):34-6.
9. Knudsen LV, Öberg M, Nielsen C, Naylor G, Kramer SE. Factors Influencing Help Seeking, Hearing Aid Uptake, Hearing Aid Use and Satisfaction With Hearing Aids: A Review of the Literature. *Trends in Amplification*. 2010;14(3):127-54.
10. Bennett RJ, Laplante-Levesque A, Eikelboom RH. How Do Hearing Aid Owners Respond To Hearing Aid Problems? *Ear & Hearing*. 2018:1-11.
11. Blustein J, Weinstein BE, Chodosh J. Over-the-counter hearing aids: What will it mean for older Americans? *Journal of the American Geriatrics Society*. 2022;Published online ahead of print:1-6.
12. The Hearing Review. FDE Proposed Rules for OTC Extend Beyond OTC; October 20, 2021 [Available from: <https://hearingreview.com/hearing-products/hearing-aids/otc/fda-proposed-rules-for-otc-hearing-aids-extend-beyond-otc>].
13. Page MJ, McKenzie JE, Bossuyt PM, Boutron I, Hoffmann TC, Mulrow CD, et al. The PRISMA 2020 statement: an updated guideline for reporting systematic reviews. *International Journal of Surgery*. 2021;88:105906.
14. Campbell M, McKenzie JE, Sowden A, Katikireddi SV, Brennan SE, Ellis S, et al. Synthesis without meta-analysis (SWiM) in systematic reviews: reporting guideline. *BMJ*. 2020:368.
15. Oosthuizen I, Manchaiah V, Launer S, Swanepoel DW. Experiences of adult hearing aid owners: A systematic review of qualitative studies. *Trends in Hearing*. Submitted.
16. Institute of Medicine. *Crossing the Quality Chasm: A New Health System for the 21st Century*. Washington (DC): National Academies Press 2001.

17. Gregory M. A possible patient journey: A tool to facilitate patient-centered care. *Seminars in Hearing*. 2012;33(01):9-15.
18. Chundu S, Allen PM, Han W, Ratinaud P, Krishna R, Manchaiah V. Social representation of hearing aids among people with hearing loss: an exploratory study. *International Journal of Audiology*. 2021;60(12):964-78.
19. Gallagher NE, Woodside JV. Factors affecting hearing aid adoption and use: A qualitative study. *Journal of the American Academy of Audiology*. 2018;29(4):300-12.
20. Linssen AM, Joore MA, Minten RKH, Van Leeuwen YD, Anteunis LJC. Qualitative interviews on the beliefs and feelings of adults towards their ownership, but non-use of hearing aids. *International Journal of Audiology*. 2013;52(10):670-7.
21. Guerra-Zúñiga M, Cardemil-Morales F, Albertz-Arévalo N, Rahal-Espejo M. Explanations for the non-use of hearing aids in a group of older adults. A qualitative study. *Acta Otorrinolaringologica Espanola*. 2014;65(1):8-14.
22. World Health Organization. ICF: International Classification of Functioning, Disability and Health. Geneva, Switzerland: World Health Organization; 2001.
23. Danermark B, Granberg S, Kramer SE, Selb M, Möller C. The creation of a comprehensive and a brief core set for hearing loss using the international classification of functioning, disability and health. *American Journal of Audiology*. 2013;22(2):323-8.
24. Dawes P, Maslin M, Munro KJ. 'Getting used to' hearing aids from the perspective of adult hearing-aid users. *International Journal of Audiology*. 2014;53(12):861-70.
25. Laplante-Lévesque A, Knudsen LV, Preminger JE, Jones L, Nielsen C, Öberg M, et al. Hearing help-seeking and rehabilitation: Perspectives of adults with hearing impairment. *International Journal of Audiology*. 2012;51(2):93-102.
26. Lockey K, Jennings MB, Shaw L. Exploring hearing aid use in older women through narratives. *International Journal of Audiology*. 2010;49(8):542-9.
27. Ritter CR, Barker BA, Scharp KM. Using attribution theory to explore the reasons adults with hearing loss do not use their hearing aids. *PLoS ONE*. 2020;15(9 september).
28. Solheim J, Gay C, Hickson L. Older adults' experiences and issues with hearing aids in the first six months after hearing aid fitting. *International Journal of Audiology*. 2018;57(1):31-9.
29. Maidment DW, Ali YHK, Ferguson MA. Applying the COM-B model to assess the usability of smartphone-connected listening devices in adults with hearing loss. *Journal of the American Academy of Audiology*. 2019;30(5):417-30.

30. Moroe N, Vazzana N. The disuse of hearing aids in elderly people diagnosed with a presbycusis at an old age home, in Johannesburg, South Africa: A pilot study. *African Health Sciences*. 2019;19(2):2183-8.
31. Gomez R, Habib A, Maidment DW, Ferguson MA. Smartphone-Connected Hearing Aids Enable and Empower Self-Management of Hearing Loss: A Qualitative Interview Study Underpinned by the Behavior Change Wheel. *Ear and Hearing*. 2021.
32. Thorén ES, Öberg M, Andersson G, Lunner T. Internet interventions for hearing loss. *American Journal of Audiology*. 2015;24(3):316-9.
33. Choi JS, Shim KS, Shin NE, Nieman CL, Mamo SK, Han HR, et al. Cultural Adaptation of a Community-Based Hearing Health Intervention for Korean American Older Adults with Hearing Loss. *Journal of Cross-Cultural Gerontology*. 2019;34(3):223-43.
34. Barker AB, Leighton P, Ferguson MA. Coping together with hearing loss: a qualitative meta-synthesis of the psychosocial experiences of people with hearing loss and their communication partners. *International Journal of Audiology*. 2017;56(5):297-305.
35. Ekberg K, Meyer C, Scarinci N, Grenness C, Hickson L. Family member involvement in audiology appointments with older people with hearing impairment. *International Journal of Audiology*. 2015;54(2):70-6.