

White Paper

Sound That Becomes Yours: The Sound Preference Framework for Personalized Hearing Part 2

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ABSTRACT

Hearing aid fittings traditionally focus on restoring audibility and improving speech understanding. Yet many users continue to struggle with consistent hearing aid use, even when amplification is audiologically appropriate. Long-term success appears to depend not only on audibility but also on how processed sound is experienced in everyday life, including whether it feels natural, comfortable, and personally meaningful.

Drawing on behavioral science, health psychology, and decision-making research, this paper introduces the second and third layers of the Sound Preference Framework: The Sound Preference Approach and Sound Preference Exploration.

The Sound Preference Approach explains why incorporating meaningful user choice into sound-related decisions may support engagement, autonomy, and long-term commitment to hearing rehabilitation.

Sound Preference Exploration translates this stance into clinical practice by providing a structured comparison process through which individuals can explore and articulate differences between sound profiles. With this, perceptual impressions

may develop into personal preferences that support engagement, ownership, and alignment with the user's listening identity. The hearing care professional plays a pivotal role in helping individuals participate more actively in shaping how processed sound fits into their everyday listening lives.

Clinical opportunities

- Sound Preference Exploration may facilitate engagement by inviting clients to participate actively in sound-related decisions.
- Structured comparison of sound experiences may help individuals articulate listening preferences that align with their everyday listening needs.
- With careful framing and accounting for the psychology of the individual, the Sound Preference Framework may enable a stronger sense of ownership of the hearing solution.

Introduction

Hearing rehabilitation is more than a technical adjustment; it is a personal process of adaptation in which individuals learn to integrate processed sound into everyday life. Hearing care decisions are shaped by emotional, cognitive, and social factors as much as by audiometric thresholds (Boisvert et al., 2017; Laplante-Lévesque et al., 2013). As Barker et al. (2020) and Grenness et al. (2014) note, adapting to hearing loss often involves renegotiating aspects of identity, emotions, and social participation.

When such aspects are not accounted for, many hearing-aid users may struggle to integrate hearing aids into their daily lives. A meta-analysis by Marcos-Alonso et al. (2023) found that non-use is more often related to emotional discomfort or identity misalignment with the processed sound than to inadequate amplification, and users frequently describe sound as unnatural even when audibility improves (Holman et al., 2023).

In other words, success is defined not only by audibility but by how well processed sound integrates into everyday life. Among users of well-fitted, high-quality devices, as many as 40% show clear preferences for one sound design over another, preferences not predicted by audiogram, age, or lifestyle (Balling et al., 2026).

These findings highlight the need for a more structured way to incorporate individual Sound Preferences into hearing rehabilitation. In response, the Sound Preference Framework (see Figure 1 and Fischer & Engelund, 2026) was developed to connect hearing aid fitting with the user's preferences and their lived experience of sound. Building on the Sound Preference Formation layer outlined by Fischer and Engelund (2026), the present paper focuses on behavioral engagement and personalized hearing care in clinical practice.

Current clinical practice rests on three pillars: fitting based on the audiogram, verification through real-ear measures, and validation by self-report tools such as APHAB or SSQ (Humes, 2021; Jorgensen & Novak, 2022). These procedures provide a strong audiological foundation but primarily emphasize audibility and physical comfort, often leaving emotional, perceptual, and empowerment-related aspects of listening experience under-addressed (Gotowiec et al., 2022; Oosthuizen et al., 2022).

The Sound Preference Framework extends this clinical foundation by incorporating individual listening preferences into the rehabilitation process and supporting greater participation and ownership of the listening experience. The current paper explains the two practice-oriented components of the framework:

- **The Sound Preference Approach:** A clinical stance grounded in behavioral sciences and empowerment theory that explains why engaging with individual preferences and offering meaningful choice may enhance client motivation, autonomy, and long-term engagement.
- **The Sound Preference Exploration:** A structured clinical method that operationalizes the Sound Preference Approach through a guided, autonomy-supportive process in which hearing care professionals (HCPs) and clients collaboratively reflect on and evaluate sound experiences.

Together with the Sound Preference Formation model (Fischer & Engelund, 2026), these two elements form the Sound Preference Framework, connecting auditory perception, behavioral engagement, and clinical practice in personalized hearing care (see overview in Figure 1).

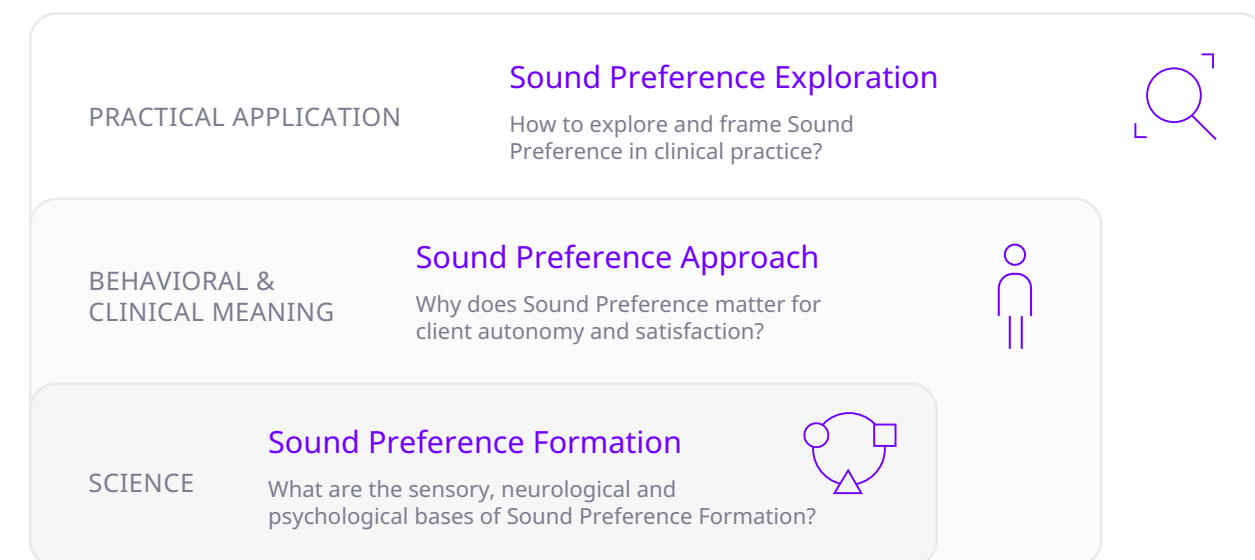


Figure 1: Overview of the Sound Preference Framework. The Sound Preference Formation layer is described in detail by Fischer & Engelund (2026), while the present paper outlines the Approach and Exploration layers of the framework.

The Sound Preference approach: How Sound Preference may support ownership

People are more likely to commit to solutions they feel they have chosen themselves. The Sound Preference Approach builds on this principle by proposing that incorporating meaningful user choice into sound-related decisions may support engagement with hearing rehabilitation.

The approach addresses a recurring challenge in hearing rehabilitation: although many individuals report a strong intention to use hearing aids, maintaining consistent engagement in everyday life can be difficult. This pattern reflects the well-documented intention–action gap in health behavior, in which motivation does not always translate into sustained action (Sawyer et al., 2019).

Behavioral research suggests that one factor associated with sustained engagement is meaningful choice. When individuals experience decisions as self-endorsed rather than externally imposed, they may be more motivated to maintain commitment over time. In hearing care, this implies that the extent to which users participate in sound-related decisions may influence how they engage with hearing aid use in everyday life (Ridgway et al., 2016).

The Sound Preference Approach therefore proposes to incorporate user choice directly into the rehabilitation process. Rather than treating sound-related decisions as purely audiological determinations, the approach frames them as collaborative judgments informed by the client's listening experience. This perspective aligns with principles of shared decision-making in healthcare (Elwyn et al., 2012) and research in audiology highlighting the importance of client–HCP interaction in hearing aid adoption (Manchaiah et al., 2017; Poost-Foroosh et al., 2011).

From a theoretical perspective, inviting clients to reflect on and articulate their Sound Preferences may support psychological mechanisms associated with autonomy and self-endorsed motivation, as described in Self-Determination Theory (Ryan & Deci, 2000). When individuals perceive that their experiences and preferences influence the decision-making process, their motivation to engage with the outcome may become more internally grounded.

Additional behavioral perspectives help explain how preference articulation may influence commitment over time. Cognitive Dissonance Theory suggests that once individuals express a preference, they are motivated to maintain consistency between that choice and subsequent experiences (Festinger, 1957). Similarly, Expectation–Disconfirmation Theory proposes that satisfaction is shaped by the relationship between expectations and experienced outcomes (Oliver, 1980). When individuals participate in shaping decisions about their listening experience, expectations may become more personal and self-relevant.

From this perspective, Sound Preference may also function as a mechanism supporting empowerment in hearing care. By inviting clients to notice, articulate, and influence how they hear, preference-based interaction may strengthen participation, confidence, and ownership in the rehabilitation process (Bennett et al., 2023; Gotowiec et al., 2022).

The Sound Preference Approach therefore represents a clinical stance in which Sound Preference is deliberately invited, explored, and acknowledged within the rehabilitation process. Rather than positioning the HCP as the sole decision-maker and the client as a passive recipient, sound-related decisions are framed as a shared process guided by professional expertise and informed by the client's lived listening experience.

Sound Preference Exploration, described in the following, operationalizes this stance by providing a structured way for HCPs and clients to compare sound experiences and reflect on listening preferences together.

Sound Preference Exploration: From clinical stance to structured practice

Where the Approach defines why preference may matter, the Exploration illustrates how it can be integrated into the rehabilitation process. Conceptually, Sound Preference Exploration is a structured comparison process in which clients experience, reflect on, and articulate differences between sound processing profiles.

This structured comparison process can be implemented in different ways. One way is to use the Sound Preference Tool available at www.soundpreference.net. This allows the listener to switch seamlessly between two different sound processing profiles in five different listening situations to help them experience the differences and discover whether they have a preference (see example in Figure 2). One profile in the tool is based on time-domain signal processing designed to optimize naturalness and the balance between focus on speech and awareness of surroundings. The other profile is based on frequency-domain signal processing and is designed to enhance speech and provide listening comfort through a more focused soundscape. The Sound Preference Tool is designed to support an engaged exploration pathway as described in the following.

The Sound Preference Tool and the exploration more broadly are not intended as a performance assessment. Instead, it provides a frame within which perceptual and emotional responses to sound can be acknowledged as relevant to decision-making (Boisvert et al., 2017).

Importantly, this process does not replace clinical best practice; instead, the exploration should be seen as a complementary step. Its purpose is not to determine which sound “performs best” in an abstract sense, but to understand how different sound characteristics are

experienced by the individual who will live with them, and which sound profile may be preferred.

A defining characteristic of Sound Preference Exploration is therefore that it should be conceptualized – and framed in clinic – as a guided exploration, not as a test. In clinical contexts, individuals often assume that there is a correct answer or that their perceptual abilities are being evaluated. Such assumptions can activate performance-oriented responses, pushing listeners to focus on identifying the technically “better” or “correct” option, rather than drawing on their personal experience. Because this test interpretation is likely to be a default response in many clinical contexts, it is crucial to explicitly communicate about the exploration as a process that allows the client to explore different sound profiles, discover whether they have a preference, and relate it to their everyday listening experiences.

Although Sound Preference Exploration may appear to be a simple comparison between sound processing profiles, the process engages several psychological mechanisms through which perceptual impressions may gradually develop into articulated preferences, during the in-clinic part of the exploration and in real life. Figure 3 shows an overview of different mechanisms that may come into play as the exploration progresses through different phases. It is crucial that the exploration is framed in a way that invites participation and autonomy (Figure 3, I), with no hints of testing or assessment, and that any tool used for exploration is manageable for the client using it (II). Both the experiences with different sounds and the articulation of those experiences are important, with articulated preferences helping the listener to create personal meaning and to stabilize their preferences (III). And finally, the initial in-clinic exploration should be clearly related to real-life experiences and follow-up (IV). Importantly, exploration does not need to produce a strong or immediate preference to be valuable. Even when a clear preference is not reached, being invited into the process may still support engagement, autonomy, and trust in the rehabilitation process (Ryan & Deci, 2000).

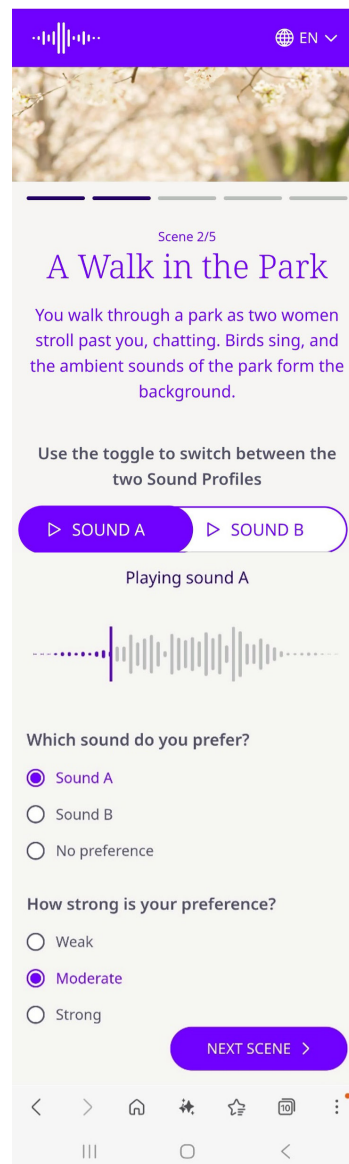


Figure 2: Example screenshot from the Sound Preference Tool available at www.soundpreference.net, showing one of the five scenes where listeners can compare different sound processing profiles.

Engagement & autonomy	Manageability & Confidence	Meaning & Identity	Expectation & Satisfaction
<i>"I'm allowed to choose"</i>	<i>"I can manage it"</i>	<i>"This sound fits me"</i>	<i>"It works for me"</i>
Being invited to participate a sense of agency	The comparison feels understandable the client can reflect without feeling tested.	Attention shifts from acoustic comparison to personal fit.	The real-life experience is evaluated based on expectations formed during exploration.

Figure 3: The different phases of the Sound Preference Exploration.

Exploration pathways

The exploration process does not unfold identically for every individual. While Sound Preference Exploration using the Sound Preference Tool provides a structured opportunity to reflect on listening experiences, the clarity with which preferences emerge and the extent to which exploration supports engagement can vary. These differences may arise from individual psychological variations, as well as from contextual conditions that shape how individuals interpret and respond to the comparison process.

When exploration feels understandable, manageable, and personally relevant, listeners may follow an engaged exploration pathway, in which they notice differences between sound experiences, reflect on their impressions, and articulate emerging preferences. Alternatively, exploration may develop along a disengaged pathway if the comparison task is experienced as cognitively demanding, confusing, or uncertain. In such cases, listeners may hesitate, rely more heavily on HCP's judgment, or disengage from the comparison process.

A range of psychological traits and contextual factors may influence which pathway emerges. [Table 1](#) provides an overview of how these factors may impact the exploration pathway and the clinical implications of each.

Framing

As is clear from [Table 1](#), the characteristics of the individual listener interact with the way the Sound Preference Exploration is framed, with the result that the framing should be adjusted to the individual client's reactions. The way the task is introduced, including the language used by the HCP, may shape what listeners see themselves as evaluating.

A more general perspective on framing comes from Goal Framing Theory, which proposes that people interpret situations through different motivational frames (Lindenberg & Steg, 2007). These frames influence how individuals evaluate what they experience. A hedonic frame focuses on what feels pleasant or comfortable, a gain frame focuses on performance or improvement, and a normative frame focuses on what appears correct or expected.

The way the comparison is introduced may therefore influence how listeners evaluate the sounds. If the task is framed as a technical comparison, listeners may focus on identifying which sound is objectively "better." For example, an instruction such as "Let's test which sound gives you the best clarity" may direct attention toward performance and accuracy.

If the comparison is framed as an exploration of listening experiences, focus may shift toward personal perception. Instructions such as "Let's listen to two different sound experiences and see which one feels most natural or comfortable for you" or "There is no right or wrong answer. Just notice which sound feels more like something you would enjoy in everyday life" encourage listeners to reflect on how the sound fits their listening expectations. Although the acoustic differences between sound profiles remain the same, the psychological meaning of the task changes with the framing.

Taken together, these perspectives highlight that the way Sound Preference Exploration is framed influences how listeners engage with and interpret the comparison process. This underscores the importance of supportive clinical facilitation. The following section outlines how this interaction may unfold in practice.

Conceptual steps in Sound Preference Exploration

Before: Preparing for Exploration

Sound Preference Exploration begins before any sound comparison takes place. The way the exploration is introduced influences how individuals interpret the task and how comfortable they feel participating in it.

For many seeking hearing care, clinical encounters have traditionally centered around professional assessment and recommendation. Being invited to evaluate and express preferences about sound may therefore feel unfamiliar. Some individuals respond with curiosity, while others may initially hesitate, expecting the HCP to determine the most appropriate solution.

At this stage, the role of the HCP is not primarily to provide technical explanation but to establish a supportive framework for participation. Introducing the activity as an exploration of listening experience rather than a test of hearing ability can reduce performance pressure and encourage reflective engagement.

Clear framing and accessible communication are important in this phase. Avoiding technical terminology and focusing on everyday listening situations can help reduce cognitive load and make the task easier to engage in. Emphasizing that impressions may be subtle and that there are no correct or incorrect responses can further help individuals feel comfortable participating.

In this way, the preparation phase establishes the psychological conditions that allow the exploration to unfold as a collaborative interaction rather than a performance evaluation.

	TRAITS & CIRCUMSTANCES FAVORING ENGAGED PATHWAY	CLINICAL IMPLICATIONS
COGNITIVE LOAD Working memory has limited capacity for processing unfamiliar information (Sweller, 2024). Tasks that require individuals to notice subtle differences, maintain impressions in memory, and interpret unfamiliar input may place varying demands on cognitive resources.	Better working memory capacity Prior experience and familiarity with listening tasks Simpler task and clearer explanation	Adjust pace of exploration to individual listener Consider whether exploration is suitable for individuals showing signs of cognitive decline
SENSE OF COHERENCE Antonovsky's (1987) concept of Sense of Coherence describes the extent to which experiences are perceived as comprehensible, manageable, and meaningful.	Exploration experienced as understandable, manageable, and meaningful	Help the client understand what is happening and why Help the client feel able to handle and participate in the process Make the exploration feel relevant and worthwhile to the client
AUTONOMY & MOTIVATION Self-Determination Theory suggests that individuals are more likely to be more motivated and engage actively when three psychological needs are supported: autonomy, competence, and relatedness (Ryan & Deci, 2000).	Perceptions feel relevant to decision making → autonomy Listeners feel able to notice and interpret differences → competence Supportive interaction with HCP → relatedness	Frame exploration as collaborative process and listener perceptions as relevant to decision making
LOCUS OF CONTROL The extent to which individuals perceive outcomes as influenced by their own actions or by external authorities (Rotter, 1966). Individuals with a stronger internal locus of control tend to experience their own actions and judgments as influential, whereas those with a stronger external locus of control may feel more comfortable relying on external expertise.	Stronger internal locus of control → more comfort taking an active role in decisions about sound	Clarify that exploration combines clinical expertise with the client's experiential insight. Adjust role of HCP depending on listener's apparent locus of control: more guidance for external locus of control, less guidance for internal locus of control.
AMBIGUITY TOLERANCE Individuals who are more tolerant of ambiguity may feel comfortable exploring subtle differences and forming impressions even when those impressions are difficult to articulate, whereas others may experience the same situation as uncertain or difficult to interpret (Furnham & Marks, 2013; Kahneman, 2011; Stanley Budner, 1962)	High tolerance of ambiguity Reliance on simplified or intuitive decision strategies	Clearly frame as exploration process with no correct answer. Increase reassurance and guidance for listeners with low tolerance of ambiguity.

Table 1: Overview of psychological traits and contextual factors that may influence whether Sound Preference Exploration follows an engaged pathway.

During: Experiencing and Comparing Sound

Although the exploration may appear as a straightforward comparison between sound processing profiles, preference does not arise from acoustic perception alone.

Listeners would rarely describe this process analytically. Instead, responses might take the form of intuitive impressions such as “This sounds more natural,” “This feels easier to listen to,” or “This seems clearer.” These expressions might reflect more integrated evaluations that combine perceptual, emotional, and cognitive elements (see also the detailed discussion of Sound Preference Formation in Fischer and Engelund (2026)).

During this phase, the role of the HCP is to support reflective comparison rather than guide the listener toward a predetermined answer. This may involve inviting the listener to describe how each sound experience feels, encouraging them to take time to notice differences, and normalizing uncertainty when impressions are subtle or difficult to articulate.

For some individuals, preferences may emerge quickly. For others, impressions may remain tentative. Both represent natural variations in how individuals interpret perceptual experiences.

After: Reflecting on the Preference

Once an individual has had the chance to express a Sound Preference, whether confidently, tentatively or with no preference at all, the exploration process moves into a phase of reflection and integration.

During this stage, the HCP acknowledges the listener’s impressions and incorporates them into subsequent fitting decisions and communication. This helps connect the individual’s experiences with the later configuration of the hearing aids.

Such acknowledgement may support the client in developing psychological ownership over the hearing solution. At the same time, it is important to emphasize that Sound Preference Exploration represents the beginning of an adaptive process rather than a final decision. Listening experiences in everyday environments may lead to further adjustments as individuals continue to adapt to processed sound.

Framing the exploration in this way helps position the identified preference as a starting point for continued dialogue and refinement throughout the rehabilitation journey. In this way, Sound Preference Exploration becomes a structured yet flexible interaction through which individual listening preferences can be identified and integrated into the hearing rehabilitation process.

Concluding perspectives

The Sound Preference Framework relies on an understanding of successful hearing rehabilitation as an interaction between perceptual experience, individual psychological conditions, and clinical facilitation.

During exploration, individuals are invited to compare different perceptual experiences and reflect on how these relate to their personal listening expectations. How the exploration unfolds may be influenced by several moderating conditions, including cognitive load, sense of coherence, motivational dynamics, locus of control, and tolerance for ambiguity. These factors help shape whether the process develops along a more engaged pathway characterized by participation and emerging ownership, or along a disengaged pathway marked by greater uncertainty and reliance on external guidance.

Within this interaction, the HCP facilitates the exploration through appropriate framing: structuring the comparison process, supporting reflective dialogue, and helping ensure that the experience remains manageable and meaningful for the individual.

As described in the Sound Preference Formation model (Fischer & Engelund, 2026), Sound Preference emerges through interacting perceptual, emotional, cognitive, and social processes during listening. Together with this model and the Sound Preference Approach, the exploration illustrates how perceptual experience, behavioral engagement, and clinical practice can be connected within a unified perspective on personalized hearing care. In this way, the Sound Preference Framework bridges the gap between the technical precision of audiological fitting and the lived listening experience of the individual, enabling Sound Preferences to be meaningfully integrated into everyday life.

References

- Antonovsky, A. (1987). *Unraveling the mystery of health: How people manage stress and stay well*. Jossey-bass.
- Balling, L. W., Jensen, N. S., Nielsen, M., Best, S., Lelic, D., Marmel, F., & Engelund, G. (2026). Sound Preference as a measurable dimension in hearing aid fitting: Evidence from comparisons of time-domain and frequency-domain processing. *WSA White Paper*, April.
- Barker, B. A., Scharp, K. M., Long, S. A., & Ritter, C. R. (2020). Narratives of identity: understanding the experiences of adults with hearing loss who use hearing aids. *Int J Audiol*, 59(3), 186-194.
- Bennett, R. J., Larsson, J., Gotowiec, S., & Ferguson, M. (2023). Refinement and Validation of the Empowerment Audiology Questionnaire: Rasch Analysis and Traditional Psychometric Evaluation. *Ear Hear*, 45(3), 583-599.
- Boisvert, I., Clemesha, J., Lundmark, E., Crome, E., Barr, C., & McMahon, C. M. (2017). Decision-Making in Audiology: Balancing Evidence-Based Practice and Patient-Centered Care. *Trends Hear*, 21. <https://doi.org/10.1177/2331216517706397>
- Budner, S. (1962). Intolerance of ambiguity as a personality variable. *Journal of personality*, 30(1), 29-50.
- Elwyn, G., Frosch, D., Thomson, R., Joseph-Williams, N., Lloyd, A., Kinnersley, P., Cording, E., Tomson, D., Dodd, C., Rollnick, S., Edwards, A., & Barry, M. (2012). Shared decision making: a model for clinical practice. *J Gen Intern Med*, 27(10), 1361-1367.
- Festinger, L. (1957). *A theory of cognitive dissonance*. Stanford University Press.
- Fischer, R.-L., & Engelund, G. (2026). Sound That Feels Like You: The Sound Preference Framework for Personalized Hearing Part 1. *WSA White Paper May*.
- Furnham, A., & Marks, J. (2013). Tolerance of Ambiguity: A Review of the Recent Literature. *Psychology*, 04(09), 717-728.
- Gotowiec, S., Larsson, J., Incerti, P., Young, T., Smeds, K., Wolters, F., Herrlin, P., & Ferguson, M. (2022). Understanding patient empowerment along the hearing health journey. *Int J Audiol*, 61(2), 148-158.
- Grenness, C., Hickson, L., Laplante-Lévesque, A., & Davidson, B. (2014). Patient-centred audiological rehabilitation: Perspectives of older adults who own hearing aids. *International Journal of Audiology*, 53(sup1), S68-S75.
- Holman, J. A., Ali, Y. H., & Naylor, G. (2023). A qualitative investigation of the hearing and hearing-aid related emotional States experienced by adults with hearing loss. *International Journal of Audiology*, 62(10), 973-982.
- Humes, L. E. (2021). An approach to self-assessed auditory wellness in older adults. *Ear and Hearing*, 42(4), 745-761.
- Jorgensen, L. E., & Novak, M. (2022). Verification and Validation: Just the Standards. *Seminars in Hearing*.
- Kahneman, D. (2011). *Thinking, Fast and Slow*. Farrar, Straus and Giroux.
- Laplante-Lévesque, A., Jensen, L. D., Dawes, P., & Nielsen, C. (2013). Optimal hearing aid use: Focus groups with hearing aid clients and audiologists. *Ear and Hearing*, 34(2), 193-202.
- Lindenberg, S., & Steg, L. (2007). Normative, Gain and Hedonic Goal Frames Guiding Environmental Behavior. *Journal of Social Issues*, 63(1), 117-137.
- Manchaiah, V., Dockens, A. L., Bellon-Harn, M., & Burns, E. S. (2017). Noncongruence between Audiologist and Patient Preferences for Patient-Centeredness. *J Am Acad Audiol*, 28(7), 636-643.
- Marcos-Alonso, S., Almeida-Ayerve, C. N., Monopoli-Roca, C., Coronel-Touma, G. S., Pacheco-López, S., Peña-Navarro, P., Serradilla-López, J. M., Sánchez-Gómez, H., Pardal-Refoyo, J. L., & Batuecas-Caletrío, Á. (2023). Factors Impacting the Use or Rejection of Hearing Aids—A Systematic Review and Meta-Analysis. *Journal of Clinical Medicine*, 12(12), 4030.
- Oliver, R. L. (1980). A cognitive model of the antecedents and consequences of satisfaction decisions. *Journal of marketing research*, 17(4), 460-469.
- Oosthuizen, I., Manchaiah, V., Launer, S., & Swanepoel, W. (2022). Hearing aid Experiences of Adult Hearing aid Owners During and After Fitting: A Systematic Review of Qualitative Studies. *Trends Hear*, 26. <https://doi.org/10.1177/23312165221130584>
- Poost-Foroosh, L., Jennings, M. B., Shaw, L., Meston, C. N., & Cheesman, M. F. (2011). Factors in client-clinician interaction that influence hearing aid adoption. *Trends in Amplification*, 15(3), 127-139.

Ridgway, J., Hickson, L., & Lind, C. (2016). Decision-making and outcomes of hearing help-seekers: A self-determination theory perspective. *Int J Audiol*, 55 Suppl 3, S13-22.

Rotter, J. B. (1966). Generalized expectancies for internal versus external control of reinforcement. *Psychological monographs: General and applied*, 80(1), 1.

Ryan, R. M., & Deci, E. L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American Psychologist*, 55(1), 68.

Sawyer, C. S., Munro, K. J., Dawes, P., O'Driscoll, M. P., & Armitage, C. J. (2019). Beyond motivation: identifying targets for intervention to increase hearing aid use in adults. *International Journal of Audiology*, 58(1), 53-58.

Sweller, J. (2024). Cognitive load theory and individual differences. *Learning and Individual Differences*, 110, 102423.