INTERNATIONAL JOURNAL OF AUDIOLOGY
https://doi.org/10.1080/14992027.2025.2499916

REVIEW ARTICLE

OPEN ACCESS

Person-centered care in adult auditory rehabilitation: a scoping review

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ABSTRACT

Objective: To scrutinise the efficacy of person-centered care (PCC) in enhancing outcomes for adults navigating hearing loss through a comprehensive examination of literature on PCC in auditory rehabilitation (AR).

Design: A scoping review was conducted following Joanna Briggs Institute guidelines and the Preferred Reporting Items for Systematic Reviews and Meta-Analyses for Scoping Reviews (PRISMA-ScR) reporting standards. A context framework guided the research question.

Study Sample: Structured searches across multiple databases identified 36 records which were categorised by research design, mapped by the first author's country, and depicted by number of publications per year. Six identified elements of PCC were anaylzed across four components of PCC using deductive qualitative analysis.

Results: Most studies were published in the US and Australia; with a gradual increase to four publications per year. From the six PCC elements of person-centered care, family involvement, individualised preferences and treatment uniqueness were most frequently addressed. Notably, active listening and empathy received limited attention.

Conclusion: Evidence suggests advancement of PCC practices effectively fosters more effective and personalised approaches in adult AR. By pinpointing trends and gaps, we contribute to the advancement of PCC practices, fostering more effective and personalised approaches in AR for improved patient outcomes and experiences.

ARTICLE HISTORY
Received 30 May 2024
Revised 19 March 2025
Accepted 22 April 2025

KEYWORDS
Person-centered care; patient-centered care; adults; auditory rehabilitation; client-centered care

1. Introduction

Hearing loss (HL) is an escalating global healthcare concern, affecting a substantial proportion of the population worldwide. According to recent data from the World Health Organisation (WHO), over 1.5 billion people, nearly 20% of the global population, have HL, with 430 million having disabling HL (WHO 2021). In 2050, these figures are expected to exceed 2.5 billion and 700 million. If left unaddressed, HL can lead to a lifelong disability, significantly impacting an individual's quality of life (QoL) and their ability to participate fully in society. Adults with HL face a myriad of challenges, including difficulties in speech perception, communication, social interactions, employment, leisure pursuits, and the simple joy of experiencing sound, which increases depression symptoms and lowers QoL with daily activity restrictions (Ciorba et al. 2012; Mothemela et al. 2023).

1.1. Auditory rehabilitation

To comprehensively address these challenges, a multidisciplinary approach to auditory rehabilitation (AR) is essential considering that AR is emerging as the cornerstone for restoring QoL for individuals with HL. Although many definitions of AR have been proposed over the years - for the purpose of this scoping review, we have chosen to use the definition proposed in the American Speech-Language-Hearing Association evidence-based guidelines (Aural Rehabilitation Clinical Practice Guideline Development et al., 2023 et al. 2023). AR is defined as an umbrella term that "encompasses a range of interventions (e.g. informational counseling and perceptual training) designed to reduce deficits related to HL that may stand alone or be used in combination as part of a holistic plan" (1). For our investigation, we adopt this definition. Within AR, interventions are designed to mitigate the impact of HL on function, activity, and participation, incorporating sensory management, instruction, perceptual training, informational and personal adjustment counselling (Basura et al. 2023).

1.2. Person-Centered care

Amidst the landscape of hearing healthcare, a paradigm shift has emerged in the past decade, emphasising person-centered care (PCC) approaches that prioritise autonomy and engagement. PCC was first introduced by Rogers in 1951 as patient-centered care

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and has gradually shifted to person-centered care in clinical settings (Håkansson Eklund et al. 2019). Nonetheless, the concept of PCC has transformed healthcare by placing patients at the core of their healthcare journey (Rogers 1951) recognising that effective care extends beyond the individual to include their family, friends, and support network (Ali et al., 2017, 2018; Manchaiah et al., 2019). Unlike traditional "practitioner-centered" models, PCC fosters therapeutic, power-balanced relationships between healthcare providers and patients, recognising the significance of patient engagement, autonomy, and shared decision-making in achieving optimal healthcare outcomes (Smith, 2014). PCC has earned recognition as the gold standard in healthcare service delivery, yielding documented benefits for individuals with chronic health conditions (Kramer et al. 2014). Given that HL in adults is a chronic condition with long-term implications, embracing a PCC approach is essential within the domain of AR.

Central to AR, the core tenet of PCC lies in understanding the unique needs and aspirations of each individual with HL, ensuring that their preferences and values guide all clinical decisions (Grenness et al., 2014b). In the PCC model, rehabilitative approaches are tailored to individual needs and goals, encompassing a diverse array of interventions such as amplification, hearing assistive technology, communication strategies training, and psychosocial or personal adjustment counselling (Smith, 2014). Empowering individuals with HL to actively participate in managing the effects of their condition through a PCC approach enhances their self-confidence and overall well-being (Ferguson et al. 2019).

The International Classification of Functioning, Disability and Health (ICF; WHO 2001) has been used as a framework for providing PCC for older adults and their significant others (Grenness et al., 2016). This framework includes third-party disability, which refers to the impact of an individual's disability not only on their own life but also on those around them (e.g. family members, caregivers, the wider community) (WHO 2001). This concept recognises that disabilities can have far-reaching effects beyond the individual directly affected, often resulting in various forms of social, emotional, and economic challenges for those in close proximity. In audiology, third-party-disability manifests in several ways, particularly in cases where individuals experience HL (Grenness et al., 2016; Meyer et al., 2016). For instance, family members may struggle to communicate effectively with their loved one who has hearing impairment, leading to feelings of frustration, isolation, and stress (Scarinci et al., 2009). Additionally, caregivers may face increased responsibilities in assisting individuals with HL, which may affect their well-being and QoL (Grenness et al., 2016). By empowering family members and caregivers with the necessary knowledge and skills, audiologists can help alleviate the burden of third-party-disability and improve overall family dynamics and well-being. Audiologists also advocate for laws and efforts to reduce societal barriers and stigma associated with HL, encouraging inclusivity and support for hearing-impaired persons and their families (Coleman et al. 2018).

1.3. Person-centered care in auditory rehabilitation

The WHO published a policy framework on PCC in 2007, which envisions a scenario where individuals, families, and communities are supported by and engaged in reliable healthcare systems that address their requirements in a compassionate and comprehensive manner (WHO 2007). In the same year (2007), the Ida Institute was founded with the explicit intent of advancing PCC in the field of audiology, rooted in the belief that people with HL should occupy the focal point of hearing care. It champions the integration of their distinct needs, values, and preferences into the decision-making process, advocating for collaborative treatment decisions alongside hearing care professionals and fostering informed self-management of the condition in daily life. Through collaboration with a diverse global network of experts, the Institute has fostered a global community embracing the PCC approach, uniting clinicians, academics, industry stakeholders, and individuals with HL. The Institute's commitment to pioneering research into PCC hearing rehabilitation has resulted in the establishment of audiological guidelines and standards on a global scale (International Organization for Standardization 2021).

The essence of PCC encompasses six vital elements, as championed by the Ida Institute and integrated into the WHO policy of integrated people-centered ear and hearing care (WHO 2021). These elements encompass building a holistic understanding of the individual, sharing power and responsibility, fostering empathy and active listening, collaborating to establish common goals, tailoring interventions to the individual's needs, and promoting continuous learning and improvement (Ida Institute, n.d.-a). Importantly, family members and communication partners play a crucial role in the PCC framework, as they are integral to the individual's communication environment, decision-making process, and ongoing hearing rehabilitation efforts. This aligns with evidence that family-centered care enhances rehabilitation outcomes, improves adherence to treatment strategies, and strengthens patient-provider relationships in audiology (Grenness et al., 2016).

A critical distinction between PCC in AR and PCC in acute medical care lies in the chronic nature of HL. Unlike acute medical conditions, HL is a lifelong condition that requires ongoing self-management, adaptation, and shared decision-making. Self-management and shared decision-making are particularly critical in AR, as they enable individuals to navigate their condition beyond the clinical setting, incorporating rehabilitation strategies into their everyday lives. Research emphasises that active engagement in self-management fosters greater patient satisfaction, improved adherence to hearing aid use, and enhanced communication outcomes (Gomez et al., 2022). Thus, PCC is not just an ideal approach in AR but a necessary framework for ensuring sustainable, long-term benefits for individuals with HL.

In alignment with these principles, our manuscript aims to delve into the integration of the six PCC elements (i.e. (a) empathy, (b), active listening, (c) open-ended questions and reflective conversations, (d) involving friends and family members, (e) shared decision-making, and (f) understanding needs and preferences) within the four components of adult AR (i.e. sensory management, instruction, perceptual training, informational and personal adjustment counselling). Specifically, we intend to scrutinise the efficacy of PCC in enhancing outcomes for adults navigating HL. This exploration will encompass a comprehensive examination of literature on PCC in AR since the introduction of PCC by the WHO (2007) and subsequent Ida Institute advocacy efforts (Ida, n.d.-a) collating an overview of the elements of PCC, identifying use of key concepts, gaps in the literature, and types of sources of evidence to inform practice, policymaking, and research. By synthesising the existing body of research, we aspire to augment the growing repository of knowledge regarding PCC adult AR, encouraging its widespread adoption within the field.

Before presenting the methods, results, and discussion, it's important that we acknowledge that multiple PCC exist across healthcare disciplines. For this review, we adopted a definition of PCC that aligns with audiological rehabilitation, ensuring consistency with established frameworks used in the field. Grenness et al. (2014b) provided a comprehensive review of PCC, summarising key themes from various healthcare disciplines, including shared decision-making, therapeutic alliance, and respect for patient individuality and values. While Table 2 from Grenness et al. (2014b) outlines a broad, multidisciplinary perspective on PCC, our review focused specifically on audiology-relevant applications of PCC, which necessitated selecting a model with direct clinical applicability. The Ida Institute model was chosen as the most appropriate framework for this review because it is widely used in audiological rehabilitation and provides practical, structured tools to implement PCC in hearing healthcare. The Ida model emphasises active listening, shared decision-making, and patient empowerment, which align with key aspects of PCC in audiology as identified by Grenness et al. (2014b). Additionally, its focus on patient-practitioner interactions and real-world application makes it particularly relevant for evaluating PCC in AR.

1.4. Research question

The research question was generated based on the Population, Concept, Context Framework, which served as the foundation for the research question in this study. Specifically, the research question was: What is the scope of PCC implementation in adult AR? We aimed to map the literature, identify use of key concepts, gaps in the literature, and types of sources of evidence to inform practice, policymaking, and research. The study publications were limited from 2007 and later in alignment with the landmark publication by the WHO on PCC (WHO 2007).

2. Methods

Methodology for this review followed the guidelines outlined for scoping reviews by the Joanna Briggs Institute (JBI, 2014) and the Preferred Reporting Items for Systematic Reviews and Meta-Analyses for Scoping Reviews (PRISMA-ScR; Tricco et al., 2018).

2.1. Inclusion/exclusion criteria

This review considered peer-reviewed literature in AR on the topic of PCC including populations of adults (> 18 years) with HL of any degree. A scoping review regarding the implementation of PCC in the field of adult rehabilitative audiology from 2007 to 30 June 2023 using JBI guidelines for scoping reviews was conducted. The timeline of 2007 to date was selected since the Ida Institute, which focuses on PCC in audiology, was founded in 2007, creating awareness and implementation of PCC in the field of audiology. Publications were excluded if they were not published in English or an electronic record could not be located. Publications from peer-reviewed journals were eligible without regard for research design or type of review. Grey literature and dissertations were not included in this study as peer-reviewed literature typically undergoes rigorous scrutiny, ensuring higher quality and reliability. In contrast, grey literature (such as dissertations and non-peer-reviewed publications) may not follow the same standards. No restrictions were placed in terms of methodological choice and research designs.

2.2. PRISMA guidelines, databases and search strategy

The PRISMA-ScR statement and checklist were used as the guidelines for reporting this review. To ensure exhaustive coverage, diverse structured search strategies were applied to multiple databases, including Cumulated Index in Nursing and Allied Health Literature (CINAHL), PubMed (Medline), Scopus, and Web of Science (WoS). For all searches, the keywords in Table 1 were used, with both American and British spelling being considered; due to page limitations and the extensive scope of the scoping review, all tables have been included in Appendix A. The specific terms used were determined through an iterative process involving the use of terms in multiple test searches and a detailed examination of the records retrieved in terms of their relevance and the keywords/terms they contained. All searches were conducted in consultation with an information specialist (S.D.), with the search strategy employed for each database outlined in Appendix B.

2.3. Selection of sources of evidence

The PRISMA-ScR Flow Diagram was used to report the identification, screening, and selection process for included studies; see Figure 1. M.G. and S.D. completed a title and abstract screen and eliminated those publications that were irrelevant. M.G., N.N., R.G and F.M. each completed a full-text review and voted for inclusion of the publications. When there was a discrepancy, the publications were discussed until a consensus was reached. Authors met online for discussion when needed, a document was created and posted in a shared drive for tracking votes. Notably, we encountered no instances of deadlock among the authors; rather, any disparities were consistently resolved with detailed explanations provided to the dissenting member regarding the rationale for inclusion or exclusion.

2.4. Data charting process, data elements and evidence synthesis

Critical data elements were identified collectively by consensus of authors. These included author(s), year of publication, purpose, sample, research design, and results. In addition, PCC elements and AR components were predetermined. PCC elements and AR components included in each publication were extracted by M.G., N.N. and F.M. Data were extracted independently and compared for consistency. Data elements were extracted to an Excel spreadsheet and included author, year, purpose, sample size (if applicable), research design, and results. AR components included sensory management, instruction, counselling and perceptual training (Basura et al., 2023). PCC elements included empathy, active listening, understanding individual differences, involvement of family and friends, open-ended questions and reflective conversations, and shared goal-setting and decision-making (Ida Institute, n.d.-a). R.G. prepared the graphs and figures to visually represent the data. The JBI Levels of Evidence (2014a,b) were used to assign categories or levels of research evidence for each study. The JBI Levels of Evidence are shown in Appendix C. All data elements were initially tabled for ease of summary and synthesis. Once the data were tabled, gaps in the literature were identified. Data were then depicted in tables and figures.

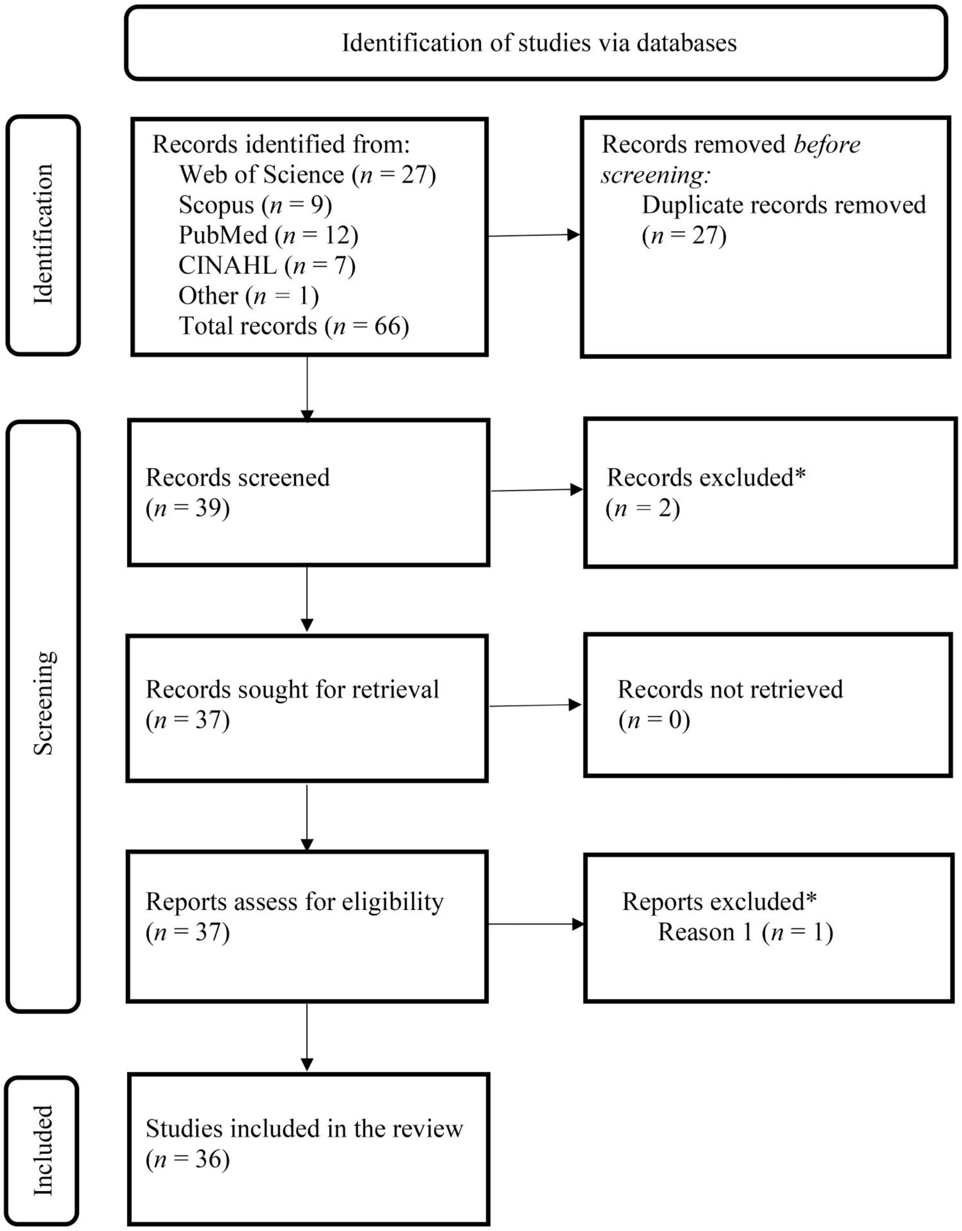

Figure 1. PRISMA flow diagram of person-centered care in adult aural rehabilitation.
Note: * = did not meet criteria. Flow diagram adapted from "The PRISMA 2020 statement: An updated guideline for reporting systematic reviews" by MJ Page, JE McKenzie, PM Bossuyt, I Boutron, TC Hoffmann, CD Mulrow et al., BMJ, 2021: 372, n71. https://doi.org/10.1136/bmj.n71

3. Results

The search results are shown in the PRISMA-ScR Flow Diagram, Figure 1. During the identification phase, a total of 66 records were identified by the search (27 by WoS, 19 by Scopus, 12 by PubMed, 7 by CINAHL). There were 27 duplicates, resulting in a total of 39 remaining records. The remaining 39 records were screened by title and abstract, with two being eliminated due to irrelevance. Full-text review was completed on 37 articles, one additional study was eliminated as it was a protocol. A total of 36 studies were included in this scoping review: 29 empirical studies and 7 reviews, case studies or expert opinion publications.

Thirty-six publications were included and are shown with details in Table 2 (see Appendix A). Seven publications reported data using a quantitative approach, 16 reported data using a qualitative research design and analysis, 10 publications used a mixed methods approach, and three studies were rated as not applicable (N/A). Studies rated as N/A included two literature reviews (Grenness et al., 2014b; Smith, 2014), and 1 expert opinion (Hull, 2019). The most commonly used methods for data collection included seven surveys, ten observational study designs, and ten focus group/participant interviews. Thematic analysis ($n = 13$) was the most commonly used analysis technique for qualitative studies and descriptive statistics ($n = 9$) was the most commonly used approach for quantitative studies. In total, there were 29 empirical studies, 1 systematic literature review, 2 literature reviews, 1 case study, 2 case series, and 1 expert opinion.

The number of publications by year can be viewed in Figure 2. Publications regarding PCC first began appearing in the AR literature in 2011, roughly five years after the Ida Institute began promoting PCC in audiology. Publications have gradually increased over the past two decades to an average of four publications per year since 2020, consistent with the notable 17-year lag from the first research evidence to implementation in practice (Morris, Wooding, and Grant 2011).

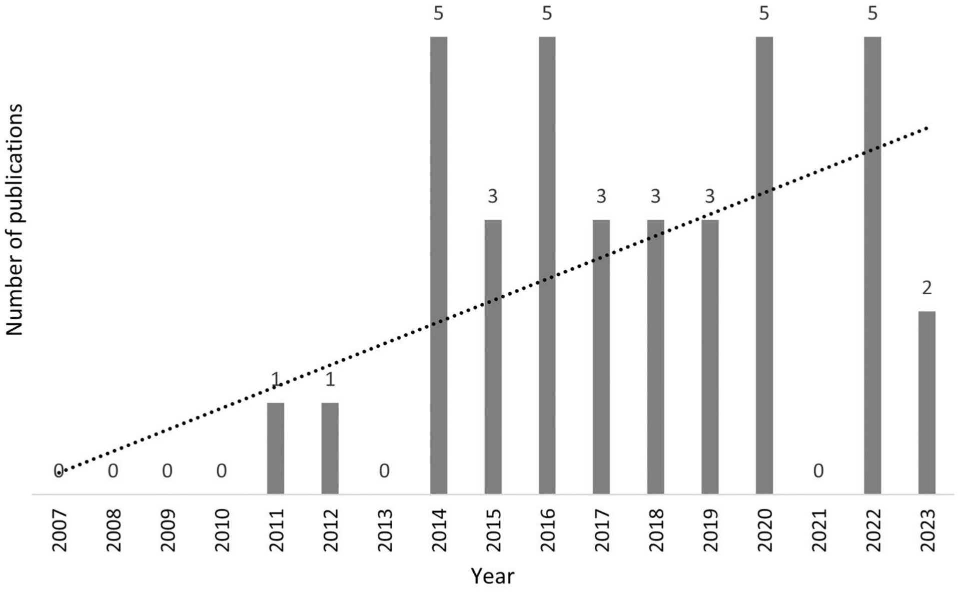

Figure 2. Chart of number of publications by year of publication.
Note: There were no publications that met inclusion criteria from 2007-2010, 2013, or in 2021. Inclusion criteria were met most frequently (n = 5) in 2014, 2016, 2020, and 2022.

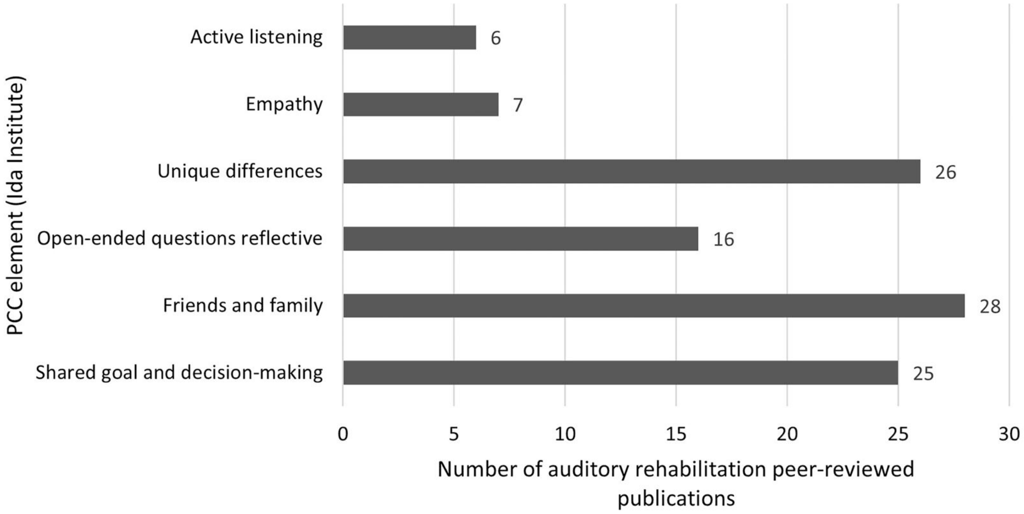

Figure 3. Graph of quantity of publications addressing PCC elements as defined by the ida institute.

Results are reported for the number of studies addressing individual adult AR components as well as for those addressing two or more components. Of the 36 included studies, 17 included all four components of an AR program (Basura et al. 2023). Three of the studies investigated AR provided in the form of telehealth. Two made use of sensory management only in order to validate an assessment tool, three made use of instruction and counselling, 12 made use of instruction, sensory management and counselling and only two including perceptual training in addition to counselling and instruction. The 6 elements of PCC identified across the studies can be seen in Figure 3. Data extracted from each study showed that 28 studies included information about the importance of including family and friends in PCC; 26 reported on the value of taking into account the unique characteristics of the individual; 25 explored shared goal-setting and decision-making, while 16 studied the use of open-ended questions and reflective dialogue. The two least studied PCC elements were active listening, with only 6 publications including this topic, and 7 mentioning empathy in the provision of PCC.

Levels of evidence for research rigour were assigned using the JBI Levels of Evidence hierarchy shown in Appendix C (JBI, 2014). Using this paradigm, Level 1 represents experimental designs, Level 2 - quasi-experimental designs, Level 3 - observational-analytical designs, Level 4 - observational-descriptive studies, and Level 5 - expert opinion and bench research. At each level, systematic reviews of the specific research design are rated as the highest within that category and designs without a control group rated as the lowest. In this study, we identified one publication rated as Level 1, four studies within Level 2, 26 studies rated within Level 3, three publications rated within Level 4, and two rated as Level 5 (see Figure 4).

3.1. Active listening

The Ida Institute (n.d.-c, para. 2) defines active listening “as a way of listening and responding to another person that improves mutual understanding … [by] being present psychologically, socially, and emotionally”. In our scoping review, there were six

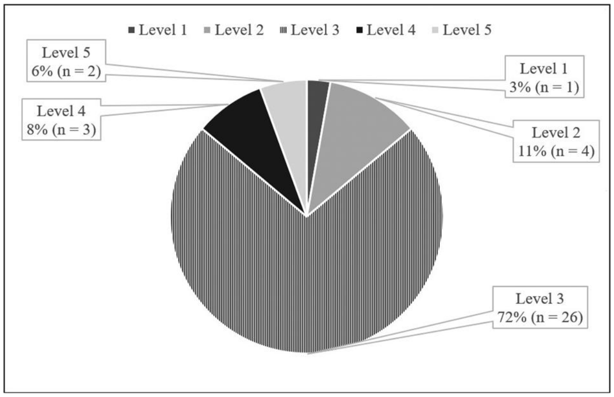

Figure 4. Graph of the levels of evidence for the 36 publications that met inclusion criteria.

studies that specifically addressed communication between audiologists and patients/families including active listening as a consideration regarding PCC (indicator: exclamation mark(!), Appendix D). In Ekberg et al.'s (2014) study of conversational analysis of 63 consultations with 26 different audiologists between September 2011 and April 2013, three instances of audiologists attempting to listen were identified, with only one instance of the audiologist attempting to respond to the patients' concerns. Grenness et al. (2014a,b) provide evidence from studies in other professions regarding the importance of active listening, point out the importance of patients' perceptions of providers taking the time to listen, emphasise the need for the patient to be recognised as an expert about their own experience and perspective. Grenness et al. (2015a) analysed the communication patterns of the history-taking phase of the initial audiology consult to profile the listening pattern and communication dynamics. They found that the majority of questions asked were closed-ended as opposed to open-ended, and those that were open-ended were often interrupted by the audiologist. Indications of continued listening and encouragement to elicit more of the lived experience were limited. The majority of questions were biomedical in nature as opposed to psychosocial/lifestyle impact types of questions. Grenness et al. (2015b) suggest that patient and practitioner "talk time" should be equally distributed and that audiologists would benefit by listening more and inviting collaboration by asking, "what do you think about this idea?". In their descriptive review of communication behaviours between audiologist, patient, and family members during encounters, Manchaiah et al. (2019) emphasises the use of strategies such as expectant pauses (i.e. cueing the patient to continue) to facilitate an open dialogue about the patient journey.

3.2. Empathy

Seven publications included in this scoping review focused on PCC in AR addressed empathy as a critical interpersonal skill for audiologists to develop (indicator: @-symbol, Appendix D). Amlani (2020) explored ten dimensions of PCC (competency, confidentiality, empathy, health promotion, integrated caret[1], family/friend support, provider-patient communication, respect, shared decision-making and trust), highlighting the lack of empathy expressed when patients present psychosocial concerns with what is perceived as a negative emotional stance, as Ekberg et al. (2014) noted. Amlani's (2020) study identified empathy, shared decision-making, trust, competency and respect as the most important attributes valued by patients/consumers who received hearing care services in medical, rehabilitative, and consumer electronic settings. Provider empathy has been shown to be correlated with hearing aid user success (Kochkin et al. 2010). Empathic communication by audiologists is crucial for increasing patient satisfaction, enabling a better understanding of the benefits of hearing technology, and increasing adherence to rehabilitation recommendations (Ekberg et al., 2014). The benefits of this approach outweigh any perceived increase in time required by the provider as motivated by Ekberg et al. (2014): "Taking time to understand and empathically respond to patients' concerns may (perhaps sometimes counterintuitively) make the audiological process more efficient as well as increase compliance to rehabilitation plans" (347).

Grenness et al. (2014a) and Meyer et al. (2017) identify empathy as a building block in establishing therapeutic alliance, indicating that therapeutic alliance as a non-judgemental relationship based on mutual respect, warmth, trust, openness, care, honesty, hope, and confidence. Grenness et al. (2015a,b) analysed the communication dynamics in AR history-taking among audiologists, patients, and their companions and were unable to identify an example demonstrating emotional or empathic talk. Although Manchaiah et al. (2019) recognise empathy as an important attribute of PCC, their systematic review did not identify empathy as a theme in their findings. Despite the fact that empathy is recognised across professions as a critical interpersonal skill for audiologists, there is a lack of attention to this attribute in the PCC research literature in AR. This needs to be addressed across healthcare disciplines (Grilo et al. 2023).

3.3. Understanding the individual differences

The Ida Institute explains this component of PCC as one in which new psychosocial information regarding individual values, beliefs, and lifestyle factors are added to the biomedical case history (Ida Institute, n.d.-a). This component represents a genuine inquiry into what matters most to the individual, exploring their ideas, concerns, expectations, emotions, and the effects of their HL on their life. Twenty-five ($n = 25$) of the publications included in this scoping review had content related to this component (indicator: asterik(*), Appendix D). Provider attitudes towards PCC exhibit variation, with audiologists in private practice showing comparatively less inclination, while younger practitioners express a heightened interest in improving their interpersonal skills (Laplante-Lévesque et al., 2014). A study by Ali et al. (2017) indicates that a significant portion of audiologists surveyed expressed a desire to enhance their counselling and AR interpersonal skills, signifying a commitment to best practices to ensure they provide services that follow a PCC approach in order to support individualised rehabilitation. However, Manchaiah et al. (2019) and Parmar et al. (2022) report a misalignment in the discussion of patient concerns between patients, their families, and audiologists. While patients and their families often express negative emotional and psychological responses to HL, audiologists tend to prioritise informational and technological aspects, inadvertently neglecting these emotional dimensions. This divergence has the potential to undermine therapeutic alliances and disregard individual differences. Patients also identified time limitations during audiology consultations as a significant obstacle to achieving PCC. Grenness et al. (2015a) advocate for taking time as providers to appreciate the patient's individual lived experience of the condition and thoroughly explore and understand their perspective.

Hull (2019), Hendriks et al. (2017), and Ekberg et al. (2016) emphasise the importance of focusing on the patients' individual needs and measuring client experiences to individualise management planning in a manner congruent with the patients' needs, attitudes, desires, values, preferences and psychological readiness. Ekberg et al. (2016) and Amlani (2020) suggest that health practitioners should focus on making changes to the way the individual thinks and feels about the specific health behaviour (i.e. cognitive-affective processes). They reported that understanding the individuals' motivation improved outcomes.

Self-determination theory suggests that clients are more likely to adopt and adhere to novel health treatments if they feel autonomously motivated to do so (Ryan and Deci 2000). These theories support Barker et al.'s (2020) premise underpinning self-identity of hearing aid users. Barker et al. (2020) developed 5 hearing aid user profiles based on individual attributes (a) satisfied user, (b) overcomer, (c) dispassionate user, (d) resigned user, and griever. They indicated that the person's belief drives their behaviours and has repercussions for the diagnosis and treatment of their HL. These strategies align with the Transtheoretical Stages of Change model, which describes the process individuals undergo when making health-related behavioural changes; this model includes four components: precontemplation, contemplation, preparation, action (Saunders et al. 2016). Utilising this approach is thought to help tailor interventions based on a person's stage of readiness and their willingness to change. To achieve change, Post-Foroosh et al. (2011, 2015) suggests (a) ensuring client comfort, (b) understanding and meeting client needs, (c) implementing client-centered attributes, (d) acknowledging each client as an individual, (e) not imposing undue pressure and discomfort, (f) conveying device information at an appropriate level, (g) supporting choices and shared decision-making, and (h) assessing factors in client readiness.

Meyer et al. (2016) propose the use of the International Classification of Functioning Disability and Health (ICF) as a framework for focusing on the impact of HL on an individual's participation and activities within the context of their unique life and circumstances (WHO 2001). The ICF's biopsychosocial model aligns closely with PCC principles, as both emphasise holistic, individualised approaches to healthcare. Like PCC, the ICF moves beyond a medical model of impairment to consider personal, environmental, and social factors that influence an individual's functioning and well-being. Both frameworks advocate for shared decision-making, self-management, and a collaborative approach to care, recognising that effective rehabilitation extends beyond clinical treatment to address broader participation in daily life. Furthermore, employing open-ended inquiries and, when necessary, delving deeper into responses through further questioning can facilitate gathering this information. Notably, Hotton et al. (2023) have recently employed a knowledge-to-action framework to create the Quebec Audiological Assessment Protocol for Younger and Older Adults (QAAP-YOA) with the intention of achieving this objective. This instrument is based on the ICF (WHO 2001) and includes activity limitations and participation restrictions, living conditions, personal factors, open discussion/shared decision-making, and individualised recommendations. Whereas Scarinci et al. (2022) suggest using the Ida Institute's Living Well Tool (LWT) to convey individual experiences and perceptions. This tool supports PCC by making it easier to discuss sensitive matters, helping clients identify the biopsychosocial impacts of their hearing disability, and ensuring that clients are the priority. Furthermore, being aware of individual differences encourages exploration of additional difficulties or comorbidities (Hall III, 2021). Laird et al. (2023) advocate for consideration of mental health comorbidities urging inclusion of psychosocial counselling within each AR session and Schroy et al. (2012) point out the unique needs of specific populations such as individuals with sudden sensorineural HL, due to traumatic brain injury.

3.4. Open-ended questions and reflective conversations

The Ida Institute model describes this component as an area of inquiry without unduly shaping or focusing the content of the response, allowing patients complete discretion in their answer, and encouraging elaboration (Ida Institute, n.d.-a). Sixteen publications included information regarding the PCC practice of using open-ended questions and reflective conversations to elicit information about individual differences (indicator: hashtag (#), Appendix D). The "open-ended questions and reflective conversations" element of the Ida Institute model addresses the therapeutic alliance and reflection components (see review by Grenness et al., 2014b). The WHO recommended an effective partnership between people who need care and people who provide care (WHO 2007). One of the domains emphasised was a therapeutic alliance with better-informed and more empowered individuals, families and communities. Meyer et al. (2016) promoted the WHO's model of ICF (WHO 2001) as a means of facilitating PCC and argued its application and relevance in the field of audiology by providing some clinical case examples of its application in the assessment and management of individuals with HL. In the same year, the same group of researchers provided justification for the application of the ICF framework to the audiological assessment and AR of older adults with HL and their significant others by comparing two versions of the same case (the first using standard practice, the second using an ICF-led model) using a case study (Grenness et al., 2016). Meyer et al. (2016) states that the key skill needed by clinicians to facilitate PCC is effective communication. Grenness et al. (2014a, 2015a,b) suggest that a therapeutic alliance that begins with an open collaboration in which the provider serves as a professional facilitator to elicit the patient narrative through open-ended questions and conversations that invite reflection and thought. Manchaiah et al. (2019) suggest that this activity, coupled with partnership-building behaviours such as active listening and expectant pauses, invites elaboration and shared responsibility for the interaction. These authors suggest a framework for history-taking that includes the opening structure, exchange of information, and relationship-building dialogue (Grenness et al., 2015a,b; Manchaiah et al., 2019). In a study regarding communication exchanges, audiologists tend to dominate the history-taking phase and control the conversation with a disproportionate emphasis on closed questions regarding the structure and function of the ear as opposed to open-ended psychosocial questions focused on lifestyle and the impact of HL activities and participation in life (Grenness et al., 2015a; Meyer et al., 2016). Meyer et al. (2017) provide a number of examples of closed versus open-ended questions for the biomedical versus biopsychosocial models of health care. There are a number of motivational counselling tools available to help identify readiness for change, which make use of the open-ended question strategy (Ida Institute, n.d.-b). Other motivational models (e.g. COM-B) are equally effective in empowering patients on their journey towards technological solutions. Ritter et al. (2020) provides evidence regarding the strength of the therapeutic alliance in curiosity and motivation in pursuing technology solutions. Scarinci et al. (2022) explored the LWT and reported participant reflections on the use of the tool in stimulating open and honest conversations. Other researchers have provided patients pictures in AR as a tool for understanding individual differences (Saunders et al. 2019) whereas some have developed patient-reported outcome measures (PROM) as tools to elicit patient narratives to highlight the impact of ear and hearing problems on activities and participation (Hotton et al., 2023; Parmar et al., 2022). Multiple studies have emphasised the value of patient and provider reflections on conversations in which a provider has effectively elicited and addressed concerns revealed through a patient story (Meyer et al., 2016, 2017; Rantanjee-Vanmali et al., 2020; Scarinci et al., 2022).

3.5. Inclusion of friends and family

The Ida Institute describes this element of PCC as an effort to examine and identify the role of immediate and extended family members and frequent communication partners in the therapeutic process (n.d.-a). Twenty-eight publications included information regarding the PCC practice of including family and friends during assessment or rehabilitation (indicator: plus-sign(+), Appendix D). Providers can involve friends and families by encouraging their attendance to appointments and encouraging their assistance and contributions to the rehabilitation process. For example, care providers can ask friends and family members questions related to communication and communication barriers as well as provide education to friends and family members who may not understand the psychosocial impact HL can have or opportunities to practice communication repair strategies.

Studies involving this element often have small sample sizes, and many are qualitative in nature (e.g. Coco et al., 2019; Parmar et al., 2022). Many studies highlight the importance of including significant others in the assessment and rehabilitation process (e.g. Ali et al., 2017, 2018); however, functional outcome data for individuals with HL and their frequent communication partners is lacking, and this aspect of PCC is often secondary to the primary research question(s).

Coco et al. (2019) employed a qualitative phenomenological approach to document and analyse how individuals' personal experiences influence their functioning within a group context. These experiences encompassed various aspects of their individual environment as well as their emotions regarding communication challenges due to HL. In adults with age-related HL, the consequences on QoL could involve emotional and behavioural responses, like anger, embarrassment, loneliness, reduced self-esteem, and even denial (Ciorba et al. 2012). Communication dynamics focused on how individual interactions with others were impacted by their HL. The role of communication partners also played a crucial role in shaping these interactions (Barker et al., 2016; Manchaiah, Stephens, and Lunner 2013). Grenness et al. (2014b) developed an operationalised patient-centered AR model for use in cases where amplification is recommended: (a) individualise, (b) inform, and (c) involve.

Ekberg et al. (2014) evaluated 63 video-recorded initial audiology appointments with older adults with HL and found that despite patients reporting psychosocial concerns with families and friends, audiologists often did not validate or address the patient's concerns. Singh and Launer (2016) completed a retrospective review of over 60,000 patient records and found that the rate of hearing aid adoption was significantly increased when a significant other attended the appointment compared to patients attending appointments alone. Singh and Launer (2016) hypothesised that those who bring a significant other to appointments exhibit tendencies such as increased readiness for change or have health beliefs more associated with hearing aid adoption (Saunders et al. 2016). Ekberg et al. (2016) mentioned that having a family member in attendance may help audiologists to explicate communication problems within the family.

Several studies have surveyed practitioner perceptions of including family and friends in the assessment and intervention process (e.g. Ali et al., 2018; Amlani, 2020; Grenness et al., 2015a,b) however, there has been little research to examine functional outcomes of both the individual with HL and functional outcomes in terms of communication with family, friends, or frequent communication partners when family and friends are included as active participants in the overall AR model. Due to small sample sizes and the limited ability to generalise current findings, questions remain regarding the perceptions of individuals with HL on incorporating family and friends. Additionally, little is known about family and friends' perceptions regarding their involvement in the AR process or the impact that might have in the process. It is also unclear how this element of PCC is being addressed in pre-professional training at this time.

3.6. Shared goal-setting and decision-making

The Ida Institute describes this element of PCC as a collaborative effort between the practitioner and individual with HL to identify an individualised course of action to best set the patient up for success (Ida Institute, n.d.-a). Twenty-five publications included information regarding the PCC practice of shared goal-setting and decision-making in AR (indicator: dollar-sign($), Appendix D). Practitioners bring knowledge of hearing technologies and rehabilitation strategies to improve outcomes; however, patients bring knowledge of their individual life circumstances, needs, and communication barriers, all of which are recommended to be considered when determining a plan of care.

Of the five reviews and the one expert opinion piece published since the year 2007, the first two were published seven years later, where Smith (2014) reviewed the self-efficacy theory and how it could be applied to AR interventions, and Grenness et al. (2014b) provided an in-depth examination of PCC within the context of AR. In an effort to elucidate the meaning and clinical implications of PCC for audiologists working in AR, their paper provides a literature review from other fields of health care. The review emphasises the importance of adapting audiological services to the requirements and preferences of individual patients, promoting shared decision-making, and fostering effective communication between audiologists and patients. The authors stress the significance of incorporating patient perspectives and values into the rehabilitation process in order to improve treatment outcomes and patient satisfaction.

In theory, practitioners agree that patients should be part of the decision-making process. However, in functional practice, practitioners often subscribe to a more traditional medical or biomedical model as result of being pressured to get through the necessary elements of the appointment within the allocated time slot or not having the skills to emotionally support the patient (Grenness et al., 2015a,b; Laplante-Lévesque et al., 2014). Research suggests that interactions with audiologists can impact a patient's decision to choose and use hearing technology (Amlani, 2020; Ekberg & Barr, 2020); however, there is a lack of evidence to suggest how this is being addressed in pre-professional training and also a lack of understanding of the patient's and professional's roles during these interactions.

Interconnectivity between shared goal-setting and shared decision-making plays a pivotal role in optimising patient outcomes in AR. Shared goal-setting involves collaboratively establishing objectives that align with the patients' preferences, needs and capabilities. Concurrently, shared decision-making empowers patients to actively participate in selecting interventions and treatment plans that resonate with their goals. These processes intertwine to foster a patient-centered approach where individuals feel empowered, informed, and engaged in their rehabilitation journey. For instance, a patient might express a desire to improve their ability to participate in conversations in noisy environments as a goal. Through shared decision-making, the audiologist and patient can explore various strategies, such as different hearing aid features or communication strategies to address this goal effectively (Priday et al. 2022).

As technology improves, opportunities to gather patient feedback have increased, as has already been seen in research examining programming of hearing technology (Malmberg & Hagberg, 2023) and in the development of eHealth solutions for individuals with HL (Nielsen et al., 2018). These technologies enable professionals and patients to identify specific communication challenges, examine various solutions, and customise interventions accordingly. Additionally, remote monitoring and teleaudiology services facilitated by technology offer greater accessibility and convenience for patients, ensuring ongoing support and adjustments as needed. While there is agreement that shared goal-setting and decision-making is important, the functional implementation of this in a systematic way has yet to be established. Technology advances provide immense opportunities for both professionals and patients to identify, examine, and improve communication between patients and practitioners to improve the overall quality of care in AR.

4. Discussion

The overall goal of this scoping review was to scrutinise the efficacy of PCC in enhancing outcomes for adults navigating HL by encompassing a comprehensive examination of literature on PCC in AR. We aimed to identify the use of key PCC concepts explored in AR literature, identify gaps, categorise sources of evidence by research design and level of evidence, and synthesise the information in a manner that could be used to inform practice, policymaking, and research. This scoping review, following the publication of the American Speech-Language-Hearing Association (ASHA) clinical practice guidelines (Basura et al. 2023), aimed to elucidate the nature of PCC emphasised as a key role in the provision of AR services. These guidelines recommend implementation of PCC in the provision of AR services. While the number of publications regarding PCC in AR has steadily increased by year and by geographic location across the globe over the past two decades, there is still much work to be done. Regarding geographic location, earlier studies were predominantly conducted in Global North countries such as the USA, Canada, Australia and New Zealand; whereas more recent studies included Global South countries such as Malaysia and South Africa. Audiology care varies significantly between the Global North and Global South due to differences in economic resources, healthcare infrastructure, and access to specialised services. Typically, in the Global North, services are widely available, whereas in the Global South, services are often limited and there is a dire need for more equitable services (Abrahams et al. 2023). The least studied PCC elements were active listening and empathy, while the most studied were understanding of individual differences and inclusion of friends and family. The implications are that these provider behaviours (active listening and empathy) have been studied less than other aspects of PCC, which may have more direct methods of measurement. In this study, we have explored each of these elements to identify what we know, what we don't know, and what the future research needs are.

4.1. Levels of evidence

It is evident from Figure 4 that the majority of the studies encompassed within this scoping review are classified under Level 3 evidence as per the established framework. However, these findings underscore the imperative need for research within higher levels of evidence within the scope of PCC in adult AR as research situated at higher levels engenders a greater depth of insight into the intricate nuances of the subject matter. Systematic reviews with focused research questions provide a structured approach to aggregating and synthesising existing knowledge while also highlighting gaps and opportunities for further investigation. With additional research conducted at the higher levels and by embracing systematic reviews with focused research questions, we can elevate the quality and impact of the evidence base, fostering a more profound understanding of PCC in adult AR and fostering advancements that hold the potential to transform clinical paradigms.

5. Limitations

Our scoping review revealed limitations. We were a relatively small team, which inevitably constrained the breadth and depth of the review's coverage. Due to practical considerations, we had to confine our search to a restricted number of databases; as a result, while we rigorously endeavoured to encompass a wide range of relevant literature, the inherent limitation of our selected databases may have inadvertently restricted the scope of our findings. We also limited the search to the past two decades, whereas the biopsychosocial model of service delivery dates back to the 1950s. This review was also limited by the heterogeneity of the studies that met the inclusion criteria, which were restricted to elements of PCC, as defined by the Ida Institute; however, the topics addressed were quite varied and were distributed across both AR components and PCC elements. Although it would be valuable to consider the relative numbers of studies that consider PCC in AR from a patient lens versus in addition to the professional lens, the search strategy for this review was not designed to capture publications focusing on the patient perspective, as this was beyond the scope of this review but could be considered a limitation of the overall study. An additional limitation was the exclusion of non-English studies from our review, which may have led to an increased risk of bias, may limit the generalisability of the findings and could lead to missing key evidence. In light of these limitations, we acknowledge that some relevant research studies or valuable insights may have been omitted from our review.

6. Future research needs

Adding practice guidelines and policy documents to the scoping review could be helpful; however, while we recognise the importance of these resources in understanding the integration of PCC in audiology services, incorporating them would have significantly broadened the scope of this review and it is recommended that this be investigated in future research. Identified gaps call for intensified research on active listening and empathy in PCC. Continued investigation into the comparative efficacy of direct versus indirect service provision is essential. Moreover, a significant gap exists in the literature regarding over-the-counter (OTC) hearing devices, given the evolving landscape of audiology practice. As OTC options become more prevalent, understanding their impact on patient outcomes and experiences becomes crucial. Additionally, the definition and role of counselling in AR continues to evolve. Traditionally, counselling has been defined as a combination of informational and personal adjustment counselling; however, Timmer et al. (2024) propose a broader, psychosocially-driven framework that integrates social-emotional well-being, shared decision-making, and structured behavioural counselling techniques. Future studies should investigate how this expanded model of counselling aligns with PCC principles in AR and whether its adoption can enhance patient engagement, hearing aid outcomes, and overall well-being. Research should also explore how audiologists perceive and implement this broader counselling framework in clinical practice. Additionally, there is a compelling demand for a more comprehensive exploration of shared decision-making processes from a clinician versus a patient viewpoint, including the specific tools that facilitate these interactions. We advocate for a deeper exploration of the dynamics surrounding individual versus group interventions, unravelling the distinctive benefits and challenges associated with each approach. Lastly, there is a need for the development of a standardised set of PCC outcome measures within audiology to enhance the comparability of data across studies and to enhance the overall interpretability of research findings.

7. Novel contributions of this review

7.1. Systematic mapping of PCC elements in AR

Unlike previous reviews that discuss PCC broadly, this review categorises and systematically analyzes how six key elements of PCC are integrated into the four components of AR. This structured approach provides a more detailed examination of PCC's role in AR than prior reviews.

7.2. Identifying underrepresented aspects of PCC

This review pinpoints gaps in the literature—particularly that active listening and empathy receive limited attention in AR research, despite their importance in effective patient-clinician communication. This insight highlights areas needing further research and clinical emphasis, which was not a focus in prior reviews.

7.3. Temporal and geographic trends in PCC research

By analysing publication trends over time and across regions, this study reveals how PCC in AR has evolved and identifies where most research is concentrated (e.g. the US and Australia). Providing a global perspective makes our findings valuable for understanding regional research gaps and global adoption trends.

7.4. Clinical implications

By identifying existing trends, potential gaps, and areas ripe for further investigation, we contribute to the ongoing dialogue surrounding the refinement and enhancement of patient-centered practices in audiological care. As we collectively endeavour to bridge these gaps and deepen our insights, we anticipate a continued progression towards more effective and personalised approaches to AR that optimise patient outcomes and experiences.

Note

1. Definition: "Sharing of health information among professionals in different professions that establishes a comprehensive treatment plan to address the biological, psychological, and social needs of the patient" (Amlani, 2020, 345).

Author contributions

M.G. conceptualisation, conducted searches, screening of titles and abstracts, completed full-text review of all articles and voted for inclusion of those applicable, extracted AR components and PCC elements for each article, writing – original version. N.N. conceptualising, completed full-text review of all articles, coded for inclusion of those applicable, extracted AR components, extracted PCC elements, writing - original version. R.G. conceptualising the idea, assisted with methodology, completed full-text review of all articles and coded for inclusion of those applicable, developed figures, writing - original version. S.D. conducted searches, screening of titles and abstracts, prepared Appendix B, writing – review and editing. F. M. completed full-text review of all articles and coded for inclusion of those applicable, extracted AR components and PCC elements for each article, writing - original version. All authors approved the submitted version.

Disclosure statement

No potential conflict of interest was reported by the author(s).

Funding

The authors acknowledge the financial support of the University Capacity Development Programme and the National Research Foundation (NRF): Research Development Grants for Y-Rated Researchers (137794) and the University of Arkansas Honours College. The funders had no role in the study design, data collection and analysis, decision to publish, or preparation of the manuscript.

References

Abrahams, K., R. Mallick, A. S. Hohlfeld, T. Pillay, T. Suliaman, and H. Kathard. 2023. "Emerging Professional Practices Focusing On Reducing Inequity in Speech-Language Therapy and Audiology: A Scoping Review." *International Journal for Equity in Health* 22 (1):43. https://doi.org/10.1186/s12939-022-01815-0.

Basura, G., K. Cienkowski, L. Hamlin, C. Ray, C. Rutherford, G. Stamper, T. Schooling, and J. Ambrose. 2023. "American Speech-Language-Hearing Association Clinical Practice Guideline on Aural Rehabilitation for Adults With Hearing Loss." *American Journal of Audiology* 32 (1):1–51. 10.1044/2022_AJA-21-00252.

Ciorba, A., C. Bianchini, S. Pelucchi, and A. Pastore. 2012. "The Impact of Hearing Loss On the Quality of Life of Elderly Adults." *Clinical Interventions in Aging* 7:159–163. https://doi.org/10.2147/CIA.S26059.

Coleman, C. K., K. Muñoz, C. W. Ong, G. M. Butcher, L. Nelson, and M. Twohig. 2018. "Opportunities for Audiologists to Use Patient-Centered

Communication during Hearing Device Monitoring Encounters." *Seminars in Hearing* 39 (1):32–43. https://doi.org/10.1055/s-0037-1613703.

Ferguson, M., D. Maidment, H. Henshaw, and E. Heffernan. 2019. "Evidence-Based Interventions For Adult Aural Rehabilitation: That Was Then, This is Now." In *Seminars in hearing*, Vol. 40, No. 01, 068–084. Thieme Medical Publishers, New York, NY. https://doi.org/10.1055/s-0038-1676784.

Gregory, Basura, Kathleen, Cienkowski, Lise, Hamlin, Christin, Ray, Cherilee, Rutherford, Greta, Stamper, Tracy, Schooling, Julie, Ambrose, Aural Rehabilitation Clinical Practice Guideline Development Panel, (2023). "American Speech-Language-Hearing Association Clinical Practice Guideline on Auditory Rehabilitation for Adults With Hearing Loss." *American Journal of Audiology*, 32 (1):1–51. https://doi.org/10.1044/2022_AJA-21-00252.

Grilo, A. M., G. Vinagre, M. C. D. Santos, J. F. Martinho, and A. I. Gomes. 2023. "Attitudes Toward Patient-Centred Care, Empathy, and Assertiveness Among Students in Rehabilitation Areas: A Longitudinal Study." *Healthcare* 11 (20):2803. https://doi.org/10.3390/healthcare11202803.

Håkansson Eklund, J., I. K. Holmström, T. Kumlin, E. Kaminsky, K. Skoglund, J. Höglander, A. J. Sundler, E. Condén, and M. Summer Meranius. 2019. "Same or different?" A Review of Reviews of Person-Centered and Patient-Centered Care." *Patient Education and Counseling* 102 (1):3–11. https://doi.org/10.1016/j.pec.2018.08.029.

Hall, J. W. III, 2021. "Promoting Healthy Hearing Over the Lifespan." *Auditory and Vestibular Research* 30 (2):74–94. https://doi.org/10.18502/avr.v30i2.6092.

Ida Institute n.d.-a. "About Us." Ida Institute. https://idainstitute.com/about_ida/

Ida Institute n.d.-b. "Motivation Tools." Ida Institute. https://idainstitute.com/tools/motivation_tools/

Ida Institute n.d.-c. "What is Person-Centered Care? the Six Elements." Ida Institute. https://idainstitute.com/what_we_do/pcc_definitions/

International Organization for Standardization 2021. "Health and Social Services - Person-Centred Staffing (ISO 22956:2021)." https://www.iso.org/standard/74246.html

Joanna Briggs Institute 2014. "Joanna Briggs Institute Levels of Evidence." https://jbi.global/sites/default/files/2019-05/JBI-Levels-of-evidence_2014_0.pdf and Supporting Document https://jbi.global/sites/default/files/2019-05/JBILevelsofEvidenceSupportingDocuments-v2.pdf

Kochkin, S., D. L. Beck, L. A. Christensen, C. Compton-Conley, B. J. Fligor, P. B. Kricos, … R. G. Turner. 2010. "MarkeTrak VIII: The Impact of the Hearing Healthcare Professional On Hearing Aid User Success." *Hearing Review* 17 (4):12–34.

Kramer, M. H. H., W. Bauer, D. Dicker, M. Durusu-Tanriover, F. Ferreira, S. P. Rigby, X. Roux, P. M. Schumm-Draeger, F. Weidanz, and J. H. van Hulsteijn, European Federation of Internal medicine 2014. "The Changing Face of Internal Medicine: Patient Centred Care." *European Journal of Internal Medicine* 25 (2):125–127. https://doi.org/10.1016/j.ejim.2013.11.013.

Manchaiah, V. K., D. Stephens, and T. Lunner. 2013. "Communication Partners' Journey Through Their Partner's Hearing Impairment." *International Journal of Otolaryngology* 2013:1–11. https://doi.org/10.1155/2013/707910.

Morris, Z. S., S. Wooding, and J. Grant. 2011. "The Answer is 17 Years, What is the Question: Understanding Time Lags in Translational Research." *Journal of the Royal Society of Medicine* 104 (12):510–520. https://doi.org/10.1258/jrsm.2011.110180.

Mothemela, B., V. Manchaiah, F. Mahomed-Asmail, M. A. Graham, and D. W. Swanepoel. 2023. "Factors Associated With Hearing Aid Outcomes Including Social Networks, Self-Reported Mental Health, and Service Delivery Models." *American Journal of Audiology* 32 (4):823–831. https://doi.org/10.1044/2023_AJA-22-00206.

Priday, G., S. Pedell, J. Vitkovic, and L. Story. 2022. "Tracking Person-Centred Care Experiences Alongside Other Success Measures in Hearing Rehabilitation." In *Artificial Intelligence and Machine Learning for Healthcare: Vol. 1: Image and Data Analytics*, 185–210. Cham: Springer International Publishing.

Rogers, C. 1951. *Client-Centered Therapy: Its Current Practice, Implication, and Theory*. Houghton Mifflin, Boston.

Ryan, R. M., and E. L. Deci. 2000. "Self-Determination Theory and the Facilitation of Intrinsic Motivation, Social Development, and Well-Being." *The American Psychologist* 55 (1):68–78. https://doi.org/10.1037//0003-066x.55.1.68.

Saunders, G. H., L. K. Dillard, M. T. Frederick, and S. C. Silverman. 2019. "Examining the Utility of Photovoice as An Audiological Counseling Tool." *Journal of the American Academy of Audiology* 30 (5):406–416. https://doi.org/10.3766/jaaa.18034.

Saunders, G. H., M. T. Frederick, S. C. Silverman, C. Nielsen, and A. Laplante-Lévesque. 2016. "A Description of Adults Seeking Hearing Help For the First Time According to Two Health Behavior Change Approaches: Transtheoretical Model (Stages of Change) and Health Belief Model." *Ear and Hearing* 37 (3):324–333. https://doi.org/10.1097/AUD.0000000000000268.

Scarinci, N., L. Worrall, and L. Hickson. 2009. "The effect of hearing impairment in older people on the spouse: development and psychometric testing of the significant other scale for hearing disability (SOS-HEAR)." *International Journal of Audiology* 48 (10):671–683.

Timmer, B. H., R. J. Bennett, J. Montano, L. Hickson, B. Weinstein, J. Wild, M. Ferguson, J. A. Holman, V. LeBeau, and L. Dyre. 2024. "Social-Emotional Well-Being and Adult Hearing Loss: Clinical Recommendations." *International Journal of Audiology* 63 (6):381–392. https://doi.org/10.1080/14992027.2023.2190864.

Tricco, A. C., E. Lillie, W. Zarin, K. K. O'Brien, H. Colquhoun, D. Levac, D. Moher, M. D. J. Peters, T. Horsley, L. Weeks, et al. 2018. "PRISMA Extension for Scoping Reviews (PRISMA-ScR): Checklist and Explanation." *Annals of Internal Medicine* 169 (7):467–473. https://doi.org/10.7326/M18-0850.30178033

WHO 2001. "WHO International Classification of Functioning, Disability and Health: ICF." https://www.who.int/standards/classifications/international-classification-of-functioning-disability-and-health

WHO 2007. "People-Centered Health Care: A Policy Framework." https://www.who.int/publications/i/item/9789290613176

WHO 2021. "Integrated People-Centered Ear and Hearing Care: Policy Brief." https://www.who.int/publications/i/item/9789240021594