

Hearing loss and hearing aid stigma in low- and middle-income settings: a scoping review

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ABSTRACT

Purpose: Stigma has been reported as a key barrier to hearing aid uptake. This scoping review explores evidence of reported stigma associated with hearing loss and hearing aids in low- and middle-income (LMI) settings.

Methods: Four databases were searched to identify studies published up to 6 November 2024. Studies mentioning stigma in relation to hearing loss or hearing aids in LMI countries or LMI settings within high-income countries were included. A narrative synthesis was conducted.

Results: Twenty-nine studies were included, with 26 conducted in LMI countries and three in LMI settings within high-income countries. Two main domains were identified: (a) stigma experienced by individuals with hearing loss, ear disease, or hearing aids and (b) experiences of stigma reported by direct communication partners. Four themes emerged from affected individuals, including (a) internalized stigma, (b) social stigma, (c) cultural beliefs, and (d) barriers to help-seeking. Communication partners' themes included (a) perception of individuals with hearing loss, (b) impact on relationships, and (c) cultural beliefs. Unique theme in LMIs is cultural beliefs that hearing loss is associated with witchcraft and curses.

Conclusions: A limited number of studies were identified but emphasized cultural and religious beliefs as important contributing factors to stigma in LMIs.

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> IMPLICATIONS FOR REHABILITATION

- Stigma related to hearing loss and hearing aids in low- and middle-income (LMI) settings presents a significant barrier to help-seeking and device adoption.
- Community-based education and culturally sensitive interventions are essential to addressing stigma and promoting hearing healthcare uptake.
- Targeting both individuals with hearing loss and their communication partners can help reduce negative perceptions.
- Rehabilitation strategies should incorporate cultural and religious beliefs to effectively address stigma unique to LMI settings, such as associations with witchcraft and curses.

Introduction

Hearing loss is a global health concern affecting more than 1.5 billion individuals worldwide [1]. Although hearing loss affects individuals globally, current prevalence estimates indicate a four times higher incidence of hearing loss in low- and middle-income countries (LMICs) compared to higher-income countries [2,3].

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This disparity is due to factors such as limited healthcare infrastructure and more environmental risk factors like infectious diseases and noise exposure [4,5].

Despite the growing prevalence of hearing loss globally, estimated to affect one in four individuals by 2050, and the negative associations of unaddressed hearing loss, hearing aid uptake remains low [1,6]. Hearing aid coverage is particularly low in low- and middle-income (LMI) regions, with penetration rates estimated to range from 1.5% to 12% [6]. In regions like Africa, hearing aid uptake by those who need them is estimated to be as low as 2% [6]. Several reasons for this low uptake exist and include limited access to hearing healthcare services, high cost of hearing aids, lack of professionals to assist with hearing healthcare service delivery, poor awareness of hearing loss, and cultural beliefs and practices related to hearing loss that influence help-seeking behaviors [1,7–9]. Negative perceptions around hearing loss and hearing aids are often reinforced by stigma, which plays a significant role in the willingness to take up hearing aids [9]. In LMI regions, such stigma could be enhanced by religious and traditional beliefs, with hearing loss sometimes attributed to curses or punishment by ancestors [10,11].

Stigma is a complex social phenomenon defined in various ways across disciplines, often related to the negative labeling and stereotyping of individuals based on societal beliefs [12]. One key framework for understanding stigma was developed by Goffman [13], who defined stigma as “an attribute that is deeply discrediting.” This theory highlights that stigma can occur through several ideas, including (a) attributes, such as physical attributes (e.g., wearing a hearing aid) or a hidden attribute (e.g., hearing loss), (b) social identity, where stigma is theorized to be the gap between an individual’s perceived social identity (i.e., how others perceive an individual) and the individual’s actual social identity, (c) stereotypes where individuals are categorized based on societies’ perceptions of undesirable, and (d) reaction of others, which can alter or ruin an individual’s usual sense of identity [13]. Goffman’s framework is particularly relevant in the context of hearing loss, where societal attitudes contribute to both social stigma, the negative perceptions held by the general public, and self-stigma, where individuals internalize these attitudes [14–17]. In LMI settings, Goffman’s framework is particularly relevant given the added influence of cultural and religious beliefs or tribal stigma [13], which may intensify social and self-stigma beyond what is typically reported in high-income countries. Self-stigma can further hinder willingness to seek help and to use hearing aids [16,18].

Studies have consistently reported that individuals who have hearing loss feel that others view them differently [19,20] and that hearing aid use does not improve these reports of stigma and can even exacerbate feelings of stigmatization [20]. These negative perceptions include misconceptions about the capabilities of individuals with hearing loss or assumptions that hearing aids indicate aging or cognitive decline [21]. Even communication partners of individuals with hearing loss experience stigma [22]. The societal perception of hearing aids as undesirable often contributes to this stigma [17]. Factors such as the size and visibility of the hearing aid directly influence individuals’ willingness to use it [23,24]. More recently, marketing strategies have aimed to advertise hearing aids as small and hardly visible, reinforcing the perception that hearing loss and hearing aids should be concealed [24,25].

Self-stigma can be further categorized into (1) witnessed, (2) anticipated, (3) self-experienced, and (4) internalized stigma [17]. Witnessed stigma refers to the observations of others being stigmatized due to hearing loss or hearing aid use [17,25]. Anticipated stigma involves the fear of potential discrimination or judgment for having hearing loss or using hearing aids, which often leads individuals to hide their hearing loss or hearing aids [17]. Self-experienced stigma relates to actual incidents of discrimination or negative reactions encountered by individuals with hearing loss or hearing aids [17,22]. Internalized stigma occurs when these individuals begin to accept and believe in the negative stereotypes about hearing loss and hearing aids, potentially leading to a reluctance to disclose their hearing loss or to use their hearing aids [17].

Studies have demonstrated that stigma is one of the key deterrents to hearing aid uptake and use, with many individuals expressing stigma from others as well as self-perceived feelings of shame [21,26,27]. Individuals with hearing loss are often concerned that hearing aids will be viewed as a sign of old age and reduced cognitive or social competency [21]. This stigma related to hearing aids within the audiological literature is often called the hearing aid effect [28]. Despite advancements in technology and increasing awareness about the importance of hearing health, the stigma surrounding hearing loss and the use of hearing aids persists, particularly in LMIs. Cultural interpretations of hearing loss in these

settings, such as beliefs about spiritual punishment or that hearing loss is a natural part of the aging process, could lead to delay or rejection of care [29,30]. The Lancet Commission on Stigma has recently led the way in designing, developing, and preliminary validating scales to assess the stigma surrounding hearing loss [31]. These scales have been preliminarily validated in the USA and Ghana but have yet to be trialed in other research studies [32–34]. Developing these scales to measure stigma is a promising step toward standardizing stigma measures that could be used to inform interventions to reduce stigma [31].

Several previous reviews have explored hearing loss and hearing aid stigma. David and Werner [35] conducted a scoping review exploring stigma among older adults and highlighted that hearing aids, in terms of size and visibility, play a significant role in stigma. da Silva et al. [16] examined self-stigma in adults and older adults and reported that stigma can lead to withdrawal and negative self-perceptions. Ruusuvaari et al. [23] conducted a scoping review on stigma among working-age adults and reported that low hearing aid usage can be linked to anticipated stigma. However, none of these reviews specifically explored differences in stigma related to income brackets. While there has been increasing interest and exploration regarding stigma related to hearing loss and hearing aids in general, limited studies have focused on stigma, specifically in LMIs. Given the multifactorial barriers to hearing healthcare and the low hearing aid adoption rate in LMIs due to limited access to hearing healthcare services and strong cultural beliefs, stigma in LMIs could present differently than in higher-income contexts. This stigma could be enhanced by limited awareness, resource constraints, and community beliefs. Thus, understanding the distinct causes and impacts of stigma in LMIs is necessary to inform advocacy, awareness, and service delivery efforts. This scoping review, therefore, aims to identify and describe the published research in which stigma was mentioned in association with hearing loss and hearing aids in LMI settings.

Materials and methods

The Joanna Briggs Institute Reviewer Manual was used to guide this review. The Preferred Reporting Items for Systematic Reviews and Meta-Analyses Extension for Scoping Reviews (PRISMA-ScR) checklist (Supplementary Material I) guidelines were followed in performing and reporting this scoping review [36]. No formal quality appraisal was conducted, consistent with PRISMA-ScR guidelines for scoping reviews.

Search strategy

The first author (CF) searched for relevant articles on four electronic databases, including CINAHL, PubMed, Web of Science, and Scopus. The search was conducted using a keyword combination of three key concepts, namely: (“hearing aid*” OR “hearing device” OR “hearing instrument” OR “assistive listening” OR “aural rehabilitation” OR “hearing loss” OR “hearing impairment” OR “hearing difficulty” OR “deafness”) AND (“Stigma” OR “Social stigma” OR “Stigmatization”) AND (“low and middle income countr*” OR “low to middle income countr*” OR “low income countr*” OR “middle income countr*” OR “low resource” OR “LMIC” OR “remote” OR “rural” OR “limited resource” OR “developing countr*” OR “Africa” OR “Asia” OR “Latin America”). Furthermore, the references of the included articles were also screened for eligibility. The final search was conducted on 6 November 2024.

Eligibility criteria

The population, concept, and context (PCC) framework [36] stipulated in the Joanna Briggs Institute Reviewer Manual was used to guide the eligibility criteria outlined in Table 1. Articles had to be empirical and published in English-language peer-reviewed journals to be included in this review. No time or age restrictions were made. Non-peer-reviewed publications, reviews, discussion papers, dissertations/thesis, conference papers, opinions, viewpoints, and pre-prints were excluded. Any studies where stigma related to hearing loss and/or hearing aids were not explored were excluded. Studies had to be conducted in either LMICs or LMI settings within high-income countries to be included. The World Bank gross national income (GNI) per

Table 1. Eligibility criteria using the population, concept, and context (PCC) criteria.

Study domain	Inclusion criteria	Exclusion criteria
Population	No age restriction	Individuals who do not have hearing loss and/or hearing aids and who are not direct communication partners of these individuals
Concept	Stigma related to hearing loss and/or hearing aids	Studies not exploring stigma specifically related to hearing loss and/or hearing aids
Context	Studies had to be conducted in low- and middle-income countries or low- and middle-income settings within high-income countries to be considered	Studies conducted in high-income countries

capita was used to define LMICs as follows: low-income: \leq \$1135, lower-middle income: \$1136 to \$4465, upper-middle income: \$4466 to \$13 845, and high-income: $>$ \$13 846 [37]. Studies conducted in LMI settings within high-income countries were determined by the author's description of the study setting.

Study selection

Studies identified through the four databases were imported into Rayyan software (<https://www.rayyan.ai/>), and the first author (CF) screened the studies for duplicates, removing any duplicates. The remaining identified studies were then exported into an Excel spreadsheet to screen and record decisions. Two authors (CF and ND) each independently screened 100% of the identified articles' titles, keywords, and abstracts. The authors were blinded to each other's decisions during the screening process. Three authors (CF, ND, and DWS) discussed any disagreements. Two authors (CF and ND) independently screened 100% of the identified articles' full text. Any disagreements were resolved through discussion and consensus with a third reviewer (DWS). If consensus was still not reached, the disagreement was further deliberated and resolved through group discussion involving all authors (CF, CN, VM, ND, and DWS).

Data extraction

A Microsoft Excel spreadsheet ([Supplementary material II](#)) was used to tabulate information from the included studies, including publication date, the country in which the study was conducted, income level of study setting, participant demographics, study design, sample size, type of stigma, concept stigma was related to (i.e., stigma related to hearing loss or related hearing aids), and any direct quotes from the participants ([Supplementary material II](#)).

Narrative synthesis was performed to identify key themes and sub-themes related to the stigma experiences described under each domain. The process began with familiarization with the extracted data, followed by open coding of stigma-related findings across studies. The first author (CF) independently conducted line-by-line coding using a deductive approach informed by existing stigma literature (e.g., internalized and social stigma) while also allowing for inductive identification of new, context-specific themes. These codes were then grouped into broader categories such as the type of stigma (e.g., internalized and social), context (e.g., healthcare, education, and community), and consequences (e.g., social withdrawal and reduced help-seeking). Through an iterative process of constant comparison across studies, themes and sub-themes were refined and organized. Once all studies were coded, the similarities and differences across themes were explored to identify patterns and contrasts across LMI contexts. The final step in the narrative process was to present the insights from the included studies, highlighting how different forms of stigma can occur and their impact on individuals and communities in LMIs. The emerging synthesis was reviewed by the last author (DWS), and any discrepancies were discussed and resolved. The data extracted was analyzed utilizing descriptive statistics with Microsoft Excel and SPSS software (version 29.0; IBM Corp., Armonk, NY).

Results

Search results and articles selected

The final keyword search identified 164 articles, 74 on Web of Science, 46 on Scopus, 30 on PubMed, and 14 on CINHAL. The 72 duplicates were removed, and thus, 92 articles were screened. The first

screening included a title, keyword, and abstract check. A total of 47 articles then underwent a full-text screening. Of these, 19 articles were included in this review. A total of 10 additional studies were identified through a manual reference check of the already included articles. Thus, 29 unique articles were included in this review (Figure 1).

Publication dates ranged from 2013, when one study was published, to 2024, when four studies were published. Studies included in this review were conducted in upper-middle ($n = 12$), lower-middle ($n = 15$), low-income ($n = 2$), and LMI settings within a high-income country ($n = 3$). Figure 2 illustrates the countries represented in this review. The 29 studies included in this review were conducted across 15 unique countries, with the highest representation from South Africa ($n = 8$), followed by Ghana ($n = 4$), Nepal ($n = 3$), and Brazil ($n = 2$). Single studies were conducted in Kenya, Gaza, the USA, India, China, Uganda, Cameroon, Ethiopia, Nigeria, the Philippines, and Australia. Two studies included multiple countries, specifically Ethiopia, Ghana, and South Africa, as well as the Philippines and South Africa, respectively.

The settings of the included studies also varied substantially. Four studies were conducted exclusively in rural communities or villages, while five studies were conducted in hospital settings, such as audiology departments or outpatient clinics. Five studies recruited participants from both rural and urban populations. Twelve studies were conducted in urban areas, including those set in educational institutions (e.g., schools for the Deaf or integrated schools) or through national-level government surveys, such as the National Health Survey in Brazil. Three studies did not specify their study setting (supplementary material II).

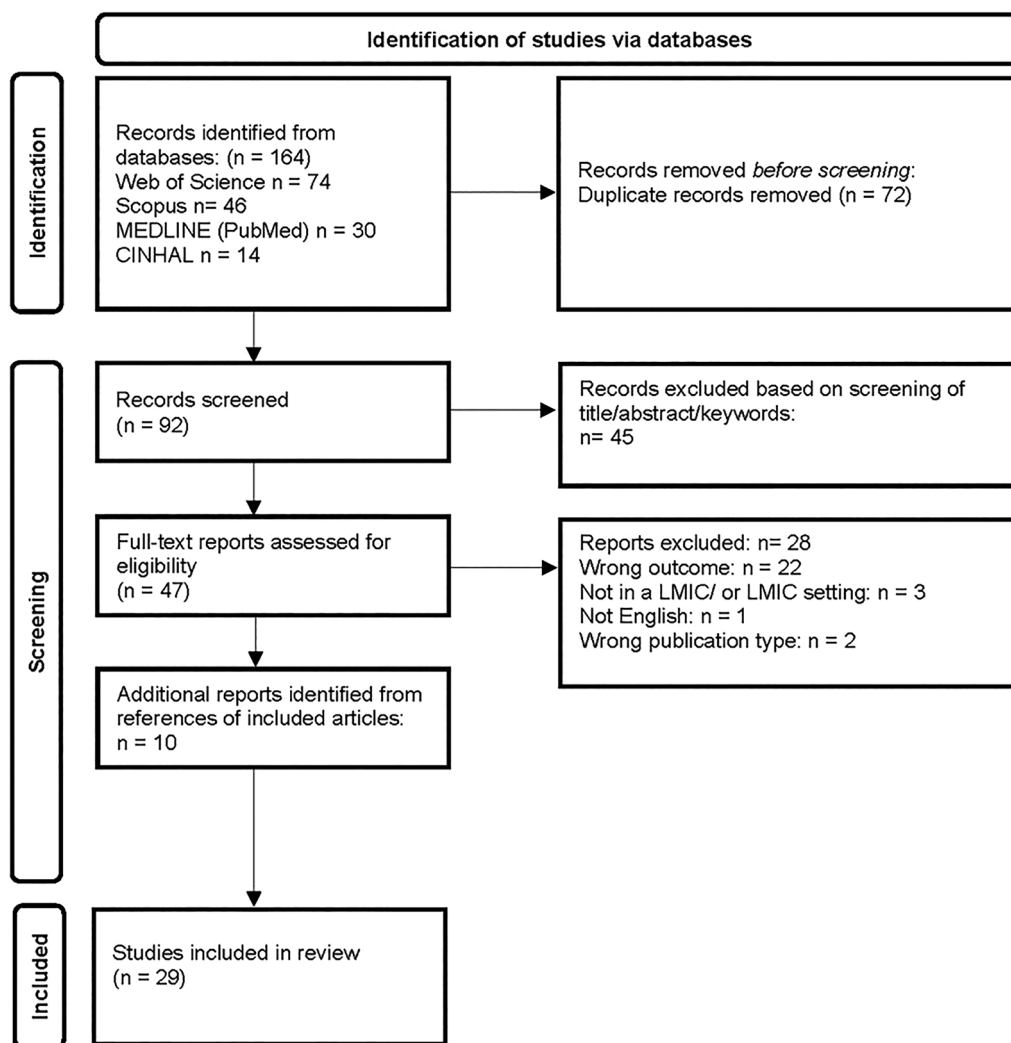


Figure 1. PRISMA flow diagram details the search and selection process applied during the review.

In terms of the populations included ([Supplementary material II](#)), 13 (44.8%) studies included only adults, eight (27.6%) did not specify the age range of included participants, and eight (27.6%) included both adults and children. No studies included only children, and when stigma perceived by children was described, caregivers reported on this.

Studies in this review were grouped into two main domains, namely, (a) the experiences of stigma reported by individuals with hearing loss, ear disease, or hearing aids and (b) the experiences of stigma reported by direct communication partners of these individuals. [Table 3](#) highlights the main and sub-themes emerging from the domain of individuals with hearing loss.

Stigma experienced by individuals with hearing loss, ear disease, or hearing aids

This domain included four main identified themes: internalized stigma, social stigma, cultural beliefs, and barriers to help-seeking ([Figure 3](#)). Each theme included several sub-themes that reflected different dimensions of stigma experiences. The themes and sub-themes are described in more detail below.

Internalized stigma

The theme of internalized stigma emerged prominently across several of the included articles with multiple sub-themes related to the experiences of individuals with hearing loss, ear disease, or hearing aids, including embarrassment, self-consciousness, fear of judgment, and anxiety in social settings.

A common finding across these individuals was embarrassment. Many of the included studies participants reported embarrassment associated with wearing hearing aids [26,41–43,48]. Hearing aids were perceived as a marker of disability or aging, leading to concerns about being labeled as weak or old [26]. Concerns regarding the size and appearance of hearing aids were expressed, with individuals prioritizing cosmetic appearance over the device's functional performance and benefits [26,40,41]. Smaller hearing aids were generally more accepted, but there was still a strong desire to conceal them entirely [41].

Additionally, individuals with hearing loss frequently reported feelings of self-consciousness and anxiety during social interactions. For instance, many were hesitant to ask others to repeat themselves [42–44]. Similarly, individuals presenting with ear disease expressed fears of being teased or perceived as being dirty [44,46]. This often led these individuals to attempt to hide any visible symptoms, such as ear discharge [46].

Anticipated stigma was another prevalent issue across these individuals, with many avoiding social situations or meeting new people out of fear of being stigmatized or rejected [38,44,46,47]. This, in turn, resulted in social withdrawal, as individuals often restricted themselves from forming new friendships to avoid disclosing their hearing loss.

Social stigma

Social stigma included subthemes of bullying, discriminatory practices, and negative societal views, specifically those with hearing loss and hearing aid users, who shared numerous instances of being teased or labeled as “dumb” [43,48–51]. These negative experiences often intensified their internalized stigma, reinforcing feelings of being different and/or inadequate [48,50].

Discrimination from society was reported as a significant contributor to the negative psychological well-being of these individuals, who often reported feeling marginalized, undervalued, and unacknowledged by others [30,39,50,54,55]. Such societal attitudes frequently led to feelings of anger, sadness, and frustration. Participants reported that society tended to underestimate their capabilities [45], resulting in the neglect of their needs [54]. Two of the included articles [48,51] mentioned that stigma and discrimination could be due to a lack of awareness and education regarding hearing loss.

Communication was also noted as a major difficulty, as the inability to communicate effectively reinforced their sense of being different and isolated [38,42,54]. Individuals with ear disease also frequently reported being teased, with sadness commonly accompanying these experiences. Further reports included exclusion from meetings due to doubts about their abilities, feelings of being disliked or hated, and being dominated in conversations [30,51]. Many described facing irritation or impatience from others, being talked about behind their backs, neglected, avoided, and even blamed for adverse outcomes [51]. Some participants even mentioned physical violence [51].

Table 3. Narrative synthesis of the studies ($n = 23$) in the domains of *hearing loss, ear disease, or hearing aids*.

Main theme	Subtheme	Examples	References
Internalized stigma	Embarrassed to wear hearing aids	<ul style="list-style-type: none"> “...my brother also had one, but it was also big, and I said I don't want those things, you know, (pauses)... it, it's not me because I, (hesitates), I can't see myself in those.” “... and now the fact they say it's smaller things (referring to the hearing aids), it will be bearable for me. I can grow my hair a little bit longer, things like that, so I can hide it. So, they don't see it.” “I always felt embarrassed when I wore [the hearing aid]...People always looked at me when I was wearing that thing” 	[41,26,42]
	Self-conscious	<ul style="list-style-type: none"> One child experiencing hearing loss expressed feeling awkward and shy about asking for people to repeat “I used to feel a bit lower or weaker than other normal people are” 	[43,44,45]
	Fear of being judged by peers and community	<ul style="list-style-type: none"> “If I have discharge they will think I am dirty and not sit with me” “I did not know what my family was going to say about my hearing loss. Everyone can hear normal in my family. Sometimes families do not understand that these things happen. I was scared of rejection.” 	[46,44,47]
	Anxiety about social interactions	<ul style="list-style-type: none"> “I used to cover my ears with my hair so that people wouldn't see” “I used to feel very bad that I used to return back home and cry a lot” 	[46,44,38]
Social stigma	Experience of bullying at school or work	<ul style="list-style-type: none"> “They whisper and point at me that I'm dumb” “the juniors also mock me and I am laughed at so I don't feel that's a good thing, so that is affecting my job” 	[48,46,30,49,44,50]
	Discriminatory practices in the community	<ul style="list-style-type: none"> Reports of being treated differently by society. This included were teasing and/or name-calling, exclusion, being disliked and/or hated, the perception of being and/or being treated as inferior, and being 'dominated' i.e. in conversations, receiving 'irritation and/or impatience' and being 'talked about behind their backs', 'neglected', 'avoided', 'blamed for all bad things' and 'badly treated in general'. If you are a deaf person and you get pregnant, the nurses will provoke, ridicule and tease you when you go to the hospital. This is not good. It happens in all the hospitals; I cannot single out any hospital. The behavior they put up toward women is very bad 	[51,49,39,52,53,38,42]
	Negative societal views	<ul style="list-style-type: none"> Because we are deaf sometimes the society neglects us. Because we are deaf, they think we can't do anything, so there is no respect. Sometimes when my mum sends me to the market to get food, people get angry at me, they shout and they don't give you what you want – it's difficult. That makes me feel bad. “Doctors give ordinary people more time...when I was younger I always went to the doctor and chatted a lot, but now the doctor does not want to chat. You can see that the doctor does not have any more time for the deaf. The doctor is impatient with the deaf.” 	[54,55,56,45,50]
Cultural beliefs	Stigmatizing religious or cultural interpretations	<ul style="list-style-type: none"> I sometimes fault God to have been born this way. 	[10]
	Community superstitions	<ul style="list-style-type: none"> I had a quarrel with my sister at home and she told me I was a curse on the family and an evil person. There were times when she refuses to eat with me for fear of giving birth to a “D and D” child. Since the Sars-Cov-2 outbreak, my sister doesn't take me to the hospital again because she doesn't feel safe out there with me; I now go alone. 	[10]
Barriers to help-seeking	Reluctance to help-seeking	<ul style="list-style-type: none"> “I knew, my family knew, but others didn't know. I used home remedies so I never gave people the chance to know I had a problem so I was not treated differently” “I covered my ears whenever it had been discharging and I would try my best not to let them know ... they might just hate me because of the problems so I never wanted to let them know” 	[44]
	Family discouraging hearing aid use	<ul style="list-style-type: none"> Wearing aid makes my family ashamed We were so many children and my father decided to keep me home and send the rest to school. They wanted to see if they could heal me so a lot of attention was focused there than taking me to school. I was grown up before my parents realized I have to live the rest of my life with my disability. 	[55]
	Community pressure to hide hearing loss	<ul style="list-style-type: none"> The more visible the hearing aid, the more stigma 	[40]

Social stigma often led to social isolation and loneliness, as individuals were stigmatized by the public and family members [49]. Women, in particular, reported being ridiculed by healthcare professionals during pregnancy and subjected to humiliating, abusive, and insulting language [39]. Additionally,

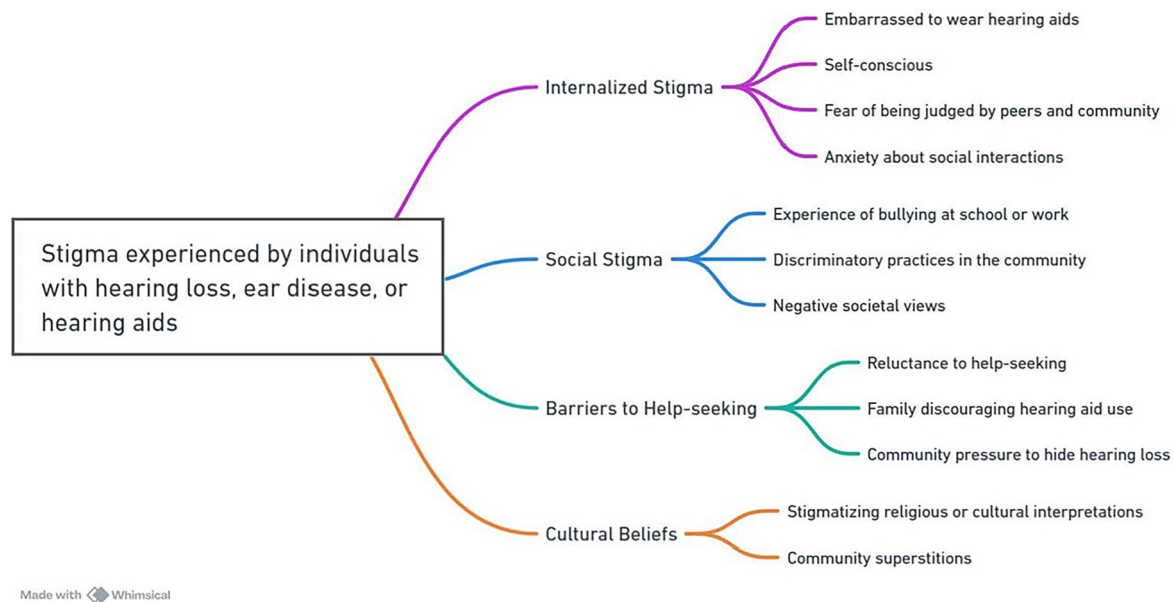


Figure 3. Flow diagram of the themes and subthemes emerging from the domain *individuals with hearing loss, ear disease, or hearing aids*.

rejection at job interviews was commonly reported, with employers citing concerns about the candidates' ability to hear effectively as the reason for their exclusion [44].

Cultural beliefs

Cultural beliefs and community superstitions emerged as an additional theme surrounding the stigma of hearing loss. Sub-themes included stigmatizing religious or cultural interpretations and community superstitions. Hearing loss was feared, and a misconception was that individuals with hearing loss or who are deaf would pass their condition on to their children. Hearing loss was often perceived as a curse [10], with those affected labeled as evil. This fear extended to social interactions, with reports indicating that some individuals avoided eating with those who had hearing loss, fearing that the curse could be transmitted to their children through such contact. Hearing loss was also frequently associated with witchcraft or viewed as a symptom of an intellectual disability [10].

Barriers to help-seeking

The stigma experienced by these individuals also emerged as a barrier to help-seeking with sub-themes including reluctance to seek care, family discouragement, and community pressure to conceal hearing loss. Some individuals in the included articles reported that the stigma they experienced limited their knowledge related to accessing healthcare for other conditions [49]. Fear of judgment and embarrassment prevented them from seeking help [53]. Embarrassment led individuals to feel hesitant to approach healthcare professionals due to the anticipated negative reactions [53]. Judgment by healthcare workers was reported as a barrier to seeking medical care, with individuals also expressing concerns that using hearing aids would lead their friends and family to perceive them as inferior [26]. This perception often resulted in feelings of shame within the family, further discouraging individuals from using hearing aids [26].

Moreover, there were reports of healthcare professionals who were ignorant of the specific needs of those with hearing loss, often generalizing and assuming that these individuals were illiterate [52,56]. Such attitudes contributed to feelings of shame and confusion among patients, particularly when they struggled to communicate effectively with healthcare providers, leading to non-utilization of available services [52,56]. In some cases, parents attempted to treat their children's hearing loss or used home remedies to conceal the problem, driven by the stigma associated with seeking formal medical assistance [44].

Experiences of stigma reported by direct communication partners

This domain consisted of three main themes: perception of individuals with hearing loss, impact on relationships, and cultural beliefs (Figure 4). Each theme contained distinct sub-themes that reflected how stigma was experienced and interpreted by communication partners such as caregivers and family members. These sub-themes included stereotyping, reduced expectations, strained family dynamics, social isolation, and culturally rooted beliefs about disability. Table 4 describes the main and sub-themes emerging from this domain.

Perception of persons with hearing loss

This theme captured how communication partners described societal and interpersonal perceptions of individuals with hearing loss, with stereotyping and being viewed as less capable emerging as sub-themes. Communication partners of individuals with hearing loss frequently reported that these individuals often felt disabled, left out, or ashamed due to their condition [43,59]. These feelings were made worse by

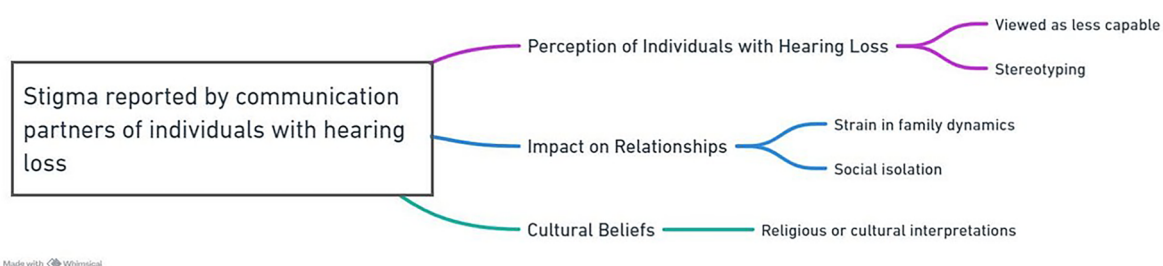


Figure 4. Flow diagram of the themes and subthemes emerging from the domain *direct communication partners*.

Table 4. Narrative synthesis of the studies ($n = 10$) in the domain of *direct communication partners*.

Main theme	Subtheme	Examples	References
Perception of persons with hearing loss	Viewed as less capable	<ul style="list-style-type: none"> “Society has viewed Deaf people, rather to be on the safe side, my father as being stupid. How can he be married? How can he make kids? And worse off, he’s married to a hearing person. How does he do things? How does he read, how does he feel because he’s Deaf?” 	[57,58]
	Stereotyping	<ul style="list-style-type: none"> “People around me don’t seem to understand me and my child.” “She was bullied at school by other children. They would remove her hearing aid and bully her. She would come home crying. I tried to speak to the teachers about this, but they didn’t help. No one understands her communication or possibly needs. “My nephew lives with me, and he had hearing aids but he stopped wearing them because he was teased.” 	[57,59,43,60]
Impact on relationships	Strain in family dynamics	<ul style="list-style-type: none"> “When I was young, I would say “stop it. Everyone is watching. I was kinda like embarrassed. So my mom would be like “what’s wrong? I wanna talk to you. Let people stare, there’s nothing wrong with that”. Now I don’t have a problem. I feel free. They are my parents. Why should I feel embarrassed?” When young, realizing that Deaf is like a disability and people look down on it, you can sometimes be a little shy... It’s almost like being ashamed of having Deaf parents in a hearing place. They, you know the way they speak sometimes. Their voicing is not a normal way of speaking. The noises that you hear. Need to check for tension. When you speak, or your parents speak, they might be excited on when they are speaking, they might look like there’s anger. So it depends on the situation. That can also make you feel self-aware; “oh people are looking at us”. That can also have an effect. 	[57,48,58,61]
	Social isolation	<ul style="list-style-type: none"> “I think it makes my nephew feel kind of left out...makes him feel...what’s the word—disabled? In some sort. In some way.” 	[43]
Cultural beliefs	Religious or cultural interpretations	<ul style="list-style-type: none"> “Some say that it is God who is annoyed with them. Others say that their forefathers were disabled, and it is a replica of that [Interviewer: Can you explain more?] In the past people went for raid and in the process of raiding they might have killed a disabled person, and so God now makes sure that they have got that disability.” “Well, some of them think that deafness is a curse, you have been cursed, the person has been cursed. Some people think like that. And if there are several cases of deafness in a family, they will say that it is a curse” 	[11,30]

experiences of bullying, mocking, and teasing, which were commonly reported [30,43,48,57,60]. However, a direct communication partner of a child with hearing loss reported that once they explained the child's case to the other children, they understood him better and started including him in their games [48]. In some cases, the negative social reactions were so severe that individuals stopped using their hearing aids altogether to avoid further discrimination [43,59].

Impact on relationships

This theme included sub-themes related to how stigma affected family dynamics and social isolation. Some communication partners shared that individuals with hearing loss were concerned about their future prospects, particularly the fear of never getting married due to the stigma associated with hearing aid use [48]. The attitudes of caregivers reinforced this anxiety, some of whom were reported to hide their deaf or hard-of-hearing child to protect the future prospects and social standing of their other children within the community [48,58] or have others consider them as bad parents [61]. In some cases, caregivers were resistant to the idea of their child wearing a hearing aid or learning sign language, as they believed it would further highlight the child's disability and bring additional stigma to the family [48].

Cultural beliefs

Similar to individuals with hearing loss, their direct communication partners also reported that the condition was often attributed to witchcraft [11,30]. Cultural beliefs emerged as a unique dimension of stigma in LMI contexts, shaped by religious, spiritual, and community-based interpretations of hearing loss. In several studies, hearing loss was attributed to curses or spiritual punishment, resulting in individuals being isolated or hidden. These culturally rooted explanations contributed to both internalized stigma (e.g., shame and concealment) and enacted stigma (e.g., discrimination and exclusion), as reported by individuals with hearing loss and their communication partners.

Discussion

Key findings

This scoping review identified 29 unique articles, with no studies before 2013 focusing on stigma related to hearing loss and hearing aids in LMIs. The included articles were predominantly qualitative, highlighting that research on stigma in LMIs has largely been exploratory. The limited number of quantitative studies highlights a gap in standardized measures of stigma, suggesting the need for more rigorous quantitative assessments. In this review, only one of the included studies explored stigma as a primary outcome. Thus, stigma is often explored indirectly rather than in a structured manner using a formal theoretical framework.

The findings highlight the pervasive influence of both social and self-stigma in these contexts, which contributes to the low uptake of hearing aids and impacts the quality of life of individuals with hearing loss. This review identified several key themes of stigma reported by affected individuals and their direct communication partners, including internalized stigma, social stigma, cultural beliefs, barriers to help-seeking, and impact on relationships. These findings emphasize the need for targeted interventions that address stigma at multiple levels, including societal attitudes, healthcare provider education, and individual self-perceptions.

The themes identified in the current review are consistent with themes reported by studies exploring stigma conducted in high-income countries. In line with findings from high-income countries, this study also reports internalized or perceived stigma, which is a significant barrier to willingness to take up treatment or disclose hearing difficulties [21,25,62]. Individuals in high-income settings also reported concerns about being labeled as disabled, cognitively impaired, or old [21,25,62–64]. Hearing aids, especially larger ones, were often seen as a sign of aging, weakness, or a consequence of negative behaviors that can affect hearing, leading to embarrassment and avoidance of use [25,62,64]. However, the current study highlights a unique concern reported in LMIs, cultural beliefs that associate hearing loss with witchcraft or curses [10,11,30]. Cultural belief surrounding hearing loss in LMI settings can often be associated with curses from

ancestors if the individual does something to upset the ancestors, a call to become a traditional healer, bewitchments, a mother coming into contact with contaminated blood during pregnancy, or poor aural hygiene [65,66]. Such beliefs, which have not been reported in high-income settings, may further stigmatize individuals, making them more reluctant to disclose their hearing difficulties or seek treatment [10]. This highlights the need for culturally informed strategies to address stigma in LMIs, where the impact of societal beliefs extends beyond traditional notions of disability.

None of the included studies from LMIs reported any significant reduction in stigma in recent years, despite advancements in hearing aid technology. However, Nickbakht et al. [64] reported a recent decrease in stigma in high-income settings, which may be due to a number of factors, including the increased use of ear-worn devices like earphones. Furthermore, hearing aid size and their conspicuous nature remain a concern across LMI and high-income settings. In line with the current review, individuals in high-income settings also show a strong preference for small and discreet hearing aids [21,64]. Manufacturers have capitalized on this preference by marketing hearing aids as small and nearly invisible devices, further reinforcing the stigma associated with larger, more visible aids [25,62]. However, McCormack and Fortum [67] found that despite these marketing efforts, hearing aid appearance was not always the primary reason for nonuse in high-income countries, suggesting that stigma may play a greater role in the decision-making stage rather than in the continued use of hearing aids. This indicates that while esthetic concerns are important, other factors, such as social stigma and internalized beliefs, may hold greater weight in determining hearing aid uptake.

Direct communication partners in LMIs reported experiencing embarrassment related to the stigma surrounding hearing loss and hearing aids. This finding contrasts with those from high-income settings, where stigma associated with communication partners is less frequently reported [64]. In LMIs, direct communication partners may feel more pronounced societal pressure, exacerbating their feelings of embarrassment or shame due to the strong cultural beliefs surrounding hearing loss. However, in both settings, communication partners significantly influence individuals' decision-making regarding hearing aid uptake. As reported in high-income settings, negative perceptions or concerns over anticipated stigma from communication partners often act as barriers to treatment uptake [25,64]. Whether through fear of judgment or misconceptions about hearing aid use, the influence of communication partners can discourage individuals from seeking help, further perpetuating the cycle of stigma.

Despite several similarities in stigma experiences between LMI and high-income settings, several demographic factors remain underexplored, particularly in LMIs. Additionally, many studies lacked data on age, gender, socioeconomic status, and urban vs. rural residence, factors that could influence stigma experiences and intervention effectiveness. While some studies in high-income settings have reported that women are more concerned with the appearance of hearing aids or that men view hearing aid use as unmasculine [64], there is a lack of research addressing these gender differences in LMIs. Understanding how cultural norms in LMIs shape gendered experiences of stigma is crucial, as these norms may exacerbate or mitigate concerns about hearing aid use differently than in high-income contexts. Additionally, no studies in LMIs have specifically examined how age influences the experience of stigma, and a limited number of studies included children's perceptions of stigma. This is a notable gap, especially given conflicting findings from high-income settings, where some studies suggest older individuals face more stigma while others indicate younger individuals may be more affected [64].

Additionally, in LMIs, there were a limited number of studies exploring healthcare professionals' experiences with stigma and their potential role in perpetuating it. Individuals in the current review frequently reported negative treatment by healthcare professionals, often feeling dismissed or judged for their hearing loss [26,52,56]. However, none of the included studies addressed healthcare professionals' perspectives, leaving a gap in understanding how their attitudes might contribute to or alleviate stigma. In contrast, research from high-income settings shows that healthcare professionals tend to focus on the stigma associated with hearing aid use, while individuals are often more concerned with the stigma surrounding hearing loss itself [64]. This disconnect highlights the need for better alignment between patient and provider perspectives. In LMIs, where cultural beliefs and resource constraints may further influence healthcare delivery, understanding the role of professionals in perpetuating stigma could be key to improving treatment outcomes and encouraging help-seeking behaviors.

Implications for practice and policy

The study found limited recommendations for addressing stigma in LMIs, with education and awareness being the most cited strategies [48,51]. These efforts aim to improve public understanding and acceptance of hearing loss but may not fully address deeply ingrained cultural beliefs, indicating a need for tailored interventions. In high-income settings, strategies include making hearing aids more visible and appealing rather than promoting smaller, discreet design which aims to normalize the devices [62], leveraging public figures to normalize hearing aid use [62] and support groups for shared experiences and possible coping strategies [64]. Moreover, training healthcare professionals to promote positive communication about hearing assessments and treatment options is critical for reducing stigma and encouraging help-seeking behavior [7,25].

In LMIs, raising awareness and challenging cultural and religious beliefs about hearing loss should be a priority [1]. Misconceptions linking hearing loss to witchcraft or curses can exacerbate stigma and discourage individuals from seeking help. Awareness campaigns providing accurate information about hearing loss, ear disease, and treatment options are critical [1]. Culturally informed strategies, such as the use of respected local figures or community leaders to share testimonials, addressing inaccurate misinformation, and culturally appropriate awareness campaigns, are possible solutions that have been used to address stigma related to other conditions, such as mental health [68]. Given the resource limitations in many LMI settings, low-cost and scalable stigma-reduction strategies are essential. Embedding anti-stigma messaging into existing public health initiatives (e.g., vaccination or maternal health campaigns) or using community radio has proven effective in other domains, including HIV and mental health [68,69]. Additionally, task sharing with community healthcare workers in LMIs, where there are limited hearing healthcare professionals, offers a viable strategy to improve access to care while also helping combat stigma [1]. Community healthcare workers are often better positioned to deliver culturally sensitive education and raise awareness, given their proximity to the communities they serve. This approach not only increases the reach of healthcare services but also empowers local communities to challenge stigma and support individuals with hearing loss.

Future research

The findings from this review highlight that while stigma related to hearing loss and hearing aids is a global issue, stigma in LMIs is shaped by unique sociocultural dynamics. In these settings, stigma is not only informed by personal perceptions or esthetics but can be exacerbated by religious, traditional, or communal belief systems. Given these contextual factors, findings and interventions from high-income countries may not be suitable in LMI settings. It is, therefore, essential that stigma-related research and policy development consider the lived experiences and beliefs of individuals in LMIs. Future studies should develop and evaluate culturally relevant stigma-reduction strategies alongside the adaptation and validation of stigma measurement tools for diverse LMI populations.

While this scoping review provides valuable insights into the stigma associated with hearing loss in LMIs, several methodological limitations were identified across the included studies. Most of the included studies made use of qualitative study designs (89.7%), which are essential for capturing lived experiences [70], limiting the generalizability of findings. This underscores the need for more robust methodologies, including mixed-methods and longitudinal designs, to track stigma changes over time and evaluate intervention outcomes. Few studies utilized validated measures or formal frameworks to assess stigma, and only one study [38] explicitly investigated stigma as the primary research outcome. The lack of standardized frameworks and instruments limits comparability across studies and restricts the development of effective interventions. Recently, the Lancet Commission on Stigma has developed and conducted preliminary validation, in the USA and Ghana, of standardized tools for measuring stigma amongst adults, parents of children, and care partners of persons who are d/Deaf or hard of hearing [25,33–35]. The development and preliminary validation of these tools are highly relevant and could potentially improve stigma measurement. However, their implementation in LMIs remains minimal, indicating a pressing need for cultural adaptation and psychometric validation toward the application of these tools across diverse cultural and linguistic contexts. Given the importance of context

in understanding and addressing stigma, future research should make use of these tools to ensure rigorous, high-quality measurements of stigma are available and relevant.

In addition, research is needed to explore how stigma presents in under-researched populations and intersecting factors such as age, gender, socioeconomic status, and urban vs. rural residence. Expanding research in these domains would provide a more nuanced understanding of stigma's multifaceted nature in diverse LMI contexts. Age-specific research is needed in LMIs and high-income countries to clarify these patterns and develop tailored interventions that address the unique needs of different age groups. Particularly in children, future research should obtain responses from the affected children rather than solely relying on parents' or caregivers' perceptions of the experienced stigma. Another key gap is the absence of research exploring the perspectives of healthcare professionals in LMIs, despite their potential role in perpetuating or alleviating stigma. Further research is needed to explore how social stigma and internalized beliefs differ between LMIs and high-income countries, particularly in light of the limited availability of discreet hearing aids in many LMIs.

Limitations

This review presents certain limitations. First, none of the studies included used any formal definition or theoretical framework for stigma. For this reason, other constructs that may have similarities with stigma (e.g., attitudes, framing, and social representations) may also have been reported by researchers as stigma. Second, although this review applied a structured narrative synthesis, a formal stigma framework was not used to guide the analysis. This decision was based on the exploratory nature of the review, which aimed to broadly map and describe the range of stigma-related experiences reported in the literature rather than to test or apply a specific theoretical model. Furthermore, most included studies did not reference a formal stigma framework themselves, which made it difficult to align findings consistently with one specific framework across studies. Given the heterogeneity of study designs and the emerging nature of the topic in LMIs, using an inductive thematic approach allowed for a more inclusive synthesis of the available data. However, future reviews should consider applying established stigma frameworks. This study included only individuals with hearing loss and their direct communication partners, so perceptions of hearing loss and hearing aids among those with normal hearing were not explored. Third, grey literature was not included, and studies published in languages other than English were excluded, potentially leading to an underrepresentation of certain cultural perspectives. These limitations may have narrowed the scope of the findings and highlight the need for future reviews to adopt a more inclusive approach in order to capture a broader range of cultural insights.

Conclusions

The limited number of articles identified in LMI settings on stigma related to hearing loss report themes similar to those in high-income settings. However, the experience of stigma in LMIs is shaped by unique contextual and cultural factors where hearing loss is sometimes interpreted as a curse, spiritual punishment, or ancestral retribution. These interpretations can lead to concealment, delayed help-seeking, and rejection of care. These findings underscore that stigma related to hearing loss and hearing aids affects individuals across all socioeconomic positions. However, more nuanced research is needed to fully understand the stigma experienced by individuals with hearing loss and their communication partners from diverse populations and across a range of settings, especially using a formal theoretical framework and standardized measurement tools. Future studies should aim to isolate hearing loss as the primary disability, ensuring that other health conditions do not confound the stigma reported. Additionally, research must focus on developing and evaluating culturally informed practices that address the stigma associated with hearing loss, as this remains a significant barrier to disclosure and treatment uptake. Importantly, future research should prioritize the development of culturally and community-specific stigma-reduction strategies, emphasizing strategies that target both individuals with hearing loss and their communication partners alongside broader public health-driven efforts.

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Data availability statement

Data extraction sheet is available as [supplementary material](#).

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