

QUALITATIVE PAPER

‘The worse my hearing got, the less sociable I got’: a qualitative study of patient and professional views of the management of social isolation and hearing loss

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Abstract

Background: Social isolation is a major consequence of hearing loss. It includes an objective component (e.g. small social network) and a subjective component (e.g. loneliness).

Objective: To examine the perspectives of key stakeholders regarding (i) the relationship between hearing loss and social isolation and (ii) interventions to address hearing loss and social isolation.

Design: A phenomenological qualitative study.

Setting: A UK research centre with a role to engage patients and clinicians.

Participants: Hearing healthcare professionals ($n = 7$) and adults with hearing loss ($n = 6$) were recruited via maximum variation sampling.

Methods: Individual ($n = 3$) and group ($n = 3$) semi-structured interviews were conducted. Inductive thematic analysis was performed.

Results: Five themes were identified. Theme 1 (experience of isolation and hearing loss): hearing loss can cause people to feel disconnected at social events or to cease attending them. Theme 2 (complexity of isolation and hearing loss): the various causes of isolation (e.g. hearing loss, retirement, comorbidities) are difficult to disentangle. Theme 3 (downstream effects of isolation and hearing loss): hearing loss and/or isolation can lead to mental health problems, stigmatisation, fatigue and unemployment. Theme 4 (preferred components of an isolation intervention): an isolation intervention should be patient-led and patient-centred and take place in the community. Theme 5 (challenges to implementing an isolation intervention): barriers to implementing an isolation intervention include a lack of time, training and continuity.

Conclusion: This study demonstrated that social isolation arising from hearing loss is a substantial, complex problem and provided novel insights on implementing an intervention to address this issue.

Keywords: social isolation, loneliness, hearing loss, audiology, qualitative research, older people

Key Points

- Social isolation is a major consequence of hearing loss, yet it is not adequately addressed by current audiology interventions.
- Hearing loss is associated with objective and subjective social isolation, as well as altered social roles and relationships.

- Interventions for hearing-related social isolation should be patient-centred, patient-led and delivered within the community.
- Patients' individual needs and preferences should determine whether a generic or hearing-specific intervention is selected.
- A structured decision aid/tool could help clinicians and patients to agree on a suitable intervention.

Background

Social isolation is a substantial and pervasive threat to the physical and mental health of older adults [1, 2]. It can be conceptualised as comprising an objective component (i.e. having a limited social network and minimal social activities) and a subjective component (i.e. the emotional experience of feeling lonely and disconnected from others) [3]. Social isolation has been associated with an array of adverse health consequences, including depression, anxiety, dementia, heart disease, stroke, falls and mortality [4–8]. Consequently, several countries, including the United Kingdom (UK) and New Zealand, have implemented public health initiatives to address this problem [9, 10]. Furthermore, numerous interventions have been developed to tackle isolation, including psychological therapies, befriending programmes, leisure activities, educational activities and peer support groups [11, 12]. The majority of these interventions aim to improve social skills, enhance social support, increase social interaction opportunities and reduce maladaptive social cognition [13]. Studies investigating the effectiveness of these interventions in older adults have largely been of low methodological quality and have produced conflicting results [14–16]. Moreover, there have been calls for additional research on social isolation interventions for at-risk subgroups of older adults, particularly those with sensory impairments [2, 16].

Social isolation is one of the principal negative consequences of hearing loss [17–19]. It has even been said that hearing loss is both a sensory loss and a social loss [20]. Furthermore, hearing loss is amongst the top five causes of years lived with disability [21, 22]. In addition to social isolation, the negative consequences of hearing loss include activity limitations, third-party disability and unemployment [17, 23]. It has also been associated with depression, dementia, falls and hospitalisation [24–27]. An estimated 1.33 billion people worldwide have hearing loss, which places it alongside anaemia and vision loss as one of the three most common impairments, with age-related hearing loss being especially prevalent [28–30]. Additionally, the number of individuals with hearing loss is rising rapidly in line with the growth and ageing of the global population [31]. Aural rehabilitation comprises a range of interventions (e.g. auditory training, hearing therapy) that address the difficulties experienced by individuals with hearing loss [32]. The primary intervention, hearing aids, can improve listening ability and, importantly, both hearing-related and health-related quality of life [33]. However, uptake of and adherence to aural rehabilitation interventions are often poor [34]. In particular, a substantial proportion of adults who could benefit from hearing aids

do not use them, which can be due to insufficient follow-up care, maintenance difficulties, discomfort and stigma [33, 35, 36]. Moreover, hearing aids may not be effective in social situations because they amplify both target sounds (e.g. companion's voice) and background noise (e.g. music, chatter) [23, 35]. In addition, studies of audiology appointments suggest that patients' psychosocial concerns are often neglected [37–39]. Furthermore, audiologists lack standardised, evidence-based strategies for tackling these concerns [40]. Therefore, current aural rehabilitation approaches do not adequately address social isolation in individuals with hearing loss.

Aims and objectives

The prevalence and detrimental impact of both social isolation and hearing loss, and the association between the two, underscore the need for an intervention specifically for social isolation in individuals with hearing loss. It is recommended that the development of an intervention begin with qualitative research with key stakeholders [41, 42]. However, there has been a lack of qualitative studies examining stakeholder perspectives on hearing-related social isolation interventions. Furthermore, though various quantitative studies have demonstrated that hearing loss and isolation are related, little qualitative research has been conducted specifically to develop an in-depth understanding of the experience of this relationship [43]. Therefore, this study aimed to make a unique addition to the literature by addressing this paucity of evidence. The research objectives were to examine the views of individuals with hearing loss and hearing healthcare professionals regarding the relationship between hearing loss and social isolation, and potential interventions to address this problem.

Methods

Design

This was a phenomenological qualitative study, which is the optimal approach for obtaining a deep understanding of perspectives and experiences of a phenomenon of interest [44–46]. The phenomenon was living with and managing social isolation and hearing loss. There were two participant groups: adults with hearing loss (AHLs) and hearing healthcare professionals (HCPs). This enhanced the depth and breadth of the study, as the AHLs discussed their personal lived experiences, while the HCPs provided insights

on the wide range of AHLs that attend clinic. Collecting different stakeholder perspectives, known as triangulation, is a recommended approach for enhancing rigour in qualitative research [47, 48] and for informing intervention development [41, 42]. The qualitative method was the semi-structured interview: a conversation between a researcher and a participant based on a flexible interview schedule (Appendix 1, Supplementary data are available in *Age and Ageing* online). This flexibility allows the researcher to build rapport, explore unexpected responses, discuss complex issues and identify topics valued by the participant [49]. The schedule was amended as required following each interview. Participants completed either an individual interview or group interview, which meant that the research could benefit from the unique advantages of each technique [50]. Specifically, individual interviews are ideal for establishing trust, discussing sensitive subjects and collecting detailed accounts, whereas group interviews are optimal for eliciting shared and conflicting views, facilitating synergistic discussions and generating novel ideas [44, 50]. Utilising multiple data collection techniques is another form of triangulation, which bolsters qualitative rigour [47, 48]. The study was reported according to the Standards for Reporting Qualitative Research (Appendix 2, Supplementary data are available in *Age and Ageing* online) [51].

Participants

There were 13 participants: six AHLs and seven HCPs. AHLs (Table 1) were recruited via email from the participant database of the research centre. Their inclusion criteria were self-reported hearing loss, minimum age of 18 years, good written and spoken English and ability to give informed consent. The exclusion criterion was profound hearing loss, as this is associated with unique social experiences. Specifically, many individuals with profound hearing loss belong to the Deaf community, which has its own languages, networks, identity and customs [52, 53].

HCPs (Table 2) were recruited via email from the professional network of the research team. Their inclusion criteria were: audiology degree or equivalent hearing healthcare qualification, experience as a practising audiologist, minimum age of 18 years and good written and spoken English.

In qualitative research, rather than fulfilling a pre-determined sample size, sampling typically continues until enough information has been gathered to produce a convincing account of the phenomenon of interest. This could be achieved with as little as one focus group, particularly with well-selected participants and a clearly defined topic [54]. In this study, sampling ceased once maximum variation and saturation were achieved. Maximum variation referred to diverse participant characteristics and experiences (Tables 1 and 2) that were pertinent to the research objectives [55]. Saturation occurred when all questions had been thoroughly explored and no new patterns of responses relevant to the research objectives were identified [44, 54]. To assess saturation, the researchers met after each interview and also

Table 1. Demographic information of the adults with hearing loss

Demographic category	Statistic
<i>Gender</i>	<i>n</i>
Male	3
Female	3
<i>Age</i>	<i>Years</i>
Mean	65.83
Standard deviation	6.43
<i>Estimated hearing loss duration</i>	<i>Years</i>
Mean	22.5
Standard deviation	14.11
<i>Hearing loss onset</i>	<i>n</i>
Gradual	5
Sudden	1
<i>Employment</i>	<i>n</i>
Employed	1
Retired	5
<i>Living arrangements</i>	<i>n</i>
Living alone	2
Living with others	3

Table 2. Demographic information of the hearing health-care professionals

Demographic category	Statistic
<i>Gender</i>	<i>n</i>
Male	2
Female	5
<i>Length of professional experience</i>	<i>Years</i>
Mean	9.5
Standard deviation	10.42
<i>Role(s) at the time of the interview</i>	<i>n</i>
Audiologist	5
Audiology researcher	7
Audiology lecturer	1
<i>Area(s) of expertise</i>	<i>n</i>
Adult aural rehabilitation	5
ENT	2
Tinnitus	1
Vestibular	1
Adult diagnostics	1
<i>Type(s) of professional experience</i>	<i>n</i>
Public health service	5
Private health service	3

performed a preliminary data analysis. They ensured that participants had sufficient exposure to the phenomenon and that the interviews generated a substantial amount of rich, salient data. They noted that the transcripts were lengthy and densely coded. They determined that new patterns were absent before finalising the themes.

Procedure

Participants received a study information sheet that was developed with input from AHLs who were Patient and Public Involvement representatives. They attended an interview at a UK research centre, which was designed to put participants at ease and minimise the inhibiting effects of

Table 3. Categories of social isolation intervention

Intervention category	Summary
Leisure activities/skill development	<ul style="list-style-type: none"> • Activity that suits individual preferences. • Could involve learning a skill. • Examples are gardening programmes, sports, volunteering and computer training.
Home visits/befriending	<ul style="list-style-type: none"> • Visits from a companion or volunteer. • Could be face-to-face or via telephone. • Typically one-to-one.
Social facilitation	<ul style="list-style-type: none"> • Activities with a peer group. • Designed to build friendships. • Examples are friendship clubs and shared interest groups.
Psychological therapies	<ul style="list-style-type: none"> • Therapy delivered by a trained professional. • Often incorporates group activities. • Examples are mindfulness, humour therapy and cognitive behavioural therapy.
Health and social care	<ul style="list-style-type: none"> • Formal care programme delivered by a health professional. • Could take place in the community or in a care home. • Examples are home visits by nursing students and rehabilitation programmes.
Animal-assisted therapy	<ul style="list-style-type: none"> • Companionship from a pet. • Usually a cat or dog. • Pet could be live or robotic.

a 'research environment'. It included facilities for AHLs and older adults (e.g. loop system), a welcoming reception area and comfortable interview rooms. Each participant provided informed, written consent before completing either an individual interview or a group interview. Two AHLs were interviewed individually, while the remaining four were interviewed as a group. One HCP was interviewed individually, while the other six were interviewed in two groups of three. They were interviewed by the first and second authors, who met afterwards for reflexive discussions (Appendix 3, Supplementary data are available in *Age and Ageing* online).

The interviews lasted 1 hour and 28 minutes on average, and breaks and refreshments were provided. They initially focused on the social impact of hearing loss before exploring perceptions of isolation interventions. It was anticipated that some participants would be unfamiliar with such interventions. Therefore, to facilitate meaningful discussion on this topic, all participants received a handout outlining key isolation intervention categories (Table 3) from the literature [11]. Moreover, supplementing verbal communication with written information is recommended for interviewing AHLs [56]. Participants reviewed the handout for a few minutes to select interventions that were familiar or appealing. The interviews were audio-recorded and transcribed verbatim. All data were treated confidentially and stored securely. Travel expenses were reimbursed and participants received a small honorarium (£10GBP).

Data analysis

Inductive thematic analysis was performed according to an established and robust procedure [57] and was supported

by the use of QSR International NVivo 12 software. The transcripts of the AHLs and HCPs were analysed together and themes common to both groups were sought. Peer assessment enhanced the rigour of the analysis [47]. Specifically, the first and second authors independently analysed three transcripts and then met to compare their findings. No notable discrepancies were identified, indicating that the interpretation of the data was not limited to the perspective of a single researcher. The second author then coded the remaining transcripts. Subsequently, the two authors held several meetings to generate and refine the themes. They ensured that each theme had sufficient supportive data. A third researcher reviewed their themes before they were finalised.

Results

Five key themes were identified (Table 4).

Theme 1: experience of social isolation and hearing loss

The participants reported that hearing loss can impair social engagement, especially in challenging listening conditions, such as noisy environments (e.g. bars, cafés) and group conversations (e.g. meetings, family gatherings): 'This one patient . . . used to go out socialising with his friends to the pub. [Now] he just stays in the room, watching TV all day' (HCP5). Some found that hearing aids improved their engagement, while others continued to struggle:

'I first realized [I had hearing loss] when I was in a meeting in a big room and I sat the opposite end from the speaker . . . Everything was garbled . . . I got

Table 4. Thematic analysis summary

Theme	Key points
Experience of social isolation and hearing loss	<ul style="list-style-type: none"> • Hearing loss can lead people to become disconnected and withdrawn during social events or to cease attending them. • It can also affect social roles and social identity and can impede the formation and maintenance of relationships.
Complexity of the relationship between social isolation and hearing loss	<ul style="list-style-type: none"> • It can be difficult to pinpoint the cause of isolation (e.g. hearing loss, retirement). • Many factors can exacerbate or ameliorate isolation (e.g. social support, hearing loss type).
Downstream effects of social isolation and hearing loss	<ul style="list-style-type: none"> • Hearing loss and isolation can impair other aspects of well-being, including mental health. • Hearing loss and isolation are both stigmatised.
Preferred components of a social isolation intervention	<ul style="list-style-type: none"> • Few existing hearing loss interventions directly target isolation. • Such interventions should be patient-centred and patient-led and take place face-to-face in the community.
Challenges to implementing a social isolation intervention	<ul style="list-style-type: none"> • Audiologists may lack the time, rapport, resources and training needed to deliver isolation interventions. • These interventions must be accessible for people with hearing loss, mobility issues and low computer literacy.

my hearing aids and I came into the same room . . . Everything seemed just as garbled . . . because [there were] lots of people talking and bad conditions' (AHL4).

Some cease attending social events and carrying out social activities: 'We see many people who [say]: "I used to go out dancing, . . . go out for meals, . . . be part of this club . . . but then I just couldn't hear so I didn't go"' (HCP7). AHL5 said: 'I would like to go to [shows] but the last time I went . . . the music . . . being played before the performance was too loud . . . I paid the ticket but I had to come out . . . I don't really want to leave, but . . . I couldn't stand it.' Others continue to attend social events but are withdrawn or disconnected whilst there: 'That's one of the most common complaints . . . "Even if I go, I feel like I can't join in."' and they often will say: 'I just sit there and watch everybody else' (HCP7). AHL2 said: 'We used to meet up most weeks and go for a drink and have a yack . . . I felt like I was just sitting there because everybody was talking . . . and I was . . . not really fitting in and enjoying it . . . I find myself switching off . . . Then I sort of float back in. Just in and out.' Similarly, AHL6 commented: 'I will sit there and . . . detach myself from the conversation.'

For some, hearing loss alters their social identity and social roles: 'They feel almost a burden . . . to their friends or family because they need . . . extra support' (HCP7). AHL2 said:

'Before . . . we'd just meet up in the pub . . . We've got quite a big group . . . I've stopped going now . . . I just meet a couple of friends and we have a coffee . . . They think that I should be the life and soul of the party . . . I get fed up . . . of having to be that person . . . I don't want to . . . be like a recluse . . . but now I pick and choose what I want to do . . . whereas before I didn't have a care in the world.'

Hearing loss can also affect the quality of one's relationships: "It has a strain on your relationships . . . You can be

isolated . . . within your own home . . . When they're with their family, they just sit there . . . not interacting" (HCP1). Hearing loss can cause conflict with family. AHL3 said: "My husband gets so annoyed with me if I can't hear him" while AHL4 said: "Even my children are quite impatient." Additionally, it can impede new relationships: "Concentration . . . makes it very hard . . . [When] going to meet new people . . . you're constantly having to declare: "I have a hearing loss." . . . and I'm usually watching the body language . . . It's hard work . . . It just brings down the . . . willingness to go out [into] the unknown" (AHL6). However, several audiologists asserted that relationship quality is more important than quantity: "It's about the quality . . . They can have one person that they communicate well with, and that makes them feel good . . . It depends on how it makes them feel, rather than the number" (HCP3).

Theme 2: complexity of the relationship between social isolation and hearing loss

Several participants reported that the relationship between hearing loss and social isolation is complex, particularly because it is difficult to identify and disentangle the various causes of isolation: 'I don't think it's just one thing - just the hearing loss. It's everything' (HCP6). For instance, AHL1 did not attribute his isolation to hearing loss: 'I'm not a particularly social person, but that's a psychological problem on my part, not anything to do with the hearing.' He added: 'At my age, you have a set circle . . . If I were younger then [I'd] want to impress people, but at my age, you've done all [that]. You're left with the friends you've got. You hang on to them till the end.' Several reported that older adults often undergo several transitions including retirement, bereavement and deteriorating health, which can cause or exacerbate

isolation: 'Let's say... you've retired... Those groups that you were once part of... dwindle or... you get another health problem and you can't go to those groups' (HCP2). However, hearing loss can be identified as the main source of one's isolation: 'Over years, your other health conditions can deteriorate, so we can't really pinpoint hearing loss as to why they're... isolating... but I've had patients where... they've got interventions... for the other conditions, so... they've got the confidence to say: "It's my hearing that's... making me isolated"' (HCP5). AHL2 said:

'The worse my hearing got, the less sociable I got... You get fed up of saying: "Sorry, what did you say?"... I used to be really confident and didn't let it bother me. But I find the older I get, the worse I'm getting at socialising... Mainly it's because I'm struggling with the hearing.'

HCP1 reported that hearing loss can cause isolation irrespective of age: 'Younger adults who have hearing loss... talk about the challenges with communication... That is what makes them withdraw... That is separate from age... There is an overarching isolation effect.'

In addition, several factors can influence the extent to which one becomes isolated, including personality: 'It comes down to personality... Some people might let their hearing loss take over their whole life. Some people might be stronger willed... and... fight against it' (HCP5). AHL3 said: 'Some people... make themselves very lonely and cut off.' Another important factor is social support: 'If there's a couple, even though one might not be hearing,... the other person would push them... They [don't] go that far into isolation, whereas, if they're by themselves, they've got no-one else to push them, and then they... stop communication with the outside world' (HCP5). Hearing loss type and onset is another factor. For example, it may be more difficult to adapt to age-related hearing loss than congenital hearing loss: 'If you're born with a hearing loss... it's probably something you've learnt to live with... You will have found tactics and ways of getting round that' (HCP7). Those with age-related hearing loss may deny or be unaware of its impact due to its gradual onset: 'A lot of people are socially isolated with hearing loss, but they may not admit it... It's more subtle... It's a gradual withdrawal' (HCP1).

Theme 3: downstream effects of social isolation and hearing loss

Social isolation and hearing loss, together or separately, can affect other aspects of well-being. Some audiologists stated that the isolation arising from hearing loss can affect mental health: 'It often leads into depression, social anxiety... They've stopped going out because they... are not going to hear... Then they obviously become more depressed and they don't go out even more... [Its] a vicious cycle' (HCP7). HCP5 suggested that it can lead to 'Depression and probably early-onset dementia.' In addition, many asserted that hearing loss causes fatigue: 'Two hours intense listening in a coffee shop... I'm tired after... It's like doing a manual job in your ears' (AHL2). Many stated

that hearing loss impairs work performance: 'I was getting into difficulty being certain what people said to me and I'd have to ask them to repeat it... I'm teaching still. I think it undermined [the students'] confidence in me' (AHL1). HCP6 described one patient who was a doctor's receptionist: 'She... found it extremely stressful because [patients are] sick or elderly, or they give you confidential information, so they speak softly. So, she couldn't hear them and she felt really disabled... so she gave up her work.'

Furthermore, hearing loss and social isolation can each lead to stigmatisation. Most thought that hearing loss and hearing aids were associated with ageing, which leads some to avoid treatment:

'People are reluctant to go for [a hearing] test... It signals you're older and... it's a bit socially embarrassing to admit that you have a weakness... There's this association with walking sticks/frames, hearing aids, glasses... It seemed to me that it was the first step towards the grave. That sounds terribly dramatic, but in a sense, it is' (AHL1).

Additionally, people with hearing loss can be perceived as foolish: 'They feel... "I don't want to look stupid or... to keep asking people to repeat themselves."... They stop going out... They think: "I'm going to make a fool of myself."' (HCP7). Some suggested that social isolation is also stigmatised: 'It might be seen as a sign of weakness if you're isolated... Not everyone's going to be... happily advertising that' (HCP5). AHL4 believed that many patients do not want clinicians to assume that they are isolated: 'It's... dangerous territory. Talking to people as if: "You [have] hearing loss so therefore you're socially isolated." is a big jump... A lot of people might be offended.' Most audiologists regarded isolation as a difficult subject to raise: 'I wouldn't feel comfortable, if I just saw somebody the first time, with... recommending [an intervention] about social isolation' (HCP1).

Theme 4: preferred components of a social isolation intervention

The participants were largely unfamiliar with existing social isolation interventions. The audiologists reported that few, if any, aural rehabilitation interventions directly target social isolation: 'There isn't [a] specific social isolation intervention that comes into mind' (HCP3). There were no commonly liked or disliked social isolation interventions amongst those listed on the handout (Table 4). Most agreed that it is essential to adopt a patient-centred approach to identifying an appropriate intervention: 'From the list, I can see all of them working, but I can't see them working for everyone... You have to tailor it... The clinician and the patient can work together... It's a shared decision' (HCP5). When describing the optimal features of a social isolation intervention for AHLs, most stated that a community setting is preferable to a clinic: 'Definitely not clinic. You want it to be... laid back... Probably a community setting. That way, they can meet... in the real world' (HCP3). AHL1 stated: 'Make people relax... It's not a journey to the doctor... [It's] a

social thing. You'd get to know people who have got similar problems.' Secondly, most thought that the intervention should be led by patients who have received training: 'That could potentially be led by a peer . . . Then they all feel equal' (HCP5). AHL2 said: 'You don't really need [clinicians]. You could do it with voluntary staff.' Some suggested that a clinician could provide occasional support: 'Having a clinician there to facilitate things, like: "Have you increased your [hearing aid] volume?" . . . could be helpful' (HCP6).

There were mixed opinions as to whether the intervention should be hearing-specific or generic. Some thought that generic interventions (e.g. befriending) would suit experienced hearing aid users, while interventions addressing both hearing loss and isolation (e.g. group audiology appointment) would suit new hearing aid users: 'It depends on what you're struggling with. If hearing's your main concern . . . you probably want . . . a group with people that are struggling like you . . . It might just build that confidence to then . . . do something else where you think: "I'm going to the gardening one or the sewing one."' (HCP7). Such interventions could promote affinity amongst patients and provide practical advice (e.g. hearing aid troubleshooting): 'Bring your hearing aid, talk about problems: something like that [would help]. You're not alone: this is what you've got to get across . . . You'd come whether you're a social person or not just to get the damn [hearing aid] working' (AHL1). AHL6 befriended other individuals with hearing loss at lip-reading classes: 'From a social point of view, it's actually quite nice...We could go for a normal night out . . . in the pub. I could hear what was being said.' Finally, the intervention should be face-to-face where possible: 'I prefer . . . face-to-face . . . Although, I wouldn't mind if it was on the internet . . . But I do like the face-to-face because . . . it gets you out' (AHL2). HCP7 said: 'Online/telephone is better than nothing if you've got that opportunity to interact . . . You could have . . . a peer support group online . . . Face-to-face is . . . always best . . . The whole point . . . is getting people out and about and getting them to see people.'

Theme 5: challenges to implementing a social isolation intervention

Most thought that audiologists would lack the rapport required to discuss isolation interventions with patients. AHL1 said: '[Clinicians] mean well . . . but I sometimes feel it's a bit patronising . . . They're characterising me: "Old person, must be lonely." . . . They always . . . drop it in too early: "Have you thought about joining this?" . . . They don't really know me well enough.' Some noted that discussing this sensitive topic could be especially difficult for public sector audiologists, who tend to see each patient just once, unlike private sector audiologists, who can develop relationships with patients over time: 'The private sector . . . seems very much more personalised . . . There's consistency in the audiologists that you see, so you start building a relationship from the first moment . . . There

are . . . more regular follow-ups' (HCP5). AHL6 said: '[In] my experience . . . of the [National] Health Service . . . trying to get a level of continuity is incredibly difficult.' Some proposed that providing patients with a leaflet that lists different interventions could be an appropriate way to raise this subject: 'This is probably that person's most deep insecurity or worry . . . Maybe the list is a way: "Here . . . are some things that might help in your wider life."' (HCP2). AHL1 said: 'Rather than being told what's good for me . . . rather than [say:] "You ought to" . . . you've given me a chance to look through [the list] and I thought: "Yes, maybe these animal-assisted therapies."'

Several participants reported that audiologists lack sufficient time, resources, training and support to enable them to discuss isolation with patients. HCP2 stated: 'Talking about . . . helping their isolation . . . Is that 20 minutes that you're not going to get [for something else]? . . . It's very difficult to justify your room use, clinician time, appointments.' HCP6 asked: 'When would you do it? . . . It's like a conveyor belt . . . trying to get them out . . . It's like opening Pandora's Box . . . Are they going to be calling you to say: "God, I feel lonely"? Are you the best person? Can you refer [them directly to] psychology if you feel they're depressed?' AHL2 agreed that 'Time and resources' are key barriers. Another challenge is ensuring that the intervention is accessible to older adults, particularly those with mobility issues. AHL1 said: 'It's probably better in a community centre . . . nearer to them. You've got to come in by bus . . . find the place . . . walk up. It's a bit intimidating.' Furthermore, poor computer literacy could impede online interventions: 'Older patients . . . want that human interaction . . . because they're not used to . . . technology' (HCP5). However, HCP3 said: 'I don't think I've come across many [older adults] who . . . don't use computers or some . . . technology.' Finally, while the intervention should promote social engagement, it should not entail adverse listening conditions (e.g. large groups, noisy venues): 'I'm not going [if] you put me in a noisy room with a whole bunch of folk [and] you're going to pour alcohol in it as well . . . There is no fun in it for me' (AHL6).

Discussion

This research aimed to develop an in-depth understanding of the relationship between social isolation and hearing loss and to examine stakeholder views regarding interventions to address this problem. It found that hearing loss can impair social engagement, including altering social roles and impeding the formation and maintenance of relationships, which aligns with previous studies [17, 19, 23]. Additionally, the study found that hearing loss can lead individuals to cease attending social gatherings or to feel disconnected during social gatherings, which corresponds with the conceptualisation of isolation as having an objective element (i.e. minimal social contacts and activities) and a subjective element (i.e. feeling lonely or excluded). The results also

suggest that relationship quality can be more important than quantity, as one can be satisfied with a small yet supportive social network. Furthermore, as shown by this study, an individual with hearing loss could attend many social events but be unable to participate in conversations at those events. Therefore, assessing their subjective isolation is arguably more important than assessing their objective isolation.

The results suggest that numerous factors can influence and exacerbate isolation in individuals with hearing loss, especially hearing loss onset and type, comorbidities, social support and personality. They also suggest that hearing loss and isolation can affect other aspects of well-being, including mental health. Past research confirms that both are associated with depression and are risk factors for dementia [5, 25, 26]. The current study shows that both hearing loss and isolation are stigmatised, which can discourage patients and even clinicians from addressing them. Previous research demonstrates that hearing loss has negative associations with ageing, disability, cognitive impairment and social impairment, which can lead patients to conceal or deny it [17, 23, 58]. Few studies have examined the stigma associated specifically with isolation in adults with hearing loss, though evidence from the general population suggests that isolation can be perceived as shameful, taboo, strange and unattractive [59, 60]. Furthermore, studies indicate that many audiologists avoid discussing patients' psychosocial concerns and lack clear guidance on how to do so [37–40].

The present study indicates that currently there are no widely used, hearing-specific social isolation interventions. Additionally, participants were largely unfamiliar with existing generic social isolation interventions, which means that individuals with hearing loss are likely to struggle to obtain adequate support for isolation at present. The current study suggests that isolation interventions for individuals with hearing loss should be led by patients who have training and support and delivered in an accessible community venue. In line with this, a recent study found that audiologists regard supporting patients to self-manage and self-advocate as key to addressing their psychosocial needs [40]. The present study suggests that experienced hearing aid users could benefit from generic isolation interventions that are delivered in suitable listening conditions (e.g. quiet, non-reverberant), whereas new hearing aid users may prefer interventions that address both hearing loss and isolation (e.g. lip-reading classes, hearing aid workshops). A previous qualitative study found that peer support groups provided practical and accessible information about hearing loss in addition to social belonging [61]. There is also some evidence that group audiology appointments can improve social participation, quality of life, hearing aid use and communication strategy use [62]. Modelling has shown these interventions to be cost-effective and efficient, which is important given that the current study identified time and resource constraints as barriers to implementation [63]. Another barrier was that clinicians may lack sufficient training and rapport to discuss the sensitive and complex subject of isolation. It was proposed that providing a leaflet of intervention options could be an appropriate

way to broach this issue. Decision aids have previously been developed to facilitate shared decision-making between audiologists and patients regarding aural rehabilitation interventions [64]. Similar tools could be developed for isolation interventions. Ultimately, the choice of intervention must be patient-centred so that it suits their unique preferences and needs.

A limitation of this study was that the adults with hearing loss were recruited from a database of individuals who expressed an interest in participating in hearing research. Thus, they may be more experienced in research and more socially active than other adults with hearing loss. Consequently, audiologists were also recruited, as they typically encounter a wide range of patients. Themes common to both participant groups were sought. It is possible that this approach overlooked important ideas reported only by one group. Furthermore, a broader range of stakeholders with relevant expertise, including geriatricians, allied health professionals and relatives/carers, should be consulted in future research. Additionally, this study used inductive thematic analysis because few qualitative studies have specifically explored this phenomenon and because deductive/theoretical thematic analysis can omit important patterns that do not match the selected framework [43, 57]. However, intervention development research should ideally be underpinned by theory [42]. Future studies could apply an existing theory, such as a health psychology model, or utilise grounded theory to devise a new theory [65].

This study was conducted before the coronavirus disease 2019 (COVID-19) pandemic, which has substantially altered healthcare and which has increased social isolation following the introduction of social distancing measures in many countries [66]. Nevertheless, the findings remain important for future clinical practice. In particular, they indicate that while face-to-face interventions in community settings are preferable, online interventions are acceptable when alternatives are unavailable. They also indicate that online interventions are increasingly feasible and accessible for older adults, despite this population generally being considered to have lower computer/internet literacy than younger adults [67, 68]. This is crucial given that the pandemic prompted a rise in telehealth services, including teleaudiology services [68, 69]. This study also has important implications for future research. Specifically, it has provided rich insights on the experience of hearing-related social isolation, as well as stakeholder perspectives on potential interventions to tackle this problem. This can inform the development of interventions to enable individuals with hearing loss to overcome isolation. Such interventions are vital given the increasing prevalence and detrimental impact of both social isolation and hearing loss.

Supplementary data: Supplementary data mentioned in the text are available to subscribers in Age and Ageing online.

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