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Patient Experiences with Hearing Aids in South African Public Healthcare

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Abstract: Background/Objectives: Hearing aids are essential for managing hearing loss, yet their accessibility, consistent use, and maintenance remain challenging in public healthcare systems, particularly in low- and middle-income countries (LMICs) such as South Africa. Despite the availability of these services, many patients struggle with device utilization, resulting in suboptimal rehabilitation outcomes. This study explores patient experiences with hearing aids in South Africa's public healthcare sector. This study aimed to (1) assess patients' experiences with hearing aid access, including waiting times and service delivery; (2) identify challenges related to hearing aid maintenance and repairs in the public sector; (3) explore factors influencing consistent hearing aid use, including social, psychological, and practical barriers; and (4) propose strategies to enhance hearing aid provision and aftercare services in South Africa. **Methods:** This descriptive qualitative study was conducted at two public healthcare facilities in Johannesburg. Purposive sampling was used to recruit 15 adult hearing aid users who had received government-funded hearing aids within the past 12 months. Semi-structured interviews were conducted, transcribed verbatim, and analyzed using thematic analysis. **Results:** Participants reported long waiting periods (up to a year) for hearing aids, with poor communication regarding timelines. Challenges included difficulties adjusting to amplification, discomfort, and battery shortages, leading to inconsistent use or device abandonment. Social stigma and lack of family support further discouraged consistent use. Repair services were slow, with waiting times exceeding three months. Participants recommended decentralized battery distribution, structured follow-up appointments, improved aftercare, awareness campaigns, and mobile audiology services to improve accessibility and usability. **Conclusions:** While public hearing aid provision is essential for hearing rehabilitation, systemic inefficiencies, maintenance issues, and social barriers limit its impact. Strengthening aftercare services, decentralizing hearing aid distribution, and increasing public awareness could significantly improve hearing aid accessibility and adherence. Furthermore, policy interventions that incorporate teleaudiology, community-based maintenance programs, and integrated healthcare approaches are crucial in ensuring sustainable hearing healthcare outcomes.

Keywords: hearing aids; public healthcare; accessibility; maintenance; social stigma; low- and middle-income countries (LMICs); audiology services; hearing loss rehabilitation; South Africa

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1. Introduction

Hearing loss is a significant global public health concern, with over 5% of the world's population needing rehabilitation for disabling hearing loss—that is, approximately 430 million individuals, 34 million being children, requiring rehabilitation services [1]. The

World Health Organization [1] estimates that these numbers will increase to over 700 million people by 2050—or 1 in every 10 people. Left untreated, hearing impairment can severely impact communication, education, employment, and social participation, particularly in low- and middle-income countries (LMICs) where access to audiological care is often limited or inconsistent [2]. One of the most effective interventions for hearing loss is the use of hearing aids, which can significantly improve speech perception, social interaction, and quality of life [3]. However, despite their proven benefits, hearing aid adoption and consistent use remain low, especially in resource-constrained public healthcare systems in LMICs [2,4], where access challenges—such as limited availability, affordability, stigma, and lack of aftercare services—persist [5].

Globally, hearing aid use remains disproportionately low, particularly in LMICs, where access is hindered by systemic and economic barriers, including the high costs of devices, a limited audiology workforce, and cultural perceptions that influence device acceptance [2,5,6]. Studies indicate that only 10% to 40% of those who need hearing aids in high-income countries (HICs) actually use them [5,7], and this figure drops to less than 5% in LMICs [5], highlighting significant inequities in hearing healthcare access. In HICs, such as the United Kingdom and the United States, government subsidies and private insurance play a crucial role in making hearing aids accessible [8,9]. However, challenges such as costly out-of-pocket expenses, social stigma, and delays in hearing aid fittings still impact utilization rates [10–12]. In LMICs such as Brazil and India, public sector hearing aid provision is increasing. However, distribution bottlenecks or inefficiencies and inadequate follow-up services lead to poor device utilization and high rates of device abandonment [2,4,9,13]. Additionally, in other LMICs, including those in sub-Saharan Africa such as Malawi and Nigeria, hearing aid provision is limited, and many individuals must pay out of pocket or rely on donated devices, which often come without proper fitting, counseling, or repair services [2,14,15]. These issues highlight a global challenge in hearing healthcare delivery, particularly in resource-constrained settings like South Africa, where government-funded hearing aid programs exist but face significant operational and systemic constraints.

South Africa's healthcare system is highly unequal, with 84% of the population relying on the public sector, while only 16% can afford private healthcare [16]. Public sector hearing healthcare services are marked by long waiting times for audiological assessments and hearing aid fittings, particularly in under-resourced provinces [11]. Hearing aids are provided free of charge through government hospitals and clinics. However, many recipients face barriers to consistent use, including long waiting periods, limited aftercare services, difficulties with device maintenance and repairs, and societal stigma [11,17,18].

Key challenges in South Africa's public hearing aid provision include the following: (1) Long waiting times, where patients often wait several months to years before receiving hearing aids due to audiologist shortages and service backlogs; (2) Lack of follow-up care—hearing aids require regular adjustments and servicing, yet public audiology departments are overwhelmed, leading to limited follow-up and patient dissatisfaction; (3) Device maintenance issues, with many public sector patients reporting that hearing aids malfunction quickly, yet access to repairs and batteries is inconsistent, causing non-adherence to hearing aid use; (4) Stigma and psychosocial factors, with some patients, particularly older adults, perceiving hearing aids as signs of disability, leading to low device uptake and non-compliance [11,17–21]. Given these challenges, understanding patient experiences with hearing aids in the public healthcare sector is critical for identifying gaps in service delivery and developing strategies to improve hearing aid uptake, maintenance, and long-term use.

South Africa's public hearing aid services face similar challenges to those documented in other LMICs across Africa and Asia, such as Nigeria, Malawi, and India, where hearing

aid donation programs exist but lack proper follow-up, leading to device abandonment; workforce shortages of audiologists result in delays in diagnosis and fittings; and social stigma surrounding hearing aid use leads to low compliance rates. Addressing these structural barriers is key to improving hearing aid uptake and long-term adherence, especially in public healthcare contexts. This study explores patient experiences with hearing aids in South Africa's public healthcare system, focusing on the journey from assessment to fitting, daily use, and aftercare. The study aims to do the following: (1) Examine patients' perceptions of hearing aid access in public healthcare, including waiting times and service experiences; (2) Explore challenges related to hearing aid maintenance and repairs in the public sector; (3) Investigate factors influencing consistent hearing aid use, including social, psychological, and practical barriers; (4) Identify possible strategies to improve hearing aid provision and aftercare services in South Africa's public healthcare sector.

Understanding patient experiences will provide evidence-based recommendations for improving service delivery efficiency (e.g., reducing waiting times, streamlining appointments); enhancing hearing aid maintenance programs (e.g., ensuring consistent access to batteries and repairs); reducing stigma and increasing hearing aid adherence through patient and community education and support initiatives; and informing policy changes to improve long-term hearing aid provision and public hearing healthcare systems.

2. Materials and Methods

2.1. Study Design

This study employed a descriptive qualitative research design [22] to explore patient experiences with hearing aids in South Africa's public healthcare system. A qualitative approach was appropriate as it enabled in-depth exploration of patient perspectives, barriers, and facilitators regarding hearing aid access, usage, and maintenance [23]. The descriptive nature of the study ensured that findings reflect real-world experiences without researcher bias influencing interpretation.

2.2. Study Setting

The study was conducted at two public healthcare facilities in Johannesburg, South Africa: (1) Chris Hani Baragwanath Academic Hospital (CHBAH), one of the largest tertiary hospitals in Africa, serving a high volume of audiology patients, including those fitted with hearing aids; and (2) Hillbrow Community Health Centre (CHC), a primary healthcare facility offering audiology services, providing insights into experiences at lower levels of care where hearing aid users may seek follow-ups or repairs. These facilities were selected to allow comparative insights into experiences at both tertiary and primary levels of public healthcare, ensuring that findings reflect diverse patient experiences across different levels of service provision.

2.3. Study Population and Sampling

2.3.1. Inclusion Criteria

Participants were included based on the following criteria:

- Were 18 years or older;
- Had received a government-funded hearing aid from a public healthcare facility within the past 12 months;
- Were public healthcare patients (i.e., not using private sector audiology services);
- Were able to communicate in English or a local language understood by the researcher;
- Provided informed consent for participation in the study.

Participants were included based on self-reported use of their hearing aids after receiving them. Those who reported never using their device (e.g., leaving it unused

due to discomfort or technical issues) were excluded to ensure that the study captured actual experiences with device use. Objective measures, such as data logging and cognitive screeners, were not used, as the study was based on subjective, narrative accounts of hearing aid experiences.

2.3.2. Exclusion Criteria

Participants were excluded based on the following criteria:

- Had never used their hearing aid after receiving it;
- Had a profound hearing loss requiring sign language interpretation, which could affect the study's feasibility due to the lack of an interpreter;
- Were experiencing cognitive impairments that could impact their ability to recall and articulate their experiences.

2.3.3. Sampling Strategy

A purposive sampling strategy was employed to ensure that participants had direct experience with hearing aids in the public sector [24]. The study aimed for data saturation [25] and achieved it after 15 participants, ensuring rich, in-depth accounts of experiences across different demographics. The iterative process involved ongoing data collection and preliminary analysis occurring simultaneously. After every few interviews, transcripts were reviewed and coded to assess whether new themes or insights were still emerging. By the 13th interview, thematic redundancy began to appear, and by the 15th interview, no substantially new themes were identified. This indicated that saturation had been reached, as additional interviews were unlikely to yield novel information relevant to the study objectives. Triangulation was employed by comparing codes and themes across participants from different facility levels (tertiary vs. primary), age groups, and socioeconomic backgrounds. This constant comparison technique helped confirm when saturation was reached. Thematic saturation was also discussed and confirmed during peer debriefings with the research team, ensuring that no major gaps remained in the dataset. Maximum variation sampling to enhance sample diversity was used, ensuring representation across age groups (young adults vs. elderly users); gender (male vs female); employment status (working vs. unemployed participants); and facility level (tertiary vs. primary care users). Participants were recruited from both a tertiary hospital and a primary healthcare clinic to capture variations in service delivery experiences. While this facility-level diversity contributed to sample variation, the study did not aim to compare hearing aid experience levels between tertiary and primary care users. Rather, facility level was one of several dimensions (alongside age, gender, and employment status) used to ensure sample variation.

2.4. Data Collection

2.4.1. Method of Data Collection

Data were collected using semi-structured, in-depth interviews [26]. This approach allowed for flexibility, enabling participants to elaborate on their experiences while ensuring that all key study objectives were covered. Objective measures such as hearing aid data logging and cognitive screeners (e.g., the Abbreviated Mental Test) were not used in this study. As a qualitative study focused on lived experiences, data were collected via self-reported narratives to explore subjective perceptions of access, usage, and barriers in context. While objective logging may provide insight into usage patterns, this study prioritized patients' reported reasons for inconsistent use, as these subjective factors often drive real-world adherence. Future mixed-methods research may benefit from integrating data logging and cognitive screening tools to triangulate findings.

2.4.2. Development of the Interview Guide

The interview guide covered key areas important to this study:

1. Hearing Aid Access and Fitting Process
    - How was your experience of receiving your hearing aid?
    - How long did you wait between assessment and fitting?
    - Were you given instructions on how to use and maintain the device?
2. Hearing Aid Usage and Challenges
    - How often do you use your hearing aid?
    - Have you experienced any difficulties with the device (e.g., discomfort, technical issues)?
    - What factors influence whether you wear it regularly?
3. Hearing Aid Maintenance and Follow-Up Services
    - Have you needed any repairs or battery replacements?
    - How accessible are these services in the public sector?
    - Have you ever stopped using your hearing aid due to maintenance issues?
4. Psychosocial and Functional Impact
    - How has the hearing aid affected your daily life, communication, and confidence?
    - Have you experienced any stigma or negative reactions from others?
    - What support systems (family, healthcare professionals) have helped you adjust?
5. Recommendations for Service Improvement
    - What changes do you think could improve hearing aid services in public healthcare?
    - What would make hearing aid maintenance easier for users like yourself?

The guide was designed using open-ended questions to allow participants to elaborate on their lived experiences, beliefs, and challenges in their own words. While multiple-choice questions can be useful for quantification, the aim of this qualitative study was to capture rich, in-depth narratives rather than produce categorical or numerical data. Open-ended questions helped surface nuanced insights—including emotional responses and contextual factors—that may not have emerged through closed-ended formats. Future studies using mixed methods could complement these findings with quantitative measures.

2.4.3. Interview Procedure

Participants were approached in the audiology departments of the study sites and provided with an information sheet explaining the study. Written informed consent was obtained before participation. Interviews were conducted in a private room within the healthcare facility to maintain confidentiality. Each interview lasted approximately 30–45 min and was audio-recorded for accuracy. Field notes were taken to capture additional observations, such as non-verbal cues and emotional responses.

2.5. Data Analysis

Transcription and Coding

All interviews were transcribed verbatim and anonymized before analysis. Data were analyzed using thematic analysis, following Braun and Clarke's [27] six-step framework:

1. Familiarization with the data—transcripts were read and re-read to identify initial ideas.
2. Generating initial codes—segments of text were assigned descriptive codes (e.g., "waiting time issues", "stigma concerns").

3. Searching for themes—codes were grouped into broader themes relevant to the research objectives.
4. Reviewing themes—themes were refined and checked for coherence.
5. Defining and naming themes—themes were clearly articulated and given descriptive names.
6. Producing the report—findings were organized into a narrative that aligns with the study objectives.

To enhance reliability, two researchers independently coded 20% of the data, and discrepancies were resolved through discussion and consensus [28]. The remaining 80% of the data were coded by the primary researcher using the refined codebook developed during the double-coding phase. This approach ensured consistency in the application of codes across the entire dataset while maintaining analytic rigor.

2.6. Trustworthiness of the Study

Various strategies were put in place to ensure the trustworthiness of the study [28,29]. Credibility was maintained through triangulation, where findings were compared with the existing literature on hearing aid experiences, as well as through member checking, where selected participants reviewed preliminary findings to confirm accuracy. Dependability was assured through maintaining a detailed audit trail (including coding decisions and reflections) and by having a second researcher independently review a subset of the data. Transferability was achieved by using thick descriptions to provide rich, contextualized accounts of hearing aid experiences. Lastly, confirmability was maintained through reflexive journaling that ensured the researcher's preconceptions did not influence findings.

2.7. Ethical Considerations

The current study adhered to the Helsinki Declaration of 1975, as revised in 2013. Ethical approval was obtained from the University of the Witwatersrand's Human Research Ethics Committee (Medical) (Protocol Number: M220322). Participants were assured of confidentiality and anonymity, with names replaced by pseudonyms. Informed consent was obtained, and participants had the right to withdraw at any stage without consequence.

3. Results

3.1. Participant Characteristics

A total of 15 participants were included in this study. Table 1 summarizes the demographic and hearing aid-related characteristics. Participants varied in age, gender, employment status, and duration of hearing aid use, ensuring diverse perspectives on hearing aid experiences in the public healthcare system.

Table 1. Demographic and hearing aid-related characteristics of participants.

Variable	Category	Frequency (n)	Percentage (%)
Age Group	18–30 years	3	20%
	31–50 years	4	27%
	51–65 years	5	33%
	66+ years	3	20%
Gender	Male	7	47%
	Female	8	53%
Employment Status	Employed	4	27%
	Unemployed	6	40%
	Retired	5	33%
Duration of Hearing Aid Use	<3 months	4	27%
	3–6 months	5	33%
	>6 months	6	40%

Participants had varying levels of experience with their hearing aids, with some having used them for less than three months, while others had over six months of experience. This variation provided insight into initial adjustment, long-term use, and maintenance challenges.

3.2. Hearing Aid Access and Fitting Process

Most participants described long waiting times between the hearing assessment and the hearing aid fitting. Some experienced delays of over six months, while others were fitted more quickly, depending on hospital capacity and hearing aid stock availability. Key findings were as follows: (1) Waiting times varied significantly, with some participants experiencing delays of over a year before receiving their hearing aid; (2) A lack of clear communication about waiting periods caused frustration and anxiety; (3) Initial fitting experiences were generally positive, but some participants felt rushed through the process.

Participant Quotes:

"I waited almost a year after my test before they called me for my hearing aid. By then, I was already struggling at work." (Participant 3)

"Nobody told me how long I would have to wait. I kept going back to the clinic, but they just said 'we will call you." (Participant 9)

"When they finally fitted my hearing aid, it was a quick process. They checked if it worked, but I wasn't given much time to ask questions." (Participant 12)

3.3. Challenges Related to Hearing Aid Use and Maintenance

Most participants encountered difficulties in adjusting to their hearing aids, with issues ranging from discomfort and technical problems to difficulties in obtaining batteries. Key findings were as follows: (1) Initial adjustment was difficult for most participants, with some reporting headaches, discomfort, or difficulty adapting to amplified sound; (2) Batteries were difficult to obtain, requiring frequent trips to the hospital; (3) Technical issues (e.g., feedback, poor fit) were common, but repair services were limited and slow.

Participant Quotes:

"At first, everything sounded too loud, and I kept taking the hearing aid out. It took weeks before I got used to it." (Participant 6)

"They told me I would get free batteries, but every time I go, they are out of stock. Now I just leave the hearing aid in the drawer." (Participant 10)

"It stopped working after two months, and when I went back, they said I must wait for a repair. It's been four months, and I still don't have it back." (Participant 2)

3.4. Factors Influencing Consistent Hearing Aid Use

While some participants wore their hearing aids daily, others reported inconsistent use due to stigma, discomfort, and maintenance challenges. Key findings were as follows: (1) Social stigma discouraged some from wearing hearing aids in public; (2) A lack of family support affected consistent hearing aid use; (3) Some participants preferred to use their hearing aid only in specific situations (e.g., social gatherings, church, work).

Participant Quotes:

"People look at me differently when I wear my hearing aid. Sometimes I just leave it at home because I don't want to explain." (Participant 8)

"My family doesn't understand why I need it. They think I should just speak louder instead." (Participant 5)

"I use it when I'm at work, but at home, I don't bother because it's noisy with the kids." (Participant 13)

3.5. Accessibility of Hearing Aid Repairs and Follow-Up Services

Many participants struggled to access repair services when their hearing aids developed faults. The process was often slow and bureaucratic, leading some to abandon their hearing aids altogether. Key findings were as follows: (1) Repair services were not easily accessible, with waiting times of several months for minor repairs; (2) Some participants were not informed about follow-up appointments or maintenance support; (3) Limited technician availability in public hospitals delayed repairs.

Participant Quotes:

"I went back for a repair, and they told me to wait for three months. I just gave up and stopped using it." (Participant 1)

"Nobody told me I needed to come back for follow-ups. I thought once I had it, that was it." (Participant 7)

"They only have one person doing repairs, so the waiting list is long. My hearing aid has been broken for five months now." (Participant 14)

3.6. Patient Recommendations for Improving Hearing Aid Services

Participants suggested several ways to improve hearing aid provision and maintenance in the public sector. Key findings were as follows: (1) Participants wanted shorter waiting times and better communication about delays; (2) Many suggested community-based clinics for battery distribution and minor repairs; (3) Increased public education on hearing aids was seen as essential for reducing stigma.

Participant Quotes:

"If they could just tell us how long we have to wait, that would help. The not knowing is very stressful." (Participant 11)

"It would be better if we could get batteries from a local pharmacy or clinic instead of traveling all the way back to the hospital." (Participant 4)

"People need to be educated about hearing aids. If more people understood them, maybe we wouldn't feel so embarrassed to wear them." (Participant 15)

Table 2 presents the key findings in relation to the study objectives as presented earlier. While this study is qualitative and does not quantify themes statistically, Table 2 indicates whether concerns were reported by many, several, or a few participants. This approach helps clarify whether key issues reflected common themes or more individual experiences while maintaining qualitative rigor.

Table 2. Summary of key findings and general frequency of responses (based on thematic saturation across 15 participants).

Theme	Key Issues Identified	General Frequency
Hearing aid access and fitting process	Long waiting times, poor communication, rushed fittings.	Many participants
Challenges with use and maintenance	Adjustment difficulties, battery shortages, technical issues.	Many participants
Factors affecting consistent use	Social stigma, lack of support, selective use patterns.	Several participants
Accessibility of repairs and follow-ups	Long repair waiting times, lack of follow-up information, limited technical staff.	Many participants
Patient Recommendations	Reduce waiting times, improve battery access, enhance public education.	Many participants

While participant demographic characteristics such as age, gender, and employment status were documented and used to ensure sample diversity, the study did not aim to analyze relationships between these characteristics and the thematic findings in Table 2. Thematic analysis focused on identifying shared experiences across the sample rather than drawing subgroup comparisons. Future research with a larger or stratified sample could explore such patterns in more depth.

4. Discussion

This study contributes to the growing body of research examining barriers to effective hearing aid use in public sector healthcare systems in LMICs. It highlights the reality that device provision alone is insufficient without supporting systems that enable consistent use, follow-up care, and patient-centered support. The study sample included 15 participants with diverse demographic characteristics, ensuring representation across age groups, gender, and employment status. While hearing loss is often associated with older populations, this study found that 40% of participants were under the age of 50, emphasizing that hearing impairment is not exclusive to the elderly. This aligns with WHO [5] estimates, which indicate that hearing loss increasingly affects younger individuals, particularly in noisy urban environments where occupational and recreational noise exposure is prevalent [30]. The high unemployment rate (40%) among participants is significant, as financial insecurity may exacerbate barriers to hearing aid access and maintenance. Research in other LMICs, such as Nigeria and Malawi, has shown that employment status influences hearing aid uptake and adherence, as individuals with unstable incomes often struggle to afford transport for follow-ups or battery replacements [2,31]. In South Africa, where 84% of the population depends on public healthcare, financial barriers must be considered in service delivery planning. Current demographic profile findings imply that hearing aid interventions should not be age-limited, as younger populations also require support; therefore, budget planning should pay attention to this picture. Additionally, these findings indicate that financial barriers extend beyond direct costs, requiring policies that subsidize transport and maintenance for low-income users.

As far as the hearing aid access and fitting process is concerned, participants described lengthy waiting times for hearing aid fittings, with some waiting over a year before receiving their device. This finding is consistent with Sooful et al. [32], Mtimkulu and Khoza-Shangase [33], and Khan et al. [12], who reported that public sector hearing aid delays in South Africa range from six months upwards due to staff shortages and high patient loads. Similar challenges have been noted in India and Brazil, where insufficient audiologists and centralized service delivery create long queues for assistive devices [2,4,9]. Participants also reported poor communication about waiting times, leaving them uncertain about when they would receive their hearing aids. This aligns with research from Malawi, where studies have found that unclear timelines discouraged patients from returning for follow-ups, contributing to low adherence rates [34]. Implications raised by these findings include decentralized hearing aid services (e.g., community-based clinics), which could reduce waiting times and improve accessibility, and appointment tracking systems, which could enhance communication and patient confidence in public services. These findings align with the World Health Organization's call for people-centered health services that prioritize accessibility, responsiveness, and continuity of care. Ensuring that hearing aid users are supported beyond device provision is critical to the sustainability and equity of audiological services.

When it comes to challenges with hearing aid use and maintenance, while hearing aids improve hearing function, participants struggled with initial adaptation due to sound distortion, discomfort, and headaches. These findings mirror those in HICs, where first-time

users often report difficulties adjusting to amplification [35,36]. However, unlike in HICs, where audiologists offer structured adjustment programs, South African public healthcare patients have limited access to follow-up care, exacerbating their challenges. Participants also highlighted batteries as a major accessibility issue, with frequent stock shortages in hospitals preventing continuous hearing aid use. This issue is well-documented in LMICs, where hearing aid programs often focus on device provision without considering long-term maintenance support [11,37]. In countries such as Botswana, Kenya, and Uganda, alternative solutions—such as solar-powered hearing aids and battery distribution partnerships with pharmacies—have shown promise in addressing this challenge [32,38]. Rechargeable hearing aids, although available on the market, are not yet widely available in the public healthcare sector, and South Africa's power outages and loadshedding challenges would need to be considered in future solutions. The current findings raise three key implications: First, public audiology programs should integrate structured adjustment sessions to ease the transition for new users. Second, alternative battery distribution models (e.g., pharmacies, postal delivery) should be explored. Third, investment in rechargeable or solar-powered hearing aids may improve long-term accessibility in low-resource settings.

As far as factors influencing consistent hearing aid use are concerned, consistent hearing aid use was influenced by social stigma, a lack of family support, and situational preference. Some participants avoided wearing their devices in public spaces due to fear of judgment, a challenge also noted in LMICs such as Nigeria and Bangladesh, where hearing aids are often associated with ageing or disability [37,39]. In contrast, HICs have implemented successful awareness campaigns, normalizing hearing aids as assistive technology rather than a disability marker [40]. A lack of family support was another deterrent, with participants reporting that family members did not fully understand their hearing needs. This aligns with findings from Brazil and Malawi, where caregivers' lack of awareness often reduces encouragement for consistent hearing aid use. These findings imply that hearing health education campaigns should target both users and their families to foster supportive environments and that community outreach programs can help destigmatize hearing aid use, particularly among younger users.

When it comes to accessibility of hearing aid repairs and follow-up services, many participants reported delays in hearing aid repairs, with waiting periods extending three to six months due to limited technicians in public hospitals. This finding echoes research in India and Malawi, where hearing aid repairs often take months to complete, forcing patients to stop using their devices altogether [15]. Additionally, some participants were unaware that they needed follow-ups after receiving their hearing aid, which resulted in missed opportunities for device adjustments and maintenance. In South Africa, Khoza-Shangase and Masondo [41] and Khan et al. [12] have emphasized that audiology programs in the public sector often lack structured aftercare, negatively impacting hearing aid retention rates. This means that public healthcare systems should employ more hearing aid technicians to improve repair turnaround times, and follow-up reminders (e.g., SMS notifications) should be explored to enhance patient engagement with audiology services.

As far as patient recommendations for service improvement were concerned, participants suggested several practical and actionable solutions to improve hearing aid provision and maintenance within the South African public healthcare sector, including the following: (1) Reducing waiting times through better scheduling systems and decentralized clinics; (2) Improving battery access by distributing them through local clinics and pharmacies instead of requiring hospital visits; (3) Increasing public awareness to reduce stigma and improve hearing aid adoption. Similar recommendations have been made in other LMICs, where decentralized hearing care models have shown positive outcomes in improving hearing aid accessibility [2,4]. These findings raise implications around task-shifting strate-

gies (e.g., training primary care nurses in hearing aid maintenance) that could improve accessibility, as well as mobile hearing healthcare units that could bring repair services closer to rural and remote users. These recommendations are especially relevant in the context of South Africa's National Health Insurance (NHI) reforms and the WHO's position on integrated ear and hearing care. Aligning audiology services with these broader health strategies could improve access and reduce disparities in hearing healthcare.

As South Africa continues to scale up hearing healthcare through its public sector, these findings highlight the need to go beyond device delivery and invest in systems that support sustainable, patient-centered hearing care. Incorporating user feedback into policy, strengthening referral and follow-up structures, and addressing contextual barriers will be critical to advancing equitable outcomes. While this study provides valuable insights into hearing aid experiences in South Africa's public healthcare sector, several limitations must be acknowledged. First, the study was limited to 15 participants, which, while sufficient for qualitative analysis, may not fully represent all hearing aid users in South Africa. However, given the qualitative design, the focus is on depth and richness of data rather than statistical generalizability, and the findings aim to support transferability to similar contexts. Second, the urban-centric data presents a limitation. The study was conducted in Johannesburg-based facilities, meaning the findings may not generalize to rural populations, where access issues may be even more severe. Third, self-reported data challenges. As the study relied on participant narratives, responses were subject to recall bias and personal interpretation. Fourth, the exclusion of sign language users is another acknowledged limitation. The study did not include Deaf individuals who communicate primarily in sign language, meaning the perspectives of profoundly deaf individuals who do not use hearing aids were not explored. Fifth, patients who received hearing aids but never used them were excluded from this study. While this allowed the study to focus on users' lived experiences with hearing aids, it also excluded an important subgroup—those who stopped using their hearing aids altogether. Future studies should consider including this population to better understand the full spectrum of barriers to adoption and consistent use. These limitations highlight recommendations for future research, including the following: (1) Conducting a larger-scale study across urban and rural areas to assess regional differences; (2) Investigating task-shifting models for hearing aid repairs in under-resourced settings; (3) Exploring alternative hearing aid funding models (e.g., social insurance schemes) for sustainability; (4) Studying individuals who received hearing aids but never used them, to explore barriers to initial adoption and reasons for device abandonment within public healthcare settings.

5. Conclusions

This study explored patient experiences with hearing aids in South Africa's public healthcare sector, focusing on access, maintenance, consistent use, and service improvement strategies. The findings from this study provide important insights into the real-life experiences of public healthcare patients in South Africa who use hearing aids. Barriers such as transport costs, long wait times, and a lack of follow-up reflect not only systemic service limitations but also financial burdens for patients. Even when hearing aids are provided at no cost, the indirect costs of accessing, maintaining, and repairing them often deter consistent use.

Despite the challenges identified in the study, participants expressed clear recommendations for improving hearing aid provision, including shorter waiting times, decentralized battery distribution, enhanced follow-up care, and expanded public awareness campaigns. Addressing these barriers is critical to ensuring that hearing-impaired individuals in South Africa's public healthcare system can fully benefit from their hearing aids. Based on the

findings, five key actionable recommendations are put forward by this study, as follows: First, improve hearing aid accessibility and reduce waiting times. Here, hearing aid services must be decentralized by integrating them into primary healthcare clinics to reduce patient backlog at tertiary hospitals. Additionally, digital appointment tracking systems must be implemented to provide patients with clear timelines for device fitting and follow-up care. Moreover, task-shifting initiatives must be increased, allowing trained nurses and/or volunteers and community healthcare workers to assist in hearing aid fittings and basic audiology services. Second, strengthen hearing aid maintenance and aftercare services. Here, consistent access to batteries must be ensured by enabling distribution through pharmacies, mobile clinics, or community health workers. Also, mobile audiology services must be expanded to bring repairs and maintenance services closer to underserved and/or remote areas. Additionally, community-based repair hubs must be established where trained technicians can service hearing aids locally, reducing hospital dependency and indirectly creating employment opportunities. Third, address social and psychological barriers to hearing aid use. Public awareness campaigns must be implemented to reduce stigma around hearing aids, promoting them as essential assistive devices rather than markers of disability. Here, family education programs could be incorporated into audiology services to ensure caregivers understand hearing aid benefits and encourage consistent use. Additionally, peer support groups must be developed where new hearing aid users can share experiences and strategies for overcoming challenges. Fourth, enhance follow-up and patient support systems. Here, automated follow-up reminders (SMS or phone calls) must be introduced to improve patient attendance for repairs and adjustments. Routine hearing aid check-ins must be conducted to ensure devices are functioning optimally, particularly for elderly or low-literacy users. Moreover, tele-audiology services must be integrated where feasible, allowing audiologists to provide remote troubleshooting and counselling for hearing aid users. Fifth, strengthen research and policy development on hearing aid services. Large-scale national studies could be conducted to examine geographic disparities in hearing aid access and maintenance. Here, alternative funding models (e.g., social insurance for assistive devices) could be explored to ensure the sustainability of hearing aid provision. Additionally, advocacy for policy integration of hearing health within South Africa's broader disability and healthcare strategies to secure long-term government investment in audiology services could be prioritized.

Implementing the study's recommendations—such as mobile hearing services, decentralized battery distribution, and improved follow-up care—will require not just clinical adjustments but financial investment and political will. These changes carry cost implications for the public health system but may ultimately reduce the long-term burden by improving device use, reducing repeat visits, and enhancing communication outcomes. Ensuring equitable and effective hearing aid provision in South Africa's public healthcare system requires a multi-faceted approach that combines improved accessibility, better maintenance structures, reduced stigma, and stronger patient support systems. While government-funded hearing aids provide an essential lifeline for individuals with hearing loss, their impact is diminished when users struggle with prolonged waiting times, limited access to repairs, and inadequate social support. By implementing policy-driven improvements, including task-shifting, decentralization, mobile audiology services, and awareness campaigns, the South African healthcare system can enhance hearing aid accessibility and long-term usability. Ultimately, prioritizing patient-centered hearing healthcare solutions will ensure that hearing aid recipients can experience the full benefits of improved communication, social integration, and overall quality of life.

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Abbreviations

The following abbreviations are used in this manuscript:

HICs	High-income countries
LMICs	Low- and middle-income countries
WHO	World Health Organization

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