

Perspectives Of Speech-Language Therapists On Hearing Loss And Collaboration with the Audiology Profession



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Abstract

The research investigates the crucial gap that exists in low-resource settings by assessing systemic and knowledge-based barriers that block multidisciplinary hearing loss care protocols in Pakistan where this public health problem remains commonly undervalued. This study was conducted to measure speech-language therapists (SLTs) competencies regarding hearing loss care as well as their collaboration difficulties with audiologists. The research design involved first using a structured questionnaire consisting of 20 survey items about demographics and hearing loss knowledge and collaboration perspectives (administered to 20 SLTs in Karachi) then conducting semi-structured interviews with three clinicians to enrich the understanding of quantitative data results. The research data analysis used descriptive statistics and thematic breakdown helping to identify technical knowledge gaps and ways that institutions refer patients and their respective collaborative frameworks. Results showed participants understood basic symptoms well, but their mastery of advanced domains remained limited because they knew only 45% of hearing aid technology content while 75% of them were confused about treatment referral procedures. The research through interviews uncovered that there was organizational fragmentation in SLT practice where partnerships depended on informal communication systems instead of formal regulations and educational programs for SLTs did not produce sufficient interdisciplinary competence. The public healthcare staff faced tremendous pressure because they lacked both proper medical tools and mentorship programs that were available to private sector medical professionals. The research should be extended to rural Pakistan, and audiologists should provide their perspective while implementing policy-driven collaboration models for enhanced service delivery in low-resource environments.

Keywords: Speech-Language Therapist, hearing loss, Audiologist, hearing aid technology, communication

Introduction

Communication is a fundamental and intricate skill that people use daily. It plays a crucial role in gaining knowledge, social interactions, and overall well-being. At its core, effective communication allows individuals to express their needs and desires to their intended audience (Moser, 2010). The essential role of Speech-language therapists (SLTs) involves their work to detect and handle communication disorders and swallowing dysfunction disorders. When dealing with communication issues from hearing loss with pediatric and geriatric patients' speech-language therapists act as essential professionals. Professional therapists focus on developing communication abilities while decreasing risks by teaching patients and enhancing their participation in activities for those who need help with these problems (Papadopoulou et al., 2024). Speech-language therapists fulfil professional roles by doing assessments while providing interventions and taking advocacy actions for hearing impairment-related speech-language-literacy-social

communication disabilities (Burns et al., 2024). The implementation of auditory-verbal therapy (AVT) along with aural rehabilitation occurs under early intervention programs when SLTs work together with audiologists (Stanley et al., 2025). The unique expertise of speech-language therapists brings additional value to audiologist-managed hearing device oversight thus generating superior patient outcomes (Tellier, 2025). Effective communication becomes compromised by hearing loss together with speech and language difficulties according to (Fulcher et al., 2021). This condition plays a major role in developing language problems and creating delays in communication. The global population with hearing loss amounts to 360 million people representing 5.3% of the worldwide population and 32 million of these patients are children ((Mauliddiyah, 2021).

The combination of SLTs with audiologists has been established as the most central approach to enhancing patient results. The WHO (*Detail @ Apps.Who.Int*, n.d.) calls interprofessional practice

(IPP) a vital component of person-centered care delivery in hearing health. Research establishes that team collaboration enhances child hearing aid use through the integration of auditory training provided by SLTs with device optimization led by audiologists. Professional cooperation during aural rehabilitation programs results in superior outcomes regarding communication strategy development and social isolation reduction in adults (Borrett & Gould, 2021). However, barriers to collaboration persist. (Damiano et al., 2021) conducted research which revealed that the main barriers include unclear role definitions and communication issues across different departments and inadequate training for professionals from separate fields. The examined study revealed that SLTs became frustrated by audiologic data delays yet audiologists felt uncertain about the scope of SLT auditory rehabilitation work. The research results match (Estévez et al., 2021) recommendation to implement standardized interprofessional education (IPE) that will help professionals understand each other better and define professional roles. Hearing loss is a common factor contributing to disorders of speech and language. Ensuring adequate hearing is essential for the proper development of language and speech skills.

This study explores speech-language therapists (SLTs) perspectives on hearing loss and their view on collaboration with the audiologists. It aims to assess whether SLTs in Pakistan have a general hearing understanding, hearing-related issues, and technology for hearing. To achieve this, the study examines hearing loss, the normal anatomy of hearing, and SLTs' experience with hearing rehabilitation management options. Additionally, it investigates perspectives on interprofessional collaboration. The findings are expected to help identify SLTs' future learning needs, fostering improved collaboration with audiologists.

Research Questions

1. What extent of knowledge do speech therapists have regarding hearing or hearing loss?
2. How much speech therapists have experience and what is his perspective on collaboration with audiologists

Literature Review

Hearing loss management requires a multidisciplinary approach, with speech therapists and audiologists playing pivotal roles in diagnosis, rehabilitation, and long-term care. Globally, studies emphasize the importance of collaboration between these professions to optimize patient outcomes (Coombe, 2018; Moser, 2010). For instance, (Collinson, 2020) demonstrated that structured teamwork in high-resource settings improved adherence to hearing aid protocols by 40%, while

(Kobylas, 2016) identified institutional frameworks as critical enablers of interdisciplinary practice. However, in low- and middle-income countries (LMICs), systemic barriers such as fragmented healthcare systems and resource constraints often hinder collaboration (Leal-Kaymalyz & Herrera-Lillo, 2021). (Rashid et al., 2022) survey of speech therapists in South Asia revealed that only 35% reported formal collaboration with audiologists, attributing this gap to inadequate training and policy support.

The academic preparation of speech therapists further influences collaborative efficacy. (Fulcher et al., 2021) argued that curricula emphasizing isolated skill development rather than interdisciplinary competencies leave professionals unprepared for real-world teamwork. This aligns with findings from Pakistan (Minhas et al., 2022), where noted that 78% of speech therapy graduates felt underprepared to collaborate with audiologists. LMICs face escalated training gaps because their healthcare providers have restricted access to professional development programs (Dehkordi et al., 2024) that research indicates boost both expertise and practical abilities (Ain & Imtiaz, 2025).

Methodologically, the design of self-administered questionnaires and mixed-methods frameworks has been validated as effective for exploring professional practices in healthcare. (Dehkordi et al. 2024) emphasized the utility of Likert-scale questionnaires in capturing nuanced perspectives on collaboration, while (Leal-Kaymalyz & Herrera-Lillo, 2021) advocated for thematic analysis of interviews to contextualize quantitative findings. These approaches are particularly relevant in understudied contexts like Pakistan, where granular, context-specific data is scarce.

Despite growing recognition of these challenges, few studies have explored speech therapist-audiologist collaboration in Pakistan's unique healthcare landscape. Existing research focuses predominantly on urban, hospital-based settings (Ain & Imtiaz, 2025; Rashid et al., 2022), neglecting the role of independent clinics that dominate Karachi's speech therapy sector. This study addresses this gap by examining knowledge levels, collaboration barriers, and systemic inequities among clinic-owning speech therapists, thereby contributing actionable insights for LMIC contexts.

Materials and Methods

This research comprises of two-way phase study, in the first phase questionnaire was adopted from the previous studies. The questionnaire consisted of 20 questions in which three sections were made. The first section comprises Demographic features, the second comprises knowledge level about hearing loss and the third section has a perspective part on collaboration. This questionnaire was developed and

structured using a systemic literature survey of previous studies (Collinson, 2020; Coombe, 2018; Kobylas, 2016). For completing the first phase of the study information of the research was circulated via email to the practicing speech therapist in Karachi, Pakistan. A total of 20 speech therapists from all over Karachi were selected. With the aid of telephonic conversation, experts communicated regarding the aim and objective of the study. The questionnaire was provided and given assurance regarding the anonymous policy of responses. The average time for filling out the questionnaire was 10-15 minutes. In the second phase of the research semi-structured interviews with three Karachi SLTs were conducted, who are currently active in clinical settings. Interviews were conducted based on the first phase of the study findings with an average of 15 minutes to 20 minutes average time. The interviews were recorded on cell phones with their permission.

Participants

The participants chosen were all professional degree holders with a minimum of 3 years of experience. They were all speech therapists and had already communicated regarding the objective of the study. The participant's age group was from 30 to 55 years and had their clinical set-up in Karachi.

Instruments

To make the questionnaire format easy multiple-choice questions and a 5-point Likert scale format were adopted. Each question was arranged in a way that participants could choose easily. Irrelevant and unsuitable questions were avoided to provide flexibility to the respondents. The questionnaire

consisted of three sections including demographic features, hearing loss knowledge, and perspective view on collaboration with the audiologist.

Questionnaire Design

Questionnaire design is an essential step in these studies. To get accurate and correct information, it is important to design a questionnaire in an appropriate manner (Dehkordi et al., 2024; Leal-Kaymalyz & Herrera-Lillo, 2021). This questionnaire is composed of a variety of questions relevant to hearing loss knowledge, additionally, questions were also included regarding anatomy, aetiology, and hearing assessment. Furthermore, the perspective of collaboration between speech therapists and audiologists was explored. To explore this task short interviews were conducted. This is an attempt to make collaboration between these two professions work together. Three major sections Demographics, knowledge of hearing loss, hearing devices assessments, and perspective on collaboration.

Results and Discussion

The responses to the questionnaire were compiled and then analyzed using Microsoft Excel. Data was gathered in ten weeks with 20 respondents who submitted their responses to the questions asked. When the screening of responses was performed, it was found that 4 respondents did not fill out the questionnaire form or were incomplete. Therefore, from the data compilations, those responses were excluded. In some questions, participants chose more than one correct answer. Therefore, the total number of respondents might exceed the number of participants.

Table 1 Participants' workplace setting

Workplace	Number of Participants (N)	Percentage (%)
Hospital	7	35
Private Clinic	10	50
Special School	3	15

To complete the second phase of research, SLTs were requested for interviews, however, only 3 agreed to the interview. Brainstorming of SLTs was done by explaining the purpose of the study and giving assurance regarding the secrecy of their identity (Venkatraman et al., 2017). A thematic analysis approach was chosen for the interviews to analyze

insights of participants' thoughts (Hambraeus et al., 2020). Main themes were explored with each interview and cross-examination of themes was performed after each interview. The inquiry of the patients currently attended by SLTs was also done and their details are shown in Figure 1.

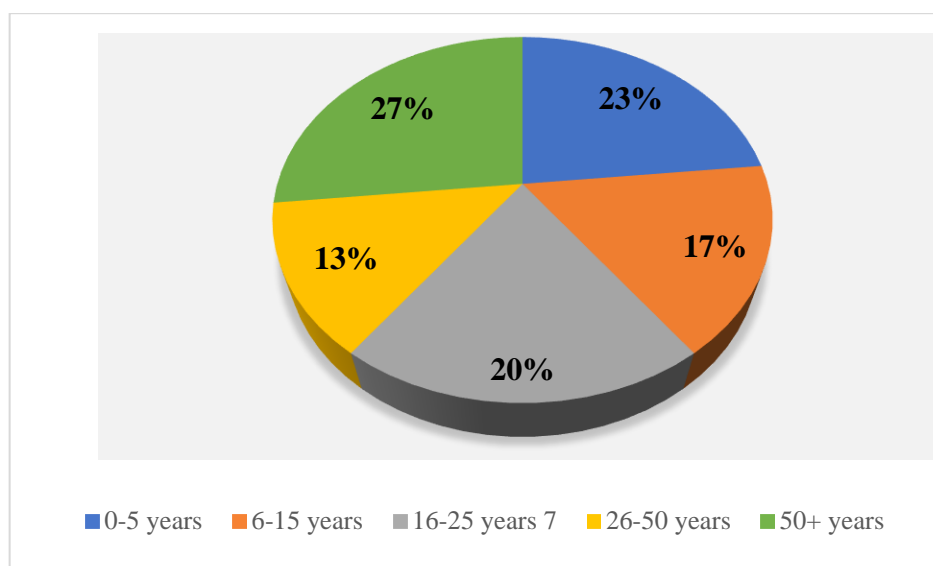


Figure 1 Details of Patients visited by SLTs

In Karachi, speech therapists attend a diverse patient demographic, with age-specific prevalence highlighting distinct clinical priorities. Data indicates that pediatric populations constitute the largest proportion, with 27% of patients aged 0–5 years, likely reflecting early intervention for developmental speech and language disorders such as articulation delays or autism spectrum conditions. These findings aligned with the study by (Johnson et al., 2007). About 23% of communication-disordered patients are adolescents between 6–15 years old which might result from academic communication difficulties or continuing developmental issues. The age group of 16–25-year-olds represents 13% of patients but this that match the needs of its multiple linguistic and culturally diverse healthcare system (Vertejee et al., 2020).

population might be seeking treatment for both remaining developmental conditions and acquired problems including voice disorders. Approximately 20% of patients fall within the 26–50 years cohort because they deal with neurological conditions that include aphasia which develops after strokes or brain injuries. The aging demography of healthcare patients continues to increase as 17% of the patient population exceeds 50 years old and demands greater attention for geriatric speech therapy services that address dysphagia and communication disorders related to disease progression in Parkinson's or dementia. The age-specific statistics highlight why Karachi needs therapy approaches

that match the needs of its multiple linguistic and culturally diverse healthcare system (Vertejee et al., 2020).

Table 2 Key Variables and Mean Values

S.No.	Variable	Mean Value	Scale of Measurement
1	Participants Age	42.5 (Years)	-
2	Experience (Clinical)	6.2 (years)	-
3	Level of Knowledge	14.2/20	-
4	Accuracy in Symptom identification	85%	
5	Familiarity with devices	55%	Based upon correct responses
6	Collaboration priority	4.5/5	
7	Institutional Barriers	4.1/5	Based on the Likert Scale

The result presented in Table 2 shows key variables and their mean values. Participants' mean age was calculated from the 30–55 range, and clinical experience reflects an average of 6.2 years. The total score (14.2/20) highlights moderate competency, with higher accuracy in symptom identification (85%) but lower familiarity with assistive devices (55%). Collaboration necessity and institutional barriers were rated on a 5-point scale (1 = strongly

disagree, 5 = strongly agree), showing strong consensus on collaboration importance (4.5/5) and significant systemic hurdles (4.1/5).

In the second phase of the study, short interviews were conducted with the speech therapist regarding the collaboration with audiology professionals. Thematic Analysis of interview is shown in following Table 3.

Table 3 Thematic Analysis of Interviews on Collaboration

Theme	Description	Key Recommendations
Systematic Fragmentation	No frameworks for collaboration between professions	Policy formulation on interdisciplinary work
Gaps in Training	Academia lacks modules of training	Integration of Modulus in Curriculum
Resource Unequal distributions	The public sector lacks tools for mentorships	Foster equitable resource allocations and mentorship programs

The thematic analysis highlighted systemic fragmentation in collaboration between speech therapists and audiologists, characterized by the absence of institutional frameworks, which force professionals to rely on informal, ad-hoc networks rather than standardized protocols, a gap necessitating urgent policy reforms to formalize interdisciplinary guidelines and workflows (Rashid et al., 2022). Academic education faces a current challenge because undergraduate programs separate speech therapy from audiology courses which leaves new graduates unprepared for collaborative work; this issue requires educational institutions to implement interdisciplinary course content across their programs to bridge theoretical and practical gaps (Moroe et al., 2025). Public health institutions face barriers to effective cooperation because they lack modern diagnostic equipment which private facilities provide alongside mentoring opportunities (Campillo-Sánchez et al., 2025). This demonstrates the requirement for equitable resource distribution to create a fair environment between public and private care providers. The findings by (Collinson, 2020; Kobylas, 2016) emphasize these systemic educational and resource challenges which require local Karachi solutions since practice models at clinics exist as the primary approach to hearing loss service delivery.

Conclusion

This study underscores the critical barriers hindering effective collaboration between speech therapists and audiologists in Karachi, Pakistan, revealing systemic fragmentation due to the absence of institutional frameworks, academic curricula that silo disciplines, and stark resource inequities between public and private sectors. To address these challenges, policymakers must prioritize the development of national guidelines to formalize interdisciplinary collaboration, while academic institutions should integrate cross-disciplinary training modules into speech therapy and audiology programs to bridge theoretical and practical gaps. Concurrently, equitable resource allocation and mentorship initiatives are essential to empower public-sector practitioners with tools and support comparable to their private-sector counterparts. Future research should expand geographically to include rural and semi-urban regions of Pakistan, incorporate audiologists' perspectives to balance the narrative, and evaluate the long-term impact of

proposed interventions, such as curriculum reforms or policy changes, on clinical outcomes. Additionally, exploring technology-driven solutions, like telehealth platforms for mentorship and collaboration, could mitigate resource disparities in underserved areas. By addressing these systemic, educational, and resourcing gaps, stakeholders can transform Karachi's ad-hoc collaborative practices into structured, sustainable models aligned with global standards, ultimately enhancing care quality for individuals with hearing loss in resource-constrained settings.

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