**Research Article**

# Barriers Faced by Deaf Individuals while Availing Speech and Hearing Services

Reuben Thomas Varghese[1*], Rajkumar Rimmalapudi[2], Rubby Viren[3], Karthik Venkat Sridaran[4], Reshma Odungattu[5], Govindaraju Teja[5]

[1.] Department of Speech-Language Sciences, All India Institute of Speech and Hearing, Mysuru, India
[2.] Department of Special Education, All India Institute of Speech and Hearing, Mysuru, India
[3.] Department of Clinical Services, All India Institute of Speech and Hearing, Mysuru, India
[4.] Department of Electronics, All India Institute of Speech and Hearing, Mysuru, India
[5.] Augmentative and Alternative Communication and Sign Language Center, All India Institute of Speech and Hearing, Mysuru, India

**ORCID ID:**
Reuben Thomas Varghese: 0000-0001-6994-0277
Rajkumar Rimmalapudi: 0009-0008-3758-0068
Rubby Viren: 0009-0003-1226-8338
Karthik Venkat Sridaran: 0009-0003-4571-1308
Reshma Odungattu: 0000-0003-1115-6046
Govindaraju Teja: 0009-0008-2099-7676

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[*] **Corresponding Author:** Department of Speech-Language Sciences, All India Institute of Speech and Hearing, Mysuru, India. reuben@aiishmysore.in

**Short running title:** Barriers Faced by Deaf Individuals while…

## Highlights

- Deaf individuals preferred professionals to use sign language during consultations
- Deaf individuals wanted sign language videos in clinics for better service access
- Deaf individuals lacked confidence in visiting speech and hearing institutes

## ABSTRACT

**Background and Aim:** Deaf individuals in India face significant auditory impairment, leading to challenges in accessing services. Studies highlight the need to enhance communication services and accessibility to ensure fair access to resources for the deaf community. The present study aimed to address the barriers faced by deaf individuals while availing speech and hearing services in India.

**Methods:** A total of 325 deaf individuals were considered in the age range of 18–30 years, and a survey research design was employed. A 25-item questionnaire was developed under three domains: communication barriers,

service access barriers, and psychological barriers. The questionnaires were given to the participants to fill, and the responses were calculated.
**Results:** The overall results revealed that service access barriers were more compared to communication barriers and psychological barriers. In services-related barriers, the results revealed communication barriers, 74% of the participants preferred sign language during speech and hearing consultations and required counselling by professionals in sign language. Further, in terms of psychological barriers, 70% of participants lacked confidence in visiting speech and hearing institutes/clinics. Moreover, 78.8% of participants reported a need for more materials in sign language at the appointment sections and a lack of sign language interpreters while accessing services in terms of service access barriers.
**Conclusion:** Addressing these barriers faced by deaf individuals is critical to ensure equitable access to services and promote positive experiences while they are availing speech and hearing services.
**Keywords:** Communication barriers; deafness; health services accessibility

## Introduction

The World Health Organization (WHO) estimates that about 63 million individuals in India face significant auditory impairment [1]. Deaf individuals encounter numerous challenges in accessing services related to their various needs. Previous studies have reported that deaf individual's face seven times lower health literacy as compared with non-deaf individuals, leading to both under diagnosis and under treatment [2]. Sign language is a unique form of communication that uses hand gestures alongside other movements, such as facial expressions and body postures [3]. Deaf persons communicate predominantly using sign language. To foster trust, make informed choices, and ensure positive outcomes, effective communication between professionals and deaf individuals is pivotal [4].

The communication challenges faced by deaf individuals present a significant barrier when they seek speech and hearing services. One notable obstacle is the limited oral communication skills. Deaf individuals often struggle with effective communication due to time-consuming, complex sentence structures, vocabulary, visual impairments, and weak reading and writing skills, preferring sign language or interpreters [5-7].

Lip-reading is ineffective for deaf individuals, as skilled lip-readers can only understand 20% of spoken words. Factors like inadequate lighting, facial hair, distance, and visual observation can complicate lip-reading [8]. Masks and group conversations also hinder it. Effective communication between patients and professionals is crucial, but a lack of certified interpreters and inadequate training hinder this access. Clinicians' limited communication skills also hinder their interaction with deaf individuals [9]. Consequently, deaf individuals may experience hindrances in their quality of care [10]. Although numerous studies have reported on the significant communication barriers encountered by deaf individuals when accessing health care services, there remains a need for an improved understanding of the extant problems to design better clinical services [11-16].

WHO, 2007 highlights the need for better support services for deaf individuals, emphasizing the importance of accommodating their specific needs and enabling self-expression despite challenges in scheduling appointments and increased client anxiety. The results of the study indicate that deaf people have difficulty communicating their experiences due to disparities, less attention, and communication through writing, friends, and family. Because there are not enough qualified and accredited interpreters, they receive services unequal to those provided to the general public [17].

In the study conducted by Middleton et al. [18], the authors provided information on the preferences of deaf individuals for communication during clinic appointments. This study highlighted the significance of adjusting communication tactics to the preferences of deaf patients and emphasized the requirement that healthcare personnel undergo training in deaf awareness and effective communication methods.

Deaf individuals encounter challenges in health care services and various other fields, including speech and hearing services. However, there is currently a dearth of Indian studies on the challenges faced by deaf individuals in clinics or educational institutes. For this reason, it is imperative to better understand the difficulties these individuals experience in availing themselves of speech and hearing services. Therefore, the present study aimed to assess the barriers faced by deaf individuals while accessing speech and hearing services.

## Methods

### Participants

A cross-sectional survey research design was employed; this study included 325 deaf people, comprising 168 men and 157 women. Participants were recruited from various deaf schools and training institutes in Mysuru. Criteria for participant recruitment included the following: a) age 18–30 years, b) presence of severe to profound hearing loss since birth, and c) minimum educational qualification of 12th grade.

**Questionnaire**

The questionnaire was designed using the following four phases.

Phase 1 involved collecting information regarding the barriers faced by deaf individuals based on previous studies and sociocultural factors and interviewing deaf individuals, their stakeholders, as well as speech and hearing professionals.

Phase 2 involved the selection of questions; based on the inputs from Phase 1, a set of 25 questions was selected. These 25 questions were categorized into the following three domains: communication barriers (consisting of ten questions), service access barriers (comprising ten questions), and psychological barriers (including five questions).

Phase 3 involved content validation of a questionnaire; an expert panel of five speech and hearing professionals was provided with the prepared set of items to rate whether the questions represented all aspects of barriers. Each expert was provided the questionnaire and instructed to rate each item on a scale ranging from 1 to 4 for content validation. A rating of 1 indicated "irrelevant and should be deleted," a rating of 2 indicated "relevance is unclear because the meaning is unclear," a rating of 3 indicated "relevant but in need of minor adjustment," and a rating of 4 indicated "relevant and clear formulation." An item was considered valid if at least three of five raters rated it as 4. The questionnaire's Content Validity Index (CVI) showed an overall item-level CVI score of 0.94, indicating excellent content validity [19]. For measuring the Content Validity Ratio (CVR), the questionnaire was given to 8 experts; the experts were requested to score each item from 1 to 3: 1- not necessary, 2- useful but not essential, and 3- essentials. The CVR of the above tool was 0.84, which was more than the required minimum value, according to Lawshe [20].

Phase 4 involved construct validity, five deaf individuals were provided with the items to rate for clarity of content, understandability, and relevance on a three-point rating scale of good, fair, and poor. Only items rated as good and fair were considered valid. Based on all the inputs from the four phases, the final 25-item questionnaire was finalized (as shown in Appendix A). The questionnaire had 5-point scoring criteria for each of the responses. Never had a score of 0, Rarely had a score of 1, Sometimes had a score of 2, Often had a score of 3, and always had a score of 4. The maximum score was 40 each for communication-related barriers and service access barriers and 20 for psychological barriers. In terms of reliability of the tool across the three dimensions, the communication barriers had good reliability (Cronbach α score was 0.84), psychological barriers showed good relaibilty (Cronbach α score was 0.81) and service access barriers showed acceptable reliability (Cronbach α score was 0.78).

**Administration of questionnaire**

The participants were given the 25-item questionnaire and asked to select one of five responses on a five-point Likert rating scale. The responses were never, rarely, sometimes, often, and always. The participants were instructed to tick the responses that indicated how often they had experienced these challenges.

**Scoring and data analysis**

Data analysis was conducted using SPSS version 26. We analysed descriptive statistics such as frequencies and percentages.

**Results**

A total of 325 deaf individuals participated in the study. The questionnaire was structured into three distinct categories: 1) communication barriers, 2) service access barriers, and 3) psychological barriers. All participants were provided with clear instructions to complete all the questionnaire questions. To ensure understanding, sign language teachers provided sign language interpretation for each question to facilitate comprehension for all participants. To calculate the frequency and percentage of participant responses, we analysed the data for each question within the three categories.

**Communication barriers**

The questions addressed various aspects of the communication barrier domain. Among the 325 participants, 79% reported not receiving counselling in sign language regarding test results and treatment options after evaluations. In addition, 74% expressed their preference for using sign language during speech and hearing consultations. Furthermore, 69% reported difficulty in understanding the steps required to obtain a disability certificate. In addition, 67% mentioned challenges in lip-reading or speech-reading when communicating with professionals. Table 1 presents the participant's responses to the questions related to communication barriers.

**Psychological barriers**

The psychological barriers category consisted of five questions. Approximately 70% of the participants reported that they lacked confidence in visiting speech and hearing institutes/clinics alone, and they expressed lower satisfaction with the services they received. Moreover, 68% reported experiencing frustration during evaluations at speech and hearing clinics, and they expressed a desire to receive real-time sign language interpretation support to enhance their confidence. Table 2 presents the participants' responses to the questions about psychological barriers.

**Service access barriers**

The service access barriers category consisted of ten questions. A significant majority of participants (78.8%) stated that displaying more materials or videos in sign language at the reception/appointment sections would enhance awareness of speech and hearing problems. Furthermore, 78% stated they had not encountered sign language interpreters while accessing services. Of the participants, 76.6% believed that speech and hearing institutes could do more to promote the use of sign language and improve service delivery. In addition, 75.7% reported they were not given the option to file a complaint with higher authorities if their needs were not met, and 68% encountered difficulties in their interactions with registration staff regarding appointments or their turn for consultations. Moreover, 67% expressed that the provision of information in sign language across different departments would enhance accessibility and improve service delivery. Table 3 displays the participants' responses to the questions related to service access barriers.

**Discussion**

The present study investigated communication, psychological, and service access barriers faced by deaf individuals when seeking speech and hearing services. The study findings are consistent with those of the existing literature in that they highlight communication challenges as a central obstacle in healthcare settings for the deaf community [21, 22, 23]. The present study emphasizes the critical importance of effective communication between professionals and deaf patients for ensuring accurate diagnosis, appropriate treatment, and improved overall health outcomes [8]. The study highlights communication barriers faced by the deaf community in accessing speech and hearing services, highlighting the need for qualified sign language interpreters and professionals who understand sign communication [23].

Service access barriers are a major concern for participants, with 79% expressing a need for more sign language materials in reception areas. However, 78% reported the absence of sign language interpreters, highlighting the need for professional support. 76.6% believe institutes and clinics should promote sign language for better service quality.

This study reveals that communication challenges significantly impact deaf individuals' well-being. Around 70% of participants lack confidence in navigating speech and hearing clinics, highlighting their vulnerability. This insecurity stems from uncertainties related to communication difficulties and the service delivery process. Frustration (68%) and a desire for real-time sign language interpretation support highlight the emotional difficulties faced by deaf individuals due to inadequate communication.

The study highlights the need for a multidimensional speech and hearing services approach to create an inclusive environment. It emphasizes the need for speech and hearing professionals to understand cultural and communication needs, improve accessibility through sign language interpreters, and address complaints. Communication barriers, such as not receiving sign language counselling for test results and treatment options, and difficulties in lip-reading or speech-reading are common issues. Another area of concern was psychological barriers. Participants lacked confidence in visiting speech and hearing institutes/clinics alone and expressed lower

satisfaction with the services they received. Participants also reported frustration during evaluations and the desire for real-time sign language interpretation support.

In terms of the limitations of the study, the construct validity of the tool used in this study was determined through a simple rating process involving five deaf individuals, who evaluated the items based on clarity, understandability, and relevance using a three-point scale. However, this approach may not fully capture the validity of the tool. The study also did not employ more robust methods such as factor analysis or assessments of convergent and discriminant validity, which are typically necessary to establish the tool's validity more comprehensively. Another limitation was that test-retest reliability was not considered.

## Conclusion

The barriers faced by deaf individuals while accessing speech and hearing services are multifaceted and significantly impact their quality of rehabilitation. To ensure equitable access to services and promote positive experiences among deaf individuals, addressing these barriers is critical. Moreover, the present study's findings highlight the need to improve the accessibility of speech and hearing services to ensure equitable care for all, especially within the context of the communication-related barriers experienced by the deaf community.

## Ethical Considerations

### Compliance with ethical guidelines

In the present study, all the testing procedures were carried out using non-invasive techniques, adhering to the guidelines of the Ethics Approval Committee of the institute (SH/EC/ARF-11/2023-2024). All the procedures were explained to the participants and informed written consent was taken from all the participants of the study.


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### Authors' contributions

RTV: Study design, statistical analysis, interpretation of the results, and critical revision of the manuscript; RR: Study design, acquisition of data; RV: Acquisition of data; KVS: Questionnaire development and data collection RO: Acquisition of data and; GT: Drafting the manuscript.

### Conflict of interest

The authors report no conflicts of interest. The authors alone are responsible for the content and writing of the paper.


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Table 1. Responses in percentage (%) to the questions related to communication barriers

| Communication barrier | Never | Rarely | Sometimes | Often | Always |
|---|---|---|---|---|---|
| **Q1** | 0.90 | 4.01 | 8.01 | 12.31 | 74.80 |
| **Q2** | 0.90 | 1.81 | 20.01 | 24.31 | 52.90 |
| **Q3** | 2.81 | 10.51 | 18.81 | 15.41 | 52.60 |
| **Q4** | 1.21 | 4.31 | 20.90 | 17.80 | 55.70 |
| **Q5** | 1.81 | 2.52 | 15.40 | 12.90 | 67.41 |
| **Q6** | 1.50 | 4.60 | 19.40 | 17.50 | 56.90 |
| **Q7** | 0.30 | 8.30 | 20.01 | 15.70 | 55.70 |
| **Q8** | 0.60 | 6.20 | 15.10 | 14.20 | 64.00 |
| **Q9** | 0.00 | 2.20 | 12.60 | 16.91 | 68.30 |
| **Q10** | 0.00 | 0.00 | 4.60 | 16.00 | 79.40 |
| **Mean** | 33.54 | | | | |
| **SD** | 4.368 | | | | |

Table 2. Responses in percentage (%) to the questions related to psychological barriers

| Psychological barrier | Never | Rarely | Sometimes | Often | Always |
|---|---|---|---|---|---|
| **Q1** | 1.80 | 4.00 | 14.80 | 24.00 | 55.40 |
| **Q2** | 0.31 | 2.81 | 14.21 | 14.81 | 68.00 |
| **Q3** | 0.61 | 1.81 | 10.51 | 19.11 | 68.01 |
| **Q4** | 0.31 | 0.61 | 11.11 | 18.51 | 69.51 |
| **Q5** | 0.00 | 0.00 | 12.01 | 18.20 | 69.81 |
| **Mean** | 17.41 | | | | |
| **SD** | 2.211 | | | | |

Table 3. Responses in Percentage (%) to the questions related to service access barriers

| Service access barrier | Never | Rarely | Sometimes | Often | Always |
|---|---|---|---|---|---|
| **Q1** | 0.60 | 1.80 | 13.80 | 22.20 | 61.50 |
| **Q2** | 0.00 | 0.60 | 9.80 | 11.40 | 78.20 |
| **Q3** | 0.00 | 1.50 | 14.50 | 16.00 | 68.00 |
| **Q4** | 0.90 | 3.70 | 20.91 | 19.41 | 55.10 |
| **Q5** | 0.00 | 0.61 | 12.01 | 22.21 | 65.20 |
| **Q6** | 0.90 | 2.51 | 10.22 | 18.81 | 67.70 |
| **Q7** | 0.00 | 2.50 | 16.90 | 16.62 | 64.01 |
| **Q8** | 0.00 | 1.80 | 7.40 | 14.20 | 76.60 |
| **Q9** | 0.30 | 0.60 | 9.28 | 11.10 | 78.89 |
| **Q10** | 0.00 | 0.00 | 5.80 | 18.50 | 75.70 |
| **Mean** | 35.30 | | | | |
| **SD** | 3.092 | | | | |

**Appendix A.** Questionnaire

Barriers faced by deaf/hard of hearing individuals while availing speech and hearing services

Name: Age/Gender: Date:

**Instructions:**

These questions are related to communication difficulties you may encounter while receiving speech and hearing services. Please select the answer that indicates how frequently you have faced these challenges. "ASLP" refers to Audiologists and Speech-Language Pathologists in the questions below.

Questions

**Communication barriers**

1. Do you prefer speech and language consultations to be conducted in Indian sign language?

☐ Never ☐ Rarely ☐ Sometimes ☐ Often ☐ Always

2. Do you find it difficult to use written language to communicate with ASLPs during speech and hearing consultations?

☐ Never ☐ Rarely ☐ Sometimes ☐ Often ☐ Always

3. Do you find it difficult to lip read/speech read when ASLPs talk to you?

☐ Never ☐ Rarely ☐ Sometimes ☐ Often ☐ Always

4. Do you feel uncomfortable when ASLPs use exaggerated pronunciation or speak loudly during speech and language consultations?

☐ Never ☐ Rarely ☐ Sometimes ☐ Often ☐ Always

5. Do you think ASLPs require a better professional skillset while interacting with individuals who are deaf or hard of hearing?

☐ Never ☐ Rarely ☐ Sometimes ☐ Often ☐ Always

6. Did you ever leave a speech and hearing institute/clinic without completing the evaluations due to communication gaps with ASLPs?

☐ Never ☐ Rarely ☐ Sometimes ☐ Often ☐ Always

7. Have you encountered difficulties while interacting with registration/ reception staff regarding your appointment/ turn for speech and hearing consultations?

☐ Never ☐ Rarely ☐ Sometimes ☐ Often ☐ Always

8. Do you find it difficult to understand the instructions given by audiologists during audiological evaluations?

☐ Never ☐ Rarely ☐ Sometimes ☐ Often ☐ Always

9. Do you feel more materials/videos should be displayed in Indian sign language regarding speech and hearing problems in the reception/appointment sections for better awareness?

☐ Never ☐ Rarely ☐ Sometimes ☐ Often ☐ Always

10. Have you received counselling in sign language about your problems, test results, and available treatment options?

☐ Never ☐ Rarely ☐ Sometimes ☐ Often ☐ Always

**Services access barrier**

1. Have ASLPs asked you whether you prefer Indian sign language or spoken language while availing speech and hearing services?

☐ Never ☐ Rarely ☐ Sometimes ☐ Often ☐ Always

2. Have you come across any Indian sign language interpreters while availing of speech and hearing services?

☐ Never ☐ Rarely ☐ Sometimes ☐ Often ☐ Always

3. Would you feel more confident if the speech and hearing institutes/clinics provided real-time sign language interpretation support?

☐ Never ☐ Rarely ☐ Sometimes ☐ Often ☐ Always

4. Have you faced difficulties while trying to access different departments or services at the speech and hearing institutes/clinics due to communication difficulties?

☐ Never ☐ Rarely ☐ Sometimes ☐ Often ☐ Always

5. Have you observed information in Indian sign language across different departments in speech and hearing institutes/clinics?

☐ Never ☐ Rarely ☐ Sometimes ☐ Often ☐ Always

6. Do you think providing information in Indian sign language across different departments in the institute would enhance accessibility and improve service delivery?

☐ Never ☐ Rarely ☐ Sometimes ☐ Often ☐ Always

7. Have you experienced difficulty comprehending the steps necessary to obtain a disability certificate during your visit to speech and hearing institutes/clinics?

☐ Never ☐ Rarely ☐ Sometimes ☐ Often ☐ Always

8. Do you have to wait a long time for testing to be completed or for appointments to be scheduled because of the absence or lack of a sign language interpreter?

☐ Never ☐ Rarely ☐ Sometimes ☐ Often ☐ Always

9. Do you feel that the speech and hearing institutes could do more to promote the use of Indian sign language to improve service delivery?

☐ Never ☐ Rarely ☐ Sometimes ☐ Often ☐ Always

10. Have you been given the option to file a complaint with the higher authorities at the speech and hearing institutes/clinics if your communication needs are not met?

☐ Never ☐ Rarely ☐ Sometimes ☐ Often ☐ Always

**Psychological barriers**

1. Have you observed ASLPs becoming confused/ frustrated regarding the ways to communicate during speech and language evaluations?

☐ Never ☐ Rarely ☐ Sometimes ☐ Often ☐ Always

2. Have you ever avoided seeking help from ASLPs due to communication difficulties?

☐ Never ☐ Rarely ☐ Sometimes ☐ Often ☐ Always

3. Have you experienced frustration during evaluations in speech and hearing institutes/clinics?

☐ Never ☐ Rarely ☐ Sometimes ☐ Often ☐ Always

4. Have you experienced less satisfaction with the speech and hearing services provided due to miscommunication?

☐ Never ☐ Rarely ☐ Sometimes ☐ Often ☐ Always

5. Do you feel confident enough to visit speech and hearing institutes/clinics alone without a friend/family member?

☐ Never ☐ Rarely ☐ Sometimes ☐ Often ☐ Always