

Hina Noor\*

| Farkhunda Rasheed Choudhary†

| Tariq Javed‡

## Teachers' report on Status of Communication with Hearing Impaired Children in Special Schools of Punjab: An Evaluation of Current Linguistic Competence of HIC

### Abstract

*Development of communication skills in children with hearing impairment (HIC) is one of the major goals of rehabilitation for these children. Information about current trends and communication status of HIC is a prerequisite for communication skill-building plan development. For the exploration of the current communication status of HIC studying in public special education institutes of Punjab, a survey was conducted. Two-stage cluster sampling was used to get data from teachers working in 30 randomly selected institutes. A self-developed questionnaire (Cronbach alpha, 0.8) was mailed to get data. SPSS was used for quantitative analysis of data obtained from 107 questionnaires containing information about 886 HIC studying in the special schools. Sign language was found as a common mode of communication. Those using an oral mode of communication were at the word level. The aural approach of teaching was getting acceptance from the teachers. Provision of hearing aid and improvement in speech therapy services were recommended.*

**Key Words:** Communication, Children with Hearing Impairment, Special Schools, Punjab, Special Education Teacher

### Introduction

Hearing impairment causes intense effects on the social relationships and interactions of the children, mostly due to its impacts on verbal conversation and communication. Children with hearing impairment (HIC) have the possibility of developing communicative delays which may have significant lifelong consequences. Early intervention is needed to maximise the communication abilities of HIC that should be based on understanding the child's characteristics (Archbold, Gregory, Mayer, & Mulla, 2012). Only identification and timely diagnosis of hearing impairment and fitting of amplification devices cannot guarantee the development of communication abilities of HIC. Aural rehabilitation services for children with hearing loss are needed, especially for children with profound hearing impairments. The primary hindrance on the way of oral skill-building is listening to impairment. In Pakistan, plans of rehabilitation simply include special education and speech therapy services. (Noor & Arif, 2017).

After the detection of hearing loss, it is significant to provide information on all the available opportunities to help and develop the communication of the child. The misconception about hearing aids is to consider it "cure-all" for hearing loss, but the hearing aid is only a part of improving communication in a long-term rehabilitation process. Nevertheless, hearing aids are considered as effective tools for enhancing hearing abilities. However, hearing aids cannot directly make a student a good listener. Listening consists of interest, attention and concentration. Most of the time children with hearing impairment may experience poor listening skills. This is because they find hearing a difficult task, and they give up and just "turn off" the speaker. In Pakistan, mostly students with severe to profound hearing loss are not provided with hearing aids. After the fitting of hearing aids, it is important to re-sharpen the child's listening skills, and it is done by auditory training of the child. The auditory training helps children with significant hearing loss how to hear, listen and understand the

\* Lecturer, Faculty of Education, Allama Iqbal Open University, Islamabad, Pakistan

† Assistant Professor, Faculty of Education, Allama Iqbal Open University, Islamabad, Pakistan.

Email: [farkhunda.rasheed@aiou.edu.pk](mailto:farkhunda.rasheed@aiou.edu.pk)

‡ SST, Federal Government Public School No. 2 (Boys), Tariqabad, Rawalpindi, Punjab, Pakistan.

language of typical hearing persons and to communicate in the same language effectively. It helps the whole process of communication of the HIC ([Nott, Cowan, Brown, & Wigglesworth, 2009](#)).

[Montgomery and Houston \(2000, p. 379\)](#) described aural rehabilitation as services that "increase the probability that successful communication will occur between a hearing-impaired person and his or her verbal environment". Services like the diagnosis of the extent of hearing loss, fitting of hearing assistance technologies, provision of auditory training in addition to communication strategies training, educational and personal adjustment counselling, psychological support, training of communication partners, speech-reading training, speech-language therapy, etc. are included in aural rehabilitation plans. These services can be provided to the target population at various workplaces, e.g. teaching institutes, clinics, hospitals, community centers, otologist's offices, mainstream or special schools or even at home.

In children, hearing impairment causes disturbance in learning speech and language. Early identification and use of amplification have an intensely positive effect on the development of the language acquisition abilities of HIC. It is also found that infants who are recognised with hearing loss by 6 months can be predicted to achieve normal language development ([Roberts & Hampton, 2017](#)). [Alsop, Killoran, Robinson, Durkel, & Prouty \(2004\)](#) stated the significance of including auditory training in the curriculum of deaf-blind students. They presented some recommendations for resources and activities for providing auditory training and a developmental approach to effective listening.

It is of prime importance that school-going HIC is provided with approximate educational placement. [Ross \(1976\)](#) recommended the provision of total communication and aural/oral classes to HIC. [Ross \(1976\)](#) and [Leslie \(1976\)](#) suggested a range of alternative educational programs, e.g. placement in regular classrooms with or without supportive services, placement in regular class supported with additional instructional services, full-time class attendance in special schools or part-time, home-based programmes, instructions in health care institutes, hospitals or total care settings, etc. But these alternate educational settings have a single aim to move towards full mainstreaming settings as quickly as possible because it is considered as the best setting for optimal communication skill-building of HIC. At the same time (re)habilitation programmes must be loaded with the multidisciplinary approach in order to be comprehensive. It was mentioned for preschool HIC that intervention should emphasise on the acquisition of basic listening and language skills, but for school-aged HIC, formal speech training is also recommended. Multisensory instructions focusing on the development of all components of the model of effective communication in addition to speech development was recommended due to varying auditory capacities of HIC, especially for those that don't show progress with auditory-only stimulation.

In Pakistan, the condition of the aural rehabilitation process is not very good due to lack of awareness and resources. There is no attention given to the provision of auditory training in schools. The reason behind is the non-provision of hearing aids to HIC and unavailability of educational audiologists in special schools. Speech and Language therapy are available for children, but lack of proper sign language, auditory training and teachers' training is a hindrance in achieving long-lasting effects in the development of the auditory skill of HIC ([Noor, 2017](#)). Furthermore, qualified and skilled special education teachers are also unaware of modern educational practices for HIC. The HIC, who are having private speech therapy and auditory training sessions are mainstreamed successfully, but the ratio of such students is minor ([Akram & Bashir, 2012](#)).

There are many nations including Pakistan who have committed together to Salamanca statement (1994) that there is a need to practice mainstreaming for children with disabilities and it should be an integral component of national plans for achieving education for all. But the current scenario of the segregated education system of Pakistan without any legal support for compulsory mainstreaming is the main impediment on the achievement of the goal. The target cannot be achieved unless we follow another statement that we need to remove barriers which can hinder the development of special to regular schools, and common administrative organizations should be built. In the case of HIC, the most prominent barrier, in addition to lack of mainstreaming act, is their communication handicap which seriously affects their social, educational and vocational success in life.

[Figueras, Edwards, & Langdon, \(2008\)](#) mentioned a delayed development of spoken language in profoundly hearing-impaired children in comparison to their counterparts with typical hearing. [Rout, Parveen, Chattopadhyay, & Kishore, \(2008\)](#) described various adjustment and academic problems of

children with hearing impairment in schools. [Yoshinaga Itano \(2003\)](#) stated the significance of early identification and intervention in minimising the impacts of hearing loss and substantial improvements in educational and social accomplishments of the child. It was recommended for preschool HIC that intervention should be focused on achieving listening and basic language skills, but proper speech training is necessary for school-aged HIC. The HIC may develop positive social behaviour, participate in group activities, follow discipline, pay attention and discuss their thoughts with the teachers ([Majid & Saif, 2011](#)). It will happen when the HIC is able to develop communication.

Although the children with hearing impairment experience better advancements in spoken language than before, there is still considerable variability occurs ([Tomblin, Oleson, Walker, & Moeller, 2014](#); [Belzner & Seal, 2009](#)). Children with hearing impairment possess considerably less communicative actions ([Figueras, Edwards, & Langdon, 2008](#)), they need extended time to gain their first 50 words vocabulary ([Lund & Douglas, 2016](#)), possess lesser vocabulary knowledge ([Nott, Cowan & Wigglesworth, 2009](#)), have trouble to use grammar in spoken language and writing ([Spencer, Barker, & Tomblin, 2003](#); [Insoe, Odell, Archbold, & Nikolopoulos, 2009](#)), have a lesser narrative and descriptive skills and unable to attain reading skills in high school appropriate for their age ([Geers, Tobey & Brenner, 2008](#)). Considering the accurate aspects and communication status of the HIC is vital to maximising communication outcomes. Children with different levels of hearing impairment may go through countless difficulties in the acquisition of language and academic skills than their peers with normal hearing ([Tomblin, Ambrose, Oleson, & Moeller, 2015](#)). There are many studies that help to predict language outcomes for HIC and have concentrated on child-related factors for early intervention like identification and cochlear implantation at an early stage, greater residual hearing, and lesser period of auditory deprivation. It results in quick acquisition of expressive and receptive language skills ([Nicholas & Geers, 2003](#)).

Children use pre-linguistic communication skills such as signs, vocalisations and gestures to contribute to social gatherings before they start talking. Many pre-lingual skills of children may help to reveal child's communication status; hence, help to target in their intervention plans ([Gros-Louis, West, & King \(2014\)](#)).

There are many features that play a significant role in affecting therapeutic effects in aural rehabilitation. It is, therefore, imperative to know the communication status of the children and the related factors. They may include the degree of hearing impairment, the onset of hearing impairment, child's linguistic needs, differences leading to a group or individual therapy approaches, a socioeconomic status that determines the capability to buy available services and products and interaction between HIC and practitioner (Tye Murray, 2014). Development of communication skills in HIC is one of the major goals of rehabilitation of these children. The current education system of HIC is not fulfilling educational, vocational and communication needs of hearing-impaired children in Pakistan. There is a need for an integrated system of aural rehabilitation for effective communication that will lead to educational, social and vocational mainstreaming of HIC in our society. There are special education centres existing in every tehsil of Punjab that can be utilised effectively to initiate and coordinate the rehabilitation practices from screening to mainstreaming of HIC. Exploration of communication status of these HIC may help their teachers in finding solutions to their communication problems. The aural approach of teaching was getting acceptance from the teachers. Improvement in sign language skills of teachers was recommended to get the maximum benefit from total communication mode.

## Objectives

The survey was conducted to:

1. Explore the current professional mode of communication used by the teachers and their competence level.
2. Explore the current linguistic competence of the HIC studying in special schools of Punjab.
3. Document the recommendations of the special education teachers about the future needs for communication skill-building of HIC.

## Methodology

### Research Design

The study was descriptive in nature. The survey research design was used to achieve the objectives of the study.

### Participants

The teachers working in special education institutes for HIC of Punjab were selected through two stages of cluster sampling. Out of 161 special education institutes controlled by Directorate of Special Education, Punjab, 30 institutes were selected as follows:



Figure 1: First stage of Sampling Distribution

In the second stage, teachers from these institutes were randomly selected as the sample of the study. The number of teachers selected against each institute type is as follows:

- Nine special education institute (secondary/middle) =  $8 \times 9 = 72$
- One special education institute (higher secondary) =  $10 \times 9 = 90$
- One special education center =  $2 \times 9 = 18$
- Three-degree colleges for HIC =  $3 \times 10 = 30$

Total teachers = 210 (72+90+18+30)

### Instruments

A self-developed questionnaire was mailed to the teachers of special education institutes for HIC. Constructs of the questionnaire were the demographic data of the respondents, information about hearing loss of the HIC, evaluation of the status of aural communication of HIC, current communication mode used by the teachers and their recommendations about the future communication needs of HIC. Content validity was checked by the experts of the field. Pilot testing was carried out in Public institute for HIC, Islamabad and the Cronbach's alpha was found to be 0.8.

### Data Collection and Analysis

210 questionnaires were sent via postal services to the randomly selected institutes. 107 questionnaires were received back containing information about 886 HIC studying in different grades of special schools run by Directorate of Punjab. Data analysis was carried out via SPSS 11.

## Results

Table 1 and 2 shows the demographics of the special education teachers teaching the HIC in special public schools of Punjab. It is evident that most of the teachers were young female graduates holding a master degree in education. Most of the teachers were employed in grade 17 as a senior teacher, freshly inducted by the government. Only a small proportion of teachers were not properly qualified, whereas a small proportion did not enter their post title or nature of the appointment.

**Table 1.** The Age and Gender of the Teachers of the HIC

Age Range of Teacher	F	%	Gender	f	%
26-30	40	37.3	Male	18	16.8
31-35	17	15.8	Female	89	83.1
36-40	12	11.2	Post of Teachers	f	%
41-45	3	2.8	Junior Teachers	34	28.9
46-50	12	11.2	Senior Teacher	65	60.7
51-60	6	5.6	No response	8	7.4
No response	17	15.8			
Total	107	100.0	Total	107	100.0

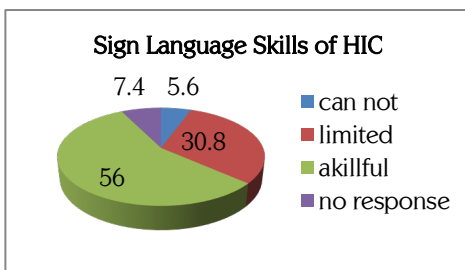
Table 1 shows that there was 16.8% male while 83.1% female teachers out of which 28.9% of teachers were junior teachers, and 60.7% of teachers were senior teachers.

**Table 2.** Experience and Professional Qualification of the Teachers

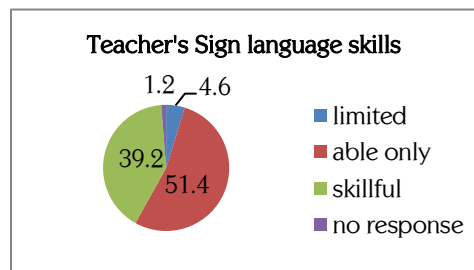
Experience in years	f	%	Professional Qualification	f	%
	36	33.6	B. Ed	16	14.9
1-4	30	28.0	Diploma for Deaf	23	21.4
5-8	14	13.0	M. Ed	38	35.5
9-12	8	7.4	M. Sc	18	16.8
13-16	5	4.6	Untrained	1	0.9
17-20	2	1.8	No response	11	10.2
21-24	6	5.6	F.A	11	10.2
More than 24	6	5.6	Bachelors	14	13.0
No response			Master	76	71
			M. Phil	6	5.6
Total			Total	107	100

## Teaching Methodology and Teacher's, Recommendations

It is evident from figure 2 below that only 39% of teachers were skilful in sign language, but the majority was able enough to communicate through sign language. A small minority of teachers considered themselves as limited users of sign language. Figure 3 below shows that most of the HIC was skilful in the use of sign language, as reported by the teachers.



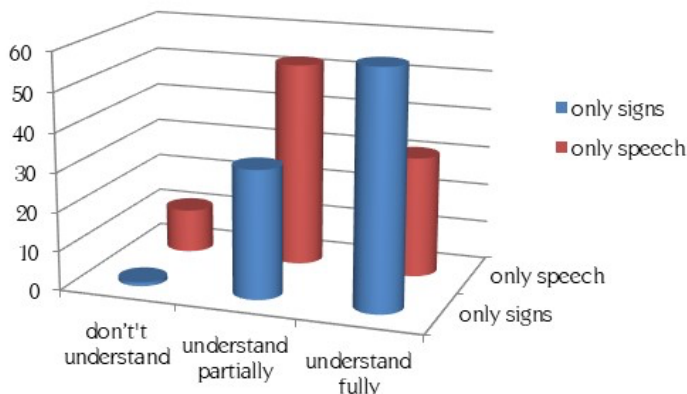
**Figure 2:** Sign Language Skills of HIC



**Figure 3:** Sign Language Skills of the Teachers of HIC

it is clear from figure 3 that if we compare the skill level of students and their teachers in the use of sign-language that students are perceived as a better user of sign language for communication. Teachers consider themselves not at par with HIC. Here a question arises that if teachers are not confident about their use of sign language for teaching and communication, then how can we consider them as an expert teacher. To be a competent teacher means to be an excellent communicator as well.

The teachers reported that the majority of the HIC would comprehend ideas of any topic of discussion fully if only speech or only signs are used. In view of the teachers, one-third children would understand the matter partially if only speech or only signs are used, and only one-tenth of the children would not understand the topic details. 5% of teachers did not comment on the expected success rate of speech only mode of communication with HIC. The details are depicted in figure 4 below.



**Figure 4:** Ability of the HIC to Understand Specific Topic when Communicated by only Speech or only Signs.

The better comprehension level by the majority of the HIC, when communicated with signs only, is due to their expertise in the manual communication mode. The situation is also better when only speech is used as the number of students with partial comprehension level exceeds the students when only signs are used. It is due to the use of both speech and signs by most of the teachers of the HIC during teaching, as evident from table 3. It was quite surprising to the researcher to see the results that one-third of the teachers, who gave the response to this item of the questionnaire, were in favour of the aural approach for teaching HIC.

**Table 3.** Current Mode of the Communication during Teaching and Teaching Method

Communication	f	%	Teaching Method	F	%
Sign Only	5	4.6	Aural approach	24	22.4
Sign and Speak	97	90.6	Total communication	37	34.5
No response	5	4.6	Both	11	10.2
			No response	35	32.7
Total	107	100	Total	107	100

Table 3 shows that 4.6% teachers used to sign only while 97% of teachers speak and use signs while teaching.

**Table 4.** Teachers' Recommendations about the Special Needs of HIC

Aural rehabilitation	f	%	Curriculum and Vocational Training	f	%
Listening skill Development	13	12.1	Curriculum Development	8	7.4

Aural rehabilitation	f	%	Curriculum and Vocational Training	f	%
Provision of Hearing Aid	28	26.1	Vocational Training	33	30.8
Both	8	7.4	Both	22	20.5
No response	58	54.2	No response	44	41.1
Total	107	100	Total	107	100

Teachers' recommendation about the usage of aural communication method is further supported by their view to focus on listening skill development and provision of hearing to these children. But more than half of the teachers were confused about the need to provide aids and listening skill development training as they did not comment on this aspect of aural rehabilitation. Similarly, 41% of teachers did not comment on the need for curriculum development or vocational training needs of the children. The reason might be their satisfaction from the current situation in public schools of Punjab.

### Data Related to HIC

Teachers were asked to enter the detail of the students of their classes. In total, detail of 886 HIC was obtained from these teachers. Analysis of information about these HIC is delineated below. Demographic information of the HIC studying in special schools of Punjab is depicted in Table 5.

**Table 5.** Ages and Degree of Hearing Loss of HIC

Age of child	f	%	Degree of Hearing Loss	f	%
4-6	63	7.1	Mild	4	0.45
7-9	73	8.2	Moderate	38	4.28
10-12	139	15.6	Moderately severe	30	3.38
13-15	182	20.5	Severe	107	12.07
16-18	107	12.0	Profound	384	43.34
19 and above	40	4.5	Don't Know	31	3.49
No response	282	31.8	No response	292	32.95
Total	886	100	Total	886	100

Data about HIC was having a diversity of age because nearly all age ranges were there with the majority falling in 10-15 years of age. As far as the degree of hearing loss was analysed, teachers reported that most of the children were having a profound degree of hearing loss. A small proportion of teachers mentioned that they don't have the information about child's hearing loss, so they did not enter the detail of the degree of hearing loss.

**Table 6.** Provision and Type of Hearing Aid of HIC

Provided with Hearing Aid	f	%	Hearing Aid Type	f	%
No	693	78.2	Body worn	74	42.2
Yes	175	19.7	Behind the ear	99	56.5
No response	18	2.0	Others	2	1.1
Total	886	100	Total	175	100

As table 6 shows, the majority of HIC were not provided with the hearing aid. Out of those provided with aid, users of behind the ear hearing aid were slightly more than body-worn aid users. Two children in the sample had the cochlear implant. As the figure 5 shows, out of one-fifth child provided with a hearing aid, nearly half of children were not using them on a daily basis because they were not comfortable with their aids, as reported by their teachers.

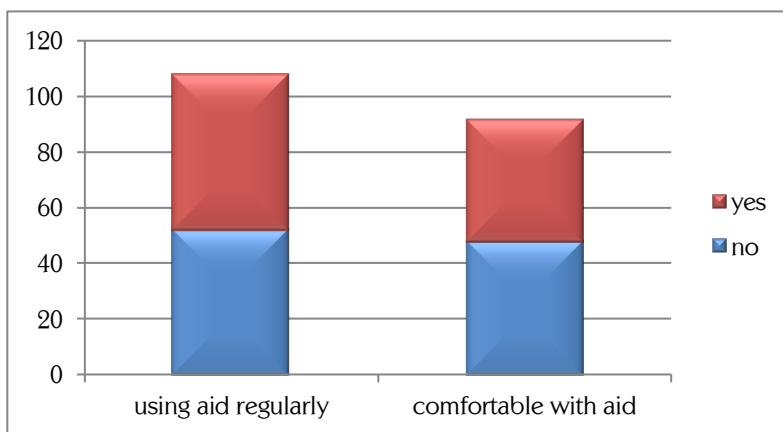


Figure 5: Usage and Comfortability of HIC with Hearing Aid

The situation becomes gloomier when the data regarding the provision of speech therapy to HIC, and their current communication style and the level were analysed. It was revealed that the majority of HIC was not having access to speech therapists, and only a small minority of HIC were getting intensive therapy sessions per week. Majority of the teachers did not bother to enter the information regarding speech therapy sessions of the children. Maybe it was due to non-availability of speech therapy services to these HIC in schools. As far as children's speech and language development were concerned, one-third of these children were using only sign language for communication, and 21% were having the word level of speech for communication as reported by teachers. Details are given in table 7 below.

Table 7. Speech Therapy and Communication Level of HIC

Speech Therapy Sessions/Week	f	%	Communication Level	f	%
1-2	140	15.8	Sign Language	290	32.7
3-4	34	3.8	Sounds	56	6.3
5-6	120	13.5	Words	189	21.3
No Session	564	63.6	2-4 Words	62	6.9
No response	28	3.1	More than four words	35	3.9
			No response	254	28.6
Total	886	100	Total	886	100

## Discussion

The noteworthy results of the current research that can be taken as contributing factors towards trend to focus on communication skills in HIC are:

- The average sign language skills of the teachers;
- Use of total communication by teachers and children's understanding level with speech only mode
- The second highest weightage of opinion to use an aural approach of teaching

But the factors contributing negatively towards trend to focus on communication skills in HIC are:

- Non-provision of hearing aids to a majority of profoundly deaf children
- The discomfort of the majority of hearing aid users
- Limited access to speech therapy services
- Reduced number of speech therapy sessions per week
- The ORAL communication status of HIC



[Mckee and Smith \(2003\)](#) found in the survey of mainstream schools in New Zealand found that 54% had profound deafness, and 40% were severely deaf. Out of all these mainstreamed profound and severely deaf children, 67.2% were able to communicate comfortably by oral mode of communication. 18.4% used both oral, and manual modes of communication and only 14.4% were using signs only. The majority of these children was reported as availing services of teacher's aide and itinerant teacher, i.e. 91% and 86%. And 78% were receiving services of an adviser for deaf children. 44% reported having access to the speech therapist. The services of interpreters and auditory-verbal therapist were available to only 3% of these children and less than a quarter had access to a deaf resource person.

A survey to report about which aural rehabilitation service is provided and how often and in which format it is provided was conducted by Susan and Lori in 2002. It was found that out of eight components of aural rehabilitation programs, the auditory training and speech reading training were least practised due to the formal nature and time demands of the provision of these services.

Final Evaluation report on inclusive education practices for the children with hearing impairment in Vietnam, by Reilly and Khanh, submitted to US Agency for International Development grant holder Pearl S. Buck International on July 2004, is presented here to get an insight of educational provisions for deaf in Vietnam. It was reported that the deaf children were among the most neglected when compared with the children with other disabilities and the main reason behind this trend was their communication difficulties. Despite their normal cognitive ability, many people consider them as un-educable. An inclusive education program for HIC was started in six provinces of Vietnam. The inclusive education program was evaluated to document the actual gains in child learning. Four key aspects described below were looked at during the programme evaluation process:

- Communication level with HIC.
- Teacher expertise to modify the instructions and activities to suit the child's need.
- Parental and educators' expectation of HIC.
- The social relationship of HIC in schools.

Data were collected by two evaluators (from Vietnam and the United States) during a structured interview of 112 stakeholders. The participants were selected from twelve schools, four district education offices, two resource centers, and four provincial education offices during the field visit of 20 days. Results indicated many similar gains as reported earlier, but still, a lot of problems were also identified. The most serious problem was the area of communication with HIC, which was particularly lagging behind for severely and profoundly deaf children, comprising 60% of the programme's participants, due to the reason that both teachers and children were not having the knowledge of a common language. Fingerspelling was the most frequently used communication tool which was not a substitute for a full national language; thus, students were missing the contents of instructions and lagging behind in the classrooms. Few short courses in sign language were not enough to prepare teachers, who in turn will teach sign language to deaf students. As learning language is a prerequisite for further academic learning by children, therefore school must become a place where children can learn the language in the normal conversational manner, no matter if with delayed milestones. Alternative structural arrangements were another option to support the goals of inclusive education, e.g. grouping of all deaf children in one classroom in one school, etc. Teachers were at the centre of the Vietnamese model, responsible for language developments, communication skill-building instruction assessment and guidance. But the teachers, in need of ongoing support like good information and special education techniques, were too much busy and thus the teacher-centred model was not working on getting the desired outcomes.

A survey by Nachiketa [Rout and Udhay Singh \(2010\)](#) was conducted to in India there is a combined cadre of audiologist and speech therapist responsible for providing AR services to H. I individuals. There are 1567 registered ASLP in India that can cover only 30% of the Indian population. Therefore, 34% H.I am detected after 5 years of age. 93.3% of H. I belonged to the income group of less than 6500 per month, and only 5.7% of HIC are able to receive an AR before 3 years of age (critical period). Out of the 70% of children diagnosed as having speech and hearing problem, only 33.4% avail SLT's services and 89% children were indicated with bilateral severe to a profound degree of sensory neural hearing loss. Clinical observations of HIC revealed only 6% were having a verbal mode of

communication mostly restricted to word-level only. None of the profound HIC was found to have a verbal expression of sentence level.

Krishna [Lertsukprasert and Benjamas Prathanee \(2005\)](#) reported the findings of Thailand inconsistent with the current research findings. In Thailand, the most common mode of communication used by deaf children was total communication. They reported that the total communication predominantly focuses on the use of sign language, thereby limiting the ability of the deaf children to communicate with other hearing persons around. The deaf children feel themselves dependent on the interpreter for communication in society.

The communication mode preferred by the teachers of HIC during a teaching in special public schools of Punjab is similar to the condition in North Carolina. Annual Survey by Gallaudet Research Institute in 2009-10 reported that more than 50% of the students with hearing impairment were taught with only spoken language mode whereas 27% were taught with only sign language mode. 12% were taught with sign-supported spoken language, and 5% teachers used spoken language with cues. In North Caroline families with hearing-impaired children are preferring to use "LSL" for communication. The benefit of this communication mode is that there is a focus on the development of spoken language skills in HIC but without using sign language. [Gardiner-Walsh & Lenihan \(2017\)](#) reported that much has changed in the last ten years while discussing the historical perspectives and current demographics. There are glimpses of such attention by teachers of Punjab as the auditory-oral approach was getting popularity in our schools also. There is a need to give training to the teachers targeting those confused teachers who were reluctant to prioritise any one of the teaching approaches in the current study.

## Conclusions

Total communication was the main mode of communication adopted by the teachers of HIC, and the majority of teachers and HIC were skilful in the use of sign language. However, most of HIC were able to understand the subject matter, taught either with only speech or with only signs. No great difference was reported in comprehending the details of the topic. Although the majority of teachers recommended using total communication, the difference with other teachers favouring aural approach was only 12%, making them the second majority. Thus, it was concluded that the aural approach was gaining popularity among teachers.

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