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Community - Based Hearing Rehabilitation of Audiologists - A Survey Study

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Abstract: ***The role of audiologists about their involvement and the current practice patterns in the community - based hearing rehabilitation in India currently does not adhere to any systematic protocols or guidelines in this field when it comes to providing rehabilitative services in the rural and outlying areas from all over India. So this survey questionnaire has been developed to obtain an overview and responses from 60 audiologists all across India were collected. Descriptive statistics were applied as the research analysis for this survey. Thus, the findings reveal that there is an average to good positive survey response from the audiologists and the responses for questions have been discussed in this article.***

Keywords: Community based rehabilitation, Community based hearing rehabilitation, Audiologists, Survey, India

1. Introduction

Community - Based Rehabilitation

The primary goal of community - based hearing rehabilitation (CBHR) is to emphasize the value of assisting people with disabilities in social situations. And this program was developed by the World Health Organization (WHO) in 1976, to provide rehabilitative and medical services. Initially, these CBR services addressed only diseases that are contagious, viral, bacterial, and fungal. Gradually, it also started regulating the practice of providing rehabilitative services for the people with disabilities by involving the team members like speech therapists cum audiologists, physiotherapists, neurologists, ENT physicians, etc., CBR processes are currently operated all over the world as supported by numerous government and non - governmental organizations (NGOs). This multi - sectoral model has also been adopted by over 90 nations since its beginnings (WHO, 2011). CBR is a holistic process and it is to encourage the involvement and incorporation of individuals with disabilities (Chung, 2019). In 2019, the agencies of the United Nations (UN) brought a shift in the concept of Community Based Rehabilitation (CBR) to Community Based Inclusive Development (CBID) which centered more on multisectoral, inclusive rehabilitation services, policies, and guidelines. So, the five main components or domains of the CBHR include (i) health, (ii) education, (iii) livelihood, (iv) social life, and (v) empowerment. Many variables could be evaluated within each of these domains. The true result indicators are characteristics that can be used to measure the impact of CBR on the lives of people with disabilities (WHO, 2015b).

The World Health Organization (WHO) has compiled two sets of such indicators, one for particular coverage and the other for more general coverage (WHO, 2015b). It is up to CBR implementers and researchers, however, to choose and adjust indicators wisely to best suit their environment. Nearly 15% of the world's population (over 1 billion people) is believed to live with some sort of disability, of which around 100 million of those are said to be under the age of 15 years. Being the most underprivileged members of society, disabled people face a variety of challenges, including limited access to healthcare institutions, poor infrastructure support, pessimistic attitudes among healthcare providers, limited educational/vocational opportunities, a lack of self - belief, financial constraints, and minimal support from family members, particularly in developing countries. People with disabilities benefit from community - based rehabilitation (CBR) programs because they bring health services to their homes, forming a close link between them and the healthcare system. Therefore, the services provided through this program should last for a lifetime for the betterment of persons with disabilities and their families. It is also mandatory to organize meetings so that they can obtain accurate information about government programs and benefits, as well as existing laws and policies for the disabled community.

The guidelines of Community based rehabilitation are;

- To advise on improving and expanding CBR services.
- To improve CBR by aiding an integrated and holistic approach that is mainly to the disabled population who are financially deprived.
- To assist stakeholders in meeting their basic needs and improve the standard of living of disabled people and their families and
- To perpetuate by encouraging the disabled persons and their families in the involvement and encouragement process of outgrowth and management.

The CBR should also follow some of the morals, so thus it enables the PWDs to survive successfully in this environment both physically and mentally.

- Impartiality towards disabled people.
- Equality and inclusivity in society are highly important.
- Barrier - free environment for agility and accessibility.
- Assuring that CBR workers always handle disabled people with kindness.
- Given equal chances for their righteousness.
- Acceptance and consideration of persons with disabilities as it implies diversity.
- Men and women should be considered equally.
- Support for children growing up with disabilities, as well as their right to maintain their identities in society.

Hence, these standards for community - based rehabilitation (CBR) apply to all handicap categories.

In one of the CBR studies, the health - related quality of life of two groups of adults was assessed using a standardized Medical Outcome Study short form (SF - 36) questionnaire given by Stewart et al., (1988). The first group consisted of CBR recipients, whereas the second was a control group composed of people who did not participate in CBR. The results showed that those who received CBR had considerably higher health - related quality - of - life levels. In overall health impression, social functioning, and activity limitation, there was also a substantial difference.

Hearing Loss & Community - Based Hearing Rehabilitation:

More than 430 million people or 5% of the population worldwide, demand treatment or intervention to address their "disabling" hearing loss were 432 million population is said to be the adult population and 34 million are said to be children). Over 700 million individuals, or one out of every 10 people, are expected to have hearing loss as one of the health issues by 2050. Hearing loss is defined as the inability to hear as well as someone with normal hearing i. e., hearing thresholds of 20 dB or better in both ears. Mild, moderate, severe, or profound hearing loss are all possibilities due to their duration of exposure. It affects one or both ears, making it difficult to hear conversational speech or loud noises. Nearly 80% of those who suffer from hearing loss live in low - and middle - income nations. Hearing loss becomes more common as people get older; about 25% of people over the age of 60 have disabling hearing loss. People with hearing loss, ranging from slight to severe, are referred to as "hard of hearing. " Hearing aids, cochlear implants, and other assistive technologies, as well as sign language, could help them communicate better. The majority of persons who are labelled as "deaf" have profound hearing loss, which means they have very little or complete lack of hearing sensation. Those individuals frequently communicate via sign language. (WHO)

CBR Implementation:

Few studies have contributed to explaining community - based approaches and/or service delivery models, as well as teaching methods, informing, learning, and training people in the hearing health field. Billard (2014) provided an overview of the CBHR program, its service delivery model, the duties of the various professionals involved in the framework, and its limitations, as well as possibilities to investigate to sustain and improve the program's community - based components. This CBR approach was made possible by an assistant practitioner who gained little knowledge about audiology and knew about hearing and ears at the community site and another volunteer/ little nurse in the program team was functioning. Hence, this model examined the stages followed and the roles played by each individual, as well as the problems such as turnover of professionals and training difficulties were some of the complications faced by the community - based program. Robler et al. (2020) conducted a study in the rural regions of Alaska where there is a high prevalence of hearing loss and conditions like ear infection in children have paved the way to analyze the follow - up rate of children from school screening programs with the help of stakeholders and community health members.

In developed countries like the United States, audiological evaluation and rehabilitation are mostly benefited by urban citizens, leaving the rural population having no access to hearing care (Planey, 2019). Furthermore, there are only a limited number of studies on the impact of CBR on those who have hearing loss. The majority of research in the literature has included additional disabilities in addition to hearing loss, and there is a dearth of identified information on the effect of CBR on a group with only hearing loss. Due to the lack of a universal framework, greater attention has been paid to actual methodological aspects of implementing CBR; and attention has been diverted to arranging resources required for CBR implementation (Biggeri et al., 2012). In this setting, the research shortage highlights the necessity for more CBR evaluation and intervention to be planned in the field of audiology.

The frequently used audiological concept is audiological screening and evaluation. The hearing screening is simple and also a less time - consuming method to have an early diagnosis. Since it is much easier to carry out, it is introduced to the Community Health Workers (CHWs) and once they are well trained, it frames the further stages to whether or not to go for the rehabilitative process.

There are different phases of CBHR followed by Audiology India:

Phase I:

- Case History
- Otoscopic examination
- Hearing testing
- Ear impression for ear moulds
- Baseline hearing assessment

Phase II:

- Hearing aid fitting and verification
- Hearing aid orientation
- Local support group formation and training on hearing aids

Phase III:

- Follow - up support
- Outcome assessment

Various experts volunteer to help with the initiative, including qualified ear, nose, and throat physicians, audiologists, and audiometricians. Professionals from a variety of fields, including speech - language pathology, have offered their support to AI. Volunteers from the local community help with a variety of camp initiatives, including organizing the CBHR camp; addressing people with hearing loss; receiving sponsorships to regulate the CBHR program and arranging the camp; following up for CBHR participants after all the phases of the camp are completed. When offering any type of service to a population, cultural modifications are required. Listening to participants and acting on their input will improve the likelihood of services being well - received. Audiologists and other experts should keep this in mind when developing culturally appropriate CBHR programs.

So, this study aims to gather the responses from audiologists about their involvement in community - based hearing rehabilitation. The objective of the study is to find out the practice patterns of audiologists in community - based hearing rehabilitation.

So far in the field of audiology, there is limited literature that has focused on the practice patterns of audiologists about their role in the rehabilitation process in a community - based setup. Therefore, the purpose of this study is to identify the practice patterns followed by the audiologists in community - based hearing rehabilitation.

2. Literature Survey

Neena et al. (2020) framed a survey questionnaire to find out the awareness, attitude, and role of nurses in the community - based rehabilitation of persons with disability, of which 60 is the sample size. The awareness Questionnaire, Attitude rating scale, and role checklist were the tools that are used. Therefore, the outcome of the study is that the awareness and role of nurses in Community based rehabilitation of persons with disabilities were not adequate even though they were having positive attitudes. Nurses need more awareness programs, in - service training, autonomy, clear job description, better working conditions, adequate staff and supervision, and guidance of rehabilitation nursing experts for proper implementation of their role.

In a study done by Billard (2014), it intends to provide an overview of the system, the duties of the interdisciplinary team approach to the program, its service delivery model, and the obstacles, as well as alternatives to investigate to retain and improve the program's community - based components. The primary purpose of this article was to provide an outline of Nunavik's Hearing and Otitis Program, including its organization as a campaign and some of the issues it faced during the study. The necessity for flexibility and creativity has been demonstrated, particularly when it comes to sustaining the knowledge of skilled professionals, whether Inuit or non - Inuit, who are currently in place. This is thought to be the cornerstone to preserving connections, and shared experience, and allowing non - Inuit to learn about the realities of life in the north.

O'Donovan (2019) evaluated research on how Community Health Workers are currently used in the prevention, screening, diagnosis, treatment, and management of ear disease and hearing loss; strategies to educate and support CHWs in this setting; and CHW cost - effectiveness. The search was undertaken from September 1978 to March 2018, using 11 main datasets and grey literature. Eight of the studies provided a review of CHW training programs, while the other three offered a vague overview of the programs. CHWs were found to play a role in the treatment of ear disease and hearing loss in three investigations, including performing ear cleaning, applying antibiotics, and hearing aid fitment. Even though only one study looked at the cost - benefit analysis of using CHWs to conduct hearing screenings, none of the studies looked at the function of CHWs in preventing hearing loss.

Akilan et al. (2014) In villages in a rural district of Tamil Nadu, South India, a community - based hearing screening scheme was launched. The purpose of this experiment was to diagnose hearing loss in newborns and young children as early as possible by utilizing Otoacoustic Emissions (OAE) devices by village health workers (VHWs). They were also taught how to give patients information about their ear and hearing care, as well as how to make follow - up visits for diagnostic testing easier when necessary. The goal of this study was to evaluate the initiative by analyzing caregiver perceptions of the service offered by mothers of children who had their hearing tested. In nine villages across the area, focus group discussions (FGDs) were held to gather information and perceptions from mothers. In total, 70 women with children under the age of two and 13 moms with children older than two took part in the focus groups. According to the mothers' responses, door - to - door health services are uncommon and are mostly focused on educating the community about health camps and preventive measures for common diseases like dengue fever. In these areas, door - to - door hearing screening for youngsters is unheard of. The hearing screening program was organized by an NGO that was acquainted with the mothers. The hearing screening program and its importance were explained to local pre - school instructors. The sensitization carried out through them in all villages was successful, based on the replies of the participants. It's worth noting that mothers referred to the test results as "pass/refer" rather than "pass/fail. " This finding implies that health workers communicated screening results using suitable vocabulary. Mothers reported that test conditions were present, indicating that VHWs did valid testing. Hearing screening services provided by health workers were welcomed by mothers in the community. The health personnel did an excellent job of providing services. Preschool teachers appeared to have played a key role in informing moms about the hearing screening program. Finally, because of the NGOs' strong presence in the community, cooperating with a local NGO increased acceptance and compliance.

Cedars et al. (2018) Hearing loss has a significant impact on a child's development, and early detection improves outcomes. While it is crucial to intervene before school admission to maximize learning, hearing screening techniques in early childhood are nonlinear. The gold standard for preschool hearing screening is conditioned to

play audiometry (CPA), however otoacoustic emission (OAE) testing gives objective data that may improve screening outcomes.

In a single - visit, two - tiered paradigm, compare the outcomes of a community - based low - income preschool hearing program before and after OAE deployment. It was expected that by implementing this strategy, referral rates would drop and follow - up rates would improve, but rates of identified sensorineural hearing loss would remain stable. Across years, demographics, pure - tone pass rates, and the frequency of newly diagnosed permanent hearing loss were all identical. Overall pass rates increased from 92 percent to 95 percent after intervention (P = 0.0014), with only 0.7 percent unable to be tested (P0.0001). Although 5% of children were unable to be tested by CPA screening, they passed OAE testing and were not sent to additional testing. The referral rate fell from 8% to 5% (P = 0.0014), and follow - up increased from 36% to 91 percent (P0.0001). Pathology detection increased from 19% to over 50% in children who were followed up on. In addition, in Year 2, the discrepancies in pass rates and ability to test that existed in Year 1 were erased. Second - line OAE screening for CPA referrals lowered referral rates, increased detection of hearing loss, reduced outcome disparities, and enhanced follow - up rates in a community context. This study teaches us how to improve early - childhood hearing screening outcomes and reduce inequities.

3. Methodology

Participants

In the present study, 60 audiologists were included. And the survey questionnaire was sent to the Indian Speech and Hearing Association (ISHA) and hence it was circulated among the audiologists of India for conducting this survey.

Inclusion criteria

The participants are professionals of India who have completed

- B. ASLP
- M. ASLP
- M. Sc (Audiology)
- Ph. D. (Audiology)
- Ph. D. (Speech & Hearing)
- Ph. D. (ASLP)
- Post - Doctoral Fellowship

Exclusion criteria

Those who are not willing to participate in the study will be excluded.

Procedure:

This questionnaire was designed to rule out the audiologists' role in the rehabilitation of persons with hearing loss in the community - based setup. So, the different services or domains like creating awareness, working on prevention of hearing loss and hearing - related disorders and conditions, identification of hearing loss and balance problems in the given population, questions related to data storage, and the audiologists team up with the multidisciplinary team members was be included in this survey questionnaire.

The designed questionnaire will be validated by five experienced audiologists. So, for validation, the first step is to establish face validity. Secondly, a pilot test will be conducted with this survey questionnaire. After collecting the data from the pilot study, segregate the obtained responses into a spreadsheet and clean the data. Then using principal component analysis (PCA), identify the underlying components, such questions which have the same measure will be segregated into the same factors. So, those factors of PCA should range from - 1.0 to 1.0. Therefore, when grouping the components, values of 0.60 or higher are normally preferred. Later on, analyze the internal consistency of questions that are put onto the same variables. As a result, the correlation between questions loading onto the same factor is checked in this stage using Cronbach's Alpha (CA) test. And the last step is to revise the information obtained from the survey analysis such as principal component analysis (PCA) and Cronbach's alpha (CA). So, after all the analysis if some questions are not important, hence it can be removed.

The scoring criteria will be given as 1 score for "Yes" answers and 0 scores for "No" answers for question numbers (1, 3, 10, 12, 13, 14 & 16) and for the remaining questions (2, 4, 5, 6, 7, 8, 9, 11 & 15) the responses will be expressed in the form of a percentage. Finally, this online survey questionnaire will be sent to the Indian Speech Hearing Association (ISHA) to be circulated among the audiologists via Google Forms for conducting the survey.

4. Results

Table 1

1. Do you work in a community - based setup?					
		Frequency	Percent	Valid percent	Cumulative Percent
Valid	No	49	81.7	81.7	81.7
	Yes	11	18.3	18.3	100
	Total	60	100	100	

Table 1 shows that out of 60 audiologists, 18.3% work in the community - based setup and the remaining 81.7% work in the diverse settings.

Table 2

2. If no, then which audiological setup do you work in?					
		Frequency	Percent	Valid percent	Cumulative Percent
Valid	1 – Hospital	30	50	50	50
	2 – Clinic	20	33.3	33.3	83.3
	3 - Teaching Institute	7	11.7	11.7	95
	4 - Non - governmental Organization (NGO)	1	1.7	1.7	96.7
	5 - Government Organization	2	3.3	3.3	100
	Total	60	100	100	

So, in the various settings in which the audiologists work, in **table 2**, it has even been said that the participants work in one or more settings. Of that, 50% work in hospitals, 33.3% work in clinics, 11.7% work in teaching institutes, 1.7%

work in Non - governmental Organization and 3.3% work in Government Organization.

Table 3

3. Do you conduct awareness programs about hearing loss and balancing problems in the community setup?					
		Frequency	Percent	Valid percent	Cumulative percent
Valid	No	17	28.3	28.3	28.3
	Yes	43	71.7	71.7	100
	Total	60	100	100	

Table 3 shows that 71.7% audiologists are said to conduct awareness programs about hearing loss and balancing problems in the community - based setup while 28.3% audiologists do not conduct any awareness about the hearing loss and balancing problems in the community based setup.

Table 4

4. How often do you raise awareness in the community - based setup?					
		Frequency	Percent	Valid percent	Cumulative percent
Valid	1 - Daily	3	5	5	5
	2 - Weekly	7	11.7	11.7	16.7
	3 - Monthly	13	21.7	21.7	38.3
	4 - Quarterly	16	26.7	26.7	65
	5 - Half yearly	7	11.7	11.7	76.7
	6 - Yearly	5	8.3	8.3	85
	7 - Never	9	15	15	100
	Total	60	100	100	

Table 4 shows that 5% audiologists raise awareness daily, 11.7% audiologists raise awareness for once in a week, 21.7% audiologists raise awareness for once in a month, 26.7% audiologists raise awareness once in three months, 11.7% audiologists raise awareness for once in six months, 8.3% audiologists awareness once in a year and 15% of the audiologists never raise any awareness about hearing in the community based setup.

Table 5

5. What are all the awareness tools that were used?					
		Frequency	Percent	Valid percent	Cumulative percent
Valid	1 - Posters	48	80	80	80
	13 - Not applicable	8	13.3	13.3	93.3
	3 - Handouts	1	1.7	1.7	95
	4 - Flip charts	1	1.7	1.7	96.7
	8 - Person - to - person communication	2	3.3	3.3	100
	Total	60	100	100	

Table 5 shows that 80% audiologists use Posters as one of the major awareness tools, 1.7% audiologists use Handouts as one of the awareness tools, 1.7% audiologists use Flip charts as one of the awareness tools.3.3% audiologists use Person - to - person communication as one of the awareness tools. Awareness tools like Banners, Radio announcements, Short message service (SMS), Press release, TV clips, Awareness talks, Street plays and Social media were also used, but then these tools were barely used alone and in most cases these are used along with the other awareness tools in the community based settings. Even then 13.3% did not use any awareness tool.

Table 6

6. Do you work in the prevention of hearing loss in the community based setup?					
		Frequency	Percent	Valid percent	Cumulative percent
Valid	1 - By giving ear protection devices	26	43.3	43.3	43.3
	2 - Ask to avoid or limit the exposure to loud noises	17	28.3	28.3	71.7
	3 - Ask to avoid scratching the ears with pins or anything	1	1.7	1.7	73.3
	4 - Ask to avoid using earphones	4	6.7	6.7	80
	5 - In preventing diseases like measles, mumps and rubella through vaccination	12	20	20	100
	Total	60	100	100	

Table 6 shows that 43.3% audiologists work in the prevention of hearing loss by giving ear protection devices, 28.3% audiologists work in prevention by asking to avoid or limit the exposure to loud noises.1.7% audiologists work in prevention by asking to avoid scratching the ears with pins or anything.6.1% audiologists work in prevention by asking to avoid using earphones.20% audiologists work in preventing diseases like measles, mumps and rubella through vaccination.

Table 7

7. How often do you work to prevent hearing loss in the community based setup?					
		Frequency	Percent	Valid percent	Cumulative percent
Valid	1 - Daily	27	45	45	45
	2 - Weekly	5	8.3	8.3	53.3
	3 - Monthly	15	25	25	78.3
	4 - Quarterly	8	13.3	13.3	91.7
	5 - Half yearly	1	1.7	1.7	93.3
	6 - Yearly	2	3.3	3.3	96.7
	7 - Never	2	3.3	3.3	100
	Total	60	100	100	

Table 7 represents that about 45% audiologists work in daily prevention of hearing loss, 8.3% audiologists work in prevention of hearing loss for once in a week, 25% audiologists work in prevention for once in a month, 13.3% audiologists work in prevention of hearing loss for once in three months, 1.7% audiologists work in prevention of hearing loss for once in six months, 3.3% audiologists work in prevention of hearing loss for once in a year and remaining 3.3% audiologists does not work in prevention of hearing loss.

Table 8

8. What all the different types of hearing screening tests you would conduct in the community - based setup?					
		Frequency	Percent	Valid percent	Cumulative percent
Valid	1 - Newborn Hearing Screening	28	46.7	46.7	46.7
	2 - School screening	17	28.3	28.3	75
	3 - Routine hearing screening	8	13.3	13.3	88.3
	6 - Not applicable	7	11.7	11.7	100
	Total	60	100	100	

Table 8 shows that 46.7% audiologists conduct newborn hearing screening, 28.3% audiologists conduct school screening, 13.3% audiologists conduct routine hearing screening in the community settings while 11.7% audiologists do not conduct any hearing screening in the community based setup.

Table 9

9. What are all the other team members you have worked with in the community based setup for hearing rehabilitation?					
		Frequency	Percent	Valid percent	Cumulative percent
Valid	1 - ENT Surgeon	35	58.3	58.3	58.3
	2 - Psychologist	1	1.7	1.7	60
	6 - All of the above	16	26.7	26.7	86.7
	7 - None of the above	8	13.3	13.3	100
	Total	60	100	100	

Table 9 shows that 58.3% audiologists work along with ENT surgeons for the rehabilitation process, 1.7% audiologists work along with Psychologist, 26.7% audiologists work along with ENT surgeons, Psychologist, Neurologist, Special Educator and Caretaker, while 13.3% audiologists do not work with any of the health care professionals (i. e., ENT surgeons, Psychologist, Neurologist) and also with Special Educator and Caretaker.

Table 10

10. Do you collect and store the patients' data from CBHR?					
		Frequency	Percent	Valid percent	Cumulative percent
Valid	No	25	41.7	41.7	41.7
	Yes	35	58.3	58.3	100
	Total	60	100	100	

Table 10 shows that 58.3% audiologists collect and store patient's data whereas 41.7% audiologists do not collect and store the patient's data.

Table 11

11. In what mode do you collect and store the data?					
		Frequency	Percent	Valid percent	Cumulative percent
Valid	1 - Computerized medical records	13	21.7	21.7	21.7
	2 - Paper medical records	23	38.3	38.3	60
	3 - Hybrid data storage	24	40	40	100
	Total	60	100	100	

Table 11 represents that 21.7% audiologists store data in the form of computerized medical records, 38.3% audiologists store data in the form of Paper medical records, 40.0% audiologists store data in the form of Hybrid data storage.

Table 12

12. Do you recommend different facilities that the hearing impaired can avail through the Education Department?					
		Frequency	Percent	Valid percent	Cumulative percent
Valid	No	9	15	15	15
	Yes	51	85	85	100
	Total	60	100	100	

Table 12 shows that 15.0% audiologists do not recommend different facilities that the hearing impaired can avail through the Education Department and 85.0% audiologists would recommend different facilities that the hearing impaired can avail through the Education Department.

Table 13

13. Do you advocate for the rights of the persons with hearing impairment and have equal opportunities in society and empower them to realize their potential rights?					
		Frequency	Percent	Valid percent	Cumulative percent
Valid	No	8	13.3	13.3	13.3
	Yes	52	86.7	86.7	100
	Total	60	100	100	

Table 13 shows that 86.7% audiologists would advocate for the rights of the persons with hearing impairment and have equal opportunities in society and empower them to realize their potential rights and 13.3% audiologists would not advocate for the rights of the persons with hearing impairment and have equal opportunities in society and empower them to realize their potential rights.

Table 14

14. Do you educate family members about the policies and benefits for hearing loss?					
		Frequency	Percent	Valid percent	Cumulative percent
Valid	No	2	3.3	3.3	3.3
	Yes	58	96.7	96.7	100
	Total	60	100	100	

Table 14, it is evident that 96.7% audiologists educate family members about the policies and benefits for hearing loss while 3.3% would not work in educating the family members about the policies and benefits for hearing loss.

Table 15

15. Do you provide assistive listening devices and hearing aids?					
		Frequency	Percent	Valid percent	Cumulative percent
Valid	No	8	13.3	13.3	13.3
	1 - Yes, only provide assistive listening devices	6	10	10	23.3
	2 - Yes, only provide hearing aids	23	38.3	38.3	61.7
	3 - Yes both	23	38.3	38.3	100
	Total	60	100	100	

Table 15 represents that 10.0% audiologists would only provide assistive listening devices, 38.3% audiologists would only provide hearing aids, 38.3% audiologists would provide both assistive listening devices and hearing aids and remaining 13.3% audiologists do not provide any assistive listening devices and hearing aids.

Table 16

16. Do you ask to follow up for Audio Verbal Therapy to children with hearing loss in CBHR?					
		Frequency	Percent	Valid percent	Cumulative percent
Valid	No	4	6.7	6.7	6.7
	Yes	56	93.3	93.3	100
	Total	60	100	100	

Table 16 shows that 93.3% audiologists would ask to follow up for Audio Verbal Therapy to children with hearing loss in CBHR while 6.7% audiologists do not give follow up for Audio Verbal Therapy to children with hearing loss in CBHR.

5. Discussion

The purpose of the study was to get an overview about the practice patterns of audiologists in the community - based setup. The responses were obtained from a total of 60 audiologists all over India. And the participants' responses suggest that the advancements in audiologists' profession and provision of services in India are not well defined. The absence of such restrictions can cause strategies to vary, ultimately it increases the likelihood of unethical approaches. So, the goal of the survey is it requires modifications and few updates has to be adapted while working in a community - based setup for hearing rehabilitation. The diagnostic tools, therapy services and patient - oriented care provided in the community - based setup requires more improvement in the future.

Although, failure to follow up is unreliable which is associated with transportation, economical, or time constraints, especially in populations with little resources (WHO, 2008). Therefore, such similar audiology focused community - based services are more in demand and more awareness about the community services in the field of audiology needs to be undertaken.

From this survey, the obtained data's shows that there are only less number of audiologists who has the exposure to work in the community - based setup for hearing assessment and intervention. Majority of the audiologists who have undertaken this survey works in the hospital and clinical setup and very few participants work in the teaching institute, non - governmental organization and government organization, although many of the audiologists are known to work in creating awareness about hearing loss and balancing problems in the community - based setup. The maximum number of participants in this survey is known to raise awareness once in every month and once in every three months and the average number of participants are said to create awareness once in every week, once in every six months and once in every year. And a very few participants are said to create awareness every day. Also, there are few participants who never create awareness in the community - based setup. In that majority of the audiologists use posters to create awareness. An average number of participants uses handouts, flip charts and person - to - person communication to create awareness and a very few number of participants work in creating awareness using banners, radio announcements, short - message - service (SMS), press release, TV clips, awareness talks, street play and social media to create awareness in the community - based setup.

A large number of participants of this study are said to work in the prevention of hearing loss in the community - based setup by giving ear protection devices, and an average number of participant's works in prevention by asking the clients to avoid and limit the exposure to loud sounds and in prevention of diseases like measles by vaccination. And also very few participants work in prevention by asking the clients to avoid scratching the ears and avoid using earphones. These audiologists where the majority of them work in prevention for almost every day and once in a month. And few of them reported to work for once in a week, once in three months, once in six months and once in a year. Also, there are few participants who do not work in the prevention of hearing loss in the community based - setup.

There are a maximum number of participants known to carry out newborn hearing screening in the community based setup. Then, an average number of participants carry out school screening and the remaining few participants conduct routine hearing screening while very few conduct industrial hearing screening and elderly screening. Although some participants do not conduct any hearing screening programs in the community - based setup.

Most audiologists are known to work with the ENT surgeon and an average number of participants work with all the team members such as Psychologists, Neurologists, Special Educator and Caretaker. Even though there are a few audiologists who do not work with other professionals in community - based hearing rehabilitation.

Almost half the audiologists have reported to store the client datas, where most of them use only paper medical records or hybrid data storage, and a smaller number of participants use computerized medical records for the client data storage, although the remaining half of the audiologists do not collect and store the client data.

More audiologists are known to recommend different facilities that are available for the hearing impaired by approaching the education department. More than half of the participants educate the family members about the policies and benefits available for the hearing impaired.

Many audiologists are said to provide both assistive listening devices and hearing aids for the hearing impaired. While a very few participants do not provide any assistive listening devices or hearing aids.

More than a half of audiologists ask the hearing impaired client to follow up for Auditory Verbal Therapy while a very few participants do not ask to follow up for Auditory Verbal Therapy.

6. Summary & Conclusion

CBR is a systematic practice that promotes the participation and integration of individuals with disabilities that place a stronger emphasis on community - wide, inclusive rehabilitative programmes, policies, and guidelines. However, the effects of CBR on people with hearing loss and the rehabilitation part have only been the subject of a small amount of research. There is currently a lack of data on the impact of CBR on a group with exclusively hearing loss because the majority of research in the literature has included various disabilities in addition to hearing loss. Since, there is also a lack of studies and information about the community based hearing rehabilitation and the initial assessment procedures, it has entirely been focused into obtaining the data's from audiology professionals all over India. Therefore, in this study the final results have shown that there is a diverse practice among audiologists which is currently being followed in the community based audiological services in India. And the awareness, prevention, screening, rehabilitation, multidisciplinary approach with other professionals, data storage, and other ethical standards needed more adequate knowledge and practice to be followed. Hence, it is known that the assessment and rehabilitation procedures in the community setup needs to be strategically planned and executed with some standard protocols to be supplemented in order to provide an uniformly distributed practice in providing community based audiological services.

Thus, this project gave an overview about the survey which has exclusively been done in India where the obtained results implies that there is a diversified practicing of audiologists in the community - based setup.

7. Limitations

- In this study, audiologists from all the regions of could not be covered, only limited participants from the regions of India have participated in this survey.
- There are a greater number of participants who have appeared in this survey does not work in the community - based setup.

8. Future direction

- The direction for future research can be done in a large number of audiology professionals.
- It should also cover more in - depth into the practice patterns in the community - based hearing rehabilitation.

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