

Indian Case Study on Deafness and Its Prevention

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ABSTRACT:

The ability to hear is essential for a child's brain growth as well as for human potential and later social development. Unfortunately, the deafness has not received adequate attention for a variety of reasons. In India, there have been numerous research on the genesis and prevalence of various diseases. It has been established that the rural population is more frequently impacted than the urban population. A portion of the blame has also been placed on a poor economic background. The high frequency of hearing impairment has been significantly attributed to a lack of health awareness and education. The appropriate attention has not been given to primary and secondary prevention. There aren't many research that are multicentric. However, some studies have been able to accurately determine the scope of the issue, its underlying causes, and the areas that require attention. The studies have also demonstrated that, with some adjustments, the current healthcare system may be used to focus on primary and secondary prevention. The main focus has been on health education, with a focus on upper respiratory infections, pre- and postnatal causes at a young age, and prevention of hearing impairment. The focus is on a national initiative that will pay close attention to both primary and secondary hearing impairment prevention, as well as how to help people who are already impacted.

Keywords: Auditory; Health awareness; Hearing impairment.

INTRODUCTION:

For human potential and mental health, communication skills are essential. The auditory sense is crucial for all forms of communication and is essential to a child's healthy mental development. Unfortunately, hearing loss is a silent suffering with significant, intricate complications. This becomes even more crucial given that a substantial portion of the patients impacted are children, the age group that will be most productive in the future and which represents a nation's greatest potential.

Around 5 million people worldwide are profoundly deaf, while an additional 200 million people are thought to have hearing loss of a less severe nature. The underprivileged conditions present in these countries, where two thirds of the world's deaf population reside, further exacerbate their handicap.

The community and families frequently lack a basic understanding of disabilities, and the delay in speech and language development shocks and disgusts the family. Children who are malnourished and have uneducated parents are more likely to suffer ear infections after recurring upper respiratory illnesses. The otorrhoea that results from suppuration after a middle ear infection quickly follows the rhinorrhoea. Many impoverished families still cannot afford the cost of treating such youngsters since they require frequent trips to the doctor. Such middle ear infections, if not treated properly, may result in consequences, some of which may be deadly, in addition to a permanent morbidity of hearing impairment. The affected person's detrimental impacts on his or her ability to earn a living harm both the affected person and his or her family.

One of the most common reasons for rejection on medical screenings in various recruitments, particularly in the defence services, is a discharging ear. Despite its vast scope, deafness has not received the attention it deserves, especially when it comes to prevention.

Magnitude of the Problem

According to a UNICEF survey, 10% of the population in India is thought to have a handicap of some kind, including locomotor, visual, hearing, speech, and mental subnormalities. There are about 80 million people who have some form of hearing loss. 35 million of them are children under the age of 14. In India, hearing loss affects 10% of the rural population and 6.8% of the urban population. What's more, more than half of these disabilities can be avoided. The largest incidence of hearing loss is found in children between the ages of 5 and 14 who are currently enrolled in school.

Worldwide, hearing loss is a problem that affects every nation. According to a study on the frequency of common ear, nose, and throat illnesses in the adult rural population of Great Britain, 5.6% of ENT patients had non-inflammatory conditions such as Otosclerosis and Meniere's disease, while 8.9% had inflammatory diseases of the middle ear. 1. The predominant cause of conductive hearing loss, accounting for 32% of patients, was chronic suppurative otitis media. In 1970, a comparison of the prevalence of CSOM among urban and rural Eskimo children revealed that 4.4% of the former had the disease, compared to 18.3% of the latter 2. According to the study, Eskimos living in cities have three main advantages over those in remote villages: better socioeconomic circumstances, better cleanliness, and more access to healthcare. These are equally significant in lowering the prevalence in India and other developing nations. Otitis media is fairly common in the early years of life, and 76% to 95% of all children will experience at least one episode by the time they are six years

old. 20 to 26% of kids had six or more episodes by the time they were six years old. The findings in emerging nations are similar.

Acute otitis media can be caused by a variety of causes, including improper breastfeeding technique, immaturity of the eustachian tube, and underdeveloped immune systems *. The conductive hearing loss brought on by recurrent otitis media (OM) during the first three to five years of life and subsequent issues with academic skills were significantly correlated. 5. Therefore, it is advised that during routine medical checkups, all newborns and young children, especially those at risk, should have their ears checked for otitis media. Doctors need to be on the lookout for deafness since it is a serious public health issue. By the age of 10, it was thought that up to 20 percent of children had hearing loss severe enough to impair development. Children with mild to moderate hearing loss were frequently difficult to identify and didn't learn they had it until they started having health, linguistic, or learning issues.

Numerous independent research have provided information on the prevalence and causes of hearing loss in India, which is crucial for a thorough analysis of the issue from a preventative, therapeutic, and rehabilitation standpoint. According to a study on the causes of hearing loss in Bombay 6, otosclerosis, chronic suppurative otitis media, tubal occlusion (non-suppurative otitis media), nerve deafness, mixed type deafness, and Meniere's syndrome were all more common than Meniere's syndrome. In their study, deafmutes made up about 4.8%. Some of these patients had multiple pathologies, leading to their being counted twice.

In Lucknow, children who attend school were the subject of a survey. There were 1,390 kids in the study sample, ranging in age from 3 to 12. 14.9 percent of children had middle ear disease. Children of low-income parents (20.2%) were more likely to experience it than those of wealthy parents (9.4%). Each child enrolled in school who has a hearing disability requires special attention. According to a 1965 study, Chandigarh has a prevalence of 19% for chronic suppurative otitis media. The highest frequency was observed in youngsters under the age of 10. More than 75% of the cases displayed tubo-tympanic (safe) pathology, which is typically referred to as a benign otitis media. Others showed signs of atticofacial pathology. According to reports, six percent of Tamil Nadu residents have hearing deficits. According to statistics from hospital patients, 35% of ENT patients had ear pathology.

This study focused on population surveys because they are the only ones that can provide an accurate picture. 3.5% of Tamil Nadu's school-age children, 11.7% of those in Virudhnagar, and 23.7% of those living in rural Varichivar were found to be hearing-impaired. In a separate investigation on ear discharge patients in Lucknow, labyrinthitis (10.8%), mastoid abscess or fistula (9.2%), osteomyelitis of the temporal bone (6.2%), facial palsy, and chronic cerebellar abscess (in 1.53% each) were found to have related sequelae in 20% of patients. 1 The economic environment appears to be very important for the Indian populace as well. According to an audiological assessment of 2000 students from two schools, one serving

students from economically disadvantaged sections and the other from wealthy sections, the total incidence of hearing loss is 12.25% 11. The prevalence was almost two times higher among rural schoolchildren, which might be attributed to the parents' low reading rates and the lack of health awareness in the latter group. The study also emphasised the importance of a child's diet, housing environment, and access to timely medical care during severe upper respiratory infections.

At the well-attended Asia 72 in Delhi 12, the average hearing standards of the Indian population from different states were examined. It had drawn a diverse crowd of visitors, and people were chosen at random to represent all the states fairly. In a sound-treated room, the audiometry was done right away. People from different states' normal hearing standards did not significantly differ from one another.

The results of the isolated polls conducted at various locations were too inconsistent to draw any conclusions. Before a collaborative study on the prevalence and aetiology of hearing impairment was conducted, there were no multicentric studies on the main causes of hearing loss in our population available in India (ICMR report, 1983) 13 on a total of 11,665 people in rural areas and 10,935 in urban areas at four centres simultaneously in 1977–1980: Calcutta, Delhi, Madras, and Trivandrum. 10.2 percent of people were determined to have hearing impairment.

24.4% of people had severe hearing loss, while 15.9% had mild hearing loss. Seven instances had the same person with various types of hearing loss in both of their ears. Overall, compared to urban regions, hearing loss was more common in rural areas.

The difference was brought about by an increase in chronic suppurative otitis media patients, which led to conductive hearing loss. The use of oil in the ear, using natural ear drops, and taking unclean water baths were all linked to a higher prevalence of hearing impairment, among other things. According to a study on the students at the Madurai University deaf and dumb school, consanguinity may possibly be an etiological component in deaf-mutism. In the Muslim community and the southern region of India, consanguinity is fairly prevalent.

Marriage counselling and public education are crucial for reducing all of the aforementioned issues. There is a perception that local intermarriages may contribute to hearing loss in regions like Jammu & Kashmir. The prevalence of consanguinity is extremely high in several regions of India. A study of hearing-impaired schoolchildren in Thanjavur found that consanguinity occurred in 65.4% of instances. These kids had at least one affected sibling (23.1%) and at least one affected relative (14.1%). 15. As it gets more difficult to distinguish between the two, the early neonatal causes may present as a congenital cause. Meningitis was revealed to be the cause in 5.3% of the 928 deaf schoolchildren studied in Madras (India) 6. Additionally, the study found that 29% of kids exhibited ocular evidence of intrauterine rubella. Only one-third of the moms of children who displayed these symptoms knew they

had rubella during pregnancy. This fact emphasises how crucial knowledge and education are.

Problems with Developing Nations and India

A developing nation's issues are distinct from those of a developed nation. Our issues are caused by underdeveloped or nonexistent medical care in rural areas. Other enormous issues include poverty, outdated habits and beliefs, lack of resources, and illiteracy. In a nation like ours, spending a small amount of money to prevent deafness will always be less expensive and more effective than treating hearing loss.

The number of experts in the sector is woefully insufficient. In India, there is one ENT surgeon for every 300,000 people. Because the bulk of these specialists are located in metropolitan regions, the ratio gets worse in comparison to rural locations. This is a 12 times worse mismatch than the WHO recommended of one ENT surgeon for per 25,000 people. Even the curriculum used to teach doctors falls short in its coverage of preventive measures. Only a few training facilities exist across the nation that provide speech and hearing-related paramedical personnel training, which is insufficient. Even deaf educators require sufficient scientific training because a sizable portion of them still rely on the common sense method.

Living circumstances that are unclean and overly crowded can increase the risk of developing upper respiratory infections. The most common cause of hearing loss in our nation is discharge from the ears (7,1u3,14).

We are currently dealing with another issue in India. Because health is a state matter, there are issues with coordination and lack of programme uniformity. Having a single coordinating agency makes things considerably easier.

PREVENTIVE MEASURES:

The growth of health and education channels has been phenomenal in India during the previous four decades. The development of quick and easy techniques for evaluating impairments has advanced. Parent to parent, child to child, disabled people and their parents, community workers, primary school instructors, and other staff members like Anganwadi workers and Lady Health visitors make up a pool of labour that has a lot of potential and can be used. They can be most effective since they have frequent and close contact with the target demographic. The primary, secondary, or tertiary levels can implement the preventive measures. In order to address all of the reasons that impact the hearing functions before they even arise, the primary prevention includes spreading health education and raising awareness in society.

This involves preventing ear, nose, and throat infections, practising better hygiene, caring for mother and child nutritionally, avoiding conditions that can result in congenital deafness, etc. The latter includes preventing consanguinity, preventing the marriages of deaf people,

immunising all female children with the MMR vaccine, and prohibiting ototoxic medications for expectant moms. A crucial component of primary prevention is educating moms on how to take better care of their bodies before, during, and after pregnancy. In fact, it is frequently nearly impossible to discriminate between prenatal and early postnatal deafness and congenital deafness. Primary prevention also includes raising awareness about noise as a factor in hearing loss.

Early intervention is part of secondary prevention, and it involves addressing ear-harming causes before they have a chance to impact hearing. Managing acute otitis media and non-suppurative otitis media, which may necessitate myringotomy, are examples of such approaches. Some of them might also need grommet insertion. It also covers the treatment of pathology that can impact the ears and influence the nose, paranasal sinuses, tonsils, and adenoids. The tertiary prevention involves minimising the disease's aftereffects and consequences in cases where the ear has already been harmed. In situations of persistently discharged ears and other chronic illnesses with acute exacerbations, early surgery is included.

Most specialised centres have so far focused on tertiary care by acquiring cutting-edge technology for treating ear ailments and disseminating it further through workshops and seminars. This does increase the pool of qualified workers who are able to manage ear cases once they have developed a condition. However, this completely disregards basic and secondary level prevention. The goal of the study was to disseminate health information on ear care while highlighting the influence that upper respiratory infections play in the development of ear disorders and hearing loss. The mother was the primary goal of the schooling, but the rest of the family members were also included. Basic health education was primarily the responsibility of school teachers and healthcare professionals. A questionnaire was used to undertake the KAP (Knowledge, Attitudes, Practices) analysis prior to the intervention in the form of health education. According to the investigation, the primary causes of the lack of health awareness in rural areas were poverty, illiteracy, ignorance, poor cleanliness, insufficient medical assistance, and traditional customs and beliefs. Only 28% of moms and 51% of teachers have the correct information about ear care, according to the KAP analysis. The experimental population received the education after it had initially been given to the instructors and healthcare professionals. Teachers and health professionals used flip charts, brochures, and posters to spread health education as part of primary prevention. The specialists who were in charge of the study also provided rotating slide presentations.

CURRENT INDIAN STATUS AND STEPS SUGGESTED:

Prior to a few years ago, we had to focus on the following goals:

1. To determine the prevalence of hearing impairment in the population and to have data that covers the entire nation and the majority of the world's regions.

2. To determine the fundamental issues that lead to the lack of health awareness regarding ear care in the research locations.
3. To create health education materials based on the population's knowledge, attitudes, and practises, as well as those of health professionals.
4. To assess the function of the current healthcare system in carrying out a strategy for the primary and secondary prevention of hearing loss.
5. Can work to prevent hearing loss both directly and indirectly. To achieve these goals, create a cost-effective plan for preventing hearing impairment and put it into action.
6. Must continue keeping an eye on any changes in the prevalence of curable and preventable hearing loss.
7. Help stop the hearing impairment issue from getting worse.

It appears that there is enough knowledge on the aetiology, incidence, and prevalence. Additionally, the viability has been examined. This appears to be enough to serve as the foundation for a nationwide initiative that is intended to encompass all 50 states and involve a significant number of specified medical institutions in active participation. When it comes to prevalence, hearing loss is a huge issue. Inability to ask for aid, resistance to altering the prevalent attitudes and habits, and the size and remoteness of the areas to be covered are all inherent problems with our population. It is made worse by the state's financial limitations, poverty, and illiteracy. If we want to make lasting and cost-effective improvements to the status of people with hearing disabilities, prevention is our best and only option.

The feasibility study carried out at Delhi and Trivandrum demonstrated that it is feasible to target the susceptible group and produce observable change in incidence through primary and secondary preventative approaches. It is conceivable to make use of the primary healthcare system's and the paramedical staff's current infrastructure. Results can be obtained for prices that developing countries like India can afford.

CONCLUSION:

It is now essential that no further effort or money be devoted to research projects or surveys attempting to determine the prevalence and causes of hearing loss. With the exception of minor geographic differences, these are already widely recognised. Additionally, the viability has been established as fact. It is now necessary to take the initiative, implement an intervention at the national level, and focus prevention efforts at the primary and secondary levels.

For these reasons, we must strive to prevent hearing loss by giving it the national attention it deserves. Deafness is as common as blindness and more common than mental disability, hence it should be included in a national programme aiming at preventing impairments. The

instructions in the health worker's job manual should be appropriately modified to include measures to prevent hearing impairment. For these reasons, we must work toward giving hearing impairment prevention the national attention it deserves. Deafness is more common than mental disability and is as common as blindness, hence it should be included in a national programme aiming at preventing impairments. The health worker should have their work manual recommendations appropriately modified to include measures to prevent hearing impairment.

Despite certain regional differences in the causal elements that lead to deafness, many of them are avoidable. Controlling these factors will therefore result in a decrease in the number of people who are deaf, as well as the costs that the community and the government incur to treat or rehabilitate them.

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