AUDIOLOGY IN India

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AN OVERVIEW OF AUDIOLOGY IN INDIA, FROM EDUCATION, TO THE AVAILABILITY OF AUDIOLOGICAL SERVICES, AND THE CHALLENGES THAT AWAIT THE PROFESSION IN THE FUTURE.

The Republic of India is the seventh largest country by geographical area with a population of more than a billion people. It is a country well known for its diversity in terms of culture, language, and religion. While one of the fastest developing countries in the world, approximately two-thirds of the population is still living in rural settings, and more than 80 percent of the population has a daily income of less than $2.00. The World Health Organization (WHO) estimates that around 80 percent of deaf and hearing impaired people live in low- and middle-income countries (WHO, 2006).

Examination of the demographics of India by the Census and National Sample Survey Organization (NSSO) identifies disability as one of the major concerns for the country. Results of a survey by NSSO in 2002 (NSSO, 2003) showed that around 16 percent of the population has some form of hearing difficulty. This figure could be slightly high because the definition of *hearing impairment* is rather loose and includes conductive, mild, and unilateral hearing loss, in addition to permanent hearing loss. NSSO estimates that about 60 percent of those with hearing difficulties are not using any sort of assistive device as their disability is not severe (Singal, 2008). However, the WHO estimated that the prevalence of disabling hearing impairment in the Indian population is 5.9 percent (WHO, 1999).

The Development of the Audiology Profession in India

Hearing impairment, like any other disability, remains a social and health issue in Indian society. Some treatment solutions for ear diseases are available in Indian traditional medicine, such as Ayurveda, Unani, and Siddha. Typically, children born with significant hearing loss have been educated in special schools for hearing impairment, where education via Indian Sign Language is promoted (Vasishta et al, 1978; Jepson, 1991). With the advent of amplification devices and influential American

educational rehabilitation systems, the oral mode of communication has become more prevalent, and many special schools have upgraded their mode of instruction to oral. Full-fledged hearing services were established in some parts of the country as the field of audiology developed.

Education of audiology professionals in India first started at the university level as a master's program, similar to that in other countries. There are now a number of higher education institutions providing speech and hearing education and services across India (TABLE 1).

Audiological Services in India Today

Professional hearing services are available in India in both the public and private sectors. Both offer audiological services, including hearing assessment and/or evaluation, selection and fitting of hearing aids, and aural rehabilitation. Some of the centers also have successful cochlear implantation programs. However, there are very few centers and professionals working in some of the specialized areas in audiology, such as vestibular assessment and rehabilitation, assessment and management of auditory processing disorder, and tinnitus rehabilitation.

Public sector facilities with audiology services are mostly district-level hospitals, educational institutes, and district health rehabilitation centers, funded by Departments of Health and state government. The services provided are free of charge or at subsidized rates. Since 1996, there has been provision for free body-level hearing aids through the Assistance to Disabled Persons for Purchase (ADIP), funded by the Ministry of Social Justice and Empowerment. Along with the hearing aid, there is also a provision for delivering solar-driven rechargeable batteries since 2004. There is also progress toward the provision of fully subsidized BTE hearing aids for the pediatric population under the NPPCD). The public sector is also working to extend audiological services to remote and rural areas by conducting residential and rural camps and appointing public workers to identify and refer those who are in need of services. More manpower is needed to ensure the smooth running of several of these government projects.

Audiologists in the private sector are greater in number than those in the public sector. These are generally equipped with all the necessary diagnostic instruments, and their work is mainly focused on hearing aid dispensing. The patient has to pay for private sector service. There are also some well-known private cochlear implant centers across South Asia that attract patients from other countries. A concern in relation to private sector provision is that there is currently no restriction or regulation of hearing aid dispensing.

Estimates of the distribution pattern of such facilities in India are shown in TABLE 2. However, most of these clinics or institutes are based in urban locations and consequently are not accessible to everyone, particularly the large remote rural populations. There is also generally a shortage of qualified professionals and infrastructure.

Current Major Projects in Audiology

One of the major audiology projects is the development of an "indigenous cochlear implant" by a group in the Defence Research and Development Organisation (DRDO). This project aims to develop a low-priced cochlear implant that could bring down the cost of implants to

Table 1. Prevalence Estimates for Speech and Hearing Disability in the National Sample Survey (NSS) (2002)

Disability Type	NSS 2002	
	Number	Percentage of Disabled
Speech	2,154,500	11.65
Hearing	3,061,700	16.56

Table 2. Distribution of Audiology Clinics in India

	East	West	South	North
Public	5	8	12	15
Private	12	39	52	66

one-sixth their current price. Unpublished reports indicate that the device is currently being tested on animals.

Another major project is the NPPCD, which is funded by the Ministry of Family and Welfare of the Government of India. This project aims to prevent avoidable hearing problems by identifying, diagnosing, and treating ear problems; providing medical rehabilitation for people suffering with hearing impairment; improving the existing intersectoral linkages for continuity of the rehabilitation program; and developing institutional capacity for ear care services. A pilot project was conducted in 25 districts during 2006–2008. The proposed government five-year plan aims to implement this to all districts of the country by 2012.

In recent years, many charities and organizations have been actively working to improve hearing health-care services in India. Project Deaf India is a good example. The long-term vision of this project is to reduce the incidence of deafness in the world and to improve the social status of deaf and hard-of-hearing young adults.

There are also various neonatal hearing screening and school hearing screening programs being piloted and adopted by a variety of institutions and hospitals across India. Some institutes also run regular residential and rural camps to identify and support people with hearing-related problems.

Audiology Education

In 1965, the first audiology and speech language therapy program was started at the All India Institute of Speech and Hearing and it was established by the Government of India, which is now a premier speech and hearing institute in Southeast Asia. The program was heavily influenced by American colleges and offered a dual degree in audiology and speech and language pathology. This dual degree practice is still present in most schools both at bachelor's and master's levels.

The entry level for the profession in India is a bachelor's degree. These programs are four years in duration and focus on speech and hearing sciences with approximately 1,500 hours of clinical practice. In general, the education programs in India are very rigorous and demanding. At the present time there is no specialized bachelor's program in audiology; however, some of the institutes do offer specialized master's and PhD programs in audiology. Many of these programs are internationally recognized, offering students the opportunity to study with people of different linguistic and cultural backgrounds. To assist this, the course has an expectation that students be able to communicate in English.

Today there are approximately 25 speech and hearing schools offering recognized diploma, bachelor's, and master's courses. TABLE 3 provides information on a few of the institutes offering audiology programs in India. These programs are accredited by the Rehabilitation Council of India (RCI). The curriculum is regularly updated through RCI-mandated workshops, and all the schools follow a minimum common curriculum.

It is estimated that more than 5,000 people have graduated out of the Indian speech and hearing schools since 1966. The majority are employed in India; however, many of them have found employment in the United States, Australia, United Kingdom, New Zealand, and the Gulf countries. In recent years, there has been an increase in the global demand for audiologists due to the modernization of audiology, especially in Western countries. This has resulted in a major drain of skilled audiologists to Western countries and a shortage of qualified audiology professionals in India.

There are two indexed speech and hearing journals being published from India with contributions from Indian academicians: *Journal of the Indian Speech and Hearing Association* and *The Journal of All India Institute of Speech and Hearing*. Both journals promote home-grown research

Table 3. Details on Some of the Speech and Hearing Schools in India

Institute/University	Place	Degrees/Courses Offered	Course Duration
All India Institute of Speech and Hearing (AIISH), Mysore University www.aiishmysore.com	Mysore	BSc Speech and Hearing MSc Audiology PhD Audiology	4 Years 2 Years 3 Years
Ali Yavar Jung Institute for the Hearing Handicapped (AYJNIHH) in four different universities across India http://ayjnihh.nic.in	Mumbai, Kolkata, Secunderabad, and New Delhi	BASLP BEd (HI) MSc ASLP MEd (HI) PhD Audiology	4 Years 1 Year 2 Years 1 Year 3 Years
Manipal College of Allied Health Sciences, Manipal University www.manipal.edu	Manipal	BASLP MASLP	4 Years 2 Years
Sri Ramachandra Medical Centre (SRMC), Sri Ramachandra University www.srmc.edu	Chennai	BASLP MASLP	4 Years 2 Years
Post Graduate Institute of Medical Education and Research (PGIMER) www.pgimer.nic.in	Chandigarh	BSc Speech and Hearing MSc Speech and Hearing	4 Years 2 Years
Topiwala National Medical College c/o BYL Nair Charitable Hospital www.nair.edu/depts/index.html	Mumbai	BASLP MASLP	4 Years 2 Years

Note: BASLP = Bachelor's in Audiology and Speech Language Pathology; BEd (HI) = Bachelor of Education (Hearing Impaired); MSc ASLP = Master of Science in Audiology and Speech Language Pathology; MASLP = Master's in Audiology and Speech Language Pathology; MEd (HI) = Master of Education (Hearing Impaired)

activities and are currently available in print form only.

Professional and Regulatory Bodies

The Indian Speech and Hearing Association (ISHA) was formed in 1967. It is a professional and scientific association for audiologists and speech and language pathologists in India with over 1,500 registered members. Its role is the promotion of excellence in the speech, language, and hearing professions and rehabilitation services through advocacy, leadership, and continued education. It is also working to develop an ethical framework, to monitor professionals, encourage networking, and support research.

The RCI (Rehabilitation Council of India) was set up as a registered society in 1986. In 1992 the Government of India implemented action to regulate the curriculum, training, and practice of rehabilitation courses under the Rehabilitation Council of India act (Sivaprasad, 2009). Apart from monitoring the curriculum, RCI has also laid down strict norms for practicing rehabilitation sciences. RCI also maintains a Central Rehabilitation Register (CRR) of all qualified professionals and personnel working in the field of rehabilitation and special education, which requires registration and periodic renewal. The RCI act mandates membership of CRR for practicing allied health professionals. The RCI also prescribes disciplinary action against unqualified persons delivering services to persons with disability.

Future Challenges

A number of challenges face the provision of hearing health-care services in India:

- Raising awareness levels in the general public about audiological problems and services. The complexity in terms of educational, religious, and socioeconomic backgrounds of such a diverse population needs to be considered in this.
- Ensuring even geographical distribution of audiology professionals and infrastructure, and improving accessibility to audiological services for people living in remote and rural settings.
- Creating more audiology clinics in the public sector, thereby creating more opportunities for professionals to work in the public sector.
- Improving the knowledge and skill levels of professionals, especially in specialized areas like vestibular

assessment and rehabilitation, auditory processing disorder assessment and management, and also tinnitus rehabilitation.

- Developing standardized and uniform procedures and protocols for hearing health-care services, and improving and modernizing audiological services.
- Reducing the brain drain and increasing the number of hearing health-care professionals.
- Defining the scope of practice for professionals from various training routes.
- Evaluating and expanding the professional and educational training needs to continue to meet the needs of the profession in the country.
- Regulating hearing aid dispensing.
- Improving clinical and applied research, initially starting from epidemiological studies to better understand the extent and nature of hearing disorders.
- Raising funding for both clinical and research work through government and various national and international charities and organizations.

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Useful Web Sites

http://ishaindia.org.in

www.rehabcouncil.nic.in

http://mohfw.nic.in/nppcd.htm

www.projectdeafindia.org

www.audiologyindia.com