

SOME IMPORTANT MILESTONES IN THE PROFESSION OF SPEECH AND
HEARING IN INDIA

Reg.No.8812

AN INDEPENDENT PROJECT WORK AS PART FULFILMENT FOR FIRST YEAR
M.SC. (SPEECH AND HEARING) TO THE UNIVERSITY OF MYSORE, MYSORE.

ALL INDIA INSTITUTE OF SPEECH AND HEARING : MYSORE - 570 006

1989

TO

AMMA

ANNA

MUMMY

PRAKASH

PRASAD

DECLARATION

This Independent project entitled "Some important milestones in the profession of speech and hearing in India" is the result of my own study under the guidance of Dr.(MISS) S.Nikam, Professor and Head of the Department of Audiology, AIISH, Mysore, and has not been submitted earlier at any University for any other diploma or degree.

Mysore
1989.

Reg.No.8812.

CERTIFICATE

This is to certify that the Independent Project entitled "Some important milestones in the profession of speech and hearing in India", is the bonafide work, done in part fulfillment for the first year M. sc , (Speech and Hearing) of the student with Reg. No.8812.

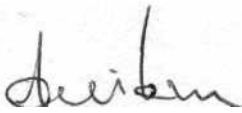

15/5/84

Director

All India Institute
of Speech and Hearing,
Mysore.

CERTIFICATE

This is to certify that the Independent Project entitled "Some important milestones in the profession of speech and hearing in India" has been prepared under my supervision and guidance.



Dr. (Miss) S. Nikam,
Prof, and Head,
Audiology Department.

A C K N O W L E D G E M E N T S

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PROLOGUE

Soon after independence, the attention of the Government of India, as well as the people began to be drawn towards the different areas of social welfare. Almost all the people did have a knowledge and experience in one or the other way about the problems of the speech and hearing handicapped because, persons with such anomalies were not uncommon during any period. But it was only for want of knowledge of rehabilitation services available for the same, that it used to arouse only negative response among different people in the form of either pity, fatalism, distress or radicule.

Thanks to the general consciousness among the people of the developed nations specially, U.S.A. after the world war II, that a number of para professions relating to various rehabilitation services came in to existence. This awakening for enhancing the human dignity and equality of opportunity for leading happier life for all the disabled touched the horizons of Indian subcontinent also.

Helping the poor and physically handicapped individuals, even at the cost of personal sacrifices has been a part of India's cultural heritage. References are found in the Mahabharatha, when the state and joint family took care of those persons who were in need of protection against the rigours of life and the handicapped did not present a serious problem.

Religion stressed the values of charity. Philanthropy and mutual help. The followers of the Budha (5th century BC) practised the preachings of the great master and had full regard for the disabled. Jainism, which was born in 6th century BC, preached selfless service to all living beings including the handicapped. Emperor Chandragupta Maurya established workshops for the vocational rehabilitation of the physically handicapped. Ashoka, the great, established charitable institutions for the care of the handicapped and the disabled.

While the orthopaedically and visually handicapped attracted the sympathy and attention of the society, philanthropic organizations and the government, the deaf and stutterers remained subjects of radicule and despise.

Before the World War II, the entire activity was limited to providing oral training by developing speech language and lipreading ability. Some institutions, merely concentrated on teaching sign language to the so called deafmutes so that they could communicate with their fellow beings. At that time hardly any attempt was made to measure, conserve and exploit the residual hearing that most aurally handicapped individuals often have.

The concept of rehabilitation has changed in the recent times. It envisages the provision of comprehensive services designed to help the disabled persons. It has focussed the

attention towards the restoration of the handicapped to the fullest, (a) Physical (b) Mental (c) Social (d) Vocational and (e) Economic usefulness of which the individual is capable. This change in the attitude to the problem has been more or less commensurate with and as the result of the growth of the discipline of audiology and speech pathology in India.

The science of audiology and speech pathology has developed immensely in advanced nations especially U.S.A. and Scandinavian countries since the last world war.

The field of speech pathology and audiology in India is just a few year old. Non-availability of qualified specialists in speech and hearing services in India necessitated the establishment of training centers at different places^ At present, there are 3-4 centers where students are trained in speech pathology and audiology./

All India Institute of Speech and Hearing is the only Institute of its own kind in South East Asia. In this Institute both training and clinical services are done. Unlike other institutions which are attached to the medical college this is the only independent institution. Therefore, All India Institute of Speech and Hearing (AIISH) has an important role in the field of Speech Pathology and Audiology in India. The starting point of many events in the speech pathology and audiology profession is AIISH.

In India speech pathology and audiology is a developing field. So it is necessary to know the important events and changes that have taken place in this field. Some of the important milestones in the profession of speech pathology and audiology are included here.

DIFFERENT CENTERS IN INDIA

All India Institute of Speech and Hearing (AIISH):

1965(9th Aug) : The Institute was established with the name All India Institute of Logopaedics.

The Government of India felt the need of a Central institution for training students in speech and hearing sciences and to give clinical services to the people who suffer from communication disorders.

On the recommendation of Dr.Palmer of the Institute of Logopaedics, Wichitakansas, U.S.A. who came to India in 1963 on the invitation of the Government of India, the Institute was established. The purpose was to give professional training in speech and hearing, research facilities and clinical services.

1966 : The Institute was registered as a Society under the 'Societies Regulations Act XXI of 1860(Punjab Amendment) Act 1957) as extended to the Union Territory of Delhi at 'Nirman Bhavan, New Delhi' for legal purposes.

Branch office is located at the Institute in Mysore, which deals with the day to day work and functions as defacts main office in charge

: of the Director of the Society who is its Principal Secretary.

1966

(25th July): The foundation stone was laid by the then President of India, Dr.Sarvapalli Radhakrishna, in the Mysore University campus. His Highness Sri Jayachamaraja Wadiyar, the late Maharaja of Mysore, donated 20 acres of land for the building. As the land donated was not suitable to the requirements of the Institute, The University of Mysore allotted 32 acres of land in University campus on lease basis for housing the institute.

1966

(10th Oct) : The Institute became autonomous body at New Delhi. The Institute is financed by the Government of India, Ministry of Health and Family Planning and Urban Development (now Family Welfare).

1966

: The name of the Institute was changed from 'The Institute of Logopaedics' to 'All India Institute of Speech and Hearing'.

The institute started functioning in Kama Mandira at first with Dr.B.M.Rao as the first Director and Dr.Natesh Rathna as special officer with a few clinical staff.

1967 : The Institute was shifted to the centenary hall of the University of Mysore, and was functioning there till the new building came up in the campus.

The Institute was started with only a few staff and the departments. Because there was no training programme in India only a few were appointed and they had taken training outside the country.

1965 - Speech Pathology

1966 - Psychology

1967 - Radiology

and with the following instruments:

Group hearing aid.

Speech trainer.

The first few cases who came to the Institute

CaseNo.	Name	Age	Problem
1.	Padma	4½ years	Hearing loss with delayed speech and language.
2.	Keshav Kumar	12 years	Stuttering
3.	sridhara	15 years	Delayed speech and language
4.	Meera	12 years	Mentally retarded

Speech and hearing impaired from both within and outside the country have been availing the services. Age range of case extends over several

decades. The youngest patient seen is a 1½ months old child and oldest is in the 90's. People from all state seek professional advice.

1970-71 : The Institute was shifted to the present building.

Different departments at the Institute:

1. Records Section
2. Audiology
 - Hearing Evaluation
 - Hearing Aid Trial
 - Noise-trauma cell
 - Earmold lab (fully equipped) - through Indo-Danish project.
3. Speech Pathology
 - Speech Therapy Clinic
4. Speech Sciences.
5. Otorhinolaryngology.
6. Clinical Psychology
7. Electronics.
8. Library and Information Centre.

Apart from these facilities - others like Neurologists, Paediatrician, Dentist, Plastic surgeon visit the Institute regularly twice a week.

EXTENDED SERVICES OF THE INSTITUTE

1. Camps
2. School Screening Programme
3. Inclusion of non-professional trainees
4. Workshops, Conferences
5. Welfare scheme
6. Public Education
7. Itinerant Speech Therapist

1. Camps:

1972

: Institute started conducting camps.

Prom 1966 to 1972 only 9672 cases had taken help from the specialists at AIISH. This percentage is low when compared with the total handicapped population. Several studies have shown the prevalence of speech and hearing problems in India.

Martin F.Palmer (1963) - 5% of population are suffering from speech and hearing problems.

The possible important factors for which a handicapped person being unable to seek help from the specialist may be (1) ignorance of the problem, (2) ignorance of facilities available for the treatment (3) Lack of facilities - The number of speech and hearing center in India is very small. So the people who are in need of these specialist may not be able to approach them because of distance and other difficulties.

: (4) Attitude of the society:- The average of Indian family is ignorant of the true nature of the handicapped condition.

Then the Institute decided to conduct camps at different places. Since then camps are conducted regularly. These camps are sponsored by many/of the associations like Lions Club, Rotary Club etc.

2. School Screening Programme:

1968 : 1st programme was conducted with Lions Club sponsoring at Naguvanahalli.

3. Inclusion of non-professional trainees:

Institute provides training to many of the professionals like deaf teachers, social workers, etc. and also in earmold making.

4. Workshops, Conference:

1981 : One of the workshop was conducted on Aids for the aurally handicapped.

5. Welfare scheme:

1981 : Issue of free hearing aids.

Procedure - If the income is below Rs.1200/- per month - free of cost.

If the income is above 1200/- but below Rs.2500/- per month has to pay half of the cost.

5. **Public Education:** 1) Radio talk
 2) News paper articles
 3) Public education pamphlets

6. **Itinerant Speech Therapist:**

1977 : Itinerant speech therapist does correspondence with the cases.

- Follow-up - Follow-up of the therapy cases are being done by sending follow-up cards. The main purpose for sending follow-up cards to cases are -
 - (1) irregular attendance (ii) to enquire the present condition of the problem (iii) for reevaluations (iv) for research purposes.
- Home visits - are being done for the regular therapy cases and also for the cases who have been discontinued from therapy.
- School visits - Visits to schools where children with speech and hearing problems are studying. Main purpose is to counsell the teachers regarding the following - (i) reason for recommending them to normal school (ii) use of hearing aid (iii) handling these children in class (iv) instructions to be followed while teaching (v) to encourage extra curricular activities etc.
- Parent counselling meetings:- Meetings are held regularly once in a month. In this

: meeting problems of cases and parents at school and at the clinics, etc. are discussed.

Others

: Pension certificate to -

- Mentally retarded
- Hearing handicapped
- Certificate for admission to school for deaf

admission to normal school
Concession for purchase of
aids and appliances.

House purchase.

Income tax exemption

Travelling concession

Language exemption

Seeking employment

Seeking driving license

1978

- Scholarships in school.

I - V standard - Rs.25/month. | Family income
VI - VIII Standard - Rs.35/month. | to be below
High School - Rs.40/ month. | Rs.10,000 p.a.

RESOURCE MATERIALS

Library: The main objective is to provide literature and other materials to the staff and students of the Institute, providing latest books and periodicals on speech and hearing and related fields.

- reference services
- bibliography and indexing
- inter-library loan
- current awareness service
- audio-visual materials

Research: Research projects are undertaken in the Institute in collaboration with Danida, S.R.S, U.S.A, I.C.M.R, C.S.I.R, etc.

INSTRUMENTATION

AIISH is well-equipped with instruments which are useful for training, clinical and research purposes. Few of the following instruments acquired -

- 1970 : Pitch computer (Mainly for speech therapy)
- 1980-81 :- Sound spectrograph (which gives the spectrum of speech sounds and can be used for diagnosis, research work.
- Hearing science Lab | For electroacoustic measurements of hearing aids as per
 - Audio-Test-Station | ENSI/IEC standards.
 - Anechoic chamber
 - Artificial ear
 - Noise, vibration measurement kit
- 1982-83 : Electroaerometer (For Diagnosis and Research purpose)
- 1984-85 : Auditory trainers |
Amplivox speech trainers | (For speech therapy)
Madsea 'S' indicator |
- 1989 : One more set for electroacoustic measurements of hearing aids was acquired. This drastically reduces the time taken for electroacoustic measurements. Some Institutions used Fonix instruments. So this can be programmed to ISI standards with the availability of micro-processed based instruments. It is anticipated that there will be greater interest in making measurements of electroacoustic measures of hearing aids, which will be in the right-step.

OTHER IMPORTANT CENTERS

There are few other centers which provide training as well as clinical services in speech and hearing. Most of them are attached to medical college. These are centers are also well-equipped both for training and clinical services and research purposes. The main aim in starting such units is to improve the rehabilitation work in speech and hearing problems in the country.

Other extended services of such centers are - camps, school screening programmes, public education, etc.

They also provide necessary resource materials for students including recent journals.

<u>Date of starting</u>	<u>Place</u>
1966(July)	- B.Y.L.Nair Hospital, Bombay.
1967(January)	- All India Institute of Medical Sciences, New Delhi.
1983(August)	- Ali Yavar Jung National Institute for the Hearing Handicapped, Bombay.

TRAINING PROGRAMME

- 1966
(July) : The first school in audiology and speech therapy was started in Bombay at T.N.Medical College and B.Y.L.Nair Hospital. This is a private institution affiliated to the university of Bombay.
- Started with under-graduate course leading to B.Sc,degree in speech therapy and audiology.
- Total duration of course of two years followed by one term of full time internship. Minimum qualification for addition was - intermediate science with Biology group.
- 1966
(October) Training programme in speech and hearing started at AIISH leading to Master's degree in speech pathology and audiology.
- Students who had completed their basic degree with major in science, education, psychology, linguistic or medicine were admitted.
- Total number of students - 15
- Duration of course was for 3 years. Examination were conducted by the University of Mysore.
- 1966 Start of internship of one year after examination, degree was given only after completing the internship of one year in any of the institutions recognized by the University of Mysore.

- : Undergraduate programme in speech and hearing i.e. B.Sc., (Speech and Hearing) was introduced at AIISH. Then students were selected to the Masters level based on B.Sc., degree.
- 1967
(January) : Diploma in clinical technique DOT (audiometry) and DCT (speech therapy) was started at AIIMS, Delhi.
- Minimum requirement for admission to the course was a pass in higher secondary examination.
- 1971 : A pre M.sc, course with the idea of drawing talents from different disciplines such as linguistics, psychology, education etc. was started at AIISH. Passing the final examination was compulsory for admission to M.Sc., course.
- 1971 Internship was discontinued and 2 year M.Sc, programme was made with students of passed pre M.sc., (Speech and Hearing), and B.Sc., (Speech and Hearing) at AIISH.
- 1972 Dissertation work was started for the fulfilment of the requirement final year M.Sc., (Speech and Hearing) degree.at AIISH
- 1976 : Semester system was introduced for M.Sc.,(consisted of 4 semesters) and B.Sc.,(consisted 6 semesters)at AIISH.

- : Students were given a stipend of Rs.100/month for 10 months each year. Later it was increased to 150/month and the seats were increased from 10 and 15 at AIISH.
- 1976 : With U.G.C. grants and C.s.I.R. fellowships a Ph.D.Programme in speech and hearing was introduced at AIISH.
- 1979 : Recognition of AIISH for Ph.D. fellowships.
- 1979 : Independent project was started for the fulfilment of the requirement first year M.Sc, (Speech and Hearing) degree at AIISH.
- 1980-81 : Non-semester scheme was introduced at AIISH.
- 1983 (August) : B.Sc. in Audiology and Speech Therapy was started at Ali Yavar Jung National Institute for the Hearing Handicapped (AYJNIHH).
- 1988 : At AIISH stipend for B.Sc., and M.Sc, has been Increased from Bs.150/- to 250/- and Rs.250/- to Rs.400/- per month respectively.
- 1989 : M.Sc., (Speech and Hearing) has been started at AYJNIHH, Bombay.
- 1989 : Number of seats are increased for the admission of B.Sc., and M.Sc., at AIISH.
 - B.Sc., - 20 to 33
 - M.Sc., - 13 to 23

Few students who get their B.sc., (speech and Hearing) degree in any of the Institute in India are allowed to continue their higher studies, outside the country.

PROFESSIONAL ORGANIZATION

ISHA : Indian Speech and Hearing Association.
 1967 : ISHA takes root. Registered under the Mysore Societies Registration Act, 1960 (Mysore Act. No.17 of 1960).

The Registered office is at the AIISH, Mysore.

One of the primary reasons for the existence of a professional organisation is the establishment of high standard for that profession.

The aims and objectives of the association are to encourage the scientific study of the process of individual human speech and hearing, to promote investigation of speech and hearing disorders to faster improvement of therapeutic procedures for such disorders to stimulate exchange of information among persons thus engaged.

The membership is open to otolaryngologists, Psychologists, physicians, paediatricians, neurologists, educators of the deaf, acoustic engineers and students.

The organization has two wings one is at the national level and the other is at the state level.

The national level annual conferences are held every year in February. During conference, which is usually for three days, many of the professionals

: and students present papers on different subjects of speech and hearing and related fields. Awards are given to the best papers.

Mostly conferences are held in major cities in the country like Bangalore, Manipal, Delhi, Patna, Chandigar, Mysore, Madras, Bombay, Calcutta,

1968 : The first conference was held at Calcutta along with the annual conference of the Association of otolaryngologists of India. The first president was Dr.R.A.F.Cooper, Dr.Y.P.Kapoor was the secretary.

1971 : Taking over of the presidentship by Sri R.K.Oza in 1971, the first speech and hearing professional to serve as the president.

In subsequent years, the presidentship was taken in alternate years by an otolaryngologist and a speech pathologist/audiologist.

1978 : After a decade, the ISHA comes into its own. The 10th conference held in Mysore apart from the annual conference of the Association of Otolaryngologists of India, set the trend for the conference in the coming years.

Establishment of branches of ISHA - Maharashtra, Madras, Mysore, Delhi.

- 1979 : Dr.P.V.Rajendra Kumar took over as the President. With his handing over the charge in 1980 the practice of the president being elected/nominated from otolaryngologists and speech pathologists/audiologists in alternate years ceased.
- Discontinued: Dr.J.V.DeSa's Award for the best paper presented at the annual ISHA conference.
- In the previous years* this award had been given to Mr.R.K.Jagadish and to Mr.M.N.Vyasamurthy.
- Institution of award for the best paper presented at the annual ISHA conference by Dr.B.M.Abrol.
- 1985 : One more award was instituted by Mr.Jesudas Dayalan Samuel to be given to the best paper presented by a student.

INDIAN STANDARDS

Indian Standard Institution was established in 1947, by a resolution of the Government of India with the active support of Industrial, Scientific and Technical Organization in the country.

ISI standards for Hearing aids, Noise measurements and Audiometers:

- 1966 : An IS:3720-1966 standard on 'Dimensions of Polarized Plugs for Hearing Aids was published. The scope of this standard was to specify dimensions and tolerances of polarized plugs for hearing aids required for interchangeability.
- 1967 : General requirements for Hearing Aids (IS:4406-1967) severed the general requirements for transistorized body level hearing aids. The document includes: design, housing, dimensions and weight, controls, climatic and mechanical durability requirements. Other aspects referred to are : marking of control setting on hearing aids, earphone receiver, cord plug and ear plug.

The hearing aids meeting the requirements had to operate from a battery voltage of preferably 1.5V; the battery was to conform to R6 size of IS:203-1963.

This was the first step for the quality control on hearing aids.

- 1967 : The standard bearing the mark IS:4482-1967 covered not only the general but also the performance requirements of transistorized body-level hearing aids. Performance requirements for the two grades of hearing aids are given separately. The grade 'A' hearing aid had to have higher maximum acoustic gain and wider frequency response. Requirements were similar for both grades of hearing aid for the following: Saturation sound pressure, effect of variation of battery voltage on acoustic gain, battery current. Harmonic distortion rated maximum sound pressure level below 10 percent only was permitted for both grades, but at different levels.
- 1973 : In keeping with the growing concern on the ill-effect of noise on human hearing, specification for assessment of noise-exposure during work for hearing conservation purposes (IS:7194-1973) was published with its scope as follows:.... gives a practical relation between occupational noise exposure expressed in terms of A-weighted sound level in dB, commonly called dB(A), and duration within a normal working week (assumed to be 40 hours), and the percentage of the workers that may be expected to exhibit an increased threshold of hearing amounting to 25 dB or more averaged over the three frequencies 500, 1000 and 2000Hz solely as a function of the noise exposure". Impulse noise is outside the purview of this document.

1976 : For the first time, methods of measurements on hearing aids was published giving the parameters to be tested as well as the test equipment and procedures for measurement. At the outset, the document (IS:3641-1976) defines the terms relevant such as test space, frequency response, acoustic gain. In the appendix, measurements for characteristics of induction pick-up coil in the hearing aids.

Specifying methods of measurements besides giving the acquirements in terms of the design, controls etc. (15:4482-1967) ensures validity of the information collected as well as comparability in the measurements made in different centers.

1979 : The specification for ear protectors of three type: earplugs, earmuffs, and helmets was brought out in recognition of the importance of hearing protection in the face of increasing noise in all walks of life. Two types of ear protectors i.e. plugs and muffs were grouped under 3 categories. Group A, B and C. The former i.e. plugs could be of the permanent or disposable varieties.

The above document (15:9167-1979) was followed by IS publication - IS:6229-1980 on method of measurement of real-ear protection of Hearing protectors

and physical attenuation of earmuffs. The document specifies the physical requirements, test procedures, criteria that the listeners have to meet, processing and reporting the data. In addition, requirements for physical method to supplement the real ear method have been given. Thus, the document is comprehensive in its scope.

- 1979 : Document on audiometers (IS:9098-1979)
- 1980 : IS:9671-1980 specification for frequency weighting for the measurement of Aircraft Noise (D-weighting)
- 1981 : IS:9876-1981 Guide to the measurement of air borne acoustical noise and evaluation of Its effects on man. Such a document becomes necessary to have because even though noise-measuring equipment is easy to operate, noise measurement and evaluation of the results obtained have to be planned carefully. A number of precautions have to be observed in order to obtain meaningful results after choosing the correct methods, scales and units.
- 1982 : Recognizing the fact that the level and duration of exposure to a sound determine the damage to one's hearing and health, the personal sound exposure meter is used for monitoring the exposure of an individual to sound that may damage hearing.

The personal sound exposure meter is a device, usually worn on a person, that integrates a function of A-weighted sound pressure over time to produce a result called sound exposure.

The above forms part of the foreword to 15:10423-1982 entitled "Specification for Personal Sound Exposure Meter.

The exposure meter specified in this document integrates the square function of A-weighted sound pressure over time. An increase in sound level by 3 dB is equivalent to doubling the exposure duration. Other exchange rates, viz, 4 dB and 5 dB, are also in use but not referred to in this stand.

IS:10399-1982.

Methods for measurements of noise emitted by stationary road vehicles.

The method is intended to check vehicles in service and also to determine variations in the noise emitted by different parts of the vehicle under test which can result from (a) the abnormal working or modification of certain components, when the defect does not appear by visual inspection and (b) the partial or complete removal of devices reducing the emission of certain noises.

1983 : 15:10565-1983: This gives comprehensive coverage to the requirements for audiometers to conduct air and bone conduction measurements. The later document (IS:10565) also covers requirements for speech audiometry and special tests.

1984 : For purpose of calibration of bone vibrator used with audiometers 15:11024-1984 (specification for standard Reference zero for the calibration of pure-tone bone conduction Audiometers and Guidelines for its practical Application).

A series of documents related to the methods of measurement of electro-acoustic characteristics of hearing aids were published. Each part referred to a different aspect. Thus part 1 pertains to General measurements for air-conduction hearing aid and part 4 to hearing aids with bone vibrator.

Parts 2 and 3 cover additional measurements for hearing aids with induction pick-up coil input and hearing aids with automatic gain control circuits.

These together with IS:11449-1985 (specification for Mechanical Coupler for Measurement on Bone Vibrator) provide adequate guidelines for making measurements on hearing aids.

1987 : One more document, on reference zero for the calibration of pure-tone air conduction audiometers (IS:4755-1987) was published in order to promote agreement and uniformity in the expression of hearing threshold level measurement throughout the world. This document gives the RETSPL values for earphones. Berger DT48 (with flat cushion). Telephonics TDH 39 with MX 41/AR cushion and Telex 1470.A. The earlier document IS:4755-1968 (Reference zero for calibration of pure-tone audiometers) gives the RETSPL value in respect of other earphones.

RESEARCH PROJECTS

Various speech and hearing centers undertake several research programmes. They are funded by VRA, Indo-Danish.

Few of them are -

- 1967 : Grants from overseas with assistance a project
VRA supported by vocational rehabilitation administration (Later called as Social Rehabilitation Service) was approved to develop comprehensive rehabilitation services to the speech and hearing handicapped in India. Under this project, instruments such as audiometers and calibration set were given to the centers. There were also visit from consultants from U.S.A.
- A Deafness research project was started in the CMC Hospital, Vellore with a grant from U.S.A. The purpose was to investigate the effects of tropical diseases on the auditory system.
- 1970 : Indo-Danish project with AIISH as the primary center and 4 regional center at Delhi, Bombay, Varanasi and Vellore.
- Training in audiometric and earmold making was giving for the staff at AIISH and different regional centers.

- : Equipment to start a full fledged earmold laboratory was also supplied. Other equipments supplied - audiometers, impedance meters. In addition 7000 hearing aids for distribution to impecunious children all over the country and also accessories such as cords, receivers, cells were given free.
- 1971 : At AIIMS - establishment of a pilot rehabilitation unit in audiology and speech pathology in India.
- This project was supported by a Research Grant No.VRA-IND-13-64 from the division of vocational administration now Known as the division of research and demonstration Grant No.19-P-58117-F-01, Social and rehabilitation service department of Health, Education and Welfare, Washington DC 20201. The most important implication of this study for the rehabilitation and social workers, includes lack of facilities for the rehabilitation work in the field of speech and hearing in most of the developing countries.

EPILOGUE

Speech and hearing is still a very young field in India. The number of professions who are trained in speech and hearing are also less.

According to Balakrishna (1978) study the percentage of males in the profession was 59% whereas the females were only 41% which is unlike in U.S.A.

According to Curlee (1975) (cited in Balakrishna (1978) reports that about 86% of the non-members of ASHA(American Speech and Hearing Association) were females and their mean age was 29.3 years. In India, the mean age of the females in this profession was found to be 25.8 years.

It is observed at AIISH that eventhough students are selected from all parts of India. Most of the candidates are from south India as compared to North. This may be because of the presence of few Institutes in North India (i.e. in Bombay, Chandigar).

Job opportunities:

According to Balakrishna (1978) 40% of the professional are absorbed in medical institution, 33% in speech and hearing clinics.

They also have chances in industries for noise control, special schools, ENT clinics. Rehabilitation centers. There are a few candidate who do private practice also.

Curlee (1976) indicates that the speech pathologists and audiologists are concentrated in urban areas. The reasons for urban concentration maybe due to various factors such as availability of other professionals, personal convenience, awareness of the people regarding specialised services in different fields of science. However, their involvement in rural health schemes need to be improved both for public education and treatment.

Still there are many changes and modifications that need to be done in many areas like training programme, instrumentation etc.

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