LOOK BEFORE YOU LEAP: AN INSIGHT TO THE SPEECH AND HEARING CAREER

Reg.No.M9108

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

ALL INDIA INSTITUTE OF SPEECH AND HEARING: MYSORE - 570 006.
1992

DEDICATED TO -

- Prof. Dr.(Miss) S, Nikam
  Director
  All India Institute of speech & Hearing
  The symbol of dedication,
  whose love and affection
  I can feel with my every pulse,

- My dearest, heartiest, ever loving friend
  late Soumen, my inspiration, my strength.

- Ammu, the definition of 'a friend'
  whose helping hands and preying lips
  well wishes and timely inspiration
  novel criticism and inspiring admiration
  constantly work with no.

- Nobelehearts, dedicated for the
  service of speech and hearing-impaired.

CERTIFICATE

This is to certify that the Independent Project entitled: LOOK BEFORE YOU LEAP: AN INSIGHT TO THE SPEECH AND HEARING CAREER is the bonafide weak in part fulfilment for the degree of first year M.Sc, (Speech & Hearing) of the student with Register Mo.M9108.

Director

Mysore
1992

All India Institute of
Speech & Hearing.Mysore.

CERTIFICATE

This is to certify that the Independent Project entitled: LOOK BEFORE YOU LEAP: AN INSIGHT TO THE SPEECH AND HEARING CAREER has been prepared under my supervision and guidance.

Mysore
1992

Dr.(Miss) S.Nikam
GUIDE

DECLARATION

I hereby declare that this Independent Project entitled: Lock before you leap: An insight to the speech and hearing career is the result of my own study under the guidance of Dr.(Miss) S.Nikam, Prof, and Head of the Department of Audiology, All India Institute of Speech and Hearing, Mysore and has not been submitted earlier to any University for any other Diploma or Degree.

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1992

ACKNOWLEDGEMENTS

To my guide. Prof. Dr.(Miss) S.Nlkam, Head of the Department of Audiology, All India Institute of Speech and Hearing, Mysore, to light of knowledge, symbol of dedication, twinkling with her greet commanding knowledge, who lifted me holding my week hands end taught me how to walk in the mysterious, unknown and twilighted lane of working paper. I have nothing to express my gratitude but only I can murmur:

My heartfelt thanks to Dr.(Miss) s.Nikam, Director, All India Institute of Speech and Hearing, Mysore for kind permission to work on the same.

My hearty thanks to Mrs. Roopa N., Mrs. Ashya, Y., Mrs. Vanaja, C.S., and other staff members of the Department of Audiology, for their invaluable suggestions and advices.

My sincere thanks to Mr. Venkatesh, Dr.S.R.Savithri, Dr. G. Purushothama, Dr.P.Vidyasagar, Mr.P.Kalaiah, Mr.Anthony Thomas, Mrs. Y.V.Geetha, and Mrs. Prema, K.S., for their love, affaction,help,advice and suggestions.

I would like to thank all the teaching and non-teaching staff of AIISH, Mysore for their love and affection, and co peration.

My heart thanks to the member of AYJNIHH, Bombay who laid the foundation atone of the speech and hearing career in my life. My special thanks to Mr.Chandrashekhar, K.R.Mr. Venugopal, Dr. Geetha Rao, Ms. Geetha Mukundam, Mr. Ranjeet Bhattacharya.

My special heartfelt gratitude to Mr.Govindarajan, M.V., Mr.Mahadeva, Mr.Ramesh Baku and all other members of AIISH Library for their timely help and cooperation.

My ever loving parents - your love and affection, silent prayer and bast wishes always rain over me. Each and every moment, I feel the presence of you and your thoughts. I can only say "Pranama" to express my gratitude.

When father's affection, mother's love, brother's advice, sister's wishes, husband's understanding, wife's hospitality, opponent's criticism and partner's support mix altogether become a unique, an ideal definition of a "FRIEND".
And, and..... and I am that 'the fortunate' to have a sweet friend like you. But I do not find any word to be sufficient enough to express my feelings towards you. Only silence has to do.

Contd....

Bhaiyaji - It la really a great pleasure to have a brother like you, who is the ocean of love and affection, who constantly boost my morale each and every moment accepting my all naughty behaviour, but never rebouncing it.

Words are not always sufficient to express someone's feelings. Pitu my sweet sister, I do not know how to express my gratitude to you.

My special thanks to Javer, Chhotto meye for your praying lips and helping hands, friendly attitude and loving bond.

Jethu et al who constantly boost my morale and make the environment fresh and fresher - I thank you ao much.

Nimu - I must thank you for being a good rocm-mate and making my hostel life homely.

Thanks, Charu, Stella, Bhu,S., for your helping hands and friendly attitude.

Rava and Raj - My sweet friends - I thank you so much for bein0g good friends.

Mr.Pathak, Ms. Jyoti,B, Ms.Jayanthi,R. - I thank you so much for giving morale support and boosting my psychic energy to work optimally.

Sanyu and Swathi - thanks a lot for your friendly attitude, help and cooperation.

My special thanks to Sanu, Bala, Salem, B.Rain, Cine Bullet, Bhu, Cs, .

Mythra, J. - I cannot thank you enough, but I am only say - I cannot forget your greatness.

Thanks to my seniors - Raghu, Sowmyn, Hari, Gokul, Shanthi, Shallashree, Sheila, for their cooperation.

Nishant and Sangita, K - A bag of special thanks to you for your timely help and cooperation. I cannot forget your sweetness.

Contd,...

Thanks to Asha, Papu, Shashi,Rajeev, Aparna, Pani(s), Mathew, Prem, (or their friendly attitude.

Kunal end Animesh who support me whenever I need makes my life more smooth and easy removing all the louring clouds over my heads, whose helping hand* and beet wishes constantly work with me. I thank you. I thank you so much.

Thanks to sneha, Geetu, Preeti, Rahul, for your love and affection. and for keeping in touch with me.

Thanks to Sunita, Preetha, Pintu, Prakash, Hasan, Ashaque, and Salaj for making my B.Sc. life smooth and easy.

Thanks to my hostel inmates for their cooperation and making a homely environment.

Thanks to Batruji, Mahadeva and Pande for providing nourish-ment and making hostel life comfortable.

Rejidi, your love and affection,timely help and cooperation I cannot forget ever. I do not have enough word to express my gratitude, only'thanks' haseto do.

sweet papu my little friend, I am sorry to take your sweet moments. I must thank you for your smiling face and kind cooperation.

From whom I owe a lot but could not mention here. I thank all of you.

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INTRODUCTION.

YOUR SILENCE AND MY WORD

Youngsters are the future of a nation. They are the young blood. They can do a lot. After M.Sc, they come into a wider, a broader aspect of life. They have passed a way which was smooth and with no side branches. Leaving the smooth straight run they come to such a position Where they have to choose a field of study for specialisation. Many want to go to medicine, engineering and so on. They hear so much about medicine and engineering and other different vocational, professional and non-professional courses. But many of them are unaware of this speech and hearing field or if some do have few informations, often is not adequate. Even sometimes they do have a false information. Speech and hearing field is a developing profession with a great deal of demands in the east and west. Here the bright, clever end thoufhgtfull brains have lots to do, lots to gain sod lots to show. Out often it is found that many good students go to other field or do not choose this because of lack of information. This is Why here I would like to talk to you and share my experiences. With that hope and belief that my best effort will take you to the world of speech and hearing, an attempt has been made to provide some information, some valuable bits of knowledge. Communication is the vehicle

to exchange our ideas thoughts, hopes what we do think, feel or dream trying to find out new meaning to the old. we communicate them to others to share our knowledge or to conovey our message or to get the necessary help from them. I or our daily lives to maintain our flow of the live livers to restore our existence to survive in the complex,difflcult anagonistic motions of the world. We a11 need to use this vehicle to convey our thoughts and feelings, share our joys and sorrows. Other animals also do share their information but restricted to the large extent due to inability to use certain special highly developed communication system. Speech and language are the best mode of communication, non-verbal modes of communication such as gestures, signs, codes, etc. though not negligible but compared to the potentially of speech and language amount of message conveyed is often restricted.

Speech is the vocal behaviour, a part of language system. Specifically to the human being, allowing there best possible communication. Where hearing plays a very important role, speech does play a significant role in life because it allows several ways and means of exchanging ideas. Such as the displacement of thoughts emotive

functioning of ideas, providing a great esthetic value to the message conveyed bearing a conjucture, referential and meter linguistic function.

Moat of us, being endowed with this special ability. Use speech and language for our communication. We recall our peat, think our present and dreams our future. But unfortunately life is not see sweet for all few are there in our society they are deprived of this special ability, they are either without speech or with defective speech.

They also do have lots to share, lots to gain and lots to contribute but often restricted due to the lack of this special ability, the ability to talk.

Personal, social and economic, all the aspects of their life often severely affected because they cannot express themselves effectively as others could do.

Many of our neighbours are unaware of the effect of hearing loss. If you tell them "Hearing is very very essential for speech development, a deaf child cannot learn to talk without assistance", they would not believe you. They may tell you that it is a punishment or a curse of god. Though you know, it la wrong what they know or believe. You may think "Oh what a foolish notion of these ignorant people". But that's story of the country. Many of our friends and youngsters are unaware of that.

You will wonder if I tell you the statistics, Is not it surprising to know that thousands and thousands of children become mentally retarded, hearing or speech handicapped and so on because of the ignorance of the illiterate adults. Our parents do have ocean of love, unacountable time and feelings to us, but they do have minimum information on how to take care of our future, the young babies. Eighty percent of Indians still do not have proper education. And this is where the young blood is required.

Here an effort is made in the subsequent chapters on the following keeping an aim in mind that it will make you understand the slience of the slience world.

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CHAPTER II

TYPES AND NATURE OF VARIOUS SPEECH AND HEARING PROBLEMS

"THE BLACK ROOTS OF THE BLUE TREE"

Man la a unique creation of the nature. He observes the nature, tries to understand it. He thinks hours together why so and to happen in such a way and why soma others do not. He shares his feelings, thoughts and ideas with his friends, neighbours and ao on. He exchanges his each and every moment with someone nearer to him. He expresses his joys when he finds hla dearest one is delighted, and he exclaims his sorrows when he finds the world not going with him as he wants. He dreams his present and future. He recalls his past. He passes his days really in a special, a very special way what never some other animals can do. His life style is unique. This is possible because of his unique ability to speak. Speech is specifically to the human giving him freedom to think, to feel, to dream and to exchange hia ideas.

You write a poem, recitate it observing the beauty of the nature, sing a beautiful aong or hum a sweet melody, share your sweet moments with your deareat one. But life is not so sweet for all. Unfortunately, few are there Who are deprived of this special ability, they are speechless or they cannot communicate as effectively as you can. Because, either they have not developed speech and language or lost

it due to head injury or illness. Few of them cannot communicate effectively as their speech is severely defective and unintelligible, They are also human beings Who must have arual rights to enjoy each and every moment of their life and to share their joys eronous with you and me. But it does not happen so. They pass a real tough time what is really too difficult to think for us Who can apeak.

Can you imagine auch a situation where you are not allowed to speak to express your needs? Or can you think of auch a condition when your speech becomes meaningless and not a single person is able to follow it. Just think a while. if you would have been taken to a place where you would not understand their language and they also do not follow your speech* What a helpless and frustrating condition It would be. You may put on your T.V. keeping its volume too low to be heard and you may try to follow the broadcast. Really you will have a very hectic time. You will understand what a misearable time they do pams or What a bitter experience they do possess or experience each sad every moment.

A single or a combination of a variety of speech and language problem may cause this devastating condition, where a person has lots to share but no way to express them or What he does have is not very effective means of

communication. Delayed speech and language is such a disorder where the speech and language development is not matched with his chronological age. Average children of the same age group, when express themselves effectively, the delayed speech and language child cannot. His speech and language skills are inadequate with articulation errors. Sometimes his speech becomes unlntelligible. His major difficulties often lie in vocabulary deficits which restrict hie speech output, in grammatical deficits which prevent him from expressing himself according to the hidden rules of communication such as use of plurals, tense etc. He is unable to transform a form of sentence to the other. This problem may be due to hearing loss or any other sensory deprivation, or due to mental retardation or due to other psychosoclal problems or inadequate speech and language stimulation in early childhood.

A deviant speech and language child may have some speech and language skills but do not dhow the linguistic patterns generally found in normally developing younger children. Instead of simplifying the symbolic code, they are atypical or eccentric forms devising a strange language of their own. They tend to have a limited repertoise of utterances and may even have difficulty repeating simple messages. It may be due to prenatal abnormalities such as injury to the mother, drug in taken or exposure to radiation et, or may be due to perinatal onuses such as birth trauma, abnormal delivery.

Instrumental delivery etc. or may be due to post-natal causes such as head injury or other injuries diseases such as encephalitis. meningitis, epilepsy etc. This speech and language problem may be the result of various paychosocial problems.

An aphasic did have adequate speech and language skills. Rut unfortunately he has lost his speech and language skills partially or totally due to sudden brain injury. It may be due to stroke preceded by cardiac problem, high blood pressure, bloodsugar, etc. Stroke may be a result of cerebral thrombosis (where blood vessels are blocked due to clot formation) or embolism (where blood clots are formed somewhere in the body, but carried out to the vessels supplying to the brain. The clots lodge the vessels wall closing or restricting blood supply to the brain.

You may come across such an aphasic Who can comprehend your speech but cannot express his thought end feelings though his facial muscles are intact. He cannot speak voluntarily though so etimes be may utter some meaningful words unknowingly. Such a frustative condition as a result of brain injury is called Broca's aphasia.

You way find a brain injufied aphasic who can break out voluntarily what he wants but cannot follow your verbal

command* or cannot repeat your speech. He may be v ry fluent but his speech is meaningless, only a combination of few mounds hapazardly. He most probably is suffering from a condition so called Wernicke's aphasia.

A variety of speech problems you may encounter which may be the result of brain injury due to physical accident or a consequence of cerevascular accident (which causes restricted blood supply to the brain) or due to certain brain diseases such as encephalitis or meningitis.

Similar conditions may be seen in childhood also causing childhood or developmental aphasia where the children severely suffer from inability to use symbols for verbal and non-verbal communication.

Apraxia is a disorder where the person can do some activities being unaware of his action. But if he is asked to do so, he becomes unable to do the same. He does not manifest any facial paralysis or paralysis of the muscles of mastication, he can eat and sometimes speaks out few meaningful utterances unknowingly. But if tried to do the same, he cannot. He wants to say something, he wants to

do something but cannot do. What a miserable condition it would be, can you imagine? The condition occurs mainly due to brain injury as in aphasia. It may be seen singly or in combination with other symbolic speech and language disorders such as Broca's aphasia.

YOu say find some people, those speech are not so intelligible. You may not follow them though they use the same language as you. Their speech is not so intelligible because they cannot produce some speech sounds in their language. Frequently they use some other sounds for a particular target sound. Number of defective sounds vary individual to individual. The inability to produce an intended sound is called mlsarticulatlon where the intended sound is either omitted, distorted or substituted by some other speech sound.

Speech fluency is a sensitive barometer of a person's psychological and physical health (Emerick and Haynes, 1986; Rousey et al. 1986; cited in "speech Correction" by Van Riper). All of us do hesitate and bobble at times but someone Whose speech habitually shows abnormal interruptions may be said as having a fluency disorder. His speech is not smooth frequently fragmented by unusual pauses and repetitions. He may speak very fast or he may be too slow. His

speech muscle movement may be irregular and jerky. As he composes his utterance may expend obvious muscular or mental effort.

Stuttering and stammering is such a fluency disorder which "occurs When the forward flow of speech is interrupted abnormally by repetitions or prolongations of a sound, syllable or articulatory posture or by avoidance and struggle behaviors" (Van Riper, 1984).

When a person wants to may something but gets blocked, becomes frustrated problem increases in course of time as he develops anxiety thinking Whether he will be able to speak out what he wants recalling his past experiences. Thus, a stammerer develops anxiety frustration, shame/and other negative emotions as he tries to speak and finds himself blocked. Day by day he tries to avoid speaking situation which may seriously affect his daily life and carreer.

Cluttering, a different form of fluency disorder where speech is disorganized, jumbled, confused and in some cases chaotic. A clutterer usually speaks very fast, moat of the time uses disorganized sentence structure with slurred or omitted syllables and sounds. But interestingly, he is unaware of his speech problem and if he knows his problem also, largely indifferent to his speech. His speech improves if he pays attention to his speech and reduces his rate of speech.

You may be very fluent speaker with good vocabulary and you might have good command on your pragmatics but yet you may not be a good singer or a good speaker. Your voice is What makes your speech more impressive, your voice which takes you to the world of music. "The human voice is a remarkable instrument. A speaker can evoke a wide range of emotions and mental images by slight changes of vocal timbre, loudness or subtle nuances in infection. Furthermore, a person's voice is a sensitive basometer of his physical and emotional health" (Van Riper, 1984).

Three main parameters of voice viz pitch, quality and loudness measures the normalcy of a person's voice* If you tie a string at its two end and set into vibration it produces a sound. This sound lasts till it vibrates. Frequency ie.the number of vibration per second predicts the nature of the sound. What we perceive is the pitch as we cannot hear the frequency but we can measure it. High frequency sound produces a high pitched sensation and a low frequency sound to low pitched one. A speaker, produces his voice setting his vocal folds into vibration. Vocal folds are two muscular elastic fibres in the our voice box so called larynx just in front of our food pipe, pharynx. A good speaker holds attention of his audiences

for his unique ability to use appropriate pitch variation (inflections). His speech is impressive. He neither shouts nor speaks too soft to hear but speaks loud enough to be heard, soft enough which makes it comfortable but not a about.

But all are not good speakers or singers. But meet of us have voice which is good enough to communicate effectively. But some one may loose him voice totally due to sudden close head injury or injury to larynx causing a state called aphonia. A severe psychological trauma also may cause such voice problem.

Neurophysiological immaturity, physical trauma even psychosocial trauma may restrict some one's vocal ability. His voice may be too soft to be heard causing disruption in communication which may be called dysphonia.

Certain organic pathology and certain hearing loss makes a person use abnormally loud voice. If he is instructed to speak softly also, most of the time, he is unable to do so.

sometimes you may find a person speaking loud enough to be heard, soft enough to tolerate but yet his speech is not intelligible. His voice quality is not normal. He

may show intermittent aphonia, in instances of weak intensity, and in conjunction with the hoarse voice. A noisy mound is heard When he speaks. In the speech and hearing parlance,we define it as "Breathy voice".

"There are voices which are so reaping and piercing that they repel listeners. The basic characteristic of these voices is the presence of what is called the "vocal fry" because, perhaps, it sounds, like the sizzling of bacon in the frying pan... whan this vocal fry is fast, however, and accompanied by great tension we have the basic quality of the 'strident or harsh voice'" (Van Riper, 1986).

Some people also present some other abnormal voice quality which is a combination of the breathy and the harsh voice quality disorders. In it you can hear the air wastage as a noise and also the straining vocal fry of the strident voice. A monopitched speaker's voice is not impressive and many a times less intelligible due to inability to Change in pitch when required. The speech becomes monotonous and sounds unnatural.

So many other different speech and language problem so far has been reported.

Dysarthria is a neurological condition when articulation and/or voice may be partially or severely affected.

Cleft lip and palate is a condition Where the lip and/ or palate (the roof of the mouth) not completely developmented There may be a hole allowing food particles to enter into the more. These children may develop delayed speech and language problem. Articulation and voice problem are moat commonly observable speech disorder.

Cerebral palsy is a congenital or early childhood disorder due to non-progressive brain damage. The cerebral palsy child does have difficulty in walking, eating, dressing and all other activities. They may show severe speech problem characterized by severe misartlculations and voice problems. Their speech development is usually delayed.

Thus far we have been describing those voice disorders in which the problem in either of loudness or quality. Pitch is one of the most significant parameters influencing speaker's speech output. We usually speak at certain fundamental frequency which gives our habitual pitch. Many a time, semetimes pitch either becomes too low or too high giving rise to low pitched or high pitched speech respectively.

Most of us tend to think of the change of voice/as, occuring abruptly when it does occur. The 'pitch breaks' which is the subject of a good deal of humor often a pathological condition When someone cannot avoid it while speaking.

This occurs involuntarily. In the early young ages, boys and girls speak within a same pitch range. But as they grow up, they differ. A young girl's voice changes with a little lowering of pitch. But a signlficant decrease in pitch is observed in young boys at puberty due to physiological and physical maturation of the larynx. The inability to shift thie pitch change from high to low may be seen in young adult causing a voice disorder called puberphonia where in young girls a remarkable unwanted decrease in pitch causes endrophonia

Hundreds of causes are attributed to various speech and language disorders. But the large proportion of speech and language impaired are hearing-impaired. Most of the time, the speech and language handicapping conditions are the result of hearing loss. Most interestingly a hearing-Impaired child cannot learn to apeak without special assistance. This is why speech and hearing problems sometimes entwined are together.

We can apeak in the dark also because we can hear In the dark, some one answers your queation when he hears you. But a deaf cannot do it.

A young infant may not understand ABC of our speech. But yet we talk to him. We smile, cuddle or respond

favourable When your child makes /a—-a/ sound. As you and me respond favourably to the child's vocalisation, a - a sound production the child becomes happy hearing our reaction and tries to produce more and more. If the vocalisation has some similarity to the intonation (Pitch pattern) of our adult language, we respond immediately thinking the child wants to aay something. Child echos his mother's word, mother responds to him. Mother talks to her Child, the child learns to speak hearing the speech around him.

We hear as we have complicated organs of hearing. Our ear has three major parts viz. external ear, middle ear and Internal ear. Pinna and the ear canal make the external ear. In the middle ear, we have three small bones called malleus, incus, and stapes making a bony chain. Eardrum separates middle ear from the external ear. A tube like structure called auditory tube connects the middle ear to the nasal cavity. Usually it is in collapsed state. The tube opens when we swallow or chew. It supplies required oxygen to the middle ear. She inner ear is the sensory part. The inner ear is connected with the external ear through the middle ear by the bony chain (formed by three amall bones mentioned earlier). The inner ear is supplied by the vestibule, cochlear nerve. It is called so because it supplies to the vestibule and cochlea the two parts of the inner ear. The

vestibular part is responsible for our balancing ability and the cochlear part is responsible for the hearing ability. The nerve fibers reach the brain with different relay stations on the way. Our hearing mechanism is controlled by the brain as other functions are controlled by the brain. The brain is the master of all.

If the external or middle ear gets infected or damaged, the conditioned called conductive hearing loss causes. Because these parts of the ear conduct the sound to the inner ear. Whereas a person may get cochlear hearing loss when cochlea gets damaged. Lesion (affection) in the nerves may cause hearing loss as for example in the case of tumor in the nerve (condition called acoustic neuroma). Hearing loss due to damage beyond the cochlea is termed as retrocochlear hearing loss. A person may be called sensorineural hearing-impaired when the hearing loss due to the lesion beyond the middle ear. Hearing loss due to the damage to the upper control mechanism such as in the brain substance or in the neural connection in the brainstem termed as central auditory disorder.

A conductive hearing loss case speaks softly but cannot hear soft speech. It may be due to any pathology in the external or middle ear including auditory tube.

A person with sensori-neural hearing loss speaks loudly as he cannot hear his own speech.

If a person gets hearing loss, he cannot hear others and thus cannot communicate effectively. Day-by-day his own speech also become distorted. If a child gets hearing loss before his apeech development, his speeeh becomes severely delayed. More the loss, more the problem, earlier the hearing loss severe the epeech problem. A child is called prelingually deaf when he gets hearing loss before the acquisition of his speech. A post-lingual deaf is that person Who become deaf after the acquisition of speech.

Post-lingual hearing loss	**Pre-lingual hearing loss**
1. As a person with normal hearing loss, his hearing, his speech deteriorates.	1. A child born with severe hearing-impairement does not acquire speech naturally.
2. The greater the hearing loss becomes, the greater the deterioration of speech.	2. The better the child's hearing level, the better his speech and the easier to acquire or develop.

Post-lingual hearing loss	Pre-lingual hearing loss
3. Am hearing loss prograe-sses in severity devia-tion in speech occur first in articulation and then in voice quality and then in rhythm.	3. The child with mild to moderate hearing loss has speech deviation primarily of articulation.
4. The longer a person has a serious hearing-impair-ment the greater the speech deterioration.	4. A child with severe hear-ing loss has serious devia-tions in articulmtion and voice quality and may have abnormal speech rhythm.
5. With sudden severe to pro-found hearing loss. speech does not detesio-rate immediately, but deteriorates gradually.-	5. The child with severe to profound hearing loss can be taught to speak but his speech may deviate consi-derably from that of a child with normal hearing.

CHAPTER III

INCIDENCE OF SPEECH AND HEARING PROBLEM IN INDIA.

"THE BLACK PHANTOM OF THE COIN"

India, the seventh largest nation in the world in area (1,220,00 square miles) is the second in population (>80.30 crores). The population is distributed among 25 states and seven union territories. 76.7% of the total population are living in the rural areas. Whereas, remaining only 23.3% are living in urban areas.

India is a country with 1652 mother tongues, 15 major scripts, skin colors ranging from blue black to ivory White, six major classes, hundreds of castes, thousands of subcastes and so many religions. Despite of so much diversity, so many different groups of people of different backgrounds, all are one, attempting to live in one nation as an integrated society. Out the red-eyes of a variety of malignant problems such as a soaring population, a primitive agricultural practices, a labor force debilitated by disease and illiteracy are threatening her shutting door to progress.

The rapid growth of Indian population has outstripped the development of natural resources. But if the population continues to one at its present rate "it is hard to imagine the gigantic investments needed to create a viable economy that would yield adequate reinvestments in the forms

of housing, hospitals and roads . . even all the aid now available from the highly developed nations were devoted to India alone, it would still not be enough to meet present needs" (Gindertael and Michel cited in "Services for handicapped in India", Taylor and Taylor).

The chronic and malignant social problem; are never dealt adequately and Indian bad politics Which has become a vieux jeu either takes them aa issues to fill his ballot box up or to avoid other socio-economic stigma.

Thus problems like nutritional deficiency, lock of treatment facilities on inadequate or quack treatment for life threatening diseases are raising their ugly heads in spite of the recent attents by governments, non-government and different voluntary organizations to improve these conditions.

Speech and hearing problems are though very serious but not so life threatening to a poor person who is in need of a handful grains to survive. This is Why the problem rarely accounted in the rural areas, mainly When it is from low socio-economic group.

Even in higher socio-economic group, female Children are still not taken care-off. Infanticides of females

children, abortion of female foetus still often encountered. People do not disclose the problem of their female children mod avoid treating them. Hearing and speech handicap is not so visible handicap like orthopedically handicap etc. Thus speech and hearing handicaps are readily ignored which makes it difficult to study the incidence or prevalence of the same.

"There is no systematic study of incidence and or prevalence of speech and hearing problem. Some discrete studies so far reported are not adequate. Number of samples of those studies were very less and samples were taken mainly from small areas which were never be representative of the whole nation. Though India is a unitednation, an integrated society, a remarkable diversity.

Prevalence indicates the population of persons in a defined population. Who at a specified time are affected or have been affected.

The NSSO (National sample Survey Organization) in 1981. Studied prevalence of communication disability. It referred to the inability to hear or to speech defects. Speech defects included inability to speak and voice defects, For communication disability 0-4 years age group was excluded as the

Incidence as number of persons who become disabled for hearing and/or speech during 365 days, preceding the date of survey per 1,00,000 population.

Prevalence of disability:

The prevalence rates has been considered in terms of urban and rural areas (states) in terms of sex and also age.

Prevalence rate per 1,00,000 population for Hearing disability

Rural		Urban	
553		390	
Females	Males	Females	Males
510	595	395	366

The highest prevalence rate from rural population was highest In Mizoram and the same for urban population from Tamil Nadu,

The lowest prevalence rate for both urban and rural areas was in Madhya Pradesh.

Thus, this survey shows that there is a large variation in prevalence of hear in disability in both urban and rural areas.

The number of persons disabled from birth amongst the rural population and urban population arc as follows:

Information on prevalence of communication disorders amongst children were incompleted and unreliable,

NSSO criteria:

1) age group above 4 years of age
2) hearing problem
3) one ear normal or hearing loss in other ear is not considered as hearing problem.

b) hearing disabled are -

i) cannot hear at all
ii) profound - can hear only very loud sound
iii) severe - can hear only shouted words
iv) moderate - they ask the speaker to repeat or see the face of the speaker.

3) Speech problem

a) cannot speak but can cry or cough then he has normal voice but may not normal speech.

b) Speech defects

1) speaking intelligibility
2) stammering
3) speaking with abnormal voice
4) other speech defects (articulation defects, nasalised voice).

The NSSO considered prevalence as number of persons having communication disability per 1,00,000 population.

	Rural	Urban
Average	188/1 lakh	100/1 lakh
Range	87-526	70-225

The variability of this is due to wron reports, false positives and false negatives. Also cases where disability occured during early childhood were reported/as cases of disability from birth.

PREVALENCE RAT -/1,00,000 population of speech disability.

For this only cases above age of 5 years more considered.

Rural	Urban
304 per 1 lakh	279 per 1 lakh

The highest rate for rural population was reported from Hizoram and the same for urban population from Haryana.

The lowest rate was reported from Madhya Pradesh.

Thus,we see that there is a marked variation in prevalence of speech disability across states for both rural and urban areas.

The number of persons having speech disability from birth is -

Rural	Urban
234 per lakh	186 per lakh

Prevalence of disability by age:

The prevalence rates for both hearing and speech disability vary with age. The prevalence rate of hearing disability increases with increase in age after the age group 15-39 years in both rural and urban areas for both males end females.

The rates are very high (Over 2000/1,00,000) for 60 years and above group.

For all age groups, the prevalence of hearing disability amongst rural males and females were found to be higher than amongst urban males and females.

The prevalence rate of speech disabilities by age falls studily over the age 5-59 years and then rises to some extent at ages 60 and above in both males and females for rural and urban areas.

Incidence of disability:

The incidence rate for hearing disability as a whole warn estimated at 19/1,00,000 population for rural areas and at 15/1,00,000 population for the urban sector.

Rural	Urban
19	15

The incidence rates for males and females are same in both rural and urban areas of the country.

The incidence rates of speech disabilities for rural and urban areas together was about 4-5/1,00,000 population.

The incidence rate for

Males	Females
6-7/1 lakh.	2-3/1 lakh.

But all these incidence rates are based on a very small sample.

Incidence of disability by age:

Incidence rates for hearing disability are strikingly higher for the age group of 60 years and above than for

other groups in both urban and rural areas In both males and females.

Incidence rotes of speech disability are higher in the lower age group from 5-14 and then falls rapidly, but increases above 40 years of age. Incidence rate ia much higher in males than the females.

PROBABLE CAUSES OF DISABILITY:

The probable causes were classified into

1) Voice disorders
2) Cleft palate
3) Following illness
4) Following injury
5) Medical and surgical intervention
6) Other causes
7) Unknown causes

The distribution of persons navlng speech disability is very much varied. The cause of disability was either not known or different from those mentioned above.

If illness was reported to be the cause for 11% of speech disability in the rural areas, and 17% of speech disability in urban areas.

In both rural and urban areas of the country, voice disorders was the cause for 3-4% of disability and cleft palate for 1-2% of speech disability.

Hearing disability was caused mainly by ear discharge and illness, German measles also caused hearing disability for not more than 1% in both rural and urban areas of the country.

Conclusions about NSSO

Rational Sample Survey Organization, has no doubt done a wide spread survey. But can we get a clear cut picture about all the speech disabilities.

The estimates, especially that of incidence is a small sample survey and we cannot conclude exactly about the nature and amount of communication disabilities in our country.

Moreover, these estimates are given in terms of rates per 1,00,000 and unless and until we convert there to overall population itself, we may not be able to even think of the number of disabled have communication problem in our country.

Also estimates about many specific disorders in terms of prevalence and incidence rates have not been given so

we actually eannot form an idea as to how many misarticulations cases, stutterers, autistics with speech disability aphasics, dysarthrics are prevalent and incident in our country.

Other surveys and demographic data:

According to Palmer (1963) 5% of India's population (80.30 crores) have speech and hearing problems.

According to a pilot study done by Subramaniyan and Satyan in 1973. The prevalence of speech and hearing problems with mental retardation is as follows:

Delayed language	69.28%
Misarticulation	14.91%
Hearing loss	2.79%
Stuttering	12.12%
Cleft palate	0.90%

The prevalence of speech and hearing problems with a history of consanguinity.

Hearing loss	7.9%
Delayed language	84.22%
Cerebral palmy	2.24%
Misarticulation	2.24%
Stuttering	3.40%

They found the incidence of hearing loss higher than the speech problems.

The incidence of delayed language la higher when compared with other speech problems.

Another study done by Manohar and Jayaram in 1973 reveals the following:

The age-wise distribution shows that speech problems had its highest prevalence rate at and around the age of six years.

In this study, peripheral speech mechanism articulation and voice, fluency, voice and language were all checked.

A sex-wise distribution shows that 13,43% of boys had speech problems. 15.79% of girls had speech problems. It was also noted that dysphonia had higher incidence in girls (15.79%) than boys.

Incidence of stuttering was more in boys than in girls with a ratio of 6:1.

On the whole, it has been reported by MSSO and many others that prevalence of speech and hearing disorders in India is 5%. This includes a large population of mentally

retarded. The prevalence rate of M.R. exclusively is around 2%, 24 million persons have been estimated to have mental retardation ranging from mild to severe degree.

All mentally retarded children have associated speech or at least some amount of language disability.

All these above studies tell us in general about how much of problem exists in India. But has any one probed into further prevalence and incidence of communicative disorders in terms of the exact number in comparison to the present population of the country.

Let us roughly estimate the prevalence and incidence of speech and hearing disabilities.

The prevalence of speech and hearing disorders is about 5% of the total population in India

$$\frac{5}{100} \times 8500 \text{ lakhs} = 425 \text{ lakhs}$$

This means that about 425,00,000 persons out of 8500,00,000 persons in India are afflicted with speech and hearing problem.

This includes a large population of mental retardation having speech disabilities.

Cam we ever imagine to see such a big population (425 lakhs) of speech and hearing disabled in our country?

The mentally retarded person themselves constitute around 240 lakhs or 240,00,000 persons. If we consider hearing disability from the NSs estimate. We have 553 rural/1,00,000 and 390 urban/1,00,000 population.

If we estimate comparing it to the present population we have

553 X 8500 lakhs = 47.00 lakhs in rural area.

1 lakh

390 X 8500 lakhs = 33.15 lakhs in the urban area.

1 lakh

Similarly, persons with hearing disability from birth are/arouod 15.98 lakhs in the rural area and 9.18 lakhs in the urban area.

this means that about 47 lakhs in rural area and about 33.15 lakhs population in urban area have hearing disabilities without any speech problem.

SPEECH DISABILITIES:

Prevalence rate in rural area is around 304/1,00,000 and 279/1,00,000 population.

Thus $\frac{304}{1\text{lakh}}$ X 8500 lakhs = 25.84 lakh*s in rural area

$\frac{279}{1\text{ lakh}}$ X 8500 lakhs = 23.72 lakhs in urban area

are afflicted with acquired speech disabilities.

Prevalence rate of persons with disabilities from birth can be calculated as -

$\frac{234}{1\text{lakh}}$ X 8500 lakhs = 19.39 lakhs in rural areas.

$\frac{186}{1\text{lakh}}$ X 8500 lakhs = 15.81 lakhs in urban areas.

These do not include acquired speech disabilities.

If we add up all these numbers of prevalence rates of person with both speech and hearing disabilities. We approximately get 430 lakhs Which is close to the expected number that is 425 lakhs.

Thus we roughly conclude our results Iin the following ways -

Speech disabilities 25.84 lakhs in rural areas

23.72 lakhs in urban areas

In total speech disabilities have a prevalence rate at about

- 49.56 lakhs

Speech disabilities due to hearing loss = 25.16 lakhs
Speech disabilities from birth = 35.70 lakhs
(This is Inclusive of speech disabilities due to hearing loss).

Thus, speech disabilities from birth without that due to hearing loss = 10.54 lakhs.
Acquired speech problems - 49.56 lakhs
Acquired hearing loss = 80.15 lakhs

Thus, congenital speech disabilities may include delayed speech and language due to unknown causes cleft palate, dysarthrla due to cerebral palsy and others.

Other acquired speech disabilities may be either dove-lopment or acquired later in life, like, stuttering, misarti-culation, developmental dysphasia, aphasia, dysarthria and others.

Yet, we do oot get an exact estimate of the prevalence sad incidence rate. In actuality the number of disabled may be much more than this.

Moreover some of the problems like cleft palate, may have associated problems like misarticulation, hearing loss, delayed speech and language. In such a case, would the estimation yield the correct numbers as calculated? certainly not.

Thus, we do not have adequate measure to make an analysis of speech and hearing problems. We have to depend on the unreliable measures like prevalence and incidence to find out the demographic data.

Now, why are we so much interested in knowing the prevalence and incidence of speech and hearing problems?

Is it that, by just looking at the number, we get fascinated? Or are these numbers utilized in a proper way?

We have not yet gone as far as this to think about the existing problem of communication disorders. We have not yet laid our hands on solving problems of many persons with communication disorders due to various inherent difficulties.

The foremost is, most of the problems is concentrated In rural areas and our speech clinicians are not motivated enough to serve in remote areas without the provison of any facilities.

Many a time, the problem goes unidentified. Even with improved measures of screening programs for identification of the problems and even with increased number of camps held each year. We have not been able to detect all the persons with either speech and hearing problems.

It is not possible for the speech clinician to go door to door, asking for details. This becomes quite a tedious job. The people themselves should approach the nearly concerned speech clinician with their speech problems.

In India, how many have the awareness and the interest? How many people in India care about these problems?

It is very hard to convince them especially in rural areas, that a problem really exists and that they should consult for their speech or hearing problem to a speech clinician for a proper rehabilitation.

And, most important of all, have we got sufficient number of speech pathologists audiologists and clinicians to rehabilitate all these cases, having speech and hearing problems?

This is presently the problem before us. Our rehabilitation program include identification, assessment, diagnosis and finally treatment of the problem and it should give mere importance to the treatment Which is not possible without adequate manpower resources.

The National Sample Survey Organisation (1981) gives particular about the type of treatment taken both in rural and urban areas.

In the urban population nearly 16.93 lakhs of the total 42.33 lakhs are not taking any treatment.

This accounts to nearly 37,79 lakhs of the total 62.93 lakhs of rural population who are not taking any treatment.

In the urban population nearly 16,98 lakhs of the total 42.33 lakhs are not taking any treatment.

Now all this is not only due to the lack of knowledge our population has about the facilities available, but also due to the limited manpower resources.

We, speech clinicians and audiologists have to face as many am 425,00,000 population of speech and hearing disorders.

But, if we try to introspect into more depth of the problem. It will be clear that the above data is a small shadow of the huge problem. Here la the table indicating the prevalence and prevalence rate of the hearing loss in the United States.

Table-I: Prevalence and prevalence rates, according to age for hearing loss in the United States.

Age group	Prevalence	Prevalence Rate per thousand.
All ages	21,198,000	90.7
0-18 years	1,203,000	19.2
19-44 years	4,955,000	49.8
45-64 years	7,077,000	159.0
65-74 years	4,373,000	261.9
75+ years	3,591,000	346.9

Adopted from Moss, A,J., Parson, V.L - Current estimates from the National Health Institute survey, United states, 1985, Vital and Health Statistics; Series 10, No.160, DHHS Pub. No. (PHS) 86-1588, Washington, DC, Public Health Services, 1986.

Cited in "Audiology the fundamental" by Bess and Humes (1990), Williams and Wilkins, Baltimore, Maryland-21202 USA.

According to this data upto 346.9 per thousand people get hearing problem. The United states is a highly developed country where the medical and other facilities area available for better health. If the prevalence of hearing lose is to high in United States, it is not a false information when we

may that only 15-19 per lakh Indian get hearing problem. If we compare the data from United states survey then the severity of the problem is at least 100 times more than that of mentioned earlier.

Cooper (1986) reported nearly one percent of the United States population has a stuttering problem.

If the incidence of stuttering only so much the total speech problem is really a huge one. But NSSO (1981) has reported that only 2.7 per lakh of Indian population. Is not it a distorted picture of whole?

The NSSO (1981) has not included so many speech and hearing handicapped in its survey restricting its Inclusive criteria to a large extent.

Thus to get a correct picture of the above problem, Government must pay special attention.

In the census board a group of speech and hearing profe-ssionals should be included to get the correct picture and idea arout the incidence and prevalence of the same.

CHAPTER - IV

DEVELOPMENT OF SPEECH & HEARING PROFESSIONS

"NECESSITY IS THE MOTHER OF INVENTION"

Years ago, people used to think, deafness is a curse of the God, people who cannot speak, might have comitted a sin. Many a times they used to pray or used to do some meaningless activities being influenced by the superstitions. St.Albertus Magness, teacher of Thomas Aquinas and the dominant figure in latin learning and natural science of 13th century wrote, "Lion's brain, if eaten, causes madness; but remedies deafness. If inserted in the ear with some strong oil". Another widely reapected authority St.Hildegard of Bingen (near about 1125 AD) held a belief that "deafness may be remedied by cutting-off a lion's right ear and holding it over the patienta ear just long enough to may hear, adimacus, by the living God and the keen virtue of a lion's hearing" and "the heart of a weazel, dried and placed with wax in the ear, benefits headache or deafness".

Years together people held all the meaningless, non-sense ideas. Sometimes aome people might have tried their own technique but no systematic accounts are available,

The first systematic effort at managing a disorder of communication involved the deaf. Itard as early as 1800s reported on what appeared to be the first effort to use.

auditory training. His followers Blanchet and Dedean tried the same. In France people started a manual system (use of hand gestures systematically following certain rules and regulations) for communicating with the deaf. But by the some time effort had been made tin Germany to develop verbal communication.

In the late 1800s, Urbantschlitsch in Germany reported on the use of auditory training and in 1895 published a text on it. In France del' Epec's concept of mammal method was implemented by Abbe Sicard contemporary to urbantachitsch. Sicard developed a dictionary of signs. urbanschitsch and Bezold (1890's) had a great contribution to the management of diseases in ear rather than inthe educational aspects. This is why some authors have been given the little, "Father of Audlology" to these physicians. In 1834, Weber test was developed which was one of the earliest qualitative hearing testa. Rinne developed his test In 1885. Harmann and Hughes (1890s) applied electric current to hearing test. Jackobson (1885) added an induction coil to control tha intensity and the frequency of the tone. Toynbes in 1863 was the first to conduct a histological investigation on ears with hearing damage.

"The education of the deaf attracted the earliest attention through the dedication of individuals Who wanted to help deaf offspring or relative*. The only other area that attracted early attention was stuttering, which warn disussed in medical texts or texts dedicated to training of the deaf. Simon suggests that in the 20th century audlology and speech correction emerged aa new professions to scope as am educational response to the developing public consciousness of the handicapped in the United States" - (O'Neill, 1987).

The first recorded text book on speech defects published In the United states haa been attributed to Potter who had practiced in Great Britain. It was a "speech and its defects" and was published in 1802. la 1825, first private practitioner, Mrs,Leigh utilized technique called "Leigh method" to cure stuttering. It was reported that She cured about ISO cases. She suggested placing rolls of linen beneath the tongue during the hours of sleeping. This allowed the tongue to be In "correct position" for speech. Another approach Involved the placing of a cork between the teeth. The speech disorder receiving the greatest attention was stuttering.

In 1800s Dieffenbach suggested some kind of surgery of the tongue for stuttering. Broca and wemickes were presenting informations on aphasia. Vocal fold movement was first discussed by Muller In 1837 Garcia developed laryngeal mirror to study vocal fold movement and other laryngeal structures. Gutzman Sr. and Albert Gutzman, his son established the Barlin school for Speech and Voice Therapy and published numerous articles and books. In Vienna Coen was recognized for his contributions to speech disorder managements.

Charvin in France and Bell in Scotland were recognized as experts in voice. In 1863, Hunt published a text on stammering and stuttering in Great Britain. In 1894, a text on speech disorders was written by J.Wyllie. Owing the period from 1839 to 1894 a good amount of works were done on stuttering. But due to lack of scientific reports there significance cannot be worked out other than historical interest.

In 1910, Rousselet had written the first text to carry the little "experimental phonetics" offering theorise to explain certain speech phonemenon. Though the research was quite limited it stimulated other scientists to study further Before that Hutchinson developed spirometer in 1649, Gutzman

developed the belt pnemmograph in 1855. In 1878, Oertel first did stroboscopic examination of larynx. The first photograph of the larynx was produced by French in 1884,

In 1910, Speech therapy was introduced in the Chicago, Detroit, and New York School systems. In 1913, Blanton, a psychiatrist, founded first speech therapy clinic at University of Wisconsin 1920s Orton and Travis used for the first time "Speech Pathology" terminology extensively. Many authors like to call them as "Father of speech pathology".

In 1924, Seashore and Travis established training program in speech pathology at l o w . I n 1925, American Society for study of Disorders of speech was established which was renamed to "American Speech Correction Association" in 1927, to American Speech and Hearing Association" in 1987, to "American speech-Language and Hearing Association" in 1978 with the Aeronym ASHA. In Ithaca, New York, Martin Institute for SpeechCorrectilon in 1926 in Boston, The Boston Stammerers Institute since 1867 were in operation.

Speech clinics were in operation from 1913 at the Univer-sity, from 1928 at N.W. University at New York medical school In 1925 and Washington University in 1926.

In 1936, the first issue of the Journal of Speech Disorders appeared.

In 1931, one of the first text books in the field "Speech Pathology" by Travis appeared.

In 1935, the first formal laboratory for research in speech science, the Flo Brown Manorial Laboratory was established at the University of Wichita.

In 1921, the first vacuum tube audiometer was developed. The first commercial modal warn western Electric 1A devised by an otologist Dr.E.Fowler.

In 1899, the first carbon hearing aid was developed by Hutchinson. But the electric hearing aid came about through the development of the telephone by A.G.Bell.

Though efforts were being -made in alleviating speech and hearing problems all over the world but the- second world war which brought Into a sea-change in the speech end hearing profession.

Raymond Carhart contributed to the development of audiology from its earliest origins. His contributions were so numerous and so significant that many think of him

today as the "Father of Audlology". A young professor in the school of speech at N.J.University when World war II broke-out, he was commissioned a captain in the Army to head the Deshon General Hospital aural rehabilitation program for was deafned military personnel at Butler, Pennsylvania,

Deshon was named as one of the three Amy General Hospitals to receive, treat, and rehabilitate soldiers who incurred hearing lose as a result of their military service. These three army hospitals, together with the Philadephia Naval Hospital, admitted and provided services so some 16000 hearing-impaired enlisted and officer personnel during the course of the war,

This war time mobilisation effort served as the basis for the development of the new discipline that is now audiology. It was in 1945 that Carhart and Confield are credited with coining the ward 'audlology' to designate the science of hearing - (Bess at al, 1990).

In 1947, "American Speech Correction Association' was renamed to 'American Speech and Hearing Association' practically than the speech and hearing field took birth and day by day has been growing up.

In 1978 Association's name is changed to American Speech-Language mad Hearing Association with the acronym ASHA.

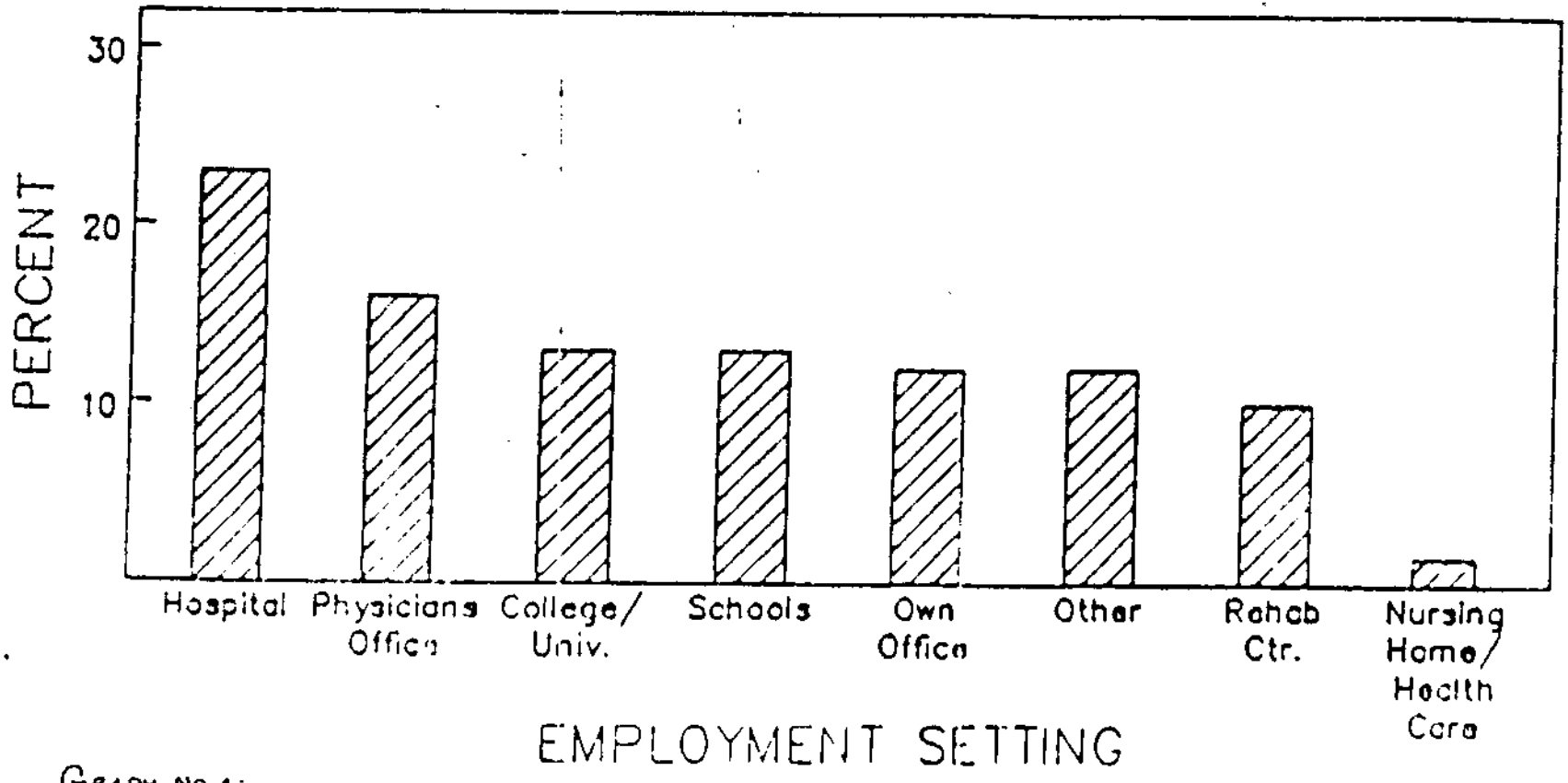
At present the young but well developed speech and hearing profession is the third beat profession in the United states.

There are approximately three hundred colleges and universities presenting training speech pathologists, similarly audiologists; two hundred of which have been accredited by the education and training board as providing the requirements of ASHA.

Most of the speech and hearing professionals of V8A belong to ASHA. Minimum a Master's degree with a license to practice speech pathology or audiology often gives a professional status and advantage of membership in the professional organisation.

For getting a job or to do private practice a certificate of clinical competence offered by ASHA is required.

The third best profession in the United States the speech and hearing professionals are rarely unemployed. As



GRAPH NO.A:

~~Figure~~ [redacted] Bar graph illustrating the distribution of employment settings for audiologists (Adapted from Chermak E. The practice of audiology: a national perspective. *ASHA* 28:31-38, 1986.) Cited in The book "Audiology - The Fundamentals" by Bess & Humes (1990, Wilkins & Wilkins, Baltimore, Maryland

reported in the JASHA (cited in "speech Correction" by Van Riper, 1990, Prentice Hall, N.J. 07632) only 4.8% speech pathologlsts are unemployed. According to this report 70.7% are involved in the clinical work whereas 6.5% in the University teaching, 4.5% in clinical supervision, 4.5% in the administration, 2.6% in the teaching to the communicatively handicapped only 1% in research and 5.4% in others.

Distribution of employment setting for speech pathologists

Area	Clinical	University Teaching	Clinical supervision	Admini-etration	Teaching Handicapped.	Research	Unemploy-ment	Others.
Per-cent	70.7	6.5	4.5	4.5	2.6	1.0	4.8	5.4

The above bar graph illustrates the distribution of employment setting for audiologists. The largest number of audiologists are shown to be employed in hospitals and physicians offices followed by University or college based clinics and by schools.

AMERICAN SPEECH-LANGUAGE AND HEARING ASSOCIATION (ASHA)

ASHA was established in 1925 as an organization named the American Academy of speech correction. The association's

name was changed to American society for the study of disorders of speech in 1927. In 1934, the associations name was changed again to American speech correction association Later on, in 1947 name was changed again to American Speech and Hearing Association, In 1978, the organization assumed Iits present name, American Speech-Language and Hearing Association with the acronym ASHA,

ASHA is established as a 501(c) (6) organization with two 501 (c) (3) subsidiaries. The American Speech-Language Hearing Foundation (ASHF) was founded in 1956 and is part of the formal structure of the ASHA as specified In Article XI of ASHA's by-laws. The foundation focuses primarily on professional development by fostering research, scholarship and clinical achievement.

ASHA is a member of IALP, International Association of Logopedics and Phonlatrics and is also member of other International and national organlzations concerned with disabilities as these relate to education, health and rehabilitation.

ASHA is also a member of the NCR (National Committee for Research in Neurological and Communicative Disorders which is comprised of 30 voluntary associations and thirty professional associations.

Activities of the Association conducted are categorised into 28 programs. They are as follows:

1. Minority
2. Research
3. Professional practices
4. Foundation
5. Membership
6. Educational standards board
7. Professional services board
8. Continuing education
9. Ethics
10. Clinical certification
11. Student affairs
12. Convention
13. Regional conferences
14. JSHD (Journal of speech & hearing disorders)
15. JSHR (Journal of speech and hearing research)
16. LSHSS (Language, speech and hearing services in schools)
17. ASHA
10. ASHA Directory
19. ASHA Monographs
20. ASHA Reports
21. Guide to graduate education.

22. Guide to professional services.

23. Special reports Brochures/other publications.

24. DSHP

25. Public Information

26. Governmental affairs

27. Retention and recruitment

28. Governance (as reported by Dr.spahr, 1967).

The executive director of ASHA-1987 in his article "ASHA and its national office" in the book "Administration of programs in speech pathology and audiology" edited by Oyer, 1987, Prentice Hall Inc, NJ 07632 USA 1987).

"ASHA is an equal opportunity and affirmative action employer. Specific efforts are made to encourage applications from ethnic minority members, woman, older persons and disabled individuals" Spahr, 1987.

National Office: ASHA
10801 Rockville Pike
Rockville, Maryland
USA.

It is near the NIH (National Institute of Health and the Public Health service).

CHAPTER V

SERVICES FOR THE SPEECH & HEARING

IN

ANCIENT

INDIA

"GRANDPA'S HOLY HANDS"

"From the early times, it is known that the Indian system of medicine is a vast store and heriditory knowledge. Thousands of years ago when the Indian culture was the centre of attention of all eyes in the world. Ayurveda shows in its full glory and attracted many scholars from many parts of the world. It was then a great source of medical knowledge. But unfortunately this source of knowledge was not made good use of and hence was forgotten".

S.R.Savithri, 1978.

Sanskrit literature is too rich in its content and quality, too old to give birth to ao many languages. Obviously, it is nothing to surprise to find all the possible aspects of life. Not only the dawn of Indian history and her development but the development of human civilisation can be read out from the sanakrlt literature. Obviously, much a vast, rich language and literature accounts for the area concerned the human and his different problem and no doubt It includes speech and hearing ancient researchers so called Munis, Rishis had very good command on the scientific studies of diseases and they developed different remedials for them.

Susruta, one famous researcher from medicine mentioned seven major groups of disorders viz. hereditary, congenital (from birth), chemical, traumatic, seasonal, parasitic (due to parasites in the body) and natural. All these disorders are mainly the result of imbalance of triad system vata pitta and kapha.

Savithri (19 73) reviewed ancient Sanskrit literature to study the status of speech and hearing in the ancient India. She reported that moat of the speech and language disorders (such as hoarseness, aphasia, dysarthrla, stuttering, aphonia, nasal voice misarticulations, speech problem due to cleft lip and facial palsy and mutism etc.). Well studied by Indian scientists in the ancient ages. They described the causes of each problem and recommended various preventive and curative measures. Preventive measures included mainly avoidance of certain conditions, taking special cares and other vocal hygienes as similar to modem science recommends. Curative measures Included medical and surgical lines of treatment.

In relation to hearing problem, Savlthri (1978) reported that in Sanskrit literature about (2KB) twenty eight different forms of ear diseases and hearing problem were

reported. Due to the invailability of all books and scripts and difficulty in interpreting the available Information due to language (Pall which is unknown to most of us). Our knowledge is very restricted. Thus, we are not in position to comment on the management availability and progress in hearing science in ancient India. But this much can be concluded easily and confidently that the hearing science of ancient India was highly developed. Munis and Rishis described each and every disease, they studied them carefully, established their causes and recommended a variety of preventive and curative measures including surgical and medical lines of treatment.

It is clear from different ancient Sanakrit literature that thousands of years ago Indian culture was highly developed and was the centre of attention of all eyes in the world. Ayurveda was in its glorious state attracting scholars from the different corners of the world. When all the west and remaining east were in their infancy, the young beautiful popinjay, India was amusing with her youngly buoyantness of knowledge. Unfortunately, earthquakes, epidemics and Who knows what all kinds of overwhelming nature's mischevous naked dancing overthrew the golden letters of the Indian history. Thereafter, India tried

many times to come up but could not do so. Not only that her front door of programs was shut-off when in different ages, thousands of repogners attacked her again and again snatched her property, robbed her assets and most of them departed leaving her half dead destroying her beauty, plundering her wealth and property. India was exploted by the foreigners ages after ages.

The rapid growth of Indian population outstripped the development of natural resources. The red eyes of various malignant problems. Such as socio-economic crisis, illi-teracy etc. has been threatening her again and again.

CHAPTER VI

DEVELOPMENT OP SPEECH & HEARING PROFESSION IN INDIA.

" AT LAST SUN RISES IN THE LAST "

India warn under British rule for a long period of time. Poor health facilities, socio-economic crises, a soaring population and illiteracy etc. arrested her progress, "The full moon is described as a source of romance, but when a illiterate poor fellow observes it perhaps starts salvation and thinks if it would be a fried chapati" (Reknowned Poet Sukanta). That w=s the condition of India at that period, superstitions strangulated her again and again complex and conflicting cultural attitudes and values made the situation more and more devastating. After independence, though the condition is improved, yet the overall picture is remaining the same. For example, Todas of India practise female infanticide.

Hindu religion stressed the value of charity philanthropy and mutual aid, but the doctrine of Kama has militated against the handicapped since it is believed that the handicap represents retribution for sins committed in a previous incarnation. Though in ancient Indian history documented special cares for handicapped, due to multiphasic socio-economic problems during the British period no significant effort was made to improve their conditions.

"The services provided for the handicapped in India must, therefore, be viewed in the light of the special conditions and problems found in the country as a whole: rapid population growth that continues to outstrip increases in production; a predominantly rural population just beginning to feel the dislocations and uneasy changes caused by gradual industrialization and cityward movement of people; difficulties of transportation and communication related to the very size of the country and the barriers of divergent customs, beliefs, and languages, attitudes of fatalism imposed by caste and sex, and widespread poverty and malnutrition" (Taylor and Taylor, 1970).

In the 19th century, almost nothing was known of the nature and causes of speech and hearing problems. Thus, no attempt had been made to manage these problems.

The first effort to provide systematic education for the deaf was made by Roman Catholic Mission in Bombay in 1883 and the first formal school for the deaf was established by missionaries in Bombay in 1685(Mazagaon School). "No records are available which would indicate that schools as such, existed before that time, although in ancient India the deaf were taken cure off by the kings" (Kapur, 1976).

Bengal was the second state to take the lead in establishing formal school for the deaf which was opened in Calcutta in 1893. (Calcutta deaf and dumb School, COD5)".."This school, with the cooperation and support of the Government, played a major role in the aural of education of the deaf in India. Deaf education subsequently made progress in other parts of India, with the establishment of schools for the deaf in Palayamkottai in 1897, Ahmedabad in 1908, Bansal in 1912, Nagpur in 1915, Dacca in 1916, chittagong in 1923 (These two are, at present in Bangalesh). Hyderabad in 1925, Madurai and Nanguneri in 1930, Delhi, Coimbatore, Murshldabad, and Madras in 1931, Berhampur in 1934, Patna and Indore in 1936, Sholapur chotta Nagpur and cochin in 1937, Tiruvella and Karaikudi in 1938, Lucknow, Burdwan, Boegra and Komla in 1939, Travancore in 1940, Jaipur in 1945 and Varanasi in 1947" (Kapur, 1976).

After the independence of our country, the Government paid special attention to speech and hearing handicapped and it was found that only schools for the deaf could not solve the problem of the speech and hearing handicap persons, special school might provide education

to them hut the problem was so vast and extended that speech and hearing handicap needed support from different aspects of the life. It was easily understood by educators and other Government officials that medical and non-medical social and psycholooical, all different kinds of help what they needed, to provide them the same trained personnels from the same field was very very essential. Therefore, an effort was made to study the extent and native of the problem. In an intranation state assembly, the problem was discussed and a report was submitted to the Government of India. Based on that report. Government of India invited Dr.Martin F Palmer consultant in the U.S. Department of Health, Education and welfare and Director, Institute of Logopedics, Wichita University, Kansas. He visited India in 1963 and made an exhaustive study throughout the country on the incidence of speech and hearing and has given estimate of 18% of (eighteen percent) the population, afflicted by speech and hearing problem. He recommended that the establishment of an Institute of Logopedlcs was urgently required in our country. He showed his kind interest to offer his assistance in the establishment of such an Institution. And at last, the All India Institute of Logopedlcs took birth on the auspicious

9th August In 1965, The former honourable President of India Dr.Sarvapalli Radhakrishnan laid the foundation atone for the Institute building on the 25th July 1966, Later on the name of the Institute was changed to All India Institute of Speech and Hearing.

Thus, a training program waa started In 1965. The training program was started at the M,Sc., level with candidates Who had completed their undergraduation in the areas such as Psychology, Linguistics and other Sciences.

Subsequently, with the commencement of the B,Sc.(Speech and Hearing) program, admission requirement for the M.sc, program was restricted to those who successfully completed their B.Sc. (Speech and Hearing). For a brief period, candidates other than speech and hearing graduates such as Psychology, Linguistics etc, graduates were admitted on condition that they fulfill the pre-requisite of one year's pre-M.Sc. program which was also conducted by the All India Institute of Speech and Hearing. After a three year trial, this program was discontinued. At present, the Institute provides training program at three different levels, B.Sc. (Speech and Hearing), M.Sc, (Speech and Hearing) and Ph.D,(speech and Hearing). The successful trainees in the respective programs are awarded the degrees of B.Sc, (speech and Hearing), M.sc. (Speech and Hearing) and Ph.D(speech and Hearing) by the University of Mysore.

About two years before, the birth of All India Institute of Logopedics, in 1963, January, the first speech therapy clinic was established in B.Y.L.Nair Hospital in Bombay with the benevolence characteristics of a Philantropist. In March, 1963, they started a diploma course in audlology and speech therapy of six months duration. Later on, they stopped that and in 1967, they started B.Sc. (Audiology and Speech Therapy) training course of three years duration which was restricted for domeciles for state of Maharashtra. They have been continuing same training program till to-day and program is still restricted for the demociles for state of Maharastra only. They have proposed to start Master's program in Audiology and speech Therapy.

All India Institute of Medical Sciences, Delhi started a Rehabilitation Unit in 1965 as an extension of C.N.T. Department. In the next year, they started a training program what they called as DCT, Diploma in Clinical Technique. It was of two academic years duration and to be completed in four semisters. But later on, it was discontinued and B.Sc. (Speech and Hearing) training program was introduced in 1986 which was of three years duration. They are continuing the same training program till today.

These three training centres were on progress. People from different areas become more and more interested in the

field. The growth and interest in and the demand for speech and hearing services resulted in the establishment of the ISHA(Indian Speech and Hearing Association) in December, 1967.

To met the demand of the speech and hearing services In 1972, a graduate course in speech and hearing was started at B.M. Institute of Mental Health in Ahmedabad. But, later on, this was discontinued due to certain unavoidable circumstances.

In 1976, post graduate Institute of Medical Education and Research, Chandigarh, extended a unit of Audiology and Speech Pathology and started a training program at B.Sc. level (Speech and Hearing).

To deal effectively with the problems of disabled populations Ministry of Welfare, Government of India established four National Institute, they are NIMH (National Institute of Mentally Handicapped), NIVH (National Institute of Visual Handicapped), NIOH (National Institute of Orthopaedlcally Handicapped); NIHH (National Institute of Hearing Handicapped) resectively.

The A.Y.J.N.I.H.H(Ali Yavar Jung National Institute for the Hearing Handicapped) is the N.I.H.H. which was established on 9th August, 1983 after the name of late Shri Ali Yavar Jung in honour of the deep interest the Ex-Governor of Maharastra, had in the welfare of the hearing handicapped. It was established as a rehabilitation and research can be in the field of speech and hearing. Later on, 1985 they started B.sc. (Audiology and Speech Therapy) training program under the University of Bombay. Progressively, they Introduced few other tr ining courses such as D.Ed (Diploma in Education for the Deaf), B.Ed (Deaf) (Bachelor in Education (deaf). They have proposed to introduce M.Sc. (Audiology and Speech Therapy/ Speech and Hearing) and M.Ed, (Deaf). Most probably, they are going to start the same in the recent future.

Different official reports and sample survey reports indicated high incidence of handicapped living in rural areas. But the scarcity of the facilities make the problem more and more severe. Thousands of children become mentally retarded, hearing and speech handicapped because of the ignorance of the Illiterate parents. Our parents do have means of love, unaccountable time and feelings for us but they do have minimum information on how to take

care off our futures. Most of rural Indiana do not have proper education. Thus, they do not know What to do with these handicapped children. In order to provide compre-henslve rehabilitation services to the handicapped, DRS (District rehabilitation scheme); a pilot project was taken up by the Minstry of Social Welfare, Government of India. This project was developed in collaboration with National Institute on Disability and Research, Washington. This project is presently being implemented in ten states with a rehabilitation unit at the district level. Each centr is headed by a District Rehabilitation Officer assisted by professionals from different fields including speech and hearing. A team approach is followed by these units.

Days went over. The requirements also have increased. Thus four regional rehabilitation training centres (RRTC) were established to support to DRC for training and to develop materials for community awareness.

Recently, a private organization at Mangalore have introduced a B.sc. (Speech and Hearing) training program under the University of Mangalore (in the year 1990).

CHAPTER VII

TRAINING FOR THE PROFESSIONALS/GENERATION OF MAN-POWER

Generation of man-power is very vary essential to develop a profession. The speech and hearing profossions im newly developing profession with a great demand for trained professionals. Aa the problem of the speech and hearing handicap is aevere, requirement is more, personnel and trained professionals for their help is not sufficient compared to their requirement.

As we have seen earlier only 4.5% of the total speech and hearing professionals are working in the rural areas. 54.9% of the rural area have never had experience of any audiological or speech pathologists help. 39.28%; of the special schools for the deaf do not any facility for audiological and speech professional's help. The services provided for the handicapped in India must be viewed in light of the apecial conditions and problems found in the country as a Whole. About 45 years has been passed away after the achievement of independence, still now, we are far away to fulfil the requirement of speech and hearing handicapped.

Recently, government, non-government and many voluntary organisations have paid their special attention to this problem. At present, six training Institute are involved In generating the man-power. Only the education, training, knowledge can reduce the problem.

Six training Institutes are there to provide training to the speech and bearing professionals. But there is no common training course or syllabus. The admission criteria differ one Institute to the other.

since it is a developing field with a great deal of demands, with a very good job prospectus. Me find good competition to enter this field. Still, due to the lack of more specific information regarding the causes to be studied etc, many young people may hesitate to apply for admission.

(a) TRAINING CENTRES. AVAILABLE COURSES. TRAINING FACILITIES AND ADMISSION CRITERIA

"SOURCE OF LIGHT"

At present, there are six training centres which are Involved in conducting training program in speech and hearing. Among them five are Government Institutions and other one is a private one. Out of these five Government Institutions, only two Institutions are main organisations involved in training under-graduates and post-graduates in the field of speech and hearing. The rest three are attached with medical colleges.

Independent Institutes	Course affiliated to University
1. Ali Yavar Jung National Institute for the Hearing Handicapped, Bombay-50.	Qaiversity of Bombay
2. All India Institute of Speech and Hearing, Mysore-6.	University of Mysore
Attached with Medical Colleges	
3. All India Institute of Medical Sciences, New Delhi-6.	Deemed University
4. B.Y.L.Nair Hospital, Bombay.	University of Bombay
5. Post-graduate Institute of Medical sciences and Research, Chandigarh.	Deemed University

Private Institute

6. The Institute of Nursing Seienes, Mangalore. University of Mangalore

In the following pages, an effort has been made to give a brief note on those training centres

ALI YAVAR JUNG NATIONAL INSTITUTE FOR THE HEARING HANDICAPPED (AYJHIHH), Bandra Reclamation. Bandra (west),Bombay.

The AYJNIHH was established on the 9th August, 1983, by the Ministry of welfare. Government of India, to deal affectively with the problems of the hearing-impaired population. It is one of the four National Institutes established by the Ministry of Welfare, Government of India. It is named after Late Sri Ali Yavar Jung, the ex-Governor of Maharastra, who was took deep interest in the Welfare cf the he@ring-lmpalz*d Individuals.

It is an autonomous body engaged in training, research, clinical and educational services.

This is a primier Institute to provide diagnostic and therapeutic facilities and to generate Manpower as we11 as to provide leadership to the large number of Government and non-Government agencies, and those working in this area. The Institute has a number of objective such as -

1) Generation of man-power to the different levels of health, education and welfare of the deaf and speech and hearing personnel.
2) Developing educational programmes for the hearing-impaired.

3) Providing comprehensive diagnostic and rehabilitative measures to individuals with speech and hearing-impairment and associated disabilities.
4) Counselling and guidance to the speech and hearing handicap and their famillies.
5) Follow-up and referral services.
6) Development of materials for clinical and educational purposes and for public awareness.
7) Undertaking public educational programs.
8) Collaborative work with different government, non—government and voluntary organisations, working in the area of development of services for speech and hearing handicapped.
9) Basic and applied research.

The Institute offers many training courses such as B.Ed, (Deaf), D.Ed (Deaf) and B.sc. (AST), DCD and has proposed to offer M.Ed. (Hearing-Impaired) and M.sc. (Speech and Hearing).

The Institute has been affiliated to the University of Bombay since 1986-87. D.sc. (AST) and B.Ed (Deaf) degrees are awarded by this University. The Institute extended its branches to Calcutta, Hyderabad, Bhubaneshwar and New Delhi. Where DCD and D.Ed. (Deaf) courses are offered. Calcutta and Hyderabad branches have started B.Ed (Deaf) training programs

under the aegies of the Uiversity of Calcutta and Osmania University respectively. One training program recently has been introduced in the state of Kerala.

In addition to the above courses, the Institute conducts many short-term training courses such as -

(a) Orientation course for regular school teachers, general medical practitioners, village health workers, anganwadi workers, NSS workers, Psychologists, parents and others.

(b) Refresher training program for teachers of the deaf, ENT specialists, pediatricians, speech and hearing professionals etc.

Community awareness and public education etc. are taken up as a part of rehabilitation program. Korkshop/Seminars on different topics related to speech and hearing are organized by this Institute.

The following are the main Departments concerned with

1) Audiology
2) Speech and Language
3) Psychology
4) E.N.T.
5) Electronics
6) M.D.D.(Material Development Department)

7) Education

8) Academic cell

9) Administration

10) Library, Information and Documentation.

A full-fledged clinic runs to provide a comprehensive diagnostic evaluation, counselling guidance and therapeutic services for the speech and hearing handicapped and associated disabled.

In addition, a Neurologist, a Paediatrician, a Physiotherapist, a Psychiatrist visit the Institute to attend the patients and to take classes for B.Sc. and other courses.

There is no In-patient facilities available at the Institute.

All the Departments are actively engaged in Independent and joint research works and hosting workshops, organizing seminars and public education program.

A Journal entitled 'NINAD' is being published every year.

The Institute conducts speech and hearing camps all over the different parts of the country independently and or in collaboration with other Government, non-Govemment and voluntary agencies.

ALL INDIA INSTITUTE OF SPEECH AND HEARING (AIISH). Mysore.

The first running Institute in India was established on 9th August, 1965, under the aegis of Union Ministry of Health and Family Welfare as a rehabilitation and training center to meet the long-felt needs,for the speech and hearing handicapped.

At present, this Institute is governed by an Executive Council and financed by the Government of India, through the Ministry of Health and Family Welfare, New Delhi.

On 2nd October, 1966, a two year post graduate training program was inaugurated. In the following year an under-graduate course was started. At present, the Institute offers, B.sc., M.sc., and Ph.D programs and the degrees are awarded by the University of Mysore.

In addition to the above courses, the Institute conducts many short-term training courses such as -

(a) Orientation course for regular medical practitioners.
(b) Short-term training for making custom earmolds.

Community awareness and public education etc are taken up as a part of rehabilitation program. Workshop/seminars on different topics related to speech and hearing are organized by the Institute.

The Institute ham a number of objectives which include -

(1) Providing training facilities to speech and hearing clinicians.

(2) Undertaking amis end applied research

(3) Providing comprehensive assessment one rehabilitation services to individuals with speech and hearing problems and associated disabilities.

(4) Offering guidance and support to the speech and hearing handicapped associated disabilities and their families.

(5) Providing follow-up and referral services.

(6) Collaborating with voluntary agencies in initiating and co-ordinating different programs eg. organizing camps for screening speech and hearing problems.

The following are the main Departments concerned with -

(a) Audiology

(b) speech Pathology

(c) Speech Sciences

(d) Clinical Psychology

(e) ENT

(f) Electronics

(g) Library and Information Centre.

All Departments are actively engaged in different joint research works and independent research projects. Workshops, seminars and public education programs are frequently organised by these departments independently end as a whole.

A professional journal entitled Journal of All India Institute of Speech and Hearing is being published every year.

The Institute conducts camps independently and in collaboration with different voluntary agencies (eg. Rotary Club, Lion's Club, Family Planning Association of India, etc.) for public awareness, mass education and also provides diagnostic and therapeutic services to the speech and hearing handicaps. At least 15 camps are conducted yearly as a part of clinical services, survey and public education.

ALL INDIA INSTITUTE OF MEDICAL SCIENCES (AIINS) , New Delhi.

In l965, a rehabilitation unit in audiology and speech pathology was established at the AIIHS with the support of the social and rehabilitation services division,U.S. Department of Health; Education and Welfare, Washington, D.G.

In 1966, a training program in audiometry technician and speech therapy warn started which comprises of four semesters in two academic years to include theoretical Instruction and practical training. But later on, this course was discontinued.

In 1967, the Institute offered a Diploma in Clinical Technician (DCT) (Speech Therapy) where the emphasis was given more on speech therapy than audiometry. This course also was discontinued.

In 1996, B.sc. (Speech and Hearing) Hons. was introduced which was of three years duration. The same training program is being continued till today. Besides the training the personnel, this Institute has been contributing a lot in the field of speech and hearing providing a comprehensive diagnostic and therapeutic measures for the speech and hearing handicapped/impaired .

AUDIOLOGY AND SPEECH THERAPY SCHOOL. TOPIWALA NATIONAL MEDICAL COLLEGE, B.Y.L. NAIR HOSPITAL. Bombay.

The first speech therapy clinic in India was established in the B.Y.L. Nair hospital in Bombay in March, 1963, This Institute was a charitable hospital and the clinical facilities ware made possible mainly through donations.

In 1966, they started a diploma course in Audiology and Speech therapy of two years duration with six months intensive training.

Later, in 1967, they started a degree course in Audiology and Speech Therapy called S.Sc. (AST) under the University of Bombay. Till today they have been continuing the same training program in addition to a future plan to start a Master's program in the same. The duration of the B.sc. (AST) in three years. This course is only for the domeciles of the state of Maharastra. Besides educational program, they provide a good comprehensive rehabilitation measures for the Speech and Hearing-impaired which include (a) Audiological evaluation (b) Speech and language evaluation (c) Rehabilitation of aurally handicapped and other speech handicapped (d) Psychological evaluation, parent counselling and guidance.

POST GRADUATE INSTITUTE OF MEDICAL EDUCATION AND RESEARCH (PGIMER) CHANIDIGARH

PGIMER extended an Audiology and Speech Rehabilitation Unit in 1976 to provide a training course in Speech and Hearing at the degree level What they called it as B,Sc, (AST), The duration of the course was three years. The total number of trainees per year admitted is only three. The same training program they are continuing till today. The main aim and objective of Audlology and speech Pathology unit is to provide clinical services such as diagnosis and therapy to the individuals with speech and hearing problem. Other than training and research in the field of speech and hearing.

THE INSTITUTE OF NURSING SCIENCES MANGALORE

This is a private oraganization. Recently, they extended an audiology and speech pathology unit to provide a comprehensive diagnostic and therapeutic services in the area of speech and hearing. On the course of progress, they are able to introduce a degree program in speech and hearing called B.Sc.(Speech and Hearing). The degree la awarded by the University of Mangalore. In 1993, the first batch will come out to provide services in this area having a B.Sc.(speech and Hearing) degree. They provide the following facilities.

1) audiological evaluation of hearing-impaired.
2) Diagnostic and treatment of different speech disorders.
3) Electroacoustic measurement and prescription of hearing aid and auditory training.
4) Generation of Man-power.

AVAILABLE COURSES AND TRAINING FACILITIES

AND

THE ADMISSION CRITERIA

"Excuse me please. May I come in"

Table: Details of courses available and their requirements

Name of the Institute	Course & Duration.	Affiliation	Total no.of seats	Allotment of seats	Min.admn. require-ment.	Faculty	Age	Medium of instruc-tion
1.	2.	3.	4.	5.	6.	7.	8.	9.
All India Institute of Speech & Hearing	B.sc. (sp. & Hg.) 3 years	University of Mysore	33	4-SC; 2-ST 3-Foreign nationals; Others-on merit and zonal basis.	P.U.C. (PCM/PCB) or equi-valent.	Science	Wo re-striction	English
	M.Sc. (Sp. & Hg). 2 years	-do-	23	3-SC; 1-ST; 3-Inservice	BSc.Sp. & Hg.) or equivalent For in-service candidate min.3 years work expe-rience in a Government Institution or Hospital	science	No restric-tion for regular candidates 28 years or below	English

1.	2.		3.	4.	5.	6.	7.	3.	9.
All Yavar Jung National Institute for the Hearing Handicapped	B.Sc. (ASR) 3 years	University of Bombay.	30	1 seat for the following States Bihar, U.P., J&K Rajastban, Himachalpradesh Haryana, Punjab, Madyapradesh, Gujarat and West Bengal, 4 seats for North Eastern States of Assam, Tripura Arunachalpradesh, Meghalaya, Manipur, Mizoram, Nagaland and Sikkim ; 5 seats SC & ST; others - on merit.	P.U.C. (PCB) or equiva-lent.	Science	No restric-tion.	English
	M.Sc. (Sp.& Hg)/ASR Proposed 2 years	University of Bomray	15	2 SC/ST,3 Foreign etude,to; 5 In-service/sponsored candidates.	D.Sc(AST) (Sp & Hg) or equi-valent	Speech & Hearing.	No age limit	English
	D.Ed. (Deaf)	University of Bombay	25	Preference to D.Ed. & DEd(Deaf) or any other certificate/ diploma in teach-ing the deaf or normal & sponsored candidates	Bachelor's degree	Not re-stricted	not re-stricted	English

1	2			5	6			
AYJRIHH - Regional Centra-								
a) Calcutta	B.Ed. (Deaf) 1 year	Univ.of Calcutta	15	Preference to n.ua. & D.Ed(Deaf) or any other certificate/ diploma in teaching the deaf or noraml and sponsered candidates.	Bachelor's degree	Not res- ricted	Not re- stricted	English Hindi/ regional language
b) Hyderabad	-do-	Univ.of Osmania	15	-do-		-do—	-do-	-do-
Regional Centres								
Calcutta, Hyderabad, Bhubanemwar, New Delhi, Valakkam(Kerala)	D.Sd. (deaf) 1 year	AYJNIHH Bombay	15X5 75	Preference to spon- sored candidates and candidates with TTC or equi- valent.	PUC or equivalent	Preference Science	No age limit	—do—
AYJNIHH,Bombay	K.Ed. (Deaf) 2 years proposed	Unit.of Bombay	15	2-SC/ST, 3-Foreign students; 5-In- service students, others-on merit. Preference to the sponsored candi- dates.	B.Ed.(Deaf) or euiva- lent	Deaf edu cation	-do-	English
Bombay & Its AYJHIHH/Regional Centres: Calcutta Hyderabad and New Delhi.	D.C.D.	AYJTNIHH Bombay	15X4 60	Preference to sponsored candidates	PUC or equi— valent	science	-do—	English/ Hindi/ regional language

1.	2.	3.	4.	S.	6.	7.	8.	9.
BYL Nair Hospital,attached to TN Medical College, Bombay	B.Sc. (ASR) 3 years	Uhiv.of Bombay	10	Only for domecile of state of Maharastra	PUC science (PCB) or equivalent		Not restricted	English
	M.Sc. (SP. & Hg) proposed	-dO-	10	On merit	B.Sc.(Sp & Hg) or equivalent.	Speech & Hearing	-do-	-do-
All India Institute of Medical Sciences, New Delhi.	B.Sc (Sp. Hg) 3 years.	Deemed Univ.	3	on merit/interview	PUC or (PCD)	Science	-do-	-do-
Post-graduate Institute of Medical sc. & Research Chandigarh.	B.Sc -do- 3 years		3	On merit/Interview and entrance examination.	-do- (PCB)	-do-	—dO-	-do-
Institute of Nursing sciences, Mangalore.	B.Sc. (Sp, & Hg.)	Univ.of Mangalore	15	On Interview	PUC or equivalent	-do—	-do-	-do»

(b) SUBJECTS TO BE STUDIED

AND THE A, B, C

First and foremost you will be studying the major subjects of SpEEch pathology and audiology. You will be alSo studying linguistics, statistics, psychology. Research methods, acoustic and electronics, anatomy and Physiology, pathology, neurology, otorhinolaryngology, medicine end organisation and administration. You may wonder Why you should study these papers. Here I am trying to give a very brief idea.

CHART Subjects to be studied

a) Audiology
b) Speech-Language pathology
c) Speech sciences
d) Linguistics
e) Psychology
f) Research methods and statistics
g) Acoustics and electronics
h) Anatomy and physiology
1) Pathology
j) Neurology
k) Otorhinolaryngology
1) Medicine and pediatrics
m) Organisation and administration.

a) Audiology - is the systematic scientific study of "Hearing" system. It includes normal hearing and its development, different types of hearing disorders, nature of them, prevention and control of hearing disorders, measurement of hearing and hearing disorders using different tests and rehabilitative aspects of hearing disorders, Knowledge in audiology allows a professional to study different hearing pathologies and to provide the best possible helps available for them.

b) Speech and Language Pathology - allows a systematic scientific study of speech and language behaviour. It includes normal speech and language and their development, different components of speech and language, disorders of speech and language and their nature, measurements of the same using different tests. It also includes therapeutic aspects of speech and language disorders.

c) Speech Sciences - is the systematic scientific study of speech behaviour using the modern development of sciences mainly the principles of physics, computers end different acoustic and electronic principles and others. It allows to study more objectively and scientifically normal speech development and its disorders. It

allows a professional to differentially diagnose a case from other disorders and also directs appropriate rehabilitative measures,

d) Linguistics-Is the systematic study of acquisition/ development of language, commonality of different language in this world. Speech and language is very unique to humans. Only we can speak. We all learn to speak through a series of stages that are common to all irrespective of the difference in languages, we all communicate with each other; express our feelings, narrate the storying describe our parts. Linguistics studies the development, growth and pragmatic use of the language and phonetics gives information on how the speech sounds are produced, when they become defective. Thus, study of linguistics and phonetics is very very essential.

e) Psychology-is the systematic scientific study of human and animal behavior, speech is a verbal behavior whereas listening is auditory behaviour. This is why psychology is a part of the training course. How does a person communicate? What does he intend? How did learn it? Why do people behave differently in the same

situation? How does a child learn to speak and to u*e different social and pragmatic contents of this verbal behaviour? What are different factors that lead to the speech and hearing problem? when there la no organic basis for such a problem? and Why? What are psychological situations can cause speech and hearing problem? What are the psychological problem of the speech and hearing-impaired and their family? To understand this, to solve these questions knowledge in psychology is essentials.

f) Statistics is the "aggregate of facts affected to a marked extent by multiplicity of causes numerically expressed, enumerated or estimated according to a reasonable standard of accuracy, collected in a systematic manner for a pre determined purpose and placed in relation to each other".

TO conduct research and scientific study the knowledge of statistics and research methods is required.

g) Acoustics is that branch of physics which deals with the nature and properties of sound and its propagation.

Psychoecoustics deals with the psychological perception of the mound propagated so that the professional is able to optimize the production and transmission of the signal and to reduce the same what it is desired. Thus, speech and hearing professionals must have a thorough knowledge of how sound is produced.

Electronics is a field allowing the use of principle of electronics for the growth and development of human civilization. Hearing aid, different electronics equipments for speech and hearing assessment and therapy the knowledge of electronics become very important and compulsory.

h) The speech and hearing professional must have a thorough understanding of the structure and function of the organs involved in the production of speech and of the organs involved in the reception and transmission of acoustic signals.

Anatomy and physiology is the basic requirement to know the structure and organ involved in speech and hearing and how these organs do function.

1) Pathology - provides knowledge regarding the patho-physiological Changes due to lesion in different struc-

tures of the body. It allows to study Changes oocured in the body and helps in differential diagnoise of the case. Knowledge about the course of recovery of a disease, the progress of disease and its nature, many a times becomes necessary. Most of the organic speech and language and hearing disorders are understood using this basic knowledge of pathology.

j) Neurology - is the branch of medical science which deals with the nervous system. The normal neurvous system, the brain and their functioning and the pathologies are to be studied to get adequate information on how the speech and hearing is controlled by the nervous system and how different pathologies in the system cause different speech and hearing problems.

k) Otorhinolaryngology is the branch of the medical science which deals with the ear (oto) nose (rhino) voice (larynx). Often we refer it to ENT. As a speech and hearing professional, one must know the organic causes, different diseases what can cause speech and hearing problem. Is there any medical help required, or necessary? What are the different structure involved in a particular disease and how does it affect the speech and hearing mechanism? Otorhinolaryngology provides knowledge on the same.

1) Medicine and pediatrics are not directly related to field. But professionals must know the side effects of different medicines/drugs prescribed which may cause speech and hearing problems. Many drugs do have ototoxic effects cause serious damage to the nervous systems including hearing mechanism. The later group of medicines are called ototoxic drugs. Other than this, the knowledge of medicine is helpful to study and understand the referral cases. Many organic speech and hearing disorders earlier treated with medicines such as aphasia, apraxia, aphonia may be understood better.

m) Organization and administration - Is "speech and hearing" is a developing profession, A professional may take up a job in a hospital set up or any other clinical set-up under different organisation or institution. He may like to do his private practice. Thus, he may need to organise a speech and hearing clinic or research centre. The subject "organization and administration" Is tought to provide adequate information on how to establish a private clinic or speech and hearing research centre how to develop it, what are different facilities available for this from our Government, A student must know

different rules and regulations concerning this. It deals with different ethical, professional, social and other aspects of an organization and its management.

Thus, the "speech and hearing" training program not only includea subjects directly related to speech and hearing problem (such as audiology and speech-language pathology) but it also includes related non-medical subjects (such as linguistics, psychology, statistics and research methods and acoustic and electronics) to understand these problems better end thus to provide a more appropriate rehabilitative measures. This training program also Includes "organization and administration in its curriculum and thus provides an all rounded, wholistic idea, adequate knowledge and opportunities for most advanced scientific rehabilitative measures and help for the speech and hearing problem as well as a good job prospectus for the professionals related to it.

(e) **RIGHTS AND RESPONSIBILITIES OF THESE TRAINEES**

"THE TEN COMMANDMENTS OF THE S/H"

Here, I am going to tell you what are the right and responsibilities you do have. As a student you will enjoy all the rights as other students do. But here again your responsibilities are more. You must remember that you are not just a common arts or science student, you are the future audiologist and speech pathologist. You are going to be a clinician on completion of your training. Therefore in classroom and clinical situations you must be merlous. Regularity, sincerely and dedication can make you a good clinician a researcher, a scientist.

During your training, you have to attend regular classes regularly and also the practical training referred to as clinical postings.

Class room Activities:

In the class and also outside the classroom, ask your teacher's help, if you have any difficulty. Do not hesitate. He/she is there to help you. Try to ask yourself more and more questions on the subject you study, try to find out reasonable answer, verify those answer with your teacher. Go to the Library. Try to find out solution for

your problem. In the class, the teacher instructs you, some times gives references. Go to the Library and see the references on the same day. Do not postpone such activities. Tomarrow never comes, so do not keep for tomarrow. Be in time to the class and clinic. Do not be late In attending to the assignment given, Whatever may be its nature.

Beyond the regular activities, the students may be given some assignments and topics to be presented in the class. The assignments done must be creative, thorough and technically sound. They can present the information in a novel and clear manner through illustrations, giving the information visually like through the use of over-head projectors and slide projectors etc. The student must give upto-date information in the topic he is concerned with. The student's internal assessment is done based on such academic activities.

Not only that some internal marks will be given to you, for your regularity, sincerety, curiosity, dedication, keenness, behaviour and of course for your good performance. If these are overlooked, then you would end up as a looser

in your academic performance and you would be a poor scorer in your examinations concerned.

But not only for works, you must learn the disciplines, the role of the student hearing and speech professional. Because, to be a good successful individual, we all need it.

Clinical and Diagnostic posting

In the clinical and diagnostic posting also, you must remember that you must play the same role.

In the first year, as a student you are expected to observe the cases coming to the clinic or diagnostic. Be a good observer. Be alert. Not only your eyes, keep your mind also open. Observe the overall behaviour of the case. Go through the case-history file, observe the case once again, try to correlate written reports with your findings and try to understand why it is so. Observe how your seniors handle the cases. Try to learn it. Be thoughtful. Maintain a regular diary. Write down your observation and daily activities. Please note down if you find any difficulty to follow or understand. Do not ask question relating to the patient in his/her presence. Behave professionally.

Request your senior to manage her time. Clarify your doubts. If you need more classification, do not hesitate to approach your clinical supervisor. Get more and more information.

I have told you to maintain a record, write down daily observation and activities. Everyday go to your supervisor or guide and get it signed. Get Information your need. Ask her your role as a student and behave accordingly. You must respect your teachers, other teaching and non-teaching staff and your seniors. Because you are going to get so much help from them.

Clinical conference/Journal Club/Others:

Besides the regular classes and clinical and diagnostic postings. You will be advised to attend clinical conference and journal club.

In the clinical conference, a senior student or staff will present a case. Before presentation, try to find out as much as possible about the case, such as nature of the problem, test results. You may also go through the file. You may read up about the specific problem presented by case, and the latest tests given to such patients. The teaching staff may explain more about the case in the conference. You must

attend clinical conference regularly do not hesitate to ask question. This experience will stand you in good steady when you attend professional conference.

In the Journal Club, a student will present an article from one of the journals, at the end of which it will be open for discussion. Before the presentation, you would find it helpful if you have gone through the article, then you can understand it better. Also you may prepare the questions you would like to ask. Be very attentive to the discusion and try to understand. Do not hesitate to ask question for better understanding and do not get discouraged if you do not understand everything that is said by your seniors and staff.

Attending the journal club regularly will help you in many ways. You will learn not to hesitate to ask questions, with experience you will learn to ask good and relevant questions. In a professional manner. You will also learn how to answer questions in a professional meeting. Most Important, you will learn that there are different ways of answering a question and sometimes one admits that one does not know the answer.

IT IS NEVER TOO EARLY TO CONTRIBUTE

we often read Pink and Pearl Sweet heroic stories of young scholars. The heroic deeds of these great scholars not only surprise us but give us something to think that "yes, it is never too early to contribute in our own area".

I remember a young boy from the Sanskrit literature. Once In a village, an well-known research scholar came with his disciples and expressed his wills to show his knowledge from his area of interest. A young boy came forward to discuss with him. But the arrogant scholar mocked at him saying that he was too young to share his knowledge with him. The young but brave beginner replied, "Oh master I am too young but my knowledge/sense is not so".

बालोमे अवधानद नमे बाला सरस्वती: ॥

(Bālo me dx g danand n h me baḷa saraswati)

Therefore, he argued with that arrogant scholar and deefeted him.

In fact, we never begin our work, always keeps for tomarrow and tomarrow never comes many a times, we under-

estimate our own potentiality and think what we cannot do. But it is a wrong idea, a foolish notion. We can do so many things and use our potential to our beat. We must be serious about our rights and responsibilities. Only if we carry our responsibilities, we can enjoy our rights.

We come from different parts of our country. We use so many different languages. We, the off-springs of a variety of cultural backgrounds get a chance to share our arts and culture, and language. when we do get chance. Why not to make use of them? Let us learn Kannada, Hindi, and so many other languages. Let us share our thoughts and feelings, make them national I am sure that then we have not to declare a year am "the year of national integrity".

As the summer vacation comes, we become happy. No work on our hands. Examination is over, We go here and there, meat with our relatives and friends. But we can spare a little time rendering service, directly or indirectly for our countrymen and can make it the sweetest. We may go to clubs and societies, arrange few seminars, can talk talk to them about the speech and hearing problems in our country.

We can give an idea about the recent remedial facilities available to them within their hands, with the help of the social workers. We can go to the doors of the residents or arrange a public meeting. We can educate them regarding the prevention of speech and hearing problems, provide Information on the facilities available in close proximity. They are not ignorant. But they are unaware of the fact. They have not got chance to know the A to Z of the real life.

It is our duty to remove scales of superstitions ideas from their minds. The beginner of the speech and hearing, therefore, must not think that it is too early to contribute but must do what is within the capability of a beginner.

CHAPTER VIII

JOB PROSPECTUS

"EACH AND EVERY TOMORROW. A BETTER TOMORROW"

We, all, always dream of a better tomorrow. Parents sacrifice their everything give their blood and sweat for their children. We do not expect our toll to go la vain. The parents' long cherished wishes, our present dreams and future days. We work hard, study hard to build up a career to achieve our future target. This ie why, many want to go to medicine, many to Engineering. But at present, the statistics show that the one of the best job prospectus for new graduates is in the field of speech and hearing.

Priya (1990) conducted an exhaustic survey and reported that 69.46% of the professionals can take up with in a year after graduation a job without my difficulty.

Distribution of professionals on the basis of period of unemployment (Priya. 1990)

Period of unemployment	1 year or less	1 - 3	3 - 5	5 and above
Percentage	69.46	3.04	-	-

According to her study not a single speech and hearing professional had to wait for more than three years. Not only that only 3.04% of the total speech and hearing profe-salonals had to wait to get a job upto three years. The remaining have gone for higher studies.

The distribution of the professionals studied by Priya (1990) showed that 41% of the professionals are Central Government employee whereas 20% are the State Government, 6% quasi Government, 25% private agencies end only 8% are self employed.

Distribution of professionals on the basis of employment (Priya, 1990)

Employer	Central Govt.	State Govt.	Ouasi GOvt,	Private agencies	Self employment
Percentage	41	20	6	25	8

On the basis of the place Where you can work to get an idea you may have a look at the following statistics.

Distribution of professionals on the basis of Place where they work (Priya, 1990)

Employer	speech & Hearing clinic	Industry	Univer-sity/ college	Special school	Medical Insti-tutes	Others
M	22	2.2	4.5	6.0	13.7	3.8
P	28	0.7	1.5	4.5	12.9	7,

22% malms and 28% female professionals were found to be working in different speech and hearing clinics at present. Other places of distribution are Industry, University or College, special school, medical institutes end others.

Distribution of professionals on the basis of nature of duties on percentage (adapted from Priya, 1990

Nature of duties		Teaching in college/University	Clinical work	Research work	Teaching in special school	Administration	Others
Percentage	M	9.05	21.98	9.48	4.74	6.465	1.293
	F	6.034	27.155	8.62	1.29	3.02	0.86

The above table indicates the nature of duties of these professionals. Mainly five main groups of works viz. teaching in colleges or university, clinical work, research work, teaching in special school and administrative work is well documented, The largest numbers of professionals are involved In clinical work followed by research work and teaching in the college or university and by administrative work and lastly teaching in special school followed by others.

So far eleven different designation are suggested as shown on the table.

Designation suggested by professionals (Priya, 1990)

1. Coordinator of speech and hearing services.
2. Clinician and lecturer
3. Scientists with different grades
4. Speech and hearing specialists
5. Speech and language pathologist and audiologist
6. Clinical and research assistant
7. Faculty designation
8. Assistant professor
9. Speech Pathologist with different grades
10. Dean and Professor
11. Junior Speech Pathologist and Audiologist.

So you, the future hearing and speech professional may work under the Central Government, State Government, Quasi Government or under the private agencies or you may do a private practice as a speech and hearing clinician.

Four National Institutes for the handicapped, mix training Institutes for the speech and hearing profe-ssionals, ten teacher (for the deaf) training Institutes ten D.R.C., four R.R.T.C., and hospitals are some of the Institutions where you can work as a teaching staff. Other source of job placement are shown on the table.

Job placements

A) On the basis of employer
   1) Central Government organization
   2) State Government organization
   3) 0uasi Government organization
   4) Private agencies
   5) Self employment.

B) On the basis of the place where you can work.
   1) Speech and Hearing Clinics
      - Four National Institutes for the handicapped
      - Six training institutes
      - Ten D.R.Cs
      - Pour R.R.T,Cs
      - Many private speech and hearing clinics
      - Hospitals
      - Nursing home and health care
      - Many Non Government organised speech and hearing clinic.
      - Many voluntary speech and hearing clinics
      - Own private practice,
   2) Industry/ies,

3) University/colleges:

- Six/training Institutes
- Four National Institute for the Handicapped
- Hospitals.

4) Special schools

- Schools for the deaf
- Schools for Mentally retarded
- schools for multiple handicapped
- schools for learning disabled
- schools for autistics
- Others.

As the problem of the speech and hearing handicap is severe, requirement is more, personne, and trained profe-ssionals for their help is not sufficient compared to their requirement, more and more trained personnel are wanted. At least another ten years we have to wait to meet their needs. When number of trained personnel is less compared to our need, then the question of unemployment never arises. Thus, for at least another 10-15 years any trained profe-ssional will be easily absorbed by different speech and hearing clinics and organisations.

But here, I am not provoking you to choose this profession to build up your career just to earn money.

If you feel an urge to serve these handicapped if you follow the silence of the speech and hearing handicapped, then only you are welcome.

Not just being influenced by the statistics of job prospectus and career, I am sure you will chocse this profession because you do feel a link with the communicatively handicapped. The field offers a wide scope for those.

CHAPTER IX

SUMMARY AND CONCLUSION

"AND MILeS To GO BEFORE I SLEEP

AnD MILES TO GO BEFORE I SLEEP"

R.Frost.

Communication is the vehicle to exchange our thoughtS and IdeaS. Speech and language are the two main compartments of this train which allow us to think the variationS in the life, to show our joyS and morrows. Speech is the vocal behaviour, the main aspect of the language system specially to the human being allowing their beet possible communication where hearing plays a very Important role. Speech play* a significant role in life because it allowS several ways and means of exchaning ideas such as the displacement of thoughts, emotive functioning of ideas, providing a greet asthetic value to the message conveyed bearing a conjunctive,referential end metalinguistic function.

Most of us being endowed of this precious ability to use speech and language for our communication. But unfortunately few are there who are not luckily enough to do the same. They are speechless or their speech are defective.

Hearing is the main sensory system allowing ua to develop our speech and language. It helps us to control our speech providing auditory feedback.

Speech and hearing plays a significant role In our daily life. Out most of us do not have adequate Information on the same.

In this project, am attempt has been made to provide a brief but adequate information on the same.

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