

**AWARENESS AND MISCONCEPTIONS IN THE AREA OF HEARING
LOSS: A SURVEY IN RURAL AND TRIBAL POPULATION**

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A Dissertation Submitted in Part Fulfilment for the Degree of
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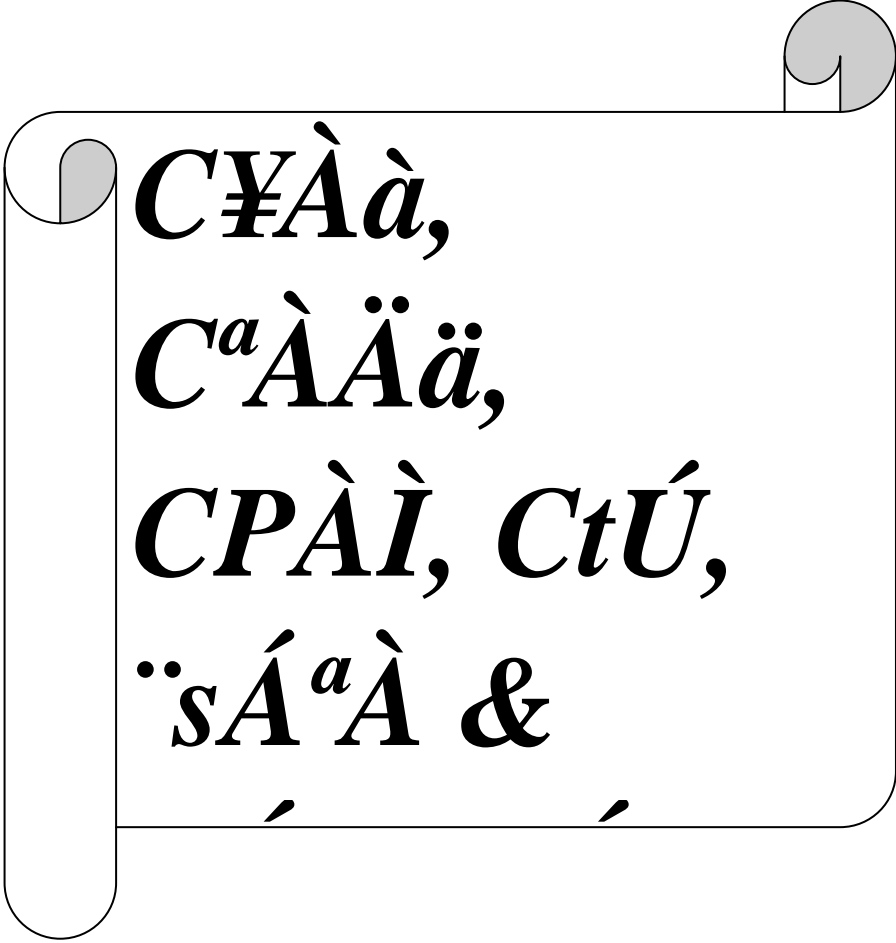
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May 2014

DEDICATION



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CERTIFICATE

This is to certify that this dissertation entitled '**Awareness and misconceptions in the area of Hearing loss: A Survey in Rural and Tribal Population**' is the bonafide work submitted in part fulfillment for the degree of Masters of Science (Audiology) of the student with Register No: 12AUD017. This has been carried out under the guidance of a faculty of this institute and has not been submitted earlier to any other Universities for the award of any other Diploma or Degree.

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CERTIFICATE

This is to certify that the dissertation entitled '**Awareness and misconceptions in the area of Hearing Loss: A Survey in Rural and Tribal population**' has been prepared under my supervision and guidance. It is also certified that this has not been submitted earlier in any other universities for the award of any Diploma or Degree.

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DECLARATION

This dissertation entitled '**Awareness and Misconceptions in the area of Hearing Loss: A Survey in Rural and Tribal population**' is the result of my own study undertaken under the guidance of Ms. N. M. Mamatha, Lecturer in Audiology, All India Institute of Speech and Hearing, Mysore, and has not been submitted earlier at any universities for any other Diploma or Degree.

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Abbreviations used in the Dissertation

Abbreviations	Description
OC	Over all Combined (overall positive score – over all negative scores) scores
PC	Positive overall scores
NC	Negative overall scores
AO	Awareness overall (positive score – negative score for awareness of hearing loss)
AP	Awareness positive scores
AN	Awareness negative score
CO	Causes overall (Positive scores – negative scores for causes of hearing loss)
CP	Causes positive scores
CN	Causes negative score
IO	Identification overall (positive scores – negative scores for identification of hearing loss)
IP	Identification positive
IN	Identification negative
RO	Rehabilitation overall (positive scores – negative score for rehabilitation of hearing loss)
RP	Rehabilitation positive
RN	Rehabilitation negative
NE	Non Educated subjects
PE	Primary Education
HPE	Higher Primary Education
IN	Intermediate
GR	Graduation

Chapter 1

Introduction

Communication plays a major role in the society. Effective communication means that the person, someone communicates with, totally understands the speaker. Verbal and written messages are conveyed by means of linguistic systems or symbols, or else words, which represent a thought, a concept, an object or an experience. Unfortunately, this effective communication may not be possible in individuals with various communication disabilities. One of these communication disabilities is the hearing loss.

The 21st century has progressed very vast to cure the various diseases effectively and faster and hence many lives have been saved over the years. In the recent years the science and technology is highly developed to treat the more life threatening diseases. However all these advancements and various facilities available to treat these diseases may not be reaching the individuals in the rural and tribal community and it is restricted only to the urban area or metropolitan cities. Though these ascents are bringing new revolution in the world, yet there are incidences where people still believe in superstitions about various disorders like cerebral palsy, mental retardation, autism, hearing loss etc, due to either lack of awareness or due to misconceptions about various disabilities believed over the generation.

There are a few cases of misbelieves reported regarding disabilities in the literature. On July 22, 2009, when world witnessed longest solar eclipse, some people in Gulbarga (northern Karnataka) buried their disabled children deep up to neck in mud. Their belief was that as the mud is holy it will cure their children having mental and physical disabilities. (Times of India, 23rd July, 2009). In the other

incident a couple was arrested on 9th may, 2012 for attempting to bury alive their 45-day old daughter near Lucknow (Panchsheel Nagar, Pilkuha) town since their child had congenital physical disability. They consulted an astrologist who advised them to bury the child alive if they wanted to stave off the curse of giving birth to congenitally ill baby (NDTV News, May 10, 2012).

Similarly there are few misbeliefs observed in the field of communication disorders like hearing loss also. The general public is unaware of the various causes of hearing loss and they continue to believe in superstitions and follow unscientific practices to treat the same. There are incidences where people put boiling oil into the discharging ear to cure the problem. People take the advice of neighbours, elders and even doctors and wait for the child to talk for many years without having the knowledge of child's hearing loss. Hence, there still exists misbeliefs and unethical practices which are most common in rural and tribal areas. This may be because of lack of awareness about existence of hearing loss and its associated conditions and also the management facilities available in India. This can also be due to ignorance of the parents about hearing loss as it is not considered as a serious problem.

India is mainly a rural based country and is the second most populous country in the world. Over 68.8% of the population is living in rural areas (Census India, 2011). India is home to a large number of tribes with a population of about 70 million. Tribal people constitute 8.14% of the total population of the country, numbering 84.51 million (2001 Census). Out of the 84.51 million, 52% of the tribal population comes under Below Poverty Line (BPL) and 54% of the tribal have no access to economic assets such as communication technology and transport.

According to the NSS (2001), the prevalence rate of hearing disability is 342 per 1,00,000 population in rural areas and 254 in urban area, incidence rate is 8 in rural and 7 in urban areas for one lac (NSS 2001). A survey done by Saritha Raju in the year 1992-93 found that the percentage of consanguineous marriage in India was 11.9 having highest percentage in Andhra Pradesh and least in Mizoram. The world wide prevalence of profound congenital hearing impairment is 11 per 10,000 children and is attributable to genetic causes in at least 50 percent of the cases. The percentage of consanguineous marriages in Andhra Pradesh is 22.36 but the rate of deafness in children born out of such wedlock is 41.73 percent. Speech, language and hearing disorders are increasing in numbers due to this kind of mating (Raju, 2008)

If proper education and awareness is given to people especially in rural and tribal areas, the percentage of congenital hearing loss can be decreased at least by 10%. If the knowledge about hearing loss and hygiene of ear is provided to the individuals in the rural and tribal areas then the acquired hearing losses due to foreign body and unscientific treatments to ear discharge and many other such conditions related to hearing loss can be reduced. Hence it is important to assess about the knowledge of the common people in rural and tribal areas about the hearing loss, its causes, management and attitude towards the hearing disabled individuals.

NEED OF THE STUDY

There are numerous misbeliefs and superstitions on various practices in our country. It can be related to religion, region, and community or may be even within a family. When it comes to diseases these misbeliefs go unnoticed and are not given importance. The consequences of misbeliefs can be very minimal or negligible but in some cases it is life threatening. These practices may or may not cure the diseases but may also affect other systems or organs which go unnoticed.

This misbelief and unscientific practices can be due to lack of knowledge about the diseases, lack of education, lack of basic necessities, or can be due to superstitions across the generation. These unscientific practices and misbeliefs may be existing in all the countries and communities and also in India since it is a rural based country and 8.2% of the population are from tribal community (census India 2011). Since there are evidences of misbeliefs and unethical practices in urban as well as rural areas (Times of India & NDTV news), with respect to other disorders like mental retardation, cerebral palsy there is need to discover such misbeliefs and unethical practices in the area of hearing loss also. This would educate the people about negative impact of misbeliefs, knowledge about treatment and its benefit. This will also help in early identification of hearing impairment, its associated disorders and its treatment. This will also help in controlling the disease. Hence present study was conducted with the aim of investigating the awareness, misbeliefs and unscientific practices in the area of hearing loss and its associated conditions in the rural and tribal population.

OBJECTIVES OF THE STUDY

- To know about the awareness of hearing loss, its associated conditions, causes identification and rehabilitation of hearing loss in rural and tribal population.
- To know the misconceptions about hearing loss, its associated conditions, causes identification and rehabilitation of hearing loss.
- To know about the unscientific practices to treat hearing loss, its associated conditions, cause, identification and rehabilitation of hearing loss.
- To compare the awareness of hearing loss, its associated conditions, causes identification and rehabilitation of hearing loss in rural population with the tribal population.

Chapter 2

Review of literature

There is not much evidence recorded in the literature regarding the misconceptions particularly related to hearing loss. Few authors have tried to find the awareness and misconceptions on hearing loss, attitude of the people towards the hearing impaired individuals, misconceptions that lead to late identification of hearing loss etc. Misconceptions exist almost in all the fields of medical science. There are many precipitating factors which influences the misconceptions. These may include the religion, culture, education and lack of exposure to the scientific world.

A study by Rao (1993) attempted to find whether people in other professionals are aware about different aspects of hearing handicap, its causes, rehabilitation, attitude of people towards them and about the functioning of the All India Institute of Speech and Hearing. A questionnaire was used in the study which included 30 yes or no questions. The subjects included were Doctors (practicing medicine), Medicos (students in training), Nurses (in private & government hospitals) and Teachers (from schools in Mysore). They conclude that Medicos have 100% knowledge about the causes for hearing impairment, doctors ranked second (94.10%). In the rehabilitation category both Medicos and teachers scored 100% scores, attitude category showed a positive attitude towards the hearing impaired and doctors found to be having more information on the All India Institute of Speech and Hearing. In a similar study by Grover (1997) adapted the questionnaire from Rao (1993) and it was modified to 45 yes or no questions related t the causes of hearing loss, rehabilitation of hearing loss and knowledge about functioning of All India Institute of Speech and Hearing. The authors had taken two groups of subjects, students and professionals,

where students included, school student (XI, XI standards), Arts students (undergraduates) and medical students (MBBS). The professional included were doctors and Board education officers. Their result showed that doctors had more knowledge on causes of hearing loss compared to the BEOs and medical students had better knowledge than the school children followed by Arts students. Positive attitude towards the hearing impairment was found in all the groups. Medical students and doctors had better knowledge regarding the rehabilitation of the hearing impaired as compared to the other groups. Doctors, BEOs and Medical students knew about the AIISH and its functions than the other groups.

Shanatala (1996) in her study included 24 yes or no questions related to awareness, rehabilitation and attitudes towards the hearing impaired. The questionnaire was administered on parents of normal hearing and hearing impaired children. Results showed that the parents of the hearing impaired had better knowledge on the causes of hearing loss as compared to the parents of the normal hearing children. Similar results were found for both rehabilitation and the attitude towards the hearing impaired categories.

Study done by Van den Brink, Wit, Kempen and Van Heuvelen (1995) aimed to investigate the attitude of elderly in seeking help for hearing impairment and to compare the groups showing dissimilar help seeking on their attitude towards hearing loss and hearing aids. The results indicated that the non consulters perceived their impairment as relatively inconsequential, most frequently demonstrated a passive acceptance of hearing problems with increasing age, saw least benefits of hearing aid use, and experienced little social pressure to seek help.

Wollega (2009) aimed to find the kind of attitudes that the hearing impaired children face from normal hearing people, and how these attitudes influence the hearing impaired child's life. They concluded that the hearing impaired children face negative attitudes from several people in the society, and the negative attitudes they face influence their lives in a negative way. These negative attitudes are results of cultural beliefs, religious values and norms that they follow within their society.

Het, Getty and Waridel (1994) tried to assess the perception of workers towards a co-worker who has impairment with no visible signs, to identify the conditions that trigger social withdrawal and isolation behaviour among people affected by Occupational Hearing Loss and the conditions that might make the latter decide to seek help and to define the type and methods of help that might minimize social withdrawal and isolation among hearing impaired workers. As a result, the daily interactions among co-workers, its effects are ignored people were not knowing how to communicate with the person who affected by Occupational Hearing Loss.

In a study done by Kumar, Rout, Kumari, Dey (2012) tried to identify the knowledge of the train passengers about the cause and the management of hearing loss. From their survey, it is found that most of the participants (82.6%) had seen a person with hearing loss. Among them, 10 reported to have relatives who have hearing loss but did not know where they should be taken for the remedy. Seventeen individuals (all geriatric) were suspected to be having reduced hearing acuity during the survey. However, none of them admitted to be having a significant disability due to hearing loss. Also 48% of the participants correctly attribute hearing loss to biological and environmental causes (genetic, congenital & noise induced) and three percent of them attributed it to myth revealing that most of the participants had awareness about what could cause hearing impairment. Regarding management, most

of the participants (25.2%) agreed to medical treatment as the best, followed by hearing aids (23.5%) for individuals with hearing loss. There were no myths related to management. Five of the participants interviewed, were already undergoing medical treatments from various medical institutions for their hearing impairment, but reported to have no benefit from the treatment. Most of them recognized Speech Language Pathologists as professionals who could manage speech difficulties but mostly attributed management of hearing impairment to an Ear Nose and Throat (ENT) specialist. They concluded that an awareness pamphlet targeting the myths can be distributed to passengers in train. Role of an audiologist as a hearing professional can also be targeted in the pamphlets. Language used in the advertisements and pamphlets should be culture and region specific and should have a pictorial representation. The need for a healthy and comfortable communication has to be explained especially to the adults and geriatric population. The elderly persons must have the skills and motivation to communicate in the external environment which is very important for communication. Here the authors emphasizes on the existence of the myths regarding the hearing loss, and tries to suggest remedies to eradicate the existing myths.

From the review it is evident that most of the studies have focused on finding the awareness of hearing loss in professional and general populations. The awareness among the professionals was satisfactory. The common people were aware of the causes of hearing loss. But there was a poor knowledge about the rehabilitation of the individuals with hearing impairment. There was a positive attitude seen in common people towards the hearing impaired individuals is reported in these studies. However these studies are done in urban population and the numbers of the educated individuals are more in urban population compared to the rural population. There

might be poor knowledge on the awareness of hearing loss, its causes, identification of hearing loss and management options for hearing loss existing in the rural and tribal population due to lack of education and poor access to the newer technology. Also there is no evidence in the literature about the knowledge of the people about the awareness of hearing loss, its causes, identification of hearing loss and rehabilitation options available for hearing loss in the rural and tribal population. Since the prevalence rate of hearing loss is greater in rural population than in the urban population there is need of investigating the awareness and misconceptions in rural and tribal population. Hence the present study was conducted to assess about the awareness of hearing loss, its associated conditions, causes, identification and rehabilitation of hearing loss in rural and tribal population.

Chapter 3

Method

The purpose of the study was to investigate the awareness, misbeliefs and unscientific practices in the area of hearing loss and its associated conditions in the rural and tribal populations. In order to fulfill the aim, the following method was adopted. The method was divided into four phases.

Method was broadly divided into four phases.

Phase I: Preparation of questionnaire

Phase II: Selection of the villages and tribal areas for the survey

Phase III: Administration of questionnaire and collection of data

Phase IV: Analysis of data

Phase I: Preparation of questionnaire

In order to find the awareness and misconceptions in the area of hearing loss a questionnaire was prepared which covered the various aspects related to knowledge about hearing loss, causes of hearing loss, identification of hearing loss and rehabilitation of hearing loss. The preparation of questionnaire underwent five stages.

They include,

- Adaptation and modification of the earlier questionnaires
- Carrying out pilot study
- Preparation of tentative questionnaire
- Validation of questionnaire
- Finalization of the questionnaire

In the first stage, questionnaire from Rao (1993), Shantala (1996) and Grover (1997), which were of binary yes/no and multiple choice questions were adapted and shortlisted as 32 open ended questions both in Kannada (Appendix I) and English (Appendix II), covering the following areas.

- Awareness of hearing loss
- Causes of hearing loss
- Identification of hearing loss and
- Rehabilitation of hearing loss

The second stage included the pilot study where the prepared open ended questionnaire was administered on professional working with rural and tribal populations, tribal welfare associations, forest guards and doctors in primary health centers in rural areas. They were instructed to give the brief information on awareness and misconceptions for each question that are reported to be observed in their village or tribal community where they are working. The relevant information that they come across during their work experience with the rural and tribal community regarding the awareness and misconceptions related to hearing loss and various categories were included. A total of 13 professionals were included in the pilot study from different areas of Mysore, Chamarajnagar, H D Kote and Hunsur taluks. The Table 3.1 summarizes the subjects from different areas considered for the pilot study.

Table 3.1:

The number of individuals taken for the pilot study from different rural and tribal areas.

Name of tribal and rural areas	Number of personnel interviewed
K Gudi	3
B R Hills	2
Nagarahole National Park	3
H D Kote	2
Doddamulagodu	1
Hunsur	2
Total	13

Note: The villages K Gudi and B R Hills are the tribal areas, and Nagarhole National Park, H D Kote, Doddamulagodu and Hunsur are the rural areas.

In the third stage a tentative closed set questionnaire which included twenty six questions was made by compiling the responses obtained in the pilot study. Six questions from the pilot study were removed due to poor responses and difficulty of the questions.

Each question was prepared in a way such that it contains five possible answers which includes both positive (knowledge on hearing loss) and negative answers (misconceptions on hearing). The questions were divided into four sub groups, namely

- Questions related to Awareness on hearing loss
- Questions related to Causes of hearing loss
- Questions related to Identification of hearing loss and
- Questions related to Rehabilitation of hearing loss

The awareness of hearing loss category contained six questions, causes of hearing loss contained eight questions, identification of hearing loss contained five questions and rehabilitation of hearing loss contained seven questions.

In the fourth stage, the closed set tentative questionnaire was given for rating from 16 experts who have vast experience in the area of speech and hearing, including Speech Language Pathologists, Audiologists, ENT Doctors, Special Educators and Psychologists. Questionnaire prepared was given in both Kannada and English languages for better understanding. Each experts were asked to rate the questions on a three parameter rating scale, i.e., appropriate, not appropriate and modification required. A space was provided for the comments, suggestions and modifications if required to make.

Only the questions rated as appropriate by majority of the professionals were taken for the final questionnaire and suggestions from all the professionals were considered. All the questions are rated as appropriate by majority of the professionals, and suggestions given were incorporated.

In the final stage, the questionnaire was finalized which contained a total of 26 questions, including 6 questions for the category Awareness of hearing loss, 8 questions for the category causes of hearing loss, 5 questions for the category identification of hearing loss and rest 7 questions for the category management of hearing loss. Each question contained five choices; wherein the first four choices included both correct (positive knowledge) and incorrect (misconceptions) answers the fifth choice was a neutral response where it says the answer can be anything other than the first 4 choices given.

The instruction was given to the participants such that, they have the option of selecting more than one answer for each question. The questionnaire contained a total of 26 questions out of which the subject has the chance of marking a maximum of 48

correct choices, 50 incorrect choices and 32 neutral answers which says “none of the above” if they are not sure of the choices provided.

PHASE 2: Selection of the villages and tribal areas for the survey

The areas selected in the study were based on the literacy of the district and rural and tribal population in the respective district since the objective of the study is to know the awareness and misconceptions in the rural and tribal populations. Chamarajanagar district is the 3rd last in the literacy rate with 51.25%, followed by Gulbarga (50.65%) and last is the Raichur (49.54%) (Census India 2011) in the state of Karnataka. Chamarajanagar has 82.86% of rural population (Census India 2011), and there is existence of tribal (Soliga) community in the BR Hills and K Gudi region. Considering these factors mentioned above the participants from Chamarajanagar district were taken for the current study.

The geographical locations selected were Nalluru, Nagavalli, Kodimole, Chandakavadi, Jyotigowdanapura, Hondarabalu and Malledevanahalli within Chamarajanagar district, and tribal population in the BR Hills and K Gudi (Soliga communities) region. The distance of the Chamarajanagar from the Mysore city is approximately 60 km, and the villages selected were within the 42km from the Chamarajanagar city. These villages were selected based on the accessibility to travel and which come under rural and tribal regions according to the District Panchayat Chamarajanagar. Only adult population (18 years & above) were included in the survey irrespective of religion, education, occupation and gender. The Chamarajanagar district is situated in the southern most region of Karnataka, sharing its border with the states of Kerala and Tamilnadu. The Figures 3.1 and 3.2 gives the geographical location of the Chamarajanagar district and the villages selected for the survey within the Chamarajanagar district.

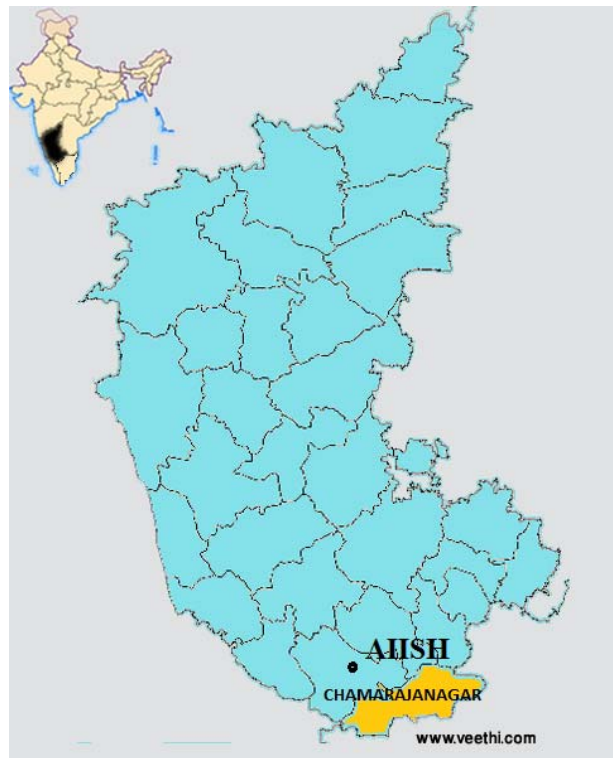


Figure3.1: Showing the geographical location of the ChamaraJanagar District in the southern region of the state of Karnataka.

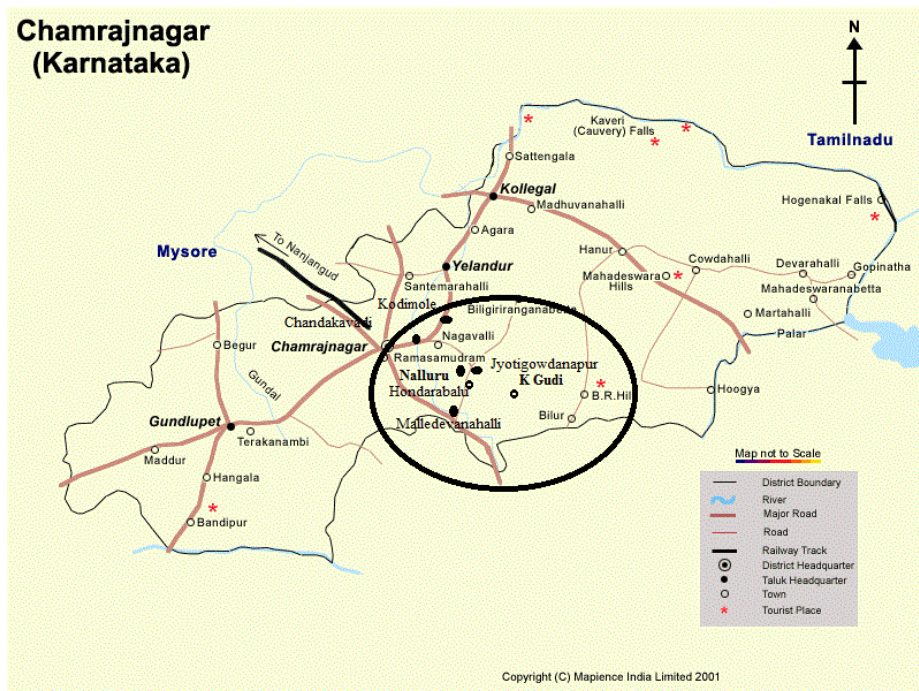


Figure3.2: Showing the geographical location of the villages selected for the survey in the ChamaraJanagar district (Regions within the circled area)

PHASE 3: Administration of questionnaire and collection of data

The prepared questionnaire was administered on various populations of the selected villages. The instructions given for participants was that ‘The given questionnaire contains few questions related to the area of hearing loss under four different sections namely awareness on hearing loss, causes for hearing loss, identification of hearing loss and rehabilitation of hearing loss. Each question is given with five choices and you are requested to put a (√) mark to the answer which you think is the correct answer. Every question may be marked with more than one answer’s. The questionnaire used for the survey was in Kannada since the language spoken by the participants in these areas was Kannada.

For the subjects who were not literates the questionnaire was administered verbally and responses were noted by the surveyor. Literates were allowed to read the questionnaire and mark the answer by themselves. Signatures of the participants were taken after the administration of the questionnaire. After the administration of the questionnaire each participants were given the address of the All India Institute of Speech and Hearing as referral slips and counseled to visit the institute if they come across any individual with communication difficulties in their family, neighbour, relatives or friends. This was done as part of primary prevention of communication disorders in rural and tribal areas. The Figures 3.3 and 3.4 shows the photographs taken during the survey in rural and tribal areas.



Figure 3.3: Showing the surveyor administering the questionnaire to one of the participants and noting the responses.



Figure 3.4: Showing one of the participant filling up the questionnaire.

PHASE 4: Analysis of the data

A total of 189 subjects participated in the survey out of which 147 were from rural areas and 42 were from the tribal areas. The Table 3.2 summarizes the gender wise distribution of subjects across villages who participated in the survey.

Table 3.2:

Showing the number of male and female subjects participated in the study from different villages

Rural areas	Males	Females	Total
Nalluru	19	13	32
Nagavalli	14	11	25
Kodimole	15	7	22
Chanadakavadi	15	9	24
Jyotigowdanapura	11	5	16
Hondarabalu	6	6	12
Malledevanahalli	10	6	16
	(90)	(57)	(147)
Tribal areas			
B R Hills	17	8	25
K Gudi	11	6	17
	(28)	(14)	(42)
Total	118	71	189

The education status of the subjects were divided into five categories, namely non educated (NE), primary education (PE), higher primary education (HPE), intermediate (IM) and graduation (GR) and above. The Table 3.3 summarizes the education status of male and female subjects across villages.

Table3.3:

Showing the statistics of the number of participants with respect to their education status

Rural areas	NE		PE		HP		IN		GR	
	M	F	M	F	M	F	M	F	M	F
Nalluru	9	7	2	0	4	4	2	1	2	1
Nagavalli	5	7	5	3	4	0	0	0	0	1
Kodimole	6	6	3	0	6	1	1	0	0	0
Chanadakavadi	6	3	2	1	3	2	0	2	4	1
Jyotigowdanapura	5	4	2	0	1	1	1	0	2	0
Hondarabalu	6	3	0	2	0	1	0	0	0	0
Malledevanahalli	5	6	4	0	1	0	0	0	0	0
	(42)	(36)	(18)	(6)	(19)	(9)	(4)	(3)	(8)	(3)
Tribal areas										
B R Hills	7	5	6	2	3	0	1	0	0	1
K Gudi	11	5	0	1	0	0	0	0	0	0
	(18)	(10)	(6)	(3)	(3)	(0)	(1)	(0)	(0)	(1)
Total	60	46	24	9	22	9	5	3	8	4

While analyzing the questionnaires, each correct answer was given as +1, and every incorrect response was given as -1 marks. If the subject's total score is 0, then it was decided that he has equal number of positive knowledge on hearing loss and also equal number of misconceptions. When the overall scores are positive it says that the subject has less misconception about hearing loss, similarly if scores are negative it says that subject has more misconceptions on hearing loss.

Greater the positive scores, better is the awareness of the subject on hearing loss and greater the negative scores, poorer is the knowledge on hearing loss and the misconception are more. The analysis was done in different perspectives. The score

are separately analyzed for villages, education status, gender and age. The obtained data was statistically analysed using the SPSS software version 17.

Chapter 4

RESULTS

The aim of the present study was to investigate the awareness and misconceptions in the area of hearing loss and its associated conditions in rural and tribal population. To fulfill the aim of the study, the developed questionnaire was administered on 189 individuals in nine different villages (seven rural & two tribal areas). The response obtained from the subjects on various categories such as awareness of hearing loss, causes of hearing loss, identification of hearing loss and rehabilitation of hearing loss are compared with the villages, gender, education status of the participants, age of the participants and rural versus tribal was done using the statistical analysis software SPSS (Statistical Packages for Social Science (version 17.0)).

The statistical analysis used to analyze the obtained data are:

- Descriptive statistical analysis was done to know the mean and standard deviation of the obtained data under each category.
- Pearson correlation was used to measure the significant difference in performance across the age groups since the age difference was more.
- Kruskal-Wallis Test was used as the education status was unequally distributed, to find the comparison of education status across different categories of questionnaire.
- Mann-Whitney U test was used to find the significant difference in the performance obtained for rural and tribal populations and gender difference for various categories of questionnaire.

- MANOVA was used to see the significant differences in performance obtained across the villages for various categories such as awareness, causes, identification and rehabilitation of hearing loss.

In order to find the awareness and misconceptions in the area of hearing loss and its associated conditions, and to compare these awareness and misconception with the education status of the participants in the rural and tribal areas, age, gender and across villages, a survey was taken up. The survey was carried out in 9 villages including 7 rural areas and 2 tribal areas. A total number of 189 subjects participated in the survey, of which 120 were males and 69 were females. The Table 4.1 gives the information about the total number of subjects (male & female) participated in the survey. The villages are divided into two groups, rural which included the villages Nalluru, Nagavalli, Kodimole, Chandakavadi, Jyotigowdanapura, Hondarabalu and Malledevanahalli, and Tribal areas B R Hills and K Gudi.

Table 4.1

Showing the village wise distribution of male and female subjects who participated in the survey.

Rural areas	Males	Females	Total
Nalluru	19	13	32
Nagavalli	14	11	25
Kodimole	15	7	22
Chanadakavadi	15	9	24
Jyotigowdanapura	11	5	16
Hondarabalu	6	6	12
Malledevanahalli	10	6	16
	(90)	(57)	(147)
Tribal areas			
B R Hills	17	8	25
K Gudi	11	6	17
	(28)	(14)	(42)
Total	118	71	189

The education status of the subjects in the study was broadly divided into five categories. Non Educated (NE), Primary Education (PE), Higher Primary Education (HPE), Intermediate (IM) and Graduation (GR). The Table 4.2 gives the information on the number of subjects under each education status from the nine villages.

Table 4.2

Showing the education status of the male and female subjects across villages

Rural areas	NE		PE		HPE		IM		GR	
	M	F	M	F	M	F	M	F	M	F
Nalluru	9	7	2	0	4	4	2	1	2	1
Nagavalli	5	7	5	3	4	0	0	0	0	1
Kodimole	6	6	3	0	6	1	1	0	0	0
Chanadakavadi	6	3	2	1	3	2	0	2	4	1
Jyotigowdanapura	5	4	2	0	1	1	1	0	2	0
Hondarabalu	6	3	0	2	0	1	0	0	0	0
Malledevanahalli	5	6	4	0	1	0	0	0	0	0
	(42)	(36)	(18)	(6)	(19)	(9)	(4)	(3)	(8)	(3)
Tribal areas										
B R Hills	7	5	6	2	3	0	1	0	0	1
K Gudi	11	5	0	1	0	0	0	0	0	0
	(18)	(10)	(6)	(3)	(3)	(0)	(1)	(0)	(0)	(1)
Total	60	46	24	9	22	9	5	3	8	4

Note: NE- Non Educated, PE- Primary Education, HPE- Higher Primary education, IM- Intermediate and GR- graduation.

From the Table 4.2 it can be noticed that there were a total of 106 (78 in rural & 28 in tribal areas) subjects who were non educated, 33 participants with primary education, 31 with the higher primary education, 8 with the intermediate education and 12 with the graduation. There were no graduated participants from 4 of the 9 villages. K Gudi, which is a tribal region, had only one educated participant who had completed her primary education. The Figure 4.1 shows the distribution of subjects according to the education status.

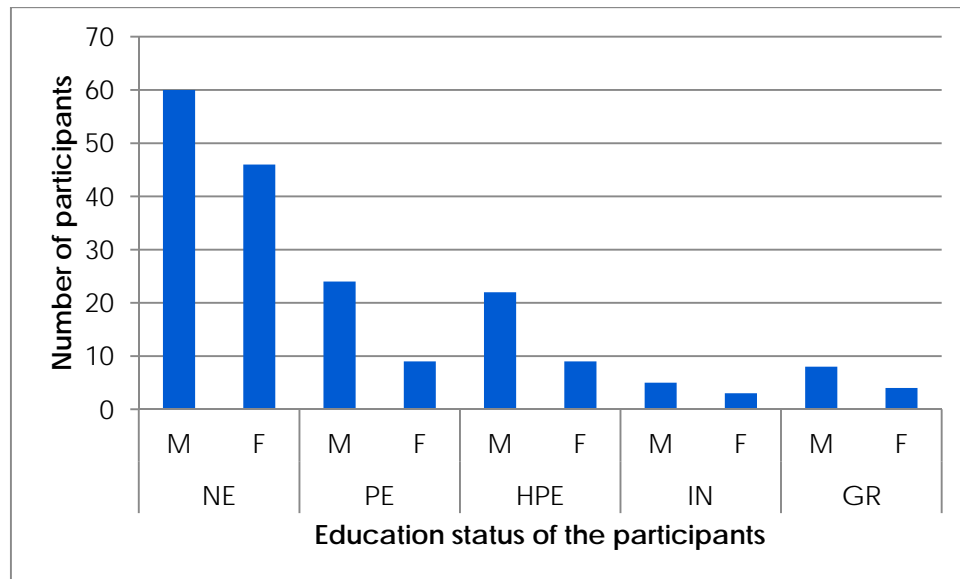


Figure 4.1: Showing the education status of the 189 subjects involved in the survey.

From the Figure 4.1, it can be noticed that there are more number of non educated subjects than the educated subjects. The numbers of higher educated subjects were less. Hence there were more non educated subjects who participated in the survey than the educated.

Since the aim of the study was to know the awareness and misconceptions related to the area of hearing loss, the analysis was done under five sub groups. To know the awareness of hearing loss in rural and tribal populations, the response obtained from subjects were given the scores based on their performance for the questionnaire. Each correct answer was given with a score of +1 and every incorrect answer was given with a score of -1. The +1 score indicates the positive knowledge and the -1 indicates the misconceptions that they have towards the hearing loss and its associated conditions. The scoring was done separately for four categories of the questionnaire i.e., awareness of hearing loss, causes of hearing loss, identification of hearing loss and rehabilitation of hearing loss.

1. Comparison of performance for four categories of the questionnaire across the villages

1.1. Awareness of hearing loss

This category contained a total of six questions, where the maximum possible positive answers elicited could be eight and maximum possible negative answers elicited could be -16. The Table 4.3 shows the mean and SD of positive and negative scores obtained for the category awareness of hearing loss for all the subjects in nine villages.

Table 4.3

Showing the Mean & SD of positive and negative scores for the category awareness of hearing loss of different villages

Village	Positive scores			Negative score	
	N	Mean positive scores	SD	Mean negative scores	SD
Nalluru	32	6.40	.87	-6.18	1.55
Nagavalli	25	6.12	1.48	-6.28	1.94
Kodimole	22	6.13	.83	-4.59	1.46
Chandakavadi	24	6.54	.77	-3.95	1.89
Jyotigowdanapura	16	6.50	.73	-5.87	1.74
Hondarabalu	12	5.50	.67	-5.16	.83
Malledavanahalli	16	5.75	.68	-3.87	1.40
B R Hills	25	5.92	1.63	-5.64	2.39
K Gudi	17	4.35	1.49	-4.41	1.50
Total	189	6.00	1.24	-5.21	1.93

From the Table 4.3 it can be noticed that the positive scores are reduced in the K Gudi village, which is a tribal region which indicates that there is less awareness on hearing loss in these region. The mean negative scores are less in the village Chandakavadi with the score of -3.95, which indicates that there is less misconceptions among people living in that village as compared to the other villages.

The Figure 4.2 Shows the graphical representation of the mean positive and negative scores obtained from subjects in 9 villages.

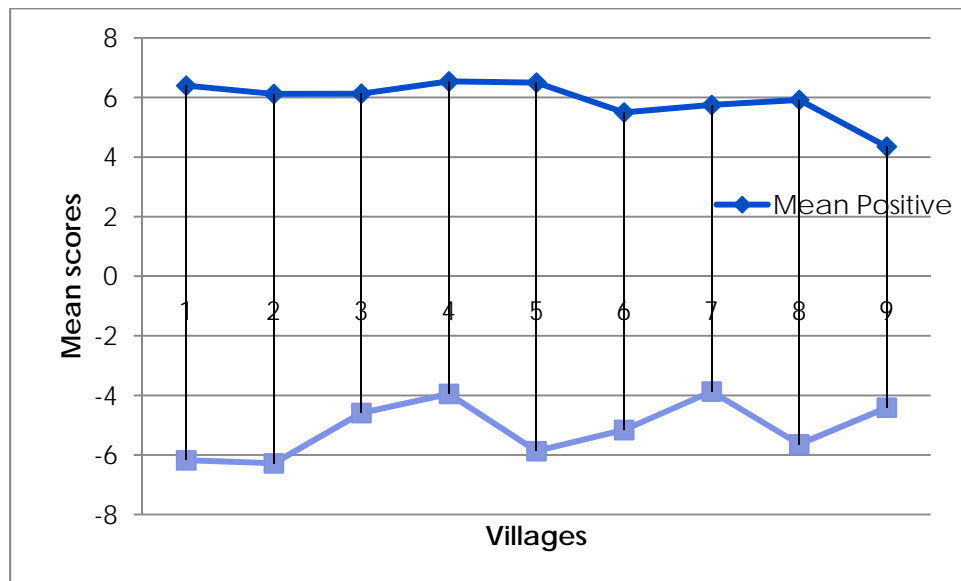


Figure 4.2: Showing the Mean positive and Mean negative score for the category awareness of hearing loss in 9 villages. 1- Nalluru, 2- Nagavalli, 3- Kodimole, 4- Chandakavadi, 5- Jyotigowdanapura, 6- Hondarabalu, 7 -Malledevanahalli, 8- B R Hills and 9- K Gudi.

From the Figure 4.2, it can be seen that the positive scores are reduced in the village K Gudi, the maximum positive scores are obtained in the villages Chandakavadi and Jyotigowdanapura indicating that there is better awareness about hearing loss in these villages. The mean negative score are maximum in the villages Nalluru and Nagavalli which says that there is more misconceptions about awareness of hearing loss in these villages.

1.2.Causes of hearing loss

This category contained 8 questions, where the maximum possible positive answers and maximum negative answers that could be obtained were 17 and 10 respectively. The Table 4.4 gives the information on the scores obtained from different villages under the causes of hearing loss.

Table 4.4:

Showing the Mean and SD of positive and negative scores of different villages for the category causes of hearing loss.

Village	N	Mean positive scores	SD	Mean Negative scores	SD
Nalluru	32	5.81	.96	-5.53	1.58
Nagavalli	25	8.28	1.42	-4.48	2.04
Kodimole	22	6.40	.79	-6.77	1.30
Chandakavadi	24	6.50	.83	-6.37	1.46
Jyotigowdanapura	16	7.43	.81	-7.31	1.01
Hondarabalu	12	8.25	1.05	-8.16	1.33
Malledavanahalli	16	6.43	.72	-6.12	1.50
B R Hills	25	7.00	1.60	-5.76	2.68
K Gudi	17	6.88	.99	-4.00	1.22
Total	189	6.89	1.34	-5.90	2.01

From the Table 4.3 and Figure 4.3 it is evident that the village nagavalli scored the maximum positive scores in causes of hearing loss category followed by Hondarabalu and Jyotigowdanapura, which indicates that there is more awareness on causes of hearing loss in these villages. The maximum mean negatives scores were seen in Hondarabalu with -8.16 followed by Jyotigowdanapura, which says the existence of misconceptions under the causes of hearing loss in these villages. The Figure 4.3 shows the village wise representation of the scores.

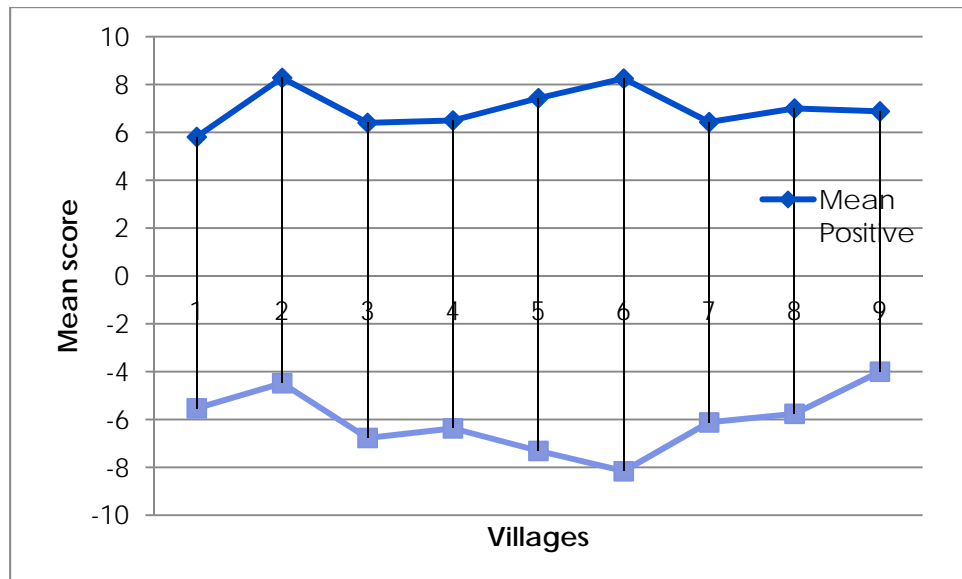


Figure 4.3: Showing the Mean positive and negative scores for the category causes for hearing loss in different villages.

1.3. Identification of hearing loss in rural and tribal populations

This category contained five questions with maximum of fourteen positive answers and maximum of six negative answers. The Table 4.5 and Figure 4.4 gives information on the mean positive and negative scores of each village for the category identification of hearing loss.

Table 4.5:

Showing the Mean and SD of positive and negative scores of different villages for the category of identification of hearing loss.

Village	N	Mean positive score	SD	Mean positive scores	SD
Nalluru	32	6.21	1.12	-4.78	1.09
Nagavalli	25	6.92	2.11	-4.88	2.36
Kodimole	22	5.40	1.18	-4.54	1.01
Chandakavadi	24	5.12	1.11	-4.04	1.12
Jyotigowdanapura	16	5.06	.77	-4.31	1.07
Hondarabalu	12	5.66	.88	-4.58	1.37
Malledavanahalli	16	6.75	1.52	-4.43	1.63
B R Hills	25	6.44	1.55	-4.40	1.77
K Gudi	17	6.70	1.64	-5.11	1.79
total	189	6.06	1.53	-4.57	1.54

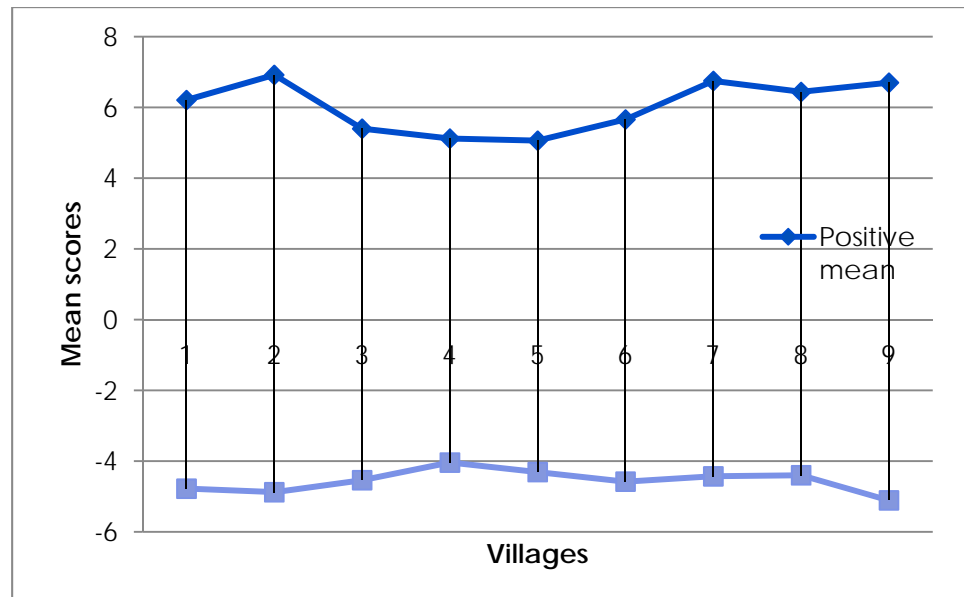


Figure 4.4: Showing the Mean positive and negative score for the category identification of hearing loss across nine villages.

From the Table 4.5 and Figure 4.4 it is seen that the Nagavalli village scored the maximum positive score followed by K Gudi, which indicates that there is more awareness on identification of hearing loss in individuals living in these villages as compared to other villages. The K gudi village scored the maximum negative score, which says that there are misconceptions on identification of hearing loss in subjects in this village.

1.4. Rehabilitation of hearing loss

This category contained seven questions with maximum of 9 positive and 18 negative answers that could be obtained. The Table 4.6 and Figure 4.5 gives the mean positive and mean negative scores obtained for the category of rehabilitation hearing loss from nine villages.]

Table 4.6:

Showing the Mean and SD of positive and negative scores of different villages for the category rehabilitation of hearing loss.

Village	N	Mean positive scores	SD	Mean negative scores	SD
Nalluru	32	6.78	.87	-7.21	2.22
Nagavalli	25	3.96	2.24	-9.52	2.43
Kodimole	22	4.00	2.61	-7.54	2.01
Chandakavadi	24	6.45	2.20	-6.50	2.85
Jyotigowdanapura	16	7.12	1.66	-7.62	2.91
Hondarabalu	12	6.33	1.77	-7.75	5.91
Malledavanahalli	16	5.50	1.63	-10.43	2.50
B R Hills	25	2.68	1.51	-7.20	2.91
K Gudi	17	3.29	2.08	-10.82	1.81
Total	189	5.07	2.44	-8.13	3.10

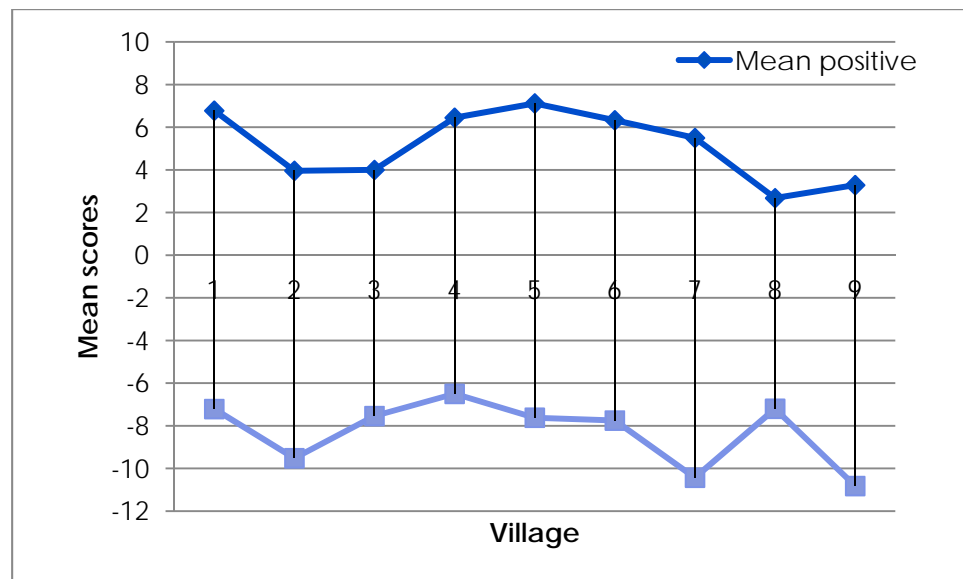


Figure 4.5: Showing the Mean positives and negative scores for the category rehabilitation of hearing loss.

It is evident from the Table 4.6 and Figure 4.5 that there is a difference with respect to the positive and negative scores obtained for the category rehabilitation of

hearing loss across the villages. The village Jyotigowdanapura scored the maximum positive score as compared to the other villages followed by Nalluru, while B R Hills and K Gudi scored the least in this category which are primarily tribal regions. The village Malledevanahalli and K Gudi scored the maximum negative scores, which indicate the presence of misconceptions among subjects living in these regions. From the Table 4.6 and Figure 4.5 it can be observed that the category rehabilitation of hearing loss had the maximum negatives score compared to awareness of hearing loss, causes of hearing loss and identification of hearing loss. There is poor knowledge noticed about rehabilitation of hearing loss across the villages.

From the Table 4.3, 4.4., 4.5 and 4.6 it can be inferred that there is difference in mean positive and mean negative score for various domains across villages. Hence MANOVA was done to find the significance difference between the villages for the category Awareness of hearing loss, causes of hearing loss, identification of hearing loss and rehabilitation of hearing loss. The Table 4.7 summarizes the test results of MANOVA.

Table 4.7:

Showing the sum of squares, degrees of freedom, mean square, F value and significance.

Category	Sum of squares	df	Mean square	F	significance
OC	689.007	8	86.126	2.367	.019
PC	508.134	8	63.517	6.024	.000
NC	717.132	8	89.641	2.558	.012
AO	163.270	8	20.409	5.172	.000
AP	67.370	8	8.421	6.748	.000
AN	156.299	8	19.537	6.380	.000
CO	363.901	8	45.488	14.237	.000
CP	124.761	8	15.595	13.049	.000
CN	233.174	8	29.147	9.916	.000
IO	58.534	8	7.317	3.824	.000
IP	85.693	8	10.712	5.363	.000

IN	17.708	8	2.213	.930	.493*
RO	1162.920	8	145.365	11.767	.000
RP	482.036	8	60.255	16.900	.000
RN	382.122	8	47.765	6.006	.000

*significance value >0.05

From the Table 4.7 it can be seen that there was significant difference across the villages for all the categories except for the negative scores of the identification of hearing loss. From this it can be assumed as in each village, the strategies used to identify the hearing loss are same and misconceptions across the villages are similar.

2. Comparison of the performance between the rural and tribal areas

The rural areas included the villages Nalluru, Nagavalli, Kodimole, Chandakavadi, Jotigowdanapura, Hondarabalu and Malledevanahalli, and the tribal villages included the B R Hills and K Gudi. The comparison of the performance (positive & negative scores) are done for rural and tribal areas for various categories. Mann Whitney U test was carried out to check if there is significant difference in performance between the rural and tribal areas for various categories. Table 4.8 gives the Mann Whitney U test values for all the categories.

Table 4.8:

Showing the results of Mann Whitney U test for comparison of performance for rural and tribal populations for various categories.

	Mann Whitney U	z	Asymp.sig.(2tailed)
CO	2181.00	-2.903	.004
CP	1611.00	-4.74	0.00
CN	3081.0	-0.19	.985*
AO	2483.0	-1.95	0.05*
AP	2093.50	-3.349	.001
AN	3024.50	-.203	.839*
CO	2050.500	-3.350	.001
CP	2855.50	-.762	.446*
CN	2103.00	-3.185	.001

IO	2437.00	-2.147	.032
IP	2274.00	-2.658	.008
IN	2753.00	-1.093	.275*
RO	1600.50	-4.768	.000
RP	1153.00	-6.259	.000
RN	2636.00	-1.451	.147*

*significance value >0.05

The Mann Whitney U test indicated that there was significant difference between the rural and tribal population for all the categories except for Combined Negative [Z= -0.19;p>0.05], Awareness Overall [Z= -1.95;p>0.05], Awareness Negative [Z= -0.203;p>0.05], Causes positive [Z= -0.762;p>0.05], Identification Negative [Z= 1.093-;p>0.05], and Rehabilitation Negative [Z= 1.451-;p>0.05].

3. Comparison of the performance across the education status of the participants across various categories

The positive and negative scores were compared with the different education status of the participants for the category awareness of hearing loss. The Table 4.9 and Figure 4.6 gives the mean positive and negative scores for the category awareness of hearing loss across education status.

Table 4.9:

Showing the Mean and SD of the positives and negative scores for the category Awareness of hearing loss across the education status of the participants.

	N	Mean positive Score	SD	Mean negative Score	SD
NE	106	5.77	1.36	-5.62	1.84
PE	32	6.21	.94	-5.28	1.80
HP	30	6.20	.99	-4.66	1.91
IM	9	6.22	.97	-4.44	2.06
GR	12	6.75	1.21	-3.33	1.77
Total	189	6.00	1.24	-5.21	1.93

The Table 4.9 shows that, as the education status of the participants increased there is an increase in the positive scores and decrease in the negative scores. The graduation group showed a maximum positive mean score of 6.75 and reduced negative mean score of -3.33. which indicates that the educated group had more awareness and less misconception compared to other groups of education status for the category awareness of hearing loss.

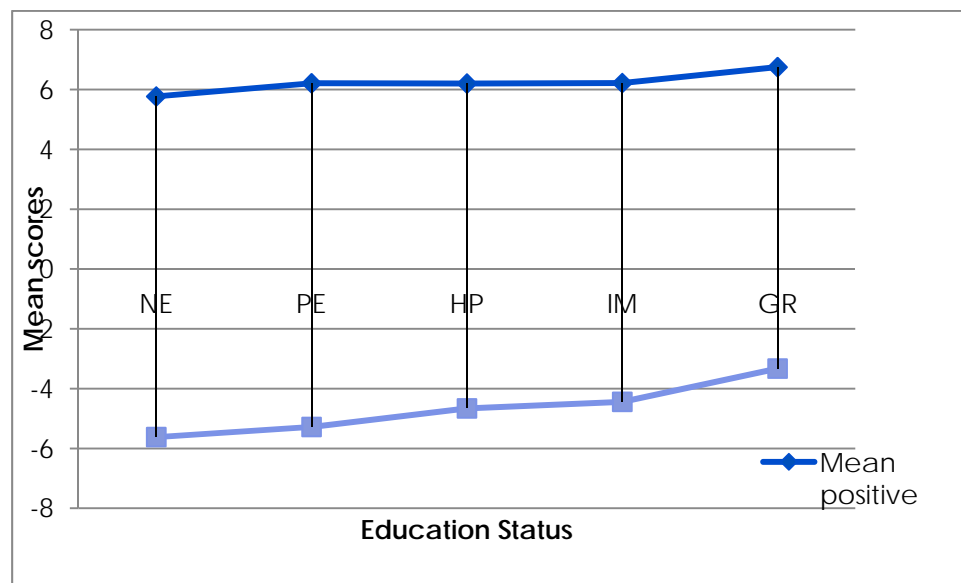


Figure 4.6: The Mean positive and negative score for the different education status of the participants.

The Figure 4.6 shows that the negative scores which indicate the misconceptions also get reduced as the education status of individuals increases.

The mean positive and mean negative scores are compared with the different education status of the participants for the category causes of hearing loss. The Table 4.10 and Figure 4.7 gives the mean positive and mean negative scores for the category causes of hearing loss across different education status of the subjects.

Table 4.10

The Mean and SD of the positive and negative scores for the category causes of hearing loss across education status of the subjects.

	N	Mean Positive score	SD	Mean Negative score	SD
NE	106	6.89	1.28	-6.38	1.97
PE	32	7.00	1.77	-5.71	1.70
HP	30	6.93	1.25	-5.53	1.83
IN	9	6.22	.66	-4.44	1.87
GR	12	7.00	1.12	-4.16	2.16
Total	189	6.89	1.34	-5.90	2.01

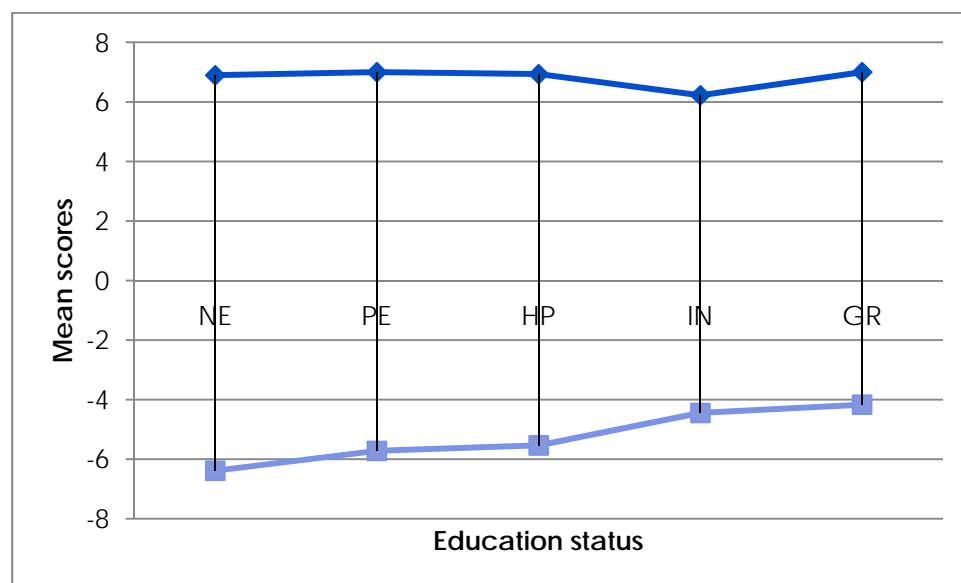


Figure 4.7: Showing the Mean positive and negative scores for the category causes of hearing loss across education status of the participants.

It can be noticed from the Figure 4.10 and Figure 4.7 that the positive scores are not varying with the education status, but for the mean negative score the education status of the participants has a increasing trend i.e., as the education status of the participants increased there is reduction in the negative score. The negative score moves towards the positive axis as the education status of the participants is increased.

The positive and negative scores were compared for the category identification of hearing loss across different education status of the participants. The Table 4.11 and Figure 4.8 showing the mean positive and mean negative score for the category identification of hearing loss across different education status of the participants.

Table4.11:

Showing the Mean and SD of positive and negative scores for the category identification of hearing loss across the different education status of the subjects

	N	Mean positive score	SD	Mean negative scores	SD
NE	106	6.08	1.56	-4.87	1.44
PE	32	6.21	1.64	-4.71	1.61
HP	30	6.06	1.38	-4.33	1.24
IN	9	5.66	1.50	-3.55	1.74
GR	12	5.75	1.60	-2.83	1.33
Total	189	6.06	1.53	-4.57	1.54

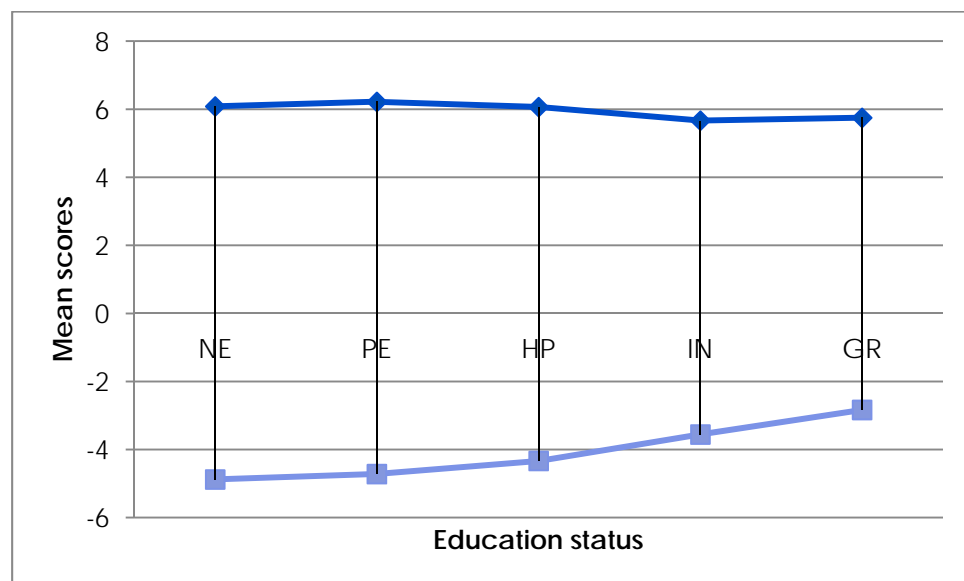


Figure 4.8: Showing the Mean positive and negative score for the category causes of hearing loss across education status of the subjects.

From the Table 4.11 and Figure 4.8 it can be observed that there is decrease in the negative scores, as the education status of the subjects is increased. However

when the positive scores concerned there was not much difference between the different education status of the participants.

The positive and negative scores were compared for the category rehabilitation of hearing loss across different education status of the participants. The Table 4.12 and Figure 4.9 shows the mean positive and mean negative score for the category rehabilitation of hearing loss across different education status of the participants.

Table 4.12:

Showing the Mean positive and negative scores for the category rehabilitation of hearing loss across different education status of the subjects.

	N	Mean positive Score	SD	Mean negative Score	SD
NE	106	4.34	2.42	-9.72	2.67
PE	32	4.87	2.39	-7.28	1.76
HP	30	6.33	1.72	-6.56	2.01
IN	9	7.11	1.26	-4.66	1.41
GR	12	7.41	1.37	-2.83	1.40
Total	189	5.07	2.44	-8.13	3.10

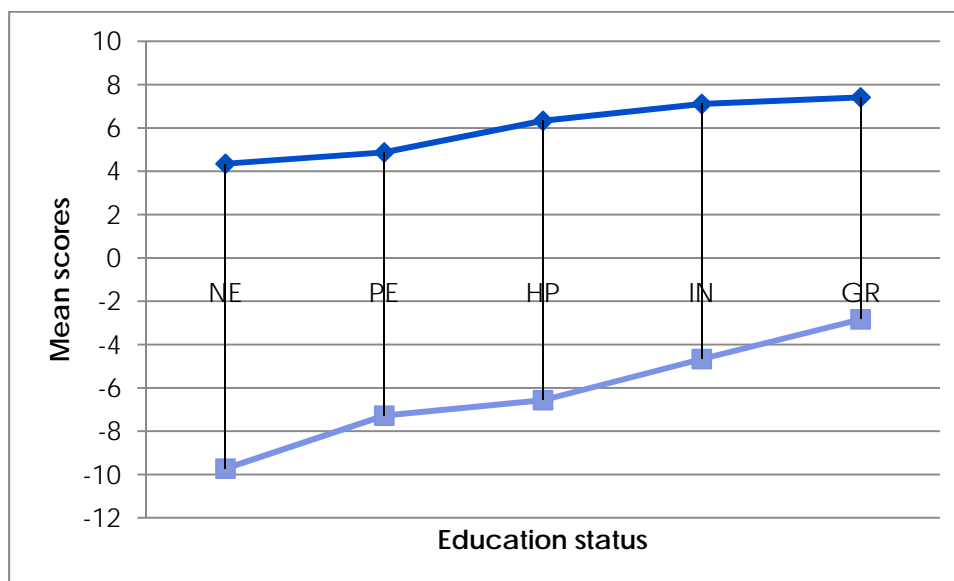


Figure 4.9: Showing the Mean positive and negative score for the category rehabilitation of hearing loss across different education status of the subjects.

It is evident from the Table 4.12 and Figure 4.9 that as the education status of the subjects increased, there is increase in positive scores. The graduation group performed better than the rest of the groups i.e., they had better knowledge about rehabilitation of hearing loss. With respect to the misconceptions, the graduation group performed much better than the other education status groups. As it can be noticed from the Figure 4.9, the negative scores of the graduation group is becoming very close to the positive axis. It can be concluded that, the educated group had more knowledge on the rehabilitation of hearing loss and also the misconceptions regarding the same were minimal.

From the Table 4.9, 4.10, 4.11 and 4, 12 it can be observed that there is difference in performance (mean positive score & mean negative scores) for all the categories across the different education status of the subjects. Hence to see if there is significance difference in performance for all the categories across education status Kruskal Walli test was done. The Table 4.13 gives the results of Kruskal Wallis test for the comparison of education status across the different categories of the questionnaire.

Table 4.13:

Showing the results of the Kruskal Wallis test for the comparison of education status across the different categories of the questionnaire.

	Chi-Square	df	Asymp. Sig.
OC	115.548	4	.000
PC	27.332	4	.000
NC	95.081	4	.000
AO	34.410	4	.000
AP	10.304	4	.036
AN	17.355	4	.002
CO	18.494	4	.001
CP	2.929	4	.570*
CN	18.440	4	.001
IO	18.010	4	.001

IP	1.853	4	.763*
IN	22.006	4	.000
RO	101.203	4	.000
RP	33.221	4	.000
RN	96.679	4	.000

* **Correlation coefficient value >0.05**

It can be observed from the Table 4.13 that there was significant difference in performance between the education status of the subjects for all the categories except for Causes Positive scores [$\chi^2=2.929$; $p>0.05$] and Identification positive scores [$\chi^2=1.853$; $p>0.05$]

It can be interpreted that as the education status of the subjects increased there is increase in the performance for all the categories except for the Causes positive and Identification positive i.e., all the subjects from different education status performed equally for the categories causes of hearing loss and identification of hearing loss.

4. Comparison of the performance across the age groups

In the study the population considered for the survey was only adults. The age range of the subjects who participated in the study is from 18 - 93 years. Since there was a large difference in the age range of the participants Pearson correlation was done to check the significant difference in performance across the ages. The Table 4.14 gives the information about significance values under each category of the questionnaire for the comparison of ages.

Table 4.14:

Showing the results of the Pearson correlation for comparison of the performance across the ages.

Categories	Pearson correlation	Sig. (2-tailed)
OC	-.386	.000*
PC	-.155	.033*
NC	-.370	.000*
AO	-.192	.008*
AP	-.032	.665
AN	-.193	.008*
CO	-.128	.078
CP	.076	.301
CN	-.198	.006*
IO	-.187	.010*
IP	.008	.912
IN	-.153	.036*
RO	-.344	.000*
RP	-.224	.002*
RN	-.294	.000*

***correlation coefficient value <0.05**

From the Table 4.14 it is evident that for all the categories there was no association found for AP, CO, Cp and IP having $p > 0.05$. The Pearson correlation of OC, PC, NC, AO, AN, CN, IO, IN, RO, RP and RN is given in Table 4.1 with significant value < 0.05 . There was reduction in the performance as the age increases for all the categories except for Awareness positive, Causes overall, Causes positive and Identification positive.

5. Comparison of the performance across the genders for all the four categories

The score obtained from the different categories of the questionnaire are compared across the gender to understand whether there is a gender difference in the performance. The mean positive and mean negative score for different categories with respect to gender are given in Table 4.15 and Figure 4.10.

Table 4.15:

Showing the Mean positive and negative scores for different categories with respect to the gender.

	Gender					
	Male			Female		
	N	Mean score	SD	N	Mean score	S D
PC	120	24.01	3.72	69	23.94	3.33
NC	120	-24.09	5.04	69	-22.89	7.61
AP	120	6.07	1.25	69	5.86	1.23
AN	120	-5.17	1.92	69	-5.27	1.98
CP	120	6.90	1.44	69	6.86	1.14
CN	120	-5.94	2.01	69	-5.84	2.01
IP	120	6.07	1.57	69	6.04	1.47
IN	120	-4.73	1.53	69	-4.28	1.51
RP	120	5.03	2.57	69	5.15	2.20
RN	120	-8.24	2.81	69	-7.94	3.57

As it can be noticed from the Table 4.15, that there was not much difference between the genders for the performance across the category. The mean positive and negative scores for both male and female subjects are not differing much.

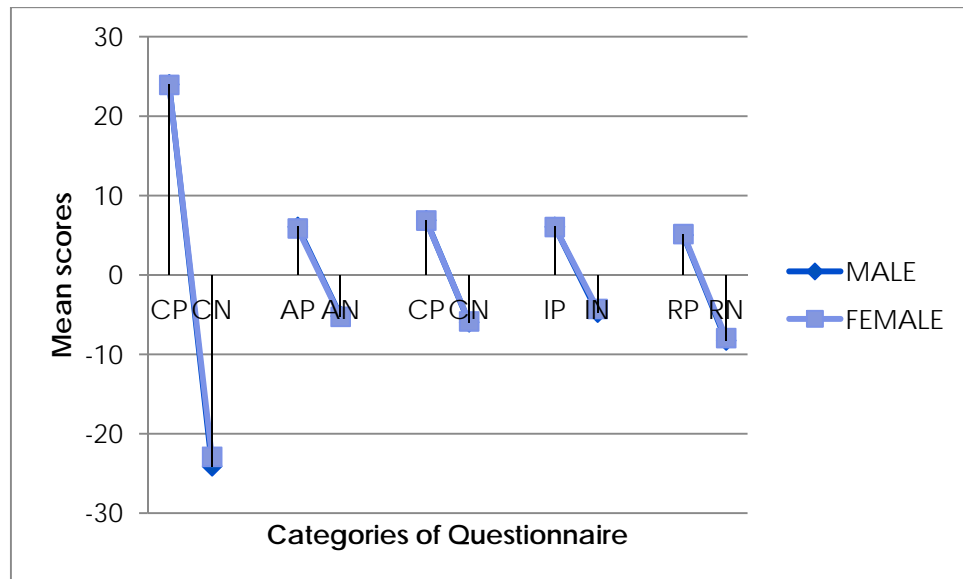


Figure 4.10: Showing the performance of males and females for different categories.

It is evident from the Figure 4.10 is that the performance of both the genders coincides in all the categories. To see if there is significant difference in performance

for various categories between the genders, Mann Whitney U test was carried out.

The Table 4.16 gives the test results of the Mann Whitney U test.

Table 4.16:

Showing the test results of the Mann Whitney U test to compare the gender difference in the performance across different categories

	Mann whitney u	z	Asymp.sig.(2tailed)
OC	4026.00	-.315	.752
PC	3998.00	-.394	.694
NC	3861.00	-.772	.440
AO	3794.50	-.967	.334
AP	3637.50	-1.463	.144
AN	4019.50	-.337	.736
CO	4040.00	-.279	.780
CP	4135.00	-.014	.989
CN	4018.50	-.340	.734
IO	3457.50	-1.946	.052
IP	4054.50	-.241	.809
IN	3414.50	-2.050	.040*
RO	4064.00	-.210	.833
RP	4105.00	-.098	.922
RN	4089.00	-.142	.887

*correlation coefficient value >0.05

From the Table 4.16 it is evident that there is no significant difference for all the categories except for the Identification Negative score [$Z = -2.050$; $p < 0.05$]. Hence it can be interpreted that there is no gender difference seen for the various categories.

Chapter 5

DISCUSSION

As seen from the results of the current study, there is presence of misconceptions in all categories like awareness of hearing loss, causes of hearing loss, identification of hearing loss and rehabilitation of hearing loss for all the education status, across different villages, across the age groups and in both the genders. But there is difference noticed with the extent of misconceptions among the individuals in rural and tribal area.

The survey was conducted in nine villages out of which seven were rural areas and two were tribal areas. The education status in all the villages was poor. There were more non educated individuals than the educated individuals. In the tribal area K Gudi, there was only one individual who completed her primary education and all others were non educated. Similarly across the villages the numbers of higher educated subjects were less. There were only 8 subjects with intermediate education and only 12 individuals with graduation across the villages. Hence it was observed that there is very poor education noticed in individuals living in both the rural and tribal areas.

Misconceptions related to awareness of hearing loss

The awareness of hearing loss included the participant's knowledge on hearing loss, meaning of hearing loss, meaning of ear discharge etc. There was no difference in performance across the villages except for the K Gudi, a tribal locality, which had minimum positive scores for awareness. Hence it can be concluded that the individuals living in tribal areas had poor knowledge on the awareness of hearing loss. The Nagavalli village scored the maximum negative

scores for awareness of hearing loss and hence there are more misconceptions on awareness of hearing loss among the individuals living in this village.

The performance of the village K Gudi was poor compared to other villages. This can be attributed to the fact that there were less educated individuals in this village than the other villages. Since the K Gudi is a tribal area, the public education program from various government and non-organisations may not be reaching the people living in this region. There is a lack of education and limited exposure on the existence of hearing loss and its associated conditions among individuals living in this area.

Awareness and misconceptions related to causes of hearing loss

For the category causes of hearing loss Nagavalli village scored the maximum positive scores indicating the better knowledge about the causes of hearing loss among the individuals in this village. The Hondarabalu village obtained the maximum negative scores indicating the existence of misconceptions about causes of hearing loss in subjects of this village. The performance of the rural and tribal populations for the causes of hearing loss was almost similar. This indicated that the people living in both rural and tribal areas have similar knowledge when the cause of hearing loss was concerned. The misconceptions related to the causes of hearing loss were also similar for the rural and tribal population.

Awareness and misconceptions related to Identification of Hearing Loss

Some of the questions related to misconceptions like hearing loss cannot be detected, hearing loss can be detected only in later ages or there is no solution for hearing loss were included in this category. This gives the information about the late identification of hearing loss in rural and tribal

population. The village Jyotigowdanapura scored the minimum positive scores indicating poor knowledge on the identification of hearing loss in this village. The village K Gudi scored the maximum negative score indicating presence of more misconceptions on identification of hearing loss compared to rural areas.

Awareness and misconceptions related to rehabilitation of hearing loss

The category rehabilitation of hearing loss elicited poor responses across all the villages compared to other 3 categories of the questionnaire. In this category K Gudi scored the minimum positive scores and maximum negative scores indicating the poor knowledge about the rehabilitation options available for hearing impaired individuals and there were more misconceptions on rehabilitation of hearing loss were prevailing among individuals living in this village compared to other villages. For this category all the villages performed poorer indicating that there is overall less knowledge about rehabilitation of hearing loss. Misconceptions like applying boiling oil to discharging ear, asking the help of the astrologer to cure hearing loss etc were present across all the villages. Some people believed that the hearing loss in the child is a consequence of sin made by the parents. Many individuals were not having the knowledge about that hearing aid as one of the solution for the hearing impaired individual to overcome their problem.

The results shows that the tribal population performed poorer than the rural population indicating poor knowledge of the people regarding the awareness, causes, identification and rehabilitation of hearing loss. The tribal population performed significantly poorer for the category rehabilitation of hearing loss compared to other villages.

Awareness and misconceptions on hearing loss across education status

There was significance difference in performance across the education stats of the participants. The graduation group scored the maximum positive score and minimum negative score for the category awareness of hearing loss indicating that there is better knowledge on hearing loss and less misconception related to awareness of hearing loss. As the education status increased there was increase in performance indicating better knowledge on hearing loss. The trend of increase in performance as education status increase was same for all the four categories i.e., awareness, causes, identification and rehabilitation of hearing loss. Overall there was less misconceptions in the educated group as compared to the non educated group.

Awareness and misconceptions about hearing loss across age

There was a trend seen with respect to the ages of the participants i.e., as the age increased the performance decreased i.e., the younger age groups performed better than the elder group. This could be related to the education status, since many educated individuals were of younger age groups compared to the elder group. It can be assumed that the younger age groups are exposed to the recent advancements related to communication disorders as compared to the elder group.

Awareness and misconceptions on hearing loss across gender

There was no significant difference in performance seen between the genders. Both the genders performed equally across all the categories except for the negative scores for the category identification of hearing loss. There was difference in misconception between the males and females with respect to identification of hearing loss however it was not statistically significant.

Awareness and misconceptions related to hearing loss in rural and tribal populations

The comparison between the rural and tribal population showed that there was significant difference between the two populations related to misconceptions with respect to the awareness, identification and rehabilitation of hearing loss. Here the tribal group performed poorer than the rural population. This can be attributed to the fact that there were less educated subjects in the tribal population than in the rural population. With respect to various categories of the questionnaire the subject had poor knowledge on the rehabilitation of hearing loss as compared to the other three categories. From this we can presume that even the people are aware of presence of conditions like hearing loss, its causes and identification of hearing loss also to some extent. However they had less knowledge about rehabilitation options available for the hearing loss. This can be due to more number of misconceptions that the individuals had with respect the rehabilitation of hearing loss.

Proper education and awareness programs in tribal and rural area will help the people in identifying the hearing loss at the early stage and suitable remedies can be taken up. Educating the people in rural and tribal population about the hearing loss, causes of hearing loss, identification of hearing loss and rehabilitation of hearing loss will help them in minimizing the incidence of congenital and acquired hearing loss. The ear related complication like foreign body in the ear or discharging ear can be minimized if proper

knowledge on ear hygiene is given. Educating the people on the hearing loss will make them develop positive attitude towards the hearing impaired individuals.

A study done by Rao (1993) showed that the medical professional selected for their study were well aware of the facts about causes of hearing impairment, availability of different schools for the hearing impaired individuals in Mysore. The study showed that all the subjects participated in the study showed a positive attitude towards the hearing impaired individual as the subjects selected for their study were professionals (Doctors, Medicos, Nurses & Teachers). In their study all the categories of subjects were educated, and three of the four categories were working in the Medical field. Their study focused only on the educated groups. Similar study by Grover (1997), selected two categories of subjects, students and professionals. Their study also indicated that all the groups showed a positive attitude towards the hearing impaired individuals and were well aware of the causes of hearing loss and their rehabilitation procedures available. However these studies were done on the educated groups and within the Mysore city. Since the study was restricted to Mysore, many people who participated in the study were aware of the All India Institute of Speech and Hearing. Hence many people had known about AIISH and it's functioning regarding identification and management of hearing loss.

However in our study, the subjects were selected randomly from different villages, which included both educated and non educated groups. The results showed that the educated groups performed significantly better than the

non educated group. And also the number of misconceptions reduced as the education status was increased.

Hence there is influence of education on the knowledge of hearing loss, its causes, identification of hearing loss and management of hearing loss. It is practically not possible to educate the people in every village and tribal areas. Instead awareness programs in the form of pamphlets, through TV, radios, news papers etc can be carried out reach individuals in those areas. More number of camps can be conducted in the rural and tribal areas to educate the people about primary, secondary and tertiary prevention of hearing loss.

Misconceptions with respect to the rehabilitation of hearing loss are more, which might be because of lack of exposure to the recent advancements with respect to hearing aids. Many believe that there is no cure for hearing loss, some believe that the hearing loss is a consequence of the child's sin or the parent's sin. Very few people were having the knowledge of hearing aid and very few numbers of people knew about the hearing aids and the speech, language and auditory therapy. With respect to causes of hearing loss, people were not aware about the knowledge that the hearing loss can occur as a consequence of consanguineous marriages. Many people told that they encourage consanguineous marriages.

Thus the current results also highlight that education helps one in many things, most importantly it empowers the knowledge. It makes the human to overcome negative knowledge or misconception and allows one to think in a scientific way. Educating any individual will make an individual to up date with the knowledge of science and technology and the current world. This study throws lights on the importance of conducting lot of public awareness programs

to educate the people regarding primary, secondary and tertiary prevention of hearing loss especially in rural and tribal areas.

After the administration of the questionnaire the subjects were given the address of the All India Institute of Speech and Hearing and counselled them to visit the institute if anybody in their family, friends or neighbour with communication disabilities. Through this the study made an attempt to introduce AIISH to the individuals in rural and tribal populations of Chamarajanagar.

Chapter 6

Summary and Conclusion

A questionnaire was adapted which included 26 questions on various categories such as awareness, causes, identification and management of hearing loss. The survey was conducted in seven villages (Nalluru, Nagavalli, Kodimole, Chanadakavadi, Jyotigowdanapura, Hondarabalu and malledevanahalli) and two tribal localities (B R Hills and K Gudi) of chamarajanagar district. A total of 189 subjects participated in the study of which 147 were from rural and 42 from tribal population. There were 106 non educated participants, 33 participants with primary education, 31 with higher primary education, 8 with intermediate and 12 with graduation. Each correct answer was given a score of +1 and every incorrect answer was given a score of -1. The +1 score indicated positive knowledge and the -1 indicated the misconceptions that they had towards hearing loss and its associated conditions. Scoring was done separately for the categories awareness, causes, identification and rehabilitation of hearing loss. Results showed that there was a difference in performance of tribal population and rural population. The tribal region had poor knowledge on the awareness, causes, identification and rehabilitation of hearing loss as compared to the rural population. The educated population performed better than the non educated population. The degree of misconceptions were more with respect to rehabilitation of hearing loss as compared to other categories. As the age of the participants increased there was a reduction in

the performance. The elders had more number of misconceptions as compared to the younger groups. The younger age group had better awareness on hearing loss as compared to the older age group. Under the four categories of the questionnaire, the category rehabilitation of hearing loss gave the maximum negative score indicating poor knowledge on the management of hearing loss in rural and tribal population. There was no gender difference found across the various categories. There is a need for carrying out public education programs and screening programs for identification and rehabilitation of hearing loss in rural and tribal populations. These kinds of studies can be carried out in different rural and tribal areas.

The study also highlights the inclusion of anganavadi workers, social workers, nurses, auxiliary midwives and training them about the primary, secondary and tertiary prevention of hearing loss. The study also helps in seeking the funds from the government to educate the people about the awareness, causes, identification and rehabilitation of individuals with hearing impairment. Study also suggests in recommending the government for creating more job opportunities for various rehabilitation professionals in rural and tribal areas.

Suggestion for future research

- Similar studies on a large scale can be taken up, covering different populations in urban, rural and tribal areas.
- Study can be taken up to compare the different occupations, their attitude towards the hearing impaired individuals and their knowledge on the hearing loss.
- These kind of studies help in planning public awareness programs to educate the people about the primary, secondary and tertiary prevention of the hearing loss and its associated conditions.
- Similar studies can be carried out in different parts of the state or country to know their knowledge on hearing loss.

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APPENDIX I

Questionnaire used for the survey in Kannada

CT® "sÁgÀvÀ ªÁPĩ ±ÀæªÀt ÀA ÉÜ, ªÀiÁfÀ ÀUÀAUÉÆwæ, ªÉÄÊ ÀÆsgÀÄ

06

ºÉ,ÀgÀÄ: ªÀAiÀÄ,ÀÄi: ºAUÀ: UÀAqÀÄ/ºÉtÄÚ

²PÀët: GzÉÆãÀUÀ: ,ÀÜ¼À/«¼Á,À:

zÀÆgªªÁtÂ ,ÀASÉã:

ÀÆZÀfÉ: F PÉ¼ÀUÉ PÉªÀÄ ¥Àæ±ÉBUÀ½ªÉ. F ¥Àæ±ÉBUÀ¼ÄÄ ±ÀæªÀtzÉÆµÀzÀ CjªÀÄ, ±ÀæªÀt zÉÆµÀzÀ PÁgÀtUÀ¼ÄÄ, ±ÀæªÀtzÉÆµÀªÀfÀÄB UÀÄgÀÄw,ÄªªÀ §UÉ ºÁUÄÄ ±ÀæªÀtzÉÆµÀPÉÌ ¥ÀjºÁgÀUÀ¼ÄfÀÄB M¼AUÉÆArzÉ. ¥ÀæwÄ ¥Àæ±ÉBUÄÄ LzÄÄ GvÀÛgÀUÀ¼ÄfÀÄB PÉÆqÀ¯ÁVzÉ. ºªÄÄUÉ AiÀiÁªÀ GvÀÛgÀ ,ÀjAiÉÄAzÄÄ Cª,ÀÄvÀÛzÉAiÉÆ D GvÀÛgÀPÉÌ (√) JAzÄÄ UÀÄgÀÄvÄÄ ªÀiÁr. MAzÉÄ ¥Àæ±ÉBUÉ MAzÀQÌAvÀ ºÉZÄÄÑ GvÀÛgÀUÀ½gÀ§ºÄÄzÄÄ. EvÀgÉ JA§ eÁUzÀºè ºªÄÄUÉ w¼çgÀÄªª, ¥Àæ±ÉBUÉ ,ÀA§Açü¹zÀ «µÀAiÄÄUÀ¼ÄfÀÄB §gÉAiÄÄ§ºÄÄzÄÄ.

±ÀæªÀt zÉÆµÀzÀ §UÉÌ CjªÀÄ

1. QªÀÄqÀÄvÀfÀ JAzÀgÉÄfÀÄ?

- QªÀÄqÀÄvÀfÀªÉAzÀgÉ Q« ,ÉÆgÀÄªªÀzÀÄ
- Q« EªèçgÀÄªªzÀÄ
- Q« PÉÄ½,ÀzÉÄ EgÄªªªzÀÄ/ªÀiÁvÄÄ ªÁgÀzÉÄ EgÄªªªzÀÄ/ªÀiÁvÀfÀÄB CxÀªªÀiÁrPÉÆ¼ÀizÉÄ EgÄªªªzÀÄ
- ªÀAiÄÄ,ÀizÀªjUÉ §gÄªªÀ MAzÄÄ gÉÆÄUÀ
- EvÀgÉ

2. QªÀÄqÀ JAzÄÄ AiÀiÁgÀfÀÄB PÀgÉAiÄÄvÀÛgÉ?

- Q« PÉÄ½,ÀzÀªfÀÄ
- Q« PÉÄ½zÀgÀÆ ¥ÀæwQæ-Ä,ÀzÀªfÀÄ/ §ÄçY±ÀQÛ PÀrªÉÄ EgÄªªªzÀÄ
- Q« ,ÉÆgÀÄwÛgÀÄªªªªUÉ QªÀÄqÀ JfÀÄBªgÄÄ
- ,ÀjAiÀiÁVªÀiÁvÀfÀÄqÀzÀªfÀÄ

EvÀgÉ

3. Q^aÀÁqÀ ^aÀÄvÀÄÛ ^aÄÆUÀ JAzÀgÉ AiÀiÁgÀÄ?

- Q« PÉÄ½, ÄÄ^aÀÁç®è ^aÄvÀÄÛ ^aiÁvÀÆ §gÄÄ^aÀÁç®è
- Q« PÉÄ½, ÄÄvÀÛzÉ DzÀgÉ ^aiÁvÀ£ÁqÄÄ^aÀÁç®è
- C, Äà, ÄÖ^aÁV ^aiÁvÀ£ÁqÄÄ^aÀÁ£ÄÄ.
- zÀqÀØ/ ¥ÉzÀÝ/ §ÄçÝ E®èzÀ^a
- EvÀgÉ

4. Q« ,ÉÆÄgÄÄ^aÀÄzÄÄ JAzÀgÉÄ£ÄÄ?

- Q«-ÄAzÀ QÄ^aÀÁ §gÄÄ^aÀÄzÄÄ/ ÄÄgÄÄ §gÄÄ^aÀÄzÄÄ
- Q^aÀÁqÄUÄÄ^aÀ ^aÄÄ£ÄÆiZÄ£É
- Q«AiÄÄÄ ±ÄÄzÄP^aÁUÄÄ^aÀ MAzÄÄ QæAiÉÄ
- Q«AiÄÄ®è AiÄiÄ^aÀÄzÉÆÄ gÉÆÄUÄ«zÉ
- EvÀgÉ

5. ^aiÁvÄÄ ÄgÄzÄ^aÀ£Ä£ÄÄß PÄAqÄgÉ ÄÄÄUÉ K£ÄÄ, ÄÄvÄzÉ?

- CzÄÄ C^aÄgÄ vÄ-Ä vÄAzÉAiÄÄ ¥Ä¥Ä ¥ÄÄtå
- C^aÄÄUÉ Q^aÀÁqÄÄvÄ£Ä«gÄ§°ÄÄzÄÄ
- C^aÄ£ÄÄ ^aiÁvÄ£ÄÄß ,ÄjAiÄiÁV PÄ°w®è
- C^aÄ£ÄÄ zÀqÀØ/ ¥ÉzÀÝ/ §ÄçÝ ,Äj-Ä®è
- EvÀgÉ

6. ±Äæ^aÄt zÉÆµÄ^aÀÄ ,Ä^aiÁ£ÄÄ^aÁV AiÄiÁjUÉ §gÄÄvÄÛzÉ?

- PÉÄ^aÀ® ^aÄPÄi¼Ä®è
- PÉÄ^aÀ® ^aÄAiÄÄ, ÄizÄ^aÄgÄ®è
- AiÄiÁgÄÄ °ÉZÄÄÑ ^aiÁvÄ£ÄqÄÄvÄÛgÉÆ C^aÄjUÉ/ °ÉZÄÄÑ QgÄÄZÄÄvÄÛgÉÆ C^aÄjUÉ
- AiÄiÁgÄÄ °ÉZÄÄÑ PÉiÖ PÉ®,Ä/ ¥Ä¥Ä ^aiÁrgÄÄvÄÛgÉÆ C^aÄjUÉ
- EvÀgÉ

±Äæ^aÄt zÉÆµÄzÄ PÄgÄtUÄ¼ÄÄ

7. ^aÄÄUÄÄ«£Ä®è ^aiÁvÄÄ ^aÄÄvÄÄÛ ÄsÄµÉAiÄÄ vÉÆAzÀgÉ EzÄÝgÉ CzÄPÉi K£ÄÄ PÄgÄt«gÄ§°ÄÄzÄÄ?

- ^aÄÄUÄÄ«£Ä §ÄçüP±ÄQÜ PÄr^aÉÄ EgÄ§°ÄÄzÄÄ

16. ${}^a\text{ÄUÄ}\langle\text{f}\text{Ä}^\circ\text{è}\pm\text{Äæ}^a\text{ÄtzÉÆ}\tilde{\mu}\text{Ä}\langle\text{zÉAiÉÄ JAzÄÄ}^\circ\text{ÉÄUÉ}$
 $\text{UÄÄgÄÄw,ÄÄ}\langle\text{j}?$

- ${}^a\text{ÄUÄ}\langle\text{f}\text{Ä}^\circ\text{è}\pm\text{Ä}\text{ŠYzÄ PÄqÉUÉ wgÄÄUÄ}\langle\text{czÁYUÄ}$
- ${}^a\text{ÄiÄvÄ}\langle\text{fÄÄB PÄ}^\circ\text{AiÄ}\langle\text{czÁYUÄ}$
- $\pm\text{Äæ}^a\text{ÄtzÉÆ}\tilde{\mu}\text{Ä}^a\text{ÄfÄÄB UÄÄgÄÄw,Ä}\text{Ä}^\circ\text{Ä}^\circ\text{ÄzsÄÄ}\langle\text{R}\text{è}$
- $\text{PÉ}\text{Ä}^\circ\text{ÄÄ}^a\text{Ä}\mu\text{Ä}\delta\text{UÄ}\frac{1}{4}\text{ÄÄ PÄAiÄÄ}^\circ\text{ÉÄPÄÄ (GzÄ: 5}$
 ${}^a\text{Ä}\mu\text{Ä}\delta\text{UÄ}\frac{1}{4}\text{ÄÄ, 10}^a\text{Ä}\mu\text{Ä}\delta\text{UÄ}\frac{1}{4}\text{ÄÄ)$
- EvÄgÉ

17. ${}^a\text{ÄUÄ}\langle\text{f}\text{Ä}^\circ\text{è}\pm\text{Äæ}^a\text{ÄtzÉÆ}\tilde{\mu}\text{Ä}\langle\text{zÄYgÉ,}^a\text{ÄUÄ}\langle\text{f}\text{Ä}^\circ\text{è}$
 $\text{PÄÄqÄÄ}\langle\text{f}\text{Ä}^\circ\text{è}\text{Ä UÄÄtPÄëtUÄ}\frac{1}{4}\text{ÉÄfÄÄ}?$

- $\text{Q}\langle\text{Ä}^\circ\text{Ä}\text{ÄgÄÄ}^a\text{ÄzÄÄ}$
- $\text{ÄjAiÄiÄV}^a\text{ÄiÄvÄ}\langle\text{fÄqÄ}\langle\text{czgÄÄ}^a\text{ÄzÄÄ}$
- $\text{PÄ}\langle\text{EVzÄUÄ wgÄÄUÄ}\langle\text{czgÄÄ}^a\text{ÄzÄÄ}$
- $\pm\text{Ä}^\circ\text{ÉAiÄÄ}^\circ\text{è/}^a\text{Ä}\langle\text{fÉAiÄÄ}^\circ\text{è}^a\text{ÄiÄvÄ}\langle\text{fÄÄB}$
 $\text{CxÄ}\delta^a\text{ÄiÄrPÉ}\text{Ä}\frac{1}{4}\text{ÄizÉÄ EgÄÄ}^a\text{ÄzÄÄ}$
- EvÄgÉ

18. $\text{AiÄiÄ}^a\text{Ä}^a\text{ÄAiÄÄ}^\circ\text{ÄfÄ}^\circ\text{è}\pm\text{Äæ}^a\text{ÄtzÉÆ}\tilde{\mu}\text{Ä}^a\text{ÄfÄÄB}$
 $\text{UÄÄgÄÄw,Ä}\text{Ä}^\circ\text{ÄzÄÄ}?$

- ${}^\circ\text{ÄnÖzÄ vÄPÄët UÄÄgÄÄw,Ä}\text{Ä}^\circ\text{Ä}^\circ\text{ÄzsÄÄ/ 3 wAUÄ}\frac{1}{4}\text{Ä M}\frac{1}{4}\text{ÄUÉ}$
 $\text{UÄÄgÄÄw,Ä}\text{Ä}^\circ\text{ÄzÄÄ}$
- ${}^a\text{ÄUÄ}\langle\text{f}\text{Ä}^\circ\text{è}\pm\text{Ä}^\circ\text{ÉUÉ}^\circ\text{É}\text{ÄUÄ}\langle\text{f}\text{Ä}^\circ\text{è}\text{ÄUÄ}$
- ${}^a\text{ÄUÄ}\langle\text{f}\text{Ä}^\circ\text{è}\text{Ä}^a\text{ÄiÄvÄ}\langle\text{fÄqÄ}\text{Ä}^\circ\text{Ä}\pm\text{ÄÄgÄÄ}^a\text{ÄiÄrzÄUÄ/}^a\text{ÄAiÄÄ}^\circ\text{ÄUÉ}$
 $\text{vÄPÄiÄvÉ}^a\text{ÄvÄ}\langle\text{fÄqÄ}\langle\text{czÁYUÄ}$
- $\text{UÄÄgÄÄw,Ä}\text{Ä}^\circ\text{Ä}^\circ\text{ÄzsÄÄ}\langle\text{R}\text{è}({}^\circ\text{Ä}\text{Ä}^\circ\text{ÄÄ}^a\text{Ä}\mu\text{Ä}\delta\text{UÄ}\frac{1}{4}\text{ÄÄ}$
 $\text{PÄAiÄÄ}^\circ\text{ÉÄPÄÄ, GzÄ: 10}^a\text{Ä}\mu\text{Ä}\delta)$
- EvÄgÉ

19. $\pm\text{Äæ}^a\text{ÄtzÉÆ}\tilde{\mu}\text{Ä}\langle\text{gÄÄ}^a\text{Ä}^a\text{ÄQÜAiÄÄ}$
 $\text{zÄ}\text{ÄgÄÄUÄ}\frac{1}{4}\text{ÉÄfÄÄ/Ä}^a\text{ÄÄ,ÉÄUÄ}\frac{1}{4}\text{ÉÄfÄÄ}?$

- $\text{Q}\langle\text{ÄiÄÄ}^\circ\text{è PÄPÄ}\delta\mu\text{Ä}\pm\text{Ä}\text{ŠY PÉÄ}\frac{1}{4}\text{Ä}^a\text{ÄzÄÄ}$
- $\text{UÄzÄY}\text{Ä}^\circ\text{ÄÄ}^a\text{Ä}^\circ\text{ÄÄ}\text{ÄUÄ}\frac{1}{4}\text{Ä}^\circ\text{è PÉÄ}\frac{1}{2}\text{ÄPÉ}\text{Ä}\frac{1}{4}\text{ÄiÄ}\text{Ä}^\circ\text{Ä}$
 $\text{PÄ}\mu\text{ÄÖ}^a\text{ÄUÄ}\langle\text{f}\text{Ä}^\circ\text{è}\text{ÄzÄÄ/}^a\text{ÄiÄvÄÄ CxÄ}\delta^a\text{ÄUÄzÉÄ EgÄÄ}^a\text{ÄzÄÄ}$
- $\text{ÄEPÄ}\text{Ä}\text{Ä}^\circ\text{ÄiÄvÄÄUÄ}\frac{1}{4}\text{Ä}\langle\text{fÄÄB PÉÄ}\frac{1}{2}\text{ÄPÉ}\text{Ä}\frac{1}{4}\text{ÄÄ}^\circ\text{ÄÄzÄÄ}^\circ\text{è}$
 $\text{PÄ}\mu\text{ÄÖ}^a\text{ÄUÄ}\langle\text{f}\text{Ä}^\circ\text{è}\text{ÄzÄÄ}$
- $\text{eÉ}\text{ÄgÄzÄ}\pm\text{Ä}\text{ŠY}\text{ÄzÄ QjQjAiÄiÄUÄ}\langle\text{f}\text{Ä}^\circ\text{è}\text{ÄzÄÄ}$
- EvÄgÉ

- ªÄUÄ«UE ,ÁPÁðgÀzÀ ,Ë®"sÀaUÀ¼À£ÄÄB PÉÆr,À®Ä wÃªiÁð,ÄªªÀzÄÄ/ ¥É£Àêÿ/ªiÁ'PÀªÉvÀ£À**
- EvÀgÉ**

24. **ªÄUÄ«£À°è ±ÀæªÀtzÉÆµÀ«zÀÝgÉ, CAvÀªªÄUÄªÀ£ÄÄB "ÉÄgÉªÄPÀ¼ÀvÀgÀªªÄxÀðUEÆ½,ªªªÀzÄªª°ÉÄUE?**

- CªÀjUE eÉÆãwµÀªzÀªÄÆ®PÀ ¥Àj°ÁgÀªªqÀÄPÄªªÀzÄÄ**
- ±ÀæªÀt ,ÁzsÀ£À zsÀj,ªªªÀzÄªªªvÀÄÛªiÁw£ÀvÀgÀ"ÉÄw PÉÆr,ªªªÀzÄª**
- QªÀqÀ/ªÄÆUEgÀ ±Á¯ÉUE ,ÉÄj,ªªªÀzÄª**
- CªÀjUE ,ª°ÉBUÀ¼À£ÄÄB PÀ°,ªªªÀzÄª**
- EvÀgÉ**

25. **±ÀæªÀt,ÁzÀ£À JAzÀgÉÄ£Ä?**

- QªÀqÀgÀÄ zsÀj,ªªªÀ MAzÄÄ ,ÁzsÀ£À**
- CAUÀ«PÀ®gÀÄ zsÀj,ªªªÀzÄª**
- ,ÁPÁðgÀçAzÀ 'UÄªªÀ MAzÄÄ ,Ë®"sÀa**
- CzÀgÀ §UEÏ Cj«è**
- EvÀgÉ**

26. **±ÀæªÀt,ÁzÀ£Àª£ÄÄB zsÀj,ªªªÀªgÀ §UEÏªªª C©ü¥ÁæAiÄªªÉ£ÄÄ?**

- CªÀ£Äª J®ègÀAvÉªiÁvÀ£ÄÄB PÀ°AiÄª®Ä ,ÁzÀª**
- CªÀ£Äª CAUÀ«PÀ®/«PÀ®ZÉvÀ£À**
- CªÀªUEªiÁvÀª §gÀªªÀç®è/ªÄÆUE/ QªÀqÀ/PÉ¥Àª**
- CªÀ£Äª ,ªªiÁdPEÏ "ÉÄqÀªzÀª£ÄÄ/ CªÀªAzÀªtªªAiÄªªÁUÄªvÀÛzÉ**
- EvÀgÉ**

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QªÀqÀ CxÀªªªÄÆUE JA§ ¥AzÀUÀ¼À£ÄÄB G¥ÁAiÉÆV,ªªªÀzÄª ,ÀjAiÉÄ?

- OzÄÄ**
- E®è**

F J ¯Áè ¥Áæ±ÉÆBªvÀÛgÀUÀ¼Àªªª CªªPÉ C©ü¥ÁæAiÄªªUÀ¼À£ÄÄB E°è §gÉ¬Àj:

*****zsÀ£ÀâªÁzÀUÀ¼ÄÄ*****

APPENDIX II

ALL INDIA INSTITUTE OF SPEECH AND HEARING MANASAGANGOTRI,
 MYSORE 06

Questionnaire on Awareness, Misbeliefs and Unscientific practices in the area of
 hearing loss: A survey in rural and tribal population

Name:
 Gender:M/F

Age:

Education:
 Rural/Tribal

Occupation:

Locality:

Instructions: The following questionnaire contains few questions related to the area of hearing loss under four sections namely awareness on hearing loss, causes for hearing loss, identification of hearing loss and rehabilitation of hearing loss. Each questions are given with five choices. You are requested to put a (√) mark to the answer which you think is the correct answer. Every question may be marked with more than one answers.

Awareness on hearing loss

1. What is hearing loss?

- Same as ear discharge/ watery fluid from the ear
 - Absence of ear
 - Having difficulty in hearing/ speaking
 - Hearing loss is a disease which comes in elderly population
 - Others
2. Whom do you call a deaf?
- Those who cannot hear
 - Who hears but does not respond when called
 - For whom there is ear discharge
 - Those who cannot speak
 - Others
3. Whom do you call a deaf and dumb?
- One who cannot hear and speak
 - One who can hear but cannot speak
 - One whose speech is not clear/ intelligible
 - One with poor mental abilities
 - Others
4. What is ear discharge?
- Puss coming from the ear
 - Indication of hearing loss
 - Is the process of cleaning of ear naturally
 - Indication of ear disease
 - Others
5. What is your opinion about a person who cannot speak?
- It's the sin of their parents
 - He might have hearing loss
 - He has not learnt the language properly
 - His mental abilities are poor
 - Others
6. Generally who will get hearing loss?
- Hearing loss occurs only in children
 - Hearing loss occurs only in adults

- Those who speaks more
- For those who have done sins/ bad things
- Others

Causes of hearing loss

7. What can be the causes if the child has inadequate speech and language?
 - Child will learn language in the coming years
 - Child has problem in his mouth/tongue/voice
 - The child has difficulty in hearing/ hearing loss
 - He has not learnt the language properly
 - Others

8. What are the causes for the child born with hearing loss?
 - Because of the sin/bad deeds done by the parents or the child
 - Familial/ from the impaired parents
 - If any problem during the pregnancy of the mother
 - Mumps/ high fever
 - Others

9. What are the causes of hearing loss in adults?
 - Trauma to head/ear, wax in the ear
 - Hearing loss comes because of ageing
 - Side effects of medicine
 - Listening to loud sounds/ crackers/blasts
 - Others

10. What are the negative effects of having hearing loss?
 - Will face difficulty in social abilities
 - Will have difficulty in hearing and speaking
 - Will impair the proper development of the language
 - Will impair the education and job
 - Others

11. Are consanguineous marriages done in your community?
- Yes, consanguineous marriages are done in our community
 - No, consanguineous marriages are not done in our community
 - We will encourage sometimes
 - I am not aware of that
 - Others
12. If you are encouraging consanguineous marriages, then why?
- Blood relatives are more trustable
 - They are known to us since many years
 - This trend has come since many generations in our community
 - There is no reason for consanguineous marriages
 - Others
13. What are the negative effects of consanguineous marriages?
- The child will be born with physical/mental disabilities
 - Child can be born with hearing loss
 - There is no negative effect of consanguineous marriages
 - I am not aware of this
 - Others
14. According to you, at what age the hearing loss develops?
- Child can be born with hearing loss
 - Hearing loss occurs only in geriatrics
 - Hearing loss can come at any age
 - I am not aware of it
 - Others

Identification of hearing loss

15. How you will identify hearing loss in a child?
- When child doesn't turn towards the sound
 - When he doesn't learn the language adequately

- Hearing loss cannot be identified
- We have to wait few years to identify hearing loss
- Others

16. How will you confirm that your child is hearing normally?

- Teachers will identify it in the school
- At birth the child should undergo medical evaluations to confirm normal hearing
- We should notice whether the child is responding for the name call or other sounds
- When the child starts learning the language properly
- Others

17. What are the signs of hearing loss in children?

- Ear discharge
- Unclear speech and inadequate language
- Not responding to sounds
- Having difficulty in understanding in home/ school
- Others

18. At what age do you think the hearing loss can be detected?

- It is possible to detect immediately after the birth
- When child starts to attend school
- When child starts speaking/ learning language
- Hearing loss is not detectable
- Others

19. What are the complaints of a person with hearing loss?

- Noise / undesirable sound inside the ear
- Difficulty in understanding speech in noisy situations
- Difficulty in hearing soft sounds
- Sensitive to loud sounds/ irritation from loud sounds
- Others

Rehabilitation for hearing loss

20. What are your immediate steps when you suspect hearing loss in your child?

- Go to astrologer and seek solution
- Consult a doctor
- Wait for few years
- Seek suggestion from teachers/ elders
- Others

21. How you will accept a child with hearing loss?

- It's the sin of the parents/ they have to face it
- Take steps for rehabilitation of the child
- Assuming there is no solution for hearing loss
- Accepting the child positively
- Others

22. How you will treat ear discharge/ wax in the ear?

- Putting hot oil into the ear
- Try to clean it with pin/ needle/others objects
- Putting some ayurvedic medicine
- Consulting a doctor
- Others

23. How you will make a hearing impaired child competent with the world?

- Finds solutions through astrologer for the child's future
- Hearing aid fitting and training for speech and language
- Joining the child to deaf and dumb school
- Teaching him sign languages
- Others

24. What are the solutions for hearing loss?

- There is no solution for hearing loss
- Hearing aid
- Joining to deaf and dumb school
- Can be treated with medicine/ surgery
- Others

25. What is a hearing aid?

- It is an aid worn by hearing impaired individuals
- Aid worn by physically handicapped
- Hearing aid is a facility provided by government
- I am not aware of it
- Others

26. What is your opinion on a person wearing a hearing aid?

- He is a disabled/ physically challenged
- He is dumb/ cannot speak properly
- Deaf/ has difficulty in hearing
- He is not useful for the society/ cannot be competing with the world
- Others

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