Technical Facilities Available For The Speech And Hearing Handicapped In Hospitals In India-A Survey

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A Dissertation Submitted in Part Fulfilment
for the Degree of Master of Science
(Speech and Hearing)
University of Mysore
1 98 1

CERTIFICATE

This is to certify that this dissertation entitled "TECHNICAL FACILITIES AVAILABLE FOR THE SPEECH AND HEARING HANDICAPPED IN INDIA - A SURVEY"

is the bona fide work in part fulfilment for the degree of M.Sc. (Speech and Hearing), carrying 100 marks, of the student with Register Number 1.

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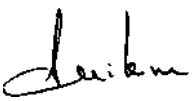
CERTIFICATE

This is to certify that this dissertation entitled "TECHNICAL FACILITIES AVAILABLE FOR THE SPEECH AND HEARING HANDICAPPED IN INDIA - A SURVEY" has been prepared under my guidance and supervision.



Dr. (Miss) SHAILAJA NIKAM
Guide.

DECLARATION

This dissertation is the results of my own study undertaken under the guidance of Dr.(Miss) Shailaja Nikam, Head of the Department of Audiology, All India Institute of Speech and Hearing, and has not been submitted earlier at any University for any other diploma or degree.

Mysore. REGISTER NUMBER 1.

ACKNOWLEDGEMENT

I wish to express my sincere thanks to Dr. (Miss) Shailaja Nikam, Professor and Head of the Department of Audiology, All India Institute of Speech and Hearing, Mysore for her invaluable guidance.

I also wish to acknowledge my greatfulness to Dr. N. Ratna, Director, All India Institute of Speech and Hearing, Mysore.

I wish to thank E.P. Balakrishna, T.A.Subba Rao, A.K. Sinha and Venugopal, M.Sc. students and Miss. Maharani and her classmates for helping me at various stages of this survey.

Finally, I express my thanks to all those who have returned the questionnaires duly filled.

CONTENTS

CHAPTER I

INTRODUCTION

The survey is a data collection method in which an instrument is used to solicit responses from a sample of respondents.(Nanlin 1976)

The survey instrument is not the specific method of any one social science. It is broadly applicable to the problems in many fields. Because of its capacity for wide application and broad coverage, the survey technique is found to be of great use in behavioral sciences.

The survey technique is used only when the desired information cannot be obtained more easily and economically from other sources. Because of its ability to cover large areas and many respondents the survey method has become the dominant method of data collection in social researches.

The versatality of the sample survey lies not only in the variety of populations to which it may be applied or in the choice of designs which are available but also in the broad scope of data which may be gathered.

Surveys vary greatly in their scope, their design and their content. As in any research, the specific characteristics of the survey will be determined by its basic

objectives. The statement of the essential questions which the researcher is intended to investigate the size and nature of the sample, the content and size of the questionnaire, the character of coding and the nature of the analysis. In survey technique, the data's are collected in many ways ranging from mail questionnaires to an in-depth personal interviews.

In other countries, many surveys have been done in the field of Speech and Hearing. Since the field of Speech and Hearing is well established, particularly in USA, as nearly all universities, colleges operate speech clinics, nearly all public schools and major hospitals employ Speech and Hearing personnel. In India, the field of Speech and Hearing still has to go a long way as such very few surveys have been done in this field to study its growth and other facilities. And also we do not have any data regarding the number of hospitals providing Speech and Hearing services.

At present very little is known of the nature and extent of Speech and Hearing disorders in India. It has been reported that about 5 per cent of our population is having Speech and Hearing disorders (Martin F. Palmer 1963) and majority have not received any kind of Speech and Hearing services due to lack of services and facilities available in hospitals. Therefore the profession in order to ensure further growth and to provide services to all Speech and Hearing impaired individuals, must draw the government

and voluntary organizations attention to start more Speech and Hearing Centres in general hospitals at various places. These authorities also must be informed about what are the facilities available at present for patient with Speech and Hearing disorders and what should be done to improve the existing and future clinics/centres to provide quality services to the handicapped people.

So far no attempt have been made to determine the current status of Speech Pathology and Audiology services in Hospitals in India. So the purpose of this study is to collect information about the personnels who are working in the field of Speech and Hearing in hospitals in India, their background, the nature of work, the availability of equipment and facilities at these centres and the department where these facilities are located.

NEED FOR THE STUDY

The present study will serve a variety of needs -

(1) The present study will help us to know the number of hospitals providing Speech Pathology and Audiology services as we do not have any information regarding the presence of Speech and Hearing professionals in the hospitals.

(2) The quality of the services to the handicaps depends upon both trained personnel and equipment. The trained personnel may be employed in hospitals but without any equipment or vice-versa. So their services cannot be used

effectively.

The quality of services not only depends upon the trained personnel and equipment but also upon technical facilities like, sound treated rooms, noise level in the rooms, facilities for calibration and/or servicing of equipment.

So the present study will help in collecting the information regarding the professionals, equipment and technical facilities available in hospitals and whether they are adequate or not to meet the growing demand of the patients.

(3) As it was reported by Balakrishna (1978) that Speech Pathologist and Audiologist also take part in administrative work of their department. But he has not studied the nature of administrative work they were doing. So this topic will be elaborated in the present study.

(4) One of the most important issues which we want to study is the promotional avenues open to Speech Pathologists and/or Audiologists working in hospitals. As such we do not have any information on this issue.

(5) High level manpower is a resource whose supply can be increased only by investment in education. Investment in education is worthwhile if the persons trained are

employed gainfully, that is, the ratio of supply of man-power and job opportunities are equal. Educated unemployment reflect wasteful investment in human resource development (Devarajan 1963).

From this study we can identify the additional need of manpower required to meet the demand. So that steps might be taken to increase the professional manpower to meet the growing demand.

(6) As one of the first survey in the field of Speech and Hearing was done by Kapur (1966) on "Personnel, Equipment and Technical facilities in hospitals in India" and after this, further study has not been done to study the future growth of Speech and Hearing Profession. As re-evaluations must be made to assure adequate future growth of the profession. The result of the present study will be compared with Kapur's (1966) study, to study how far the field of Speech and Hearing has developed after 15 years in India.

(7) Regarding equipment, we also wants to know what kind of Speech and Hearing equipment are manufactured in India and what kind of Speech and Hearing equipment we import. Whether these manufacturers provide servicing and/or calibration facilities.

The information was collected from the general

hospitals, which includes teaching and non-teaching hospitals, about the following -

(1) The availability of Speech and Hearing services in hospitals.

(2) Professional qualifications of these personnels.

(3) To identify promotional avenues (if any) available to Speech Pathologists/Audiologists working in hospitals.

(4) Nature of their duties.

(5) Nature of their administrative work.

(6) Availability of diagnostic and rehabilitation equipment and technical facilities in the hospitals.

(7) To collect information from Indian manufacturers, on the type of equipment they manufacture and from the representative of foreign companies in India, on the type of equipment they have supplied to different hospitals in Speech and Hearing field.

CHAPTER II

REVIEW OF LITERATURE

The emergence of Speech Pathology and Audiology from the some what incidental partime efforts of persons representing a wide variety of educational and clinical back-grounds to full and independent professional status is a comparatively recent development. Indeed only within the last half century has it been possible for a person to confine his scientific training and professional activity to remedial work with disorders of communication.

In India, the development of Speech and Hearing field is a very recent one as it is only 15 years old. This field was started with the Health Surveys and Planning Committee's (Mudaliar 1961) report that there were inadequate facilities for hearing evaluation and rehabilitation of communicatively handicapped in India. The committee also indicated the need for development of training facilities for Audiologist and Speech Pathologist. The importance of indigenous manufacture of diagnostic and rehabilitation equipment and improving the facilities for diagnosis and treatment of patient's with communication disorders was stressed.

It was in 1965 when one of the first training centre, All India Institute of Speech and Hearing, Mysore, was established to provide graduate and post-graduate training in the field of Speech and Hearing. At Bombay, T.N. Medical College and B.Y.L. Nair Hospital is providing graduate training course in Audiology and Speech Therapy since 1966. A Diploma course in clinical technique (Audiometry) was started in New Delhi at A.I.I.M.S. In 1972, B.M. Institute of Mental Health, Ahmedabad started a graduate course in Speech and Hearing and now in 1976, Post-graduate Institute of Medical Education and Research, Chandigarh has started a graduate course in Speech and Hearing.

This shows that now-a-days there has been anincreased recognition of the need to provide services to patients with Speech and Hearing disorders in India. As more and more Speech and Hearing Centres are being established in hospitals, rehabilitation centres, schools for special education. To meet the demand of professionally trained personnel in these centres, number of training institutions to provide professional training in Speech and Hearing field are also on increase.

At the beginning of this field, a survey was conducted by Kapur in 1966 to study personnel, equipment and technical facilities in the field of Speech and Hearing in

hospitals in India. The objectives of the survey were -

(1) To know the availability of facilities such as sound treated rooms, facilities for calibration of audiometers and facilities for making custom ear moulds.

(2) To know the number of diagnostic and therapeutic instruments such as audiometers, hearing aids and speech trainers, used in hospitals, and

(3) To know the utilization and distribution of technical personnel involved in Speech and Hearing profession.

The results of the survey indicated that out of 69 teaching hospitals, 31 non-teaching and 32 private E.N.T. clinics, only 5 teaching hospitals and 2 private clinics had qualified Speech Pathologist and 4 teaching hospitals, one non-teaching hospital and one private clinic had trained Audiometrist in the department but 12 teaching hospitals had Audiometrist who had learnt audiometry by practice. This shows the lack of trained professionals in hospitals at that time.

Regarding the equipment, out of 69 teaching hospitals, 9 hospitals did not have any audiometer, 28 teaching hospitals had one audiometer each. As a whole, 69 teaching hospitals had 104 audiometers, and 45 teaching hospitals did not have any facilities for audiological evaluation. Further, the study indicated that only 8 teaching

hospitals had Speech therapy equipment. As this study reveals that there was such a great need of Speech Pathologists and/or Audiologists and facilities to provide Speech and Hearing services to the needed people. But how far we have succeeded in this way we do not know.

1974 Annual Survey of the American Hospitals Association indicates that there are only 1387 U.S. hospitals offering Speech Pathology services.

Howell J.A. (1978) has done a survey in Australia on Facilities and Needs Survey to clarify the distribution of Speech Pathology services, type of clinics, clinicial facilities and requirement and various aspects of education and student training. The results indicated that 58% of clinics were located in capital cities and 27% in non-capital cities. Regarding the adequacy of clinical facilities, Speech Pathologists have reported that 11% had excellent facilities, 58.5% adequate, 28% partly adequate and 7.5% had inadequate facilities.

SURVEY IN THE FIELD OF SPEECH AND HEARING

One of the first survey was the survey of public school Speech and Hearing Services (Research Committee of the American Speech and Hearing Association 1961). The purpose of the project was three fold -

(1) To identify the important technical and professional

procedures in the field of Speech and Hearing.

(2) To provide authoritative information to administrators and supervisors of Speech and Hearing about current practices in the public schools.

(3) To evaluate the significance of problems and to specify which of these can be solved by modern methods of research.

The information was collected through the questionnaires regarding clinical practice, program organization and management, professional training, administrators and supervisors.

The data were analyzed interms of age range of the personnel, sex distribution, salary range, educational qualification and the age range of client being served in the school system.

This survey had indicated the need to have more professionally trained personnel and also to improve training facilities for the specialists.

MANPOWER RESOURCES

Curlee (1975) had studied the manpower resources in Speech Pathology and Audiology with the following objectives -

(1) To describe the demographic and professional

characteristics of the Speech Pathology and Audiology work force and those students currently in training.

(2) To identify current manpower utilization in Speech Pathology and Audiology.

(3) To estimate the need of additional Speech Pathologist in the area of teaching, research and client care through 1985.

(4) To specify those manpower resources or needs that require additional study and analysis, and

(5) To recommend appropriate goals for meeting the needs of the communicatively handicapped and to suggest means for meeting the needs of the communicatively handicapped and to suggest means for meeting those goals.

The questionnaires were sent to both members and non-members of ASHA. The return rate was 62% for ASHA members, 35% for non-members and 40% for students.

He found that 86% of the non-members of ASHA were females and their main age was 29.3 years compared to 32.2 years of the regular members of ASHA.

In general, ASHA members had higher educational qualifications than non-members. A majority, 85% of non-members were employed in elementary and secondary schools compared to only 36% of the ASHA members.

In terms of professional goals more students intend to specialize in Speech Pathology and Language and Language Pathology was the second most popular profession. However, trainees at doctoral level preferred Audiology.

A similar study on distribution and utilization of manpower resources in the field of Speech and Hearing in India was done by Balakrishna (1978).

The results indicated that the professionals in this field were found to be of younger age group, the mean age being 29.2 years, and majority of professionals were males having M.Sc. degree in Speech and Hearing.

In terms of employment set-up, a large number of Speech Pathologists and Audiologists were in private sector or in central government services employed in medical institutions and Speech and Hearing clinics. Next in order was schools for special education.

On the other hand, in USA the largest number of Speech Pathology services were found to be in non-governmental not-for-profit hospitals. The Speech Pathology services were usually either autonomous departments or were located in department of rehabilitation medicine and 27.3% of Speech and Hearing Centres were located in hospitals with 500 beds or more. Fifty nine per cent of the hospitals reported that they employed one to four audiologists either in

full time or part time services (Strand berg 1977). However, the author have not reported the number of hospitals providing audiology services.

NATURE OF DUTIES

Most of the authors reported that the Speech Pathologists and Audiologists were involved in a variety of duties in connection with their professional work. Curlee (1975) in a work force survey had identified eight different professional activities. These eight activities were then collapsed into one of three primary functions - clinical services, teaching or research, and he took this as a base for estimating the number of full time equivalent clinicians, the number of full time equivalent teachers and number of full time equivalent researchers will be needed by the end of 1985. He found that 80% of the current Speech Pathology and Audiology work force is directed to meet clinical needs, 15% to meet teaching needs and 5% to meet research needs.

In clinical service, the work force was directed towards - prevention, identification, evaluation and treatment. It was indicated that presently available manpower is not sufficient to meet the needs of clinical service, research and training.

Muma et al (1976), in a survey had indicated that senior faculty and clinical staff members rated primary

departmental function as teaching, clinical service and research were regarded as secondary and tertiary functions. However, some notable differences were found in the ranking of clinical service and research activities as viewed by faculty of Master's degree programs and faculty of doctoral degree programs. These differences were attributed to the differences in perceived functions between and Master's degree and Doctoral degree programs. The administrative work was regarded as subordinate to training, clinical service and research.

As this study was restricted to only training institutions, they have not reported the departmental functions in other employment set ups because the departmental functions mainly depends upon the employment set up and services.

Balakrishna (1978) had included the following categories in studying the nature of work in Speech and Hearing Centres - teaching in professional colleges/universities, teaching in schools for special education, clinical work, research work and administrative work. He reported that clinical work, research and teaching work were their main duties. Regarding administrative work, both M.Sc.'s and B.Sc.'s were involved more or less equally. But the author did not study the nature of administrative work they were involved in.

Howell (1978) had reported that 71% of Speech

Pathologist have indicated that they have not received adequate training in clinic administration during their training programme. The author recommended that training institutions should also include training in clinic administration at their under graduate level.

NEED FOR ADDITIONAL MANPOWER AND EQUIPMENT

In a survey, Curlee (1975) studied additional manpower need, he asked to clinic directors "how many more full time persons do you need right now who either possess or have completed the academic requirements for a C.C.C. from ASHA in Speech Pathology." A similar question was asked for Audiologists also. Here the mean number of clinicians needed is based only on those programs reporting that they need additional personnel. The findings of 1968 and 1972 surveys were compared and found that the need for additional Speech Pathologist and Audiologist was reduced in 1972 for each type of clinical service facilities. However the expressed need for additional audiologist was substantially lower than for additional Speech Pathologist in terms of both number of individuals needed.

They also studied the relationship between expression of need for additional Speech Pathologist and Audiologist and employment opportunities, for this, clinic directors were asked "how many additional full time Speech Pathologist and Audiologist can you financially support right now".

Results indicated that financial support was available for about 15% of the expressed need for Speech Pathologist and 10% for Audiologist. But there is no relationship between the clinical service needs of the communicatively handicapped and job opportunities (Curlee 1975).

Howell (1978) had reported that 66% of the clinics needed additional professional staff to manage the then current case load. The author also indicated the need of supportive personnels to enable the Speech Pathologist to spend the majority of their time in the work for which they were trained as they were often carrying out some clerical work in their daily duties. 60% of the clinics indicated the need for additional equipment. Even Kapur (1966) had reported that 51 teaching hospitals needed new audiometers.

The need for additional professional staff demands the future planning by employing authorities includes evaluation of the communities need for Speech Pathology services and where indicated create new positions even if personnels are not immediately available to fill these posts. (Howell J.A. 1978). But it will result in filling these posts by untrained personnels or the posts will be left vacant for years together. Otherwise the number of trainees in the training institutions must be increased to meet the growing demand for professionals. At the same

time job opportunities should not be taken as the only criteria for demand.

The following suggestions were made by Curlee (1975) to meet the manpower need -

(1) A comprehensive service manpower planning, placement system for Speech Pathologists and Audiologists should be created.

(2) An effective system of continuing education should be created to assist in the maintenance of clinical competency for individuals whose pattern of unemployment restrict their professional and informational growth.

(3) Many comprehensive studies should be undertaken as soon as possible to establish the prevalence of communication disorders, and

(4) An increase in research work force.

CHAPTER III

METHODOLOGY

The survey was designed to investigate the technical facilities available for the Speech and Hearing handicapped in hospitals in India.

The data were obtained through questionnaire, which was mailed directly to the respondents.

FORMATION OF QUESTIONNAIRES

Two types of questionnaires were prepared to collect the information from various hospitals and manufacturers of Speech and Hearing equipment in India.

(1) Questionnaire - A:

The questionnaire - A was designed to collect the information from hospitals in India (See Appendix - 'A'). The questions were framed by the investigator to collect information on general information about the hospital, personnel and their professional qualifications, their pay - scales and promotional avenues, nature of duties, nature of administrative work, technical facilities, equipment and additional need of professionals and equipment. This

questionnaire was destributed to staff and post-graduate students of Speech and Hearing to collect their comments so as to reduce the ambiguity of the questions. After making further modifications in the questions, a final questionnaire was prepared which consisted of 23 questions. For answering questions, instructions were provided for each question.

(2) Questionnaire - B:

The questionnaire - B was prepared to collect the information from the manufacturers of Speech and Hearing equipment in India. A similar procedure was followed in preparing the questionnaire B as for questionnaire - A. The questions were framed by the investigator to collect the information regarding the type of Speech and Hearing equipment manufactured in India, and the type of foreign equipment imported and the facilities for calibration and/or servicing of these equipment. This questionnaire consisted of 14 questions (See Appendix - 'B').

COVERING LETTER

A covering letter was attached to all the questionnaires in which the purpose of the study, the person conducting it, the confidentiality of the information provided by the respondents and the importance of the respondent's

returning the completed questionnaire was stressed. Each questionnaire was identified by a code number. This information was printed on the first page of the questionnaire.

SELECTION OF RESPONDENTS

A total of 275 hospitals were selected for the present study. The criteria for the selection of hospitals was the bed strength, that is, a hospital having a bed strength of 200 or more were included in the present study. Since this criterian included most of the district hospitals and teaching hospitals in India. Hospitals for T.B., mental illness, etc. were excluded. No sampling control was used.

Hospital addresses were collected from the Directory of Hospitals in India (1978 ed.) as per 1975 survey of Hospitals in India. Questionnaire - A was mailed to either Head of ENT Department or Medical Superintendent of the Hospital.

A total of 29 manufactureres and representatives of the foreign company which manufacture Speech and Hearing equipment were selected for the present study. The addresses of these manufacturers were collected from various sources. Questionnaire - B was mailed to the managers of the Industry/Company.

MAILING PROCEDURE

A total of 304 questionnaires were dispatched to all the hospitals and manufacturers in India. A self addressed stamped envelope was also enclosed with the questionnaires for the convenience of each respondent and for prompt return of the questionnaires. After receiving the duly filled questionnaire from the respondents, an acknowledgement was sent immediately.

FOLLOW-UPS

After 3 weeks of dispatch of the questionnaires, a reminder was sent to those people who failed to return the completed questionnaires.

A second follow up was sent 3 weeks later requesting them to return the filled questionnaire immediately as it was needed for the completion of the project.

DATA PROCESSING

Questionnaires, on receipt were received and categorized according to the type of the questionnaire.

Data were separately tabulated for each type of question and were analyzed in terms of teaching and non-teaching hospitals.

CHAPTER IV

RESULTS

The result of the survey are presented in this chapter. In tabular form the number and the percentages calculated are given.

A total of 275 questionnaire - A was dispatched to different hospitals and 29 manufacturers of Speech and Hearing equipment were sent questionnaire - B. The percentage of return for questionnaire - A was 40.4% (N=111) and for questionnaire - B it was 58.6% (N=17). These figures are shown in Table 1.

TABLE 1

Number of questionnaires mailed and response received

Questionnaire	Number Mailed	Number Returned	Percentage
Questionnaire-A	275	111	40.4%
Questionnaire-B	29	17	58.6%

The state-wise distribution and number and percentage of return for questionnaire - 'A' is also shown

in table 2.

TABLE 2

Number of questionnaires mailed and response received from different States of India.

States	Number Mailed	Returned No	Returned %
Andhra Pradesh	21	6	28.6%
Assam	6	2	33.3%
Bihar	18	7	38.9%
Delhi	11	7	63.6%
Gujarat	13	5	38.5%
Hariyana	4	2	50.0%
Himachal Pradesh	1	1	100.0%
Jammu and Kashmir	2	2	100.0%
Karnataka	25	10	40.0%
Kerala	22	12	54.5%
Maharastra	33	13	39.4%
Madhya Pradesh	12	2	16.7%
Orissa	4	3	75.0%
Punjab	9	4	44.4%
Rajasthan	10	2	20.0%
Tamil Nadu	25	10	40.0%
Uttar Pradesh	22	9	40.9%
West Bengal	32	11	34.4%
Union Teritories (Goa, Meghalaya and Nagaland)	5	3	60.0%
TOTAL	275	111	40.4%

In table 3, the distribution of the responses from teaching and non-teaching hospitals according to hospital's

governing body and the bed strength in the two types of hospitals is shown. It may be seen from table 3, that the percentage of return was 57.7% (N=64) for the teaching hospitals, and 42.3% (N=47) for the non-teaching hospitals. It may also be seen from Table 3 that the bed strength in teaching hospitals is greater than it is in the non-teaching hospitals. In the latter, bed strength is generally below 700 and bed strength of 1,000 and above is more common in the teaching hospitals.

The percentage of return from the state government hospitals was maximum, 66.6% as compared to other hospitals such as those under the central government, quasi-government, run by voluntary organizations, missionaries and private. The number and percentage of return for each category and with respect to hospital bed strength are also presented in table 3. (See fig. number 1).

In table 4, the distribution of teaching hospitals according to the level of training provided is shown. It may be seen that out of 64 teaching hospitals 32.8% (N=21) dealt with training of the undergraduates only, 15.6% (N=10) provided post-graduate training and 51.6% (N=33) provided training at both under-graduate and post-graduate levels. From table 4, it may also be seen that hospitals providing under-graduate training were approximately equally distributed with respect to bed strength, ranging from 200 to

TABLE 3 : SHOWING THE DISTRIBUTION OP HOSPITALS WITH RESPECT TO GOVERNING BODY, WHETHER TEACHING/NON-TEACHING AND THEIR BED STRENGTH

Governing Body / Bed Strength		Central Government		Autonomous body		State Government		Quasi Government		Voluntary Organ.		Missionary		Private		Total	
		T	NT	T	NT	T	NT	T	NT	T	NT	T	NT	T	NT	T	NT
00-299	No.		1			1	10						2		3	1	16
	%		0.9%			0.9%	9.0%						1.8%		2.7%	0.9%	14.4%
00-399	No.		1			2	6						1	1	1	3	9
	%		0.9%			1.8%	5.4%						0.9%	0.9%	0.9%	2.7%	8.1%
00-499	No.	1	2			3	4				1		1	1	1	5	9
	%	0.9%	1.8%			2.7%	3.6%				0.9%		0.9%	0.9%	0.9%	4.5%	8,1%
00_599	No.		1			4	1		1					2		6	3
	%		0.9%			3.6%	0.9%		0.9%					1.8%		5.4%	2.7%
00-699	No.	1				4	2	1								6	2
	%	0.9%				3.6%	1.8%	0.9%								5.4%	1.8%
00-799	No.	1				7						1				9	
	%	0.9%				6.3%						0.9%				8.1%	
00-899	No.			1		3		1								5	
	%			0.9%		2.7%		0.9%								4.5%	
00-999	No.	1		1		3								1		6	
	%	0.9%		0.9%		2.7%								0.9%		5.4%	
000 and bove	No.	2				10	1	2						1		15	1
	%	1.8%				9.0%	0.9%	1.8%						0.9%		13.5%	0.9%
lot pecified	No.		1			8	5						1			8	7
	%		0.9%			7.2%	4.5%						0.9%			7.3%	6.3%
otal	No.	6	6	2		45	29	4	1		1	1	5	6	5	64	47
	%	5.4%	5.4%	1.8%		40.5%	26.1%	3.6%	0.9%		0.9%	0.9%	4.5%	5.4%	4.5%	57.7%	42.3%

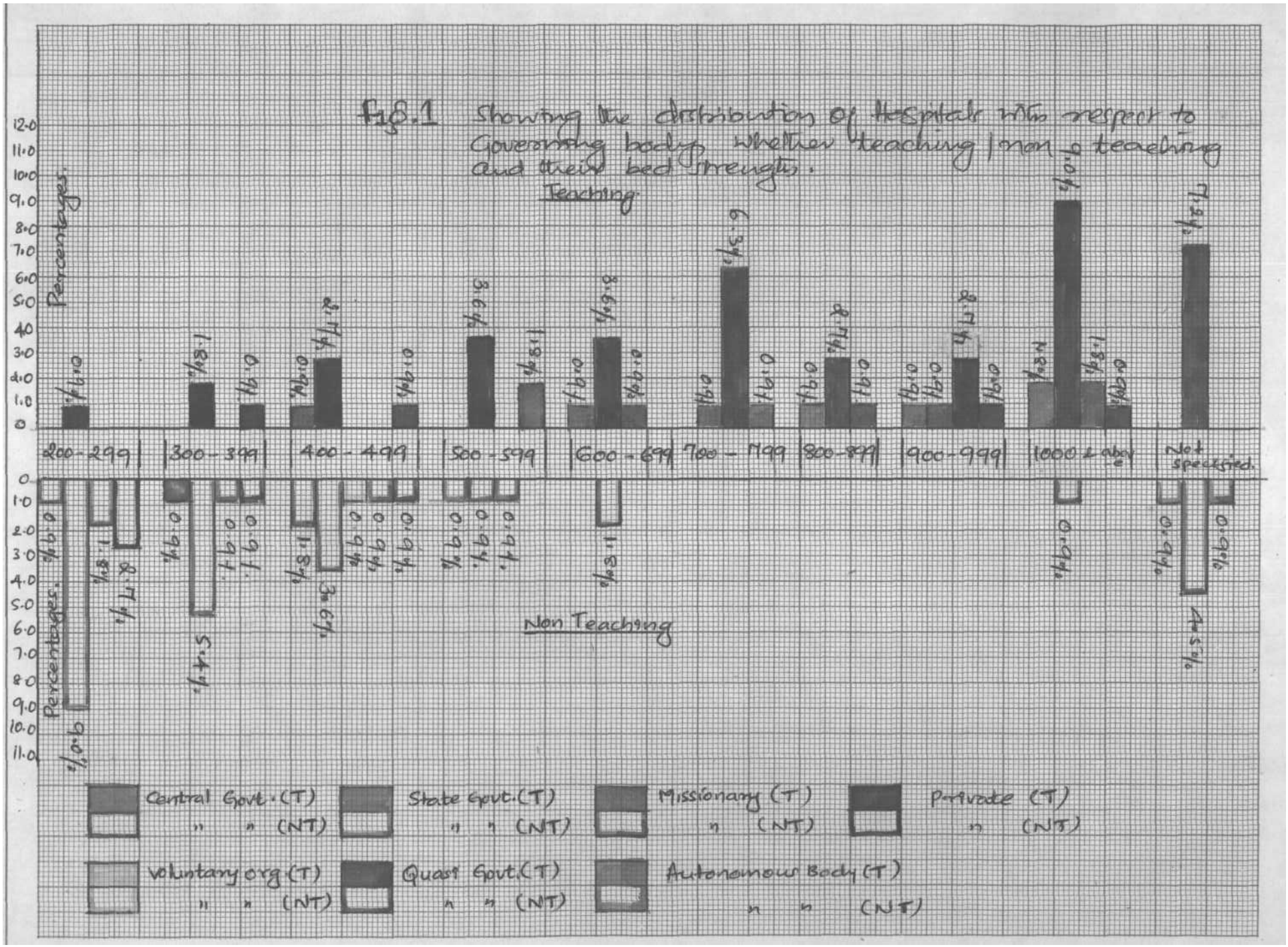


Fig.1 Showing the distribution of Hospitals with respect to Governing body, whether teaching / non teaching and their bed strengths.
Teaching
Percentages
Non Teaching
200 - 299
300 - 399
400 - 499
500 - 599
600 - 699
700 - 799
800 - 899
900 - 999
1000 & above
Not specified.
Central Govt. (T)
" " (NT)
State Govt. (T)
" " (NT)
Missionary (T)
" (NT)
Private (T)
" (NT)
Voluntary org (T)
" " (NT)
Quasi Govt. (T)
" " (NT)
Autonomous Body (T)
" " (NT)

1,000 whereas hospitals training both under-graduates and post-graduates had bed strength of 500 and above.

TABLE 4

Showing level of teaching offered in hospitals as related to their bed strength.

Bed strength.	Under-graduates only.	Post-graduates only.			Under-graduates and Post-graduates		
		DLO	MS/MD	Both	DLO	MS/MD	Both
200-299	1	-	-	-	-	-	—
300-399	3	-	-	-	-	-	-
400-499	4	-	1	-	-	-	-
500-599	2	-	-	-	1	-	3
600-699	2	1	-	1	1	-	1
700-799	2	-	-	-	-	5	2
800-899	3	-	-	1	-	-	1
900-999	2	-	1	-	-	-	-
1000 and above	-	-		3	1	-	11
Not given	2	-	-	2	1	-	3
TOTAL No.	21	1	2	7	3	6	24
TOTAL %	32.8%	1.6%	3.1%^	10.9%	4.7%	9.4%	37.5%

SPEECH AND HEARING SERVICES

The number of hospitals providing Speech Pathology and/or Audiology services are given in Table 5. It may be seen

TABLE 5 : SHOWING DISTRIBUTION OF SPEECH PATHOLOGY AND/OR AUDIOLOGY SERVICES AVAILABLE IN HOSPITALS

Governing Body / Bed Strength		Central Government		Autonomous body		State Government		Quasi Government		Voluntary Organ.		Missionary		Private		Total	
		T	NT	T	NT	T	NT	T	NT	T	NT	T	NT	T	NT	T	NT
200-299	No.														2		2
	%														1.8%		1.8%
300-399	No.					1									1	1	1
	%					0.9%									0.9%	0.9%	0.9%
400-499	No.					2								1		3	
	%					1.8%								0.9%		2.7%	
500-599	No.		1						1					2		2	2
	%		0.9%						0.9%					1.8%		1.8%	1.8%
600-699	No.					1		1								2	
	%					0.9%		0.9%								1.8%	
700-799	No.	1				3						1				5	
	%	0.9%				2.7%						0.9%				4.5%	
800-899	No.			1				1								2	
	%			0.9%				0.9%								1.8%	
900-999	No.	1		1		1										3	
	%	0.9%		0.9%		0.9%										2.7%	
1000 and above	No.	2				7	1	2						1		12	
	%	1.8%				6.3%	0.9%	1.8%						0.9%		10.8%	0.
Not Specified	No.					6										6	
	%					5.4%										5.4%	
Total	No.	4	1	2		21	1	4	1			1		4	3	36	
	%		0.9%	1.8%		18.9%	0.9%	3.6%	0.9%	=		0.9%		3.6%	2.7%	32.4%	5

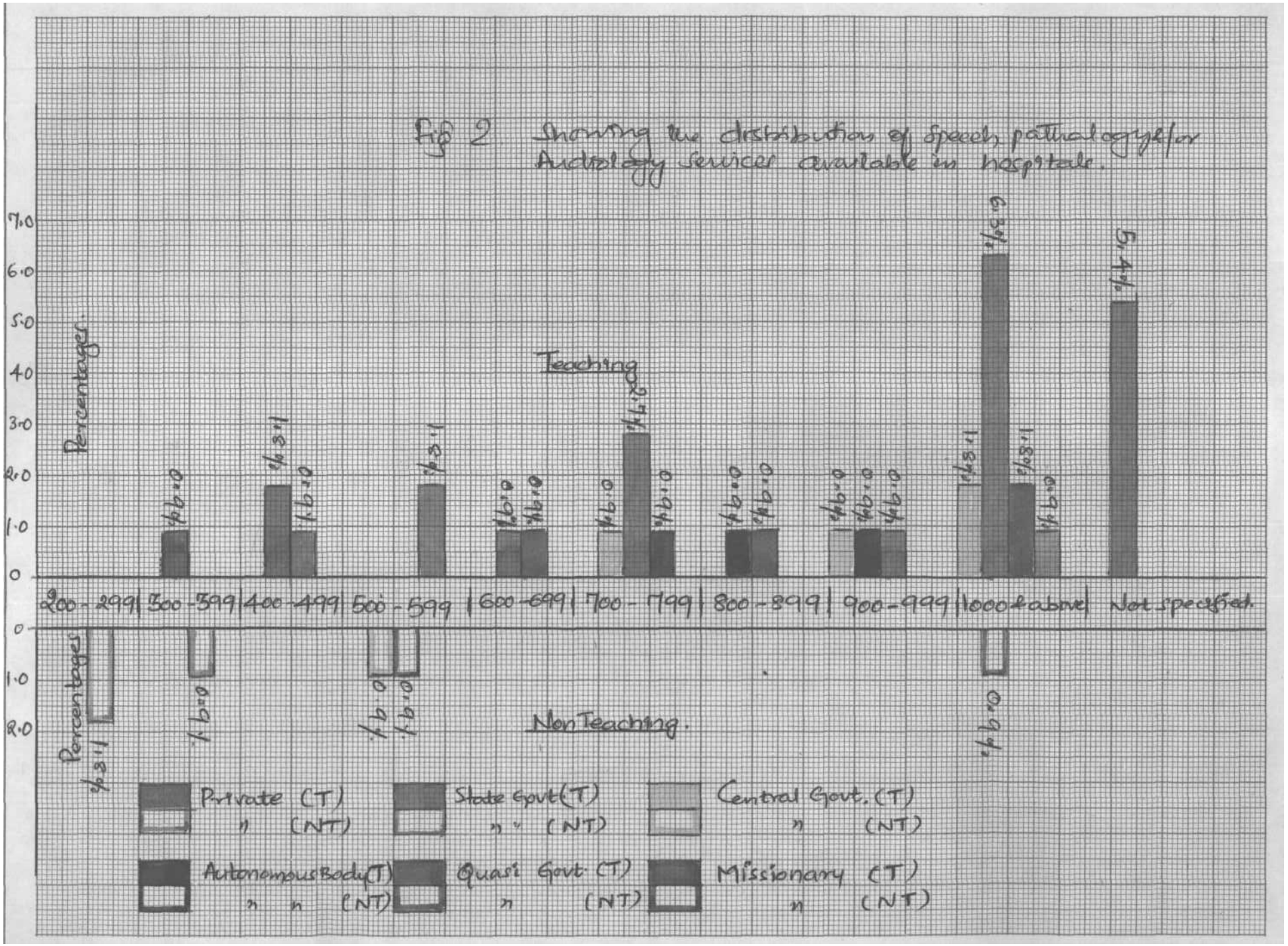


Fig 2 Showing the distribution of speech, pathology & Audiology services available in hospitals.
Percentages
Teaching
Non Teaching.
200-299
300-399
400-499
500-599
600-699
700-799
800-899
900-999
1000 & above
Not specified
Private (T)
" (NT)
State Govt (T)
" " (NT)
Central Govt. (T)
" (NT)
Autonomous Body (T)
" " (NT)
Quasi Govt. (T)
" (NT)
Missionary (T)
" (NT)

that 37.8% (N=42) of the total number of hospitals made Speech and Hearing services available. This number is inclusive of those hospitals where the positions were vacant at the time of reporting. Of the 42 hospitals, 36 were located in teaching hospitals and only 6in non-teaching hospitals. It may be further seen that 30.9% (N=13) Speech and Hearing services were located in hospitals having bed strength of 1,000 and above. In other ranges the Speech and Hearing services were found to be equally distributed.

Speech and Hearing services were found to be more in number in the state government hospitals (52.4%, N=22). Next in order were private hospitals, central government hospitals and quasi-government hospitals. (See fig. No.2).

In terms of distribution among the various departments of the hospital, 78.6% (N=33) of the Speech and Hearing services were part of the ENT Department; 16.7% (N=7) of them were independent department; and 4.8% (N=2) of them were located in departments such as plastic surgery and burns.

Table 6 shows the nature of employment of the Speech Pathologist and/or Audiologist working in hospitals, it may be seen that there were 49 Speech Pathologists/Audiologists with professional degree/diploma and 2 tuitors without any

professional qualifications, working in various hospitals. Forty two (82.4%) of these were in teaching hospitals. Further it may be seen from table 6 that 70.6% (N=36) were working full-time, 21.7% (N=11) on part-time basis and 7.8% (N=4) as honorary staff (See fig. No.3). It was also found that 35.7% (N=15) hospitals had the services of more than one Speech Pathologists and/or Audiologists.

TABLE 6

Showing the nature of employment of the Speech Pathologists/ Audiologists in hospitals.

Type of Hospital	Full-time services.		Part-time services.		Honorary	
	No.	%.	No.	%.	No.	%.
Teaching Hospitals	33	64.7%	5	9.9%	4	7.8%
Non-teaching Hospitals	3	5.9%	6	11.8%	-	-
Total	36	70.6%	11	21.7%	4	7.8%

PROFESSIONAL QUALIFICATION

The data presented in table 7 shows that more number of Speech Pathologists and Audiologists with an under-graduate degree in Speech and Hearing were employed in hospitals. Thus, 47% (N $\pm$ 24) of the Speech Pathologists/Audiologists in

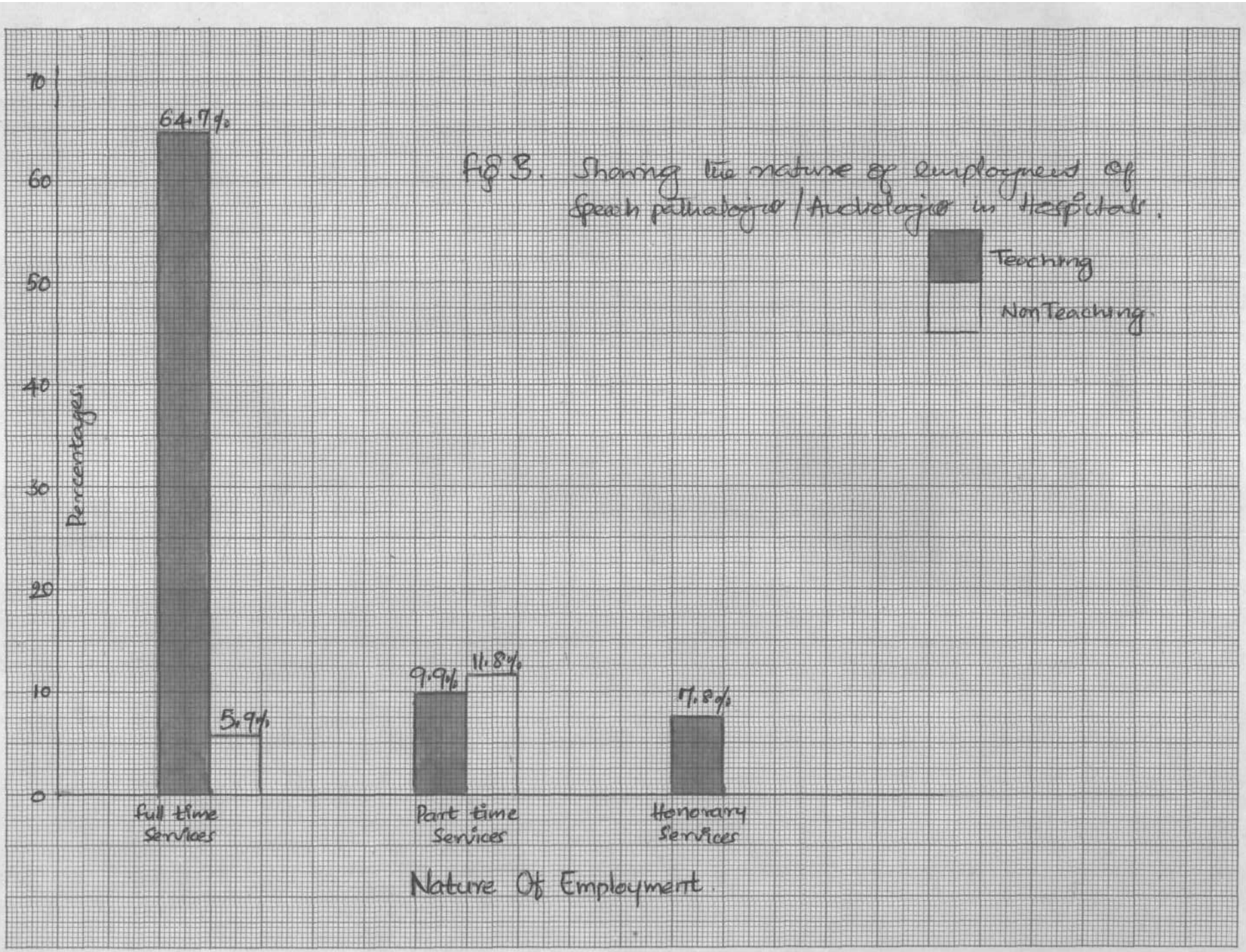


Fig 3. Showing the nature of employment of Speech pathologist / Audiologist in Hospitals.

hospitals had B.Sc. degree in Speech and Hearing whereas 35.3% (N=18) of those working in hospitals had M.Sc. degree in Speech and Hearing.

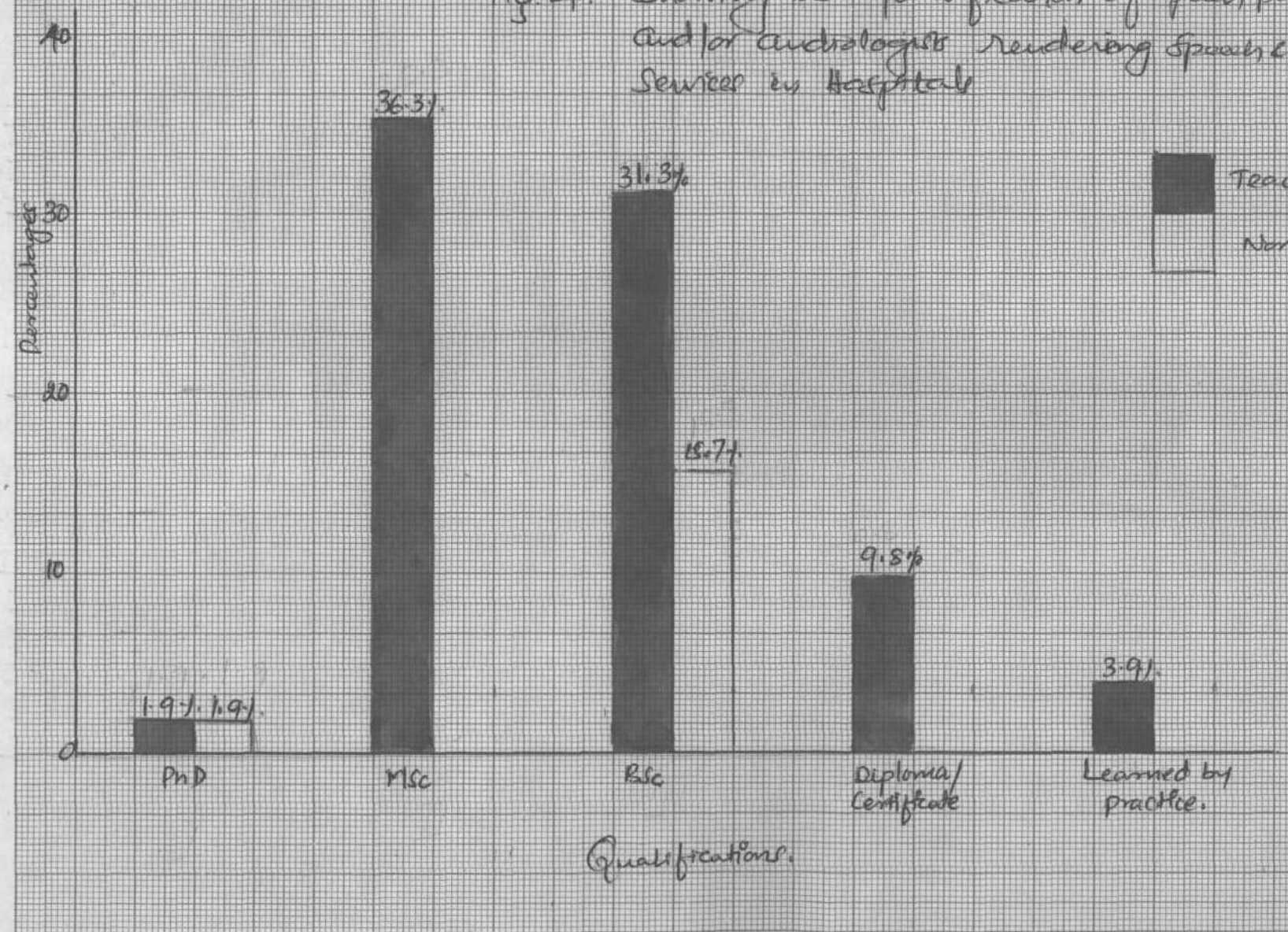
TABLE 7

Showing the qualification of Speech Pathologists and/or Audiologists rendering Speech and Hearing services in Hospitals.

Qualification of Professionals	Number of Hospitals				TOTAL	
	Teaching hospitals		Non-teaching Hospitals			
	No.	%.	No.	%.	No.	%
Ph.D. (Sp & Hg)	1	1.9%	1	1.9%	2	3.9%
M.Sc. (Sp & Hg)	18	35.3%	--		18	35.3%
B.Sc. (Sp & Hg)	16	31.3%	8	15.7%	24	47.0%
Diploma/Certificate (Audiometry)	5	9.8%	—	—	5	9.8%
Learnt by Practice	2	3.9%	-		2	3.9%
TOTAL	42	82.2%	9	17.6%	51	100.0%

With respect to distribution between teaching and non-teaching hospitals, it was found that a slightly higher number (19) of post-graduate degree holders including Ph.D. were in teaching hospitals as compared to under-graduate degree holders (N=16). None of the M.Sc. degree holders were working in non-teaching hospitals. Eight Speech Pathologists

Fig 4. Showing the qualification of Speech pathologists and/or audiologists rendering Speech & hearing Services in Hospitals



and/or Audiologists with B.Sc. degree were employed in non-teaching hospitals. It seems that the same person with Ph.D. degree was working at two different hospitals. Diploma/Certificate holders and two tuitors who had learned audiometry but had no professional qualifications were also reported to be working in teaching hospitals (See fig. Number 4).

PAY SCALES

There was a wide variation in the basic pay scales of both post-graduate and under-graduate degree holders. For those with M.Sc. degree, the basic pay was found to range from Rs.350/- to Rs.910/- per month. For the B.Sc. degree holders, the range was from Rs.230/- to Rs. 650/-. For diploma/certificate holders, the pay scale varied from Rs.350/- to Rs.425/-. For two tuitors with no professional qualification, the pay scales were not mentioned.

PROMOTIONAL AVENUES

Promotional avenues were reported to be nil for the Speech and Hearing graduates employed in hospitals. A few, however, reported that they could become Associate Professor or Professor in future, though it was not by promotion, but by direct recruitment.

ADMINISTRATIVE WORK

In table 8, the particulars of the administrative duties performed by the Speech Pathologists and/or Audiologists in hospitals is given.

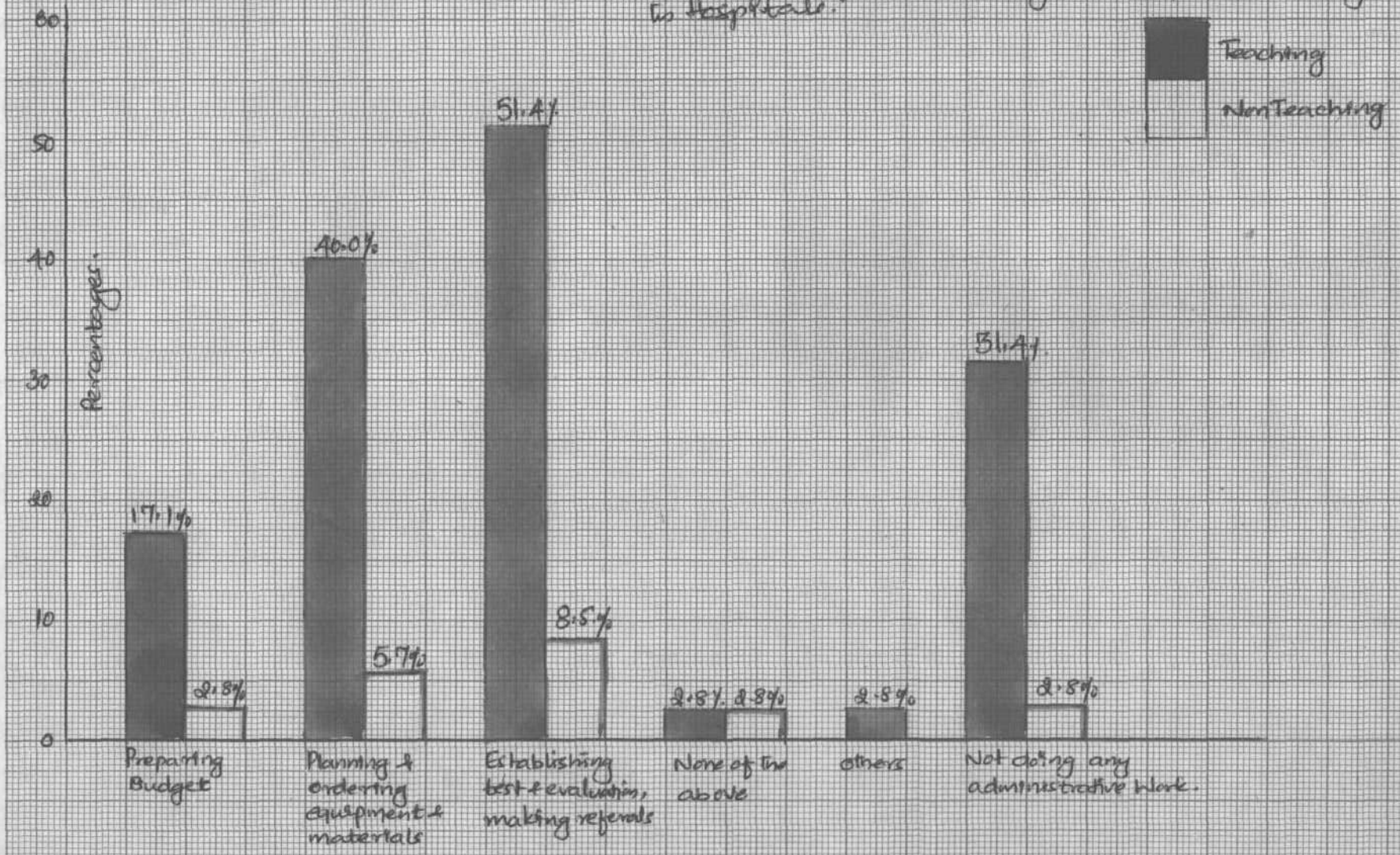
TABLE 8

Showing nature of administrative work done by Speech Pathologists/Audiologists in hospitals.

Nature of Administrative Work.	Type of Hospital.				TOTAL	
	Teaching hospitals		Non-teaching hospitals			
	No.	%	No	%	NO.	%.
Preparing Budget	6	17.1%	1	2.8%	7	20.0%
Planning and ordering equipment and materials	14	40.0%	2	5.7%	16	45.7%
Establishing Test and evaluation, making referrals	18	51.4%	3	8.5%	21	60.0%
None of the above	1	2.8%	1	2.8%	2	5.7%
Others	1	2.8%	-	-	1	2.8%
Not doing any administrative work	11	31.4%	1	2.8%	12	34.3%

The data shows that only 65.7% (N=23) of the Speech Pathologists and/or Audiologists reported that they were involved in administrative work. Sixty per cent reported of being involved in establishing test procedures, doing

Fig. 5. Showing the nature of administrative work done by speech pathologist and/or Audiologists in Hospitals.



Nature Of Administrative Work.

evaluations and making further referrals for evaluations. Next in order was (45.7%) planning and ordering for purchase of equipment and material for the Department. Twenty per - cent were involved in preparation of budget. In preparing new schemes and holding seminars, 2.8% of them were involved (See fig. No. 5).

In relating the professional qualification with the nature of administrative work as presented in table 9, it was found that more number of M.Sc. graduates were involved in planning and ordering equipment and materials.

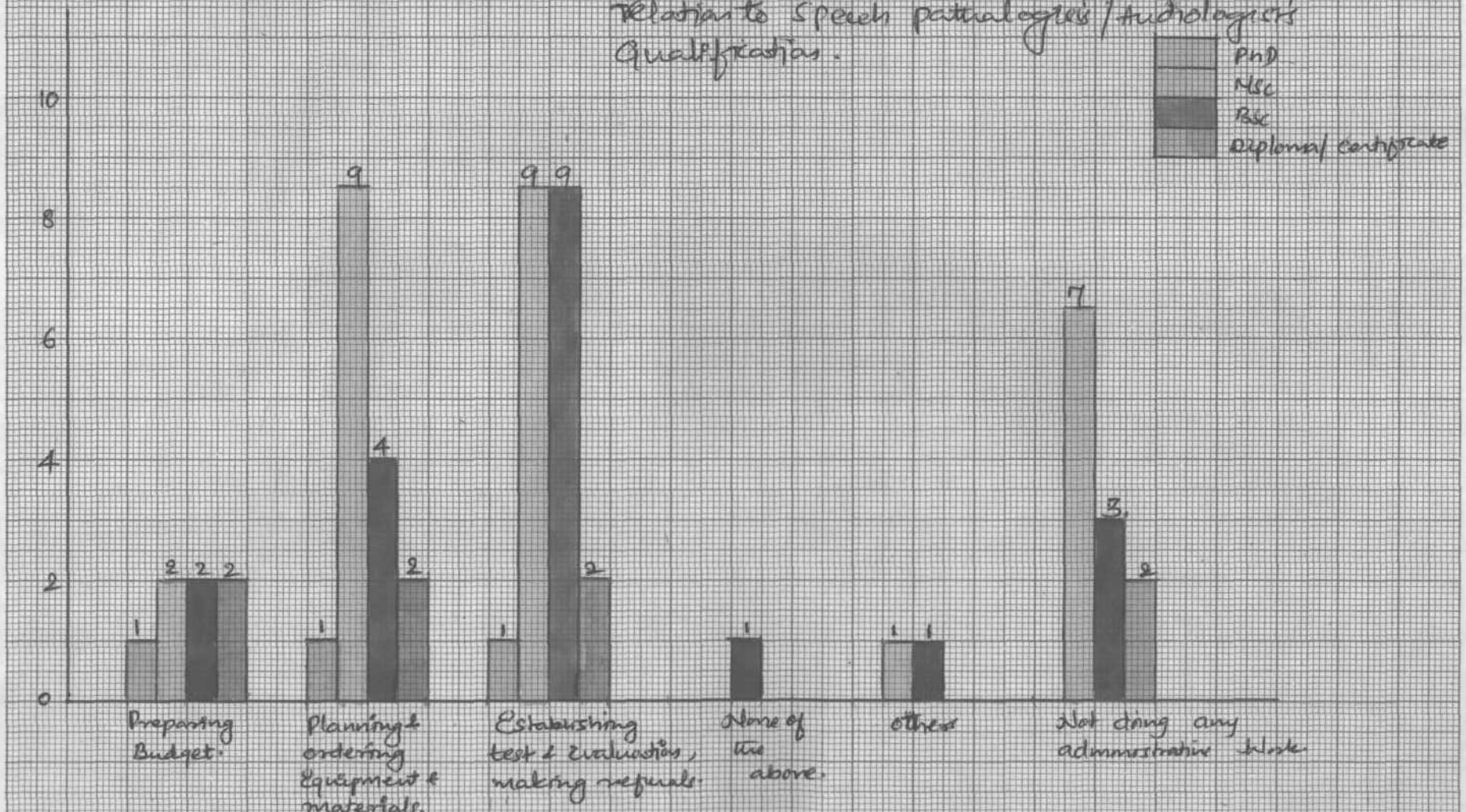
TABLE 9

Showing the nature of administrative work done in relation to Speech Pathologists/Audiologists qualification

Type of Administrative work.	Ph.D.	M.Sc.	B.Sc.	Diploma/ Certificate
Preparing Budget	1	2	2	2
Planning and ordering equip- ment and materials	1	9	4	2
Establishing test and evalua- tion, making referrals	1	9	9	2
None of the above	-	-	1	-
Others	-	1	1	-
Not doing any administra- tive work	-	7	3	2

Apart from this, not much differences in administrative

Fig. 6. Nature of administrative work done in relation to Speech pathologists / audiologists Qualifications.



Nature of Administrative work.

work performed by the two groups was found. It is also shown in figure number 6.

NATURE OF DUTIES

The data analyzed in this category is presented in table 10. It may be seen that in both teaching and non-teaching hospitals, the Speech Pathologists and/or Audiologists were equally involved in diagnostic and habilitation/rehabilitation work.

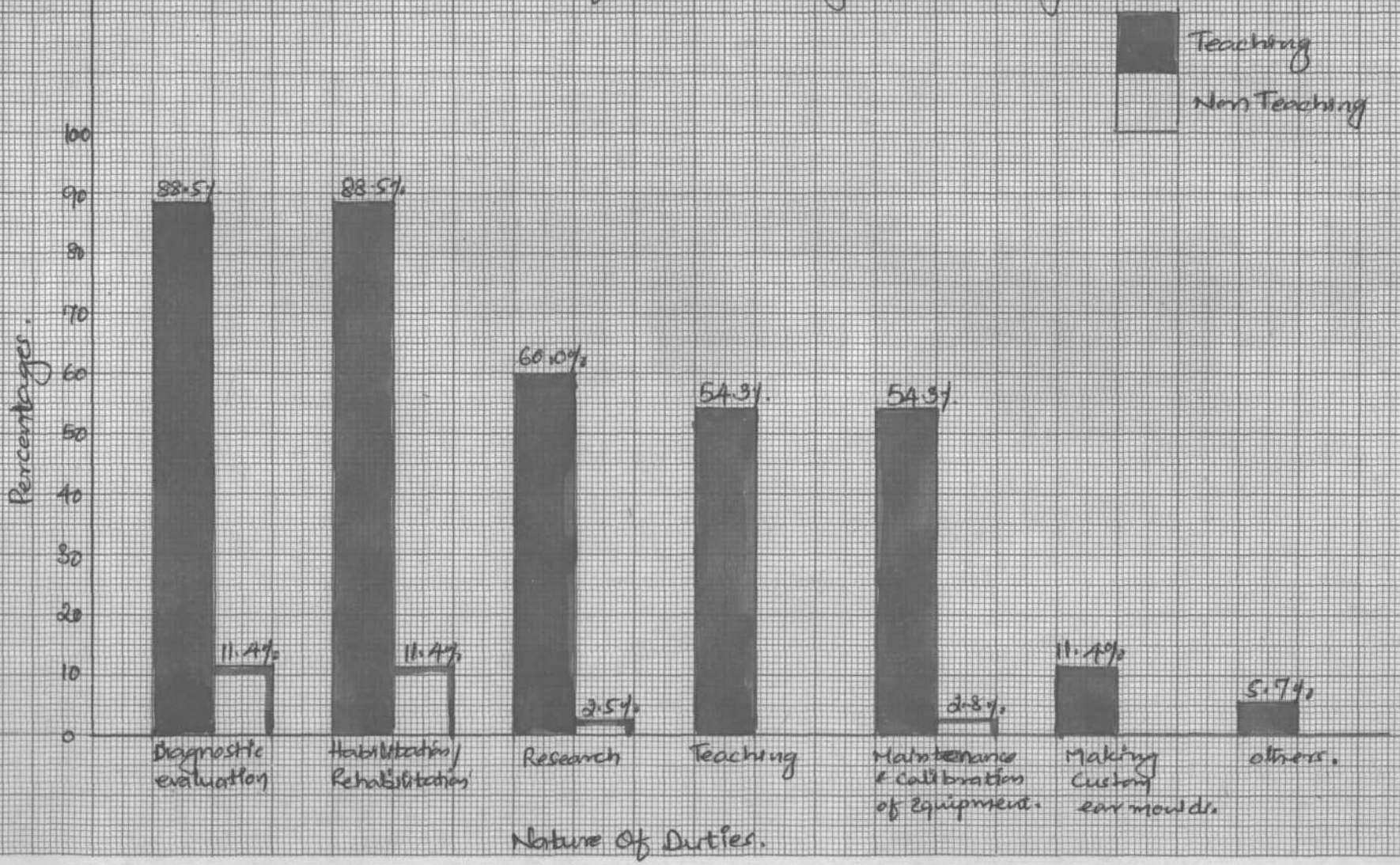
TABLE 10

Distribution of Nature of Duties of Speech Pathologists/ Audiologists in hospitals.

Nature of Duties	Type of Hospitals				TOTAL	
	Teaching hospitals		Non-teaching hospitals			
	No.	%	No.	%	No.	%
Diagnostic evaluation	31	88.5%	4	11.4%	35	100.0%
Habilitation/rehabilitation	31	88.5%	4	11.4%	35	100.0%
Research	21	60.0%	1	2.8%	22	62.9%
Teaching	19	54.3%	--		19	54.3%
Maintenance and Calibration of equipment	19	54.3%	1	2.8%	20	57.1%
Making custom ear moulds	4	11.4%	- -		4	11.4%
Others	2	5.7%	--		2	5.7%

Research work (62.9%), maintenance and calibration of equipment (57.1%), teaching work (54.3%) and making custom

Fig. 7. Showing the distributions of nature of duties of Speech pathologist / Audiologists in Hospitals.



ear moulds (11.4%) were next in order. Taking part in organizing camps, school Speech and Hearing screening programmes were reported in 'Other' category by 5.7% of the Speech Pathologists and/or Audiologists. Figure 7 shows the distribution of nature of duties.

EQUIPMENT

The various types of diagnostic rehabilitation and calibration equipment as used in the field of Speech and Hearing in hospitals are given in table 11.

TABLE 11

Showing the number and type of instruments available for Speech and Hearing purposes.

Type of Instrument.	Indigenous	Foreign	Total
Pure Tone Audiometer	22	24	46
Clinical Audiometer	68	6	74
Impedance Audiometer	1	11	12
Bekesy Audiometer	- -	2	2
E.R.A.	-	1	1
P.G.S.R.	—	1	1
Peep show unit	2	-	2
Pediatric reactometer	1	—	1
Hearing aids (Body type)	116	14	130
Ear level aids	-	3	3
Group Hearing aids	9	—	9
Individual Speech Trainers	15	—	15

Continued . .

Table 11 - continued

1.	2	3	4
Tape Recorder	17	2	19
Record Player	4	-	4
Metronome	1	-	1
Stammer Suppressor	-	1	1
Shock aversion Apparatus	-	2	2
DAF Phonic Mirror	-	1	1
A F Oscillator	1	-	1
Induction loop	1	-	1
Sound level meter	-	2	2
Artificial ear	—	1	1

Table 12 shows the distribution of number of Audiometers in various hospitals.

Table 13 shows the distribution of number of hospitals having diagnostic equipment, rehabilitation equipment and calibration equipment.

Both indigenous and foreign equipment were found in use. Under diagnostic equipment, 46 pure tone audiometers (22 indigenous and 24 foreign) and 74 clinical audiometers (68 indigenous and 6 foreign) were found to be used only in 54% (N=60) of the hospitals (47 teaching and 13 non-teaching hospitals). Of this, 18.9% had only one audiometer, 20.7% had two audiometers and the remaining 34.4% of the hospitals

had atleast three audiometers in a hospital. One hospital was reported to have six audiometers. (See fig. No.8). Facilities for free-field audiometry and speech audiometry were available in only 5.4% and 2.7% of the hospitals respectively.

TABLE 12

Showing the number of audiometers available in hospitals

Number of Audiometers	Type of Hospitals				TOTAL	
	Teaching hospitals		Non-teaching hospitals			
	No.	%	No.	%	No.	%
0	17	26.6%	34	72.3%	51	45.9%
1	13	20.3%	8	17.2%	21	18.9%
2	20	31.2%	3	6.4%	23	20.7%
3	10	15.6%	2	4.3%	12	10.8%
4	2	3.1%	--		2	1.8%
5	1	1.6%		--	1	0.9%
6	1	1.6%	--		1	0.9%

There were 10.8% (N=12) of the hospitals (11 teaching and 1 non-teaching) having one each impedance audiometer (11 foreign and 1 indigenous). The other kinds of diagnostic equipment in the hospitals were Bekesy audiometer, Evoked response audiometer, PGSR, Peep show unit and pediatric reactometer.

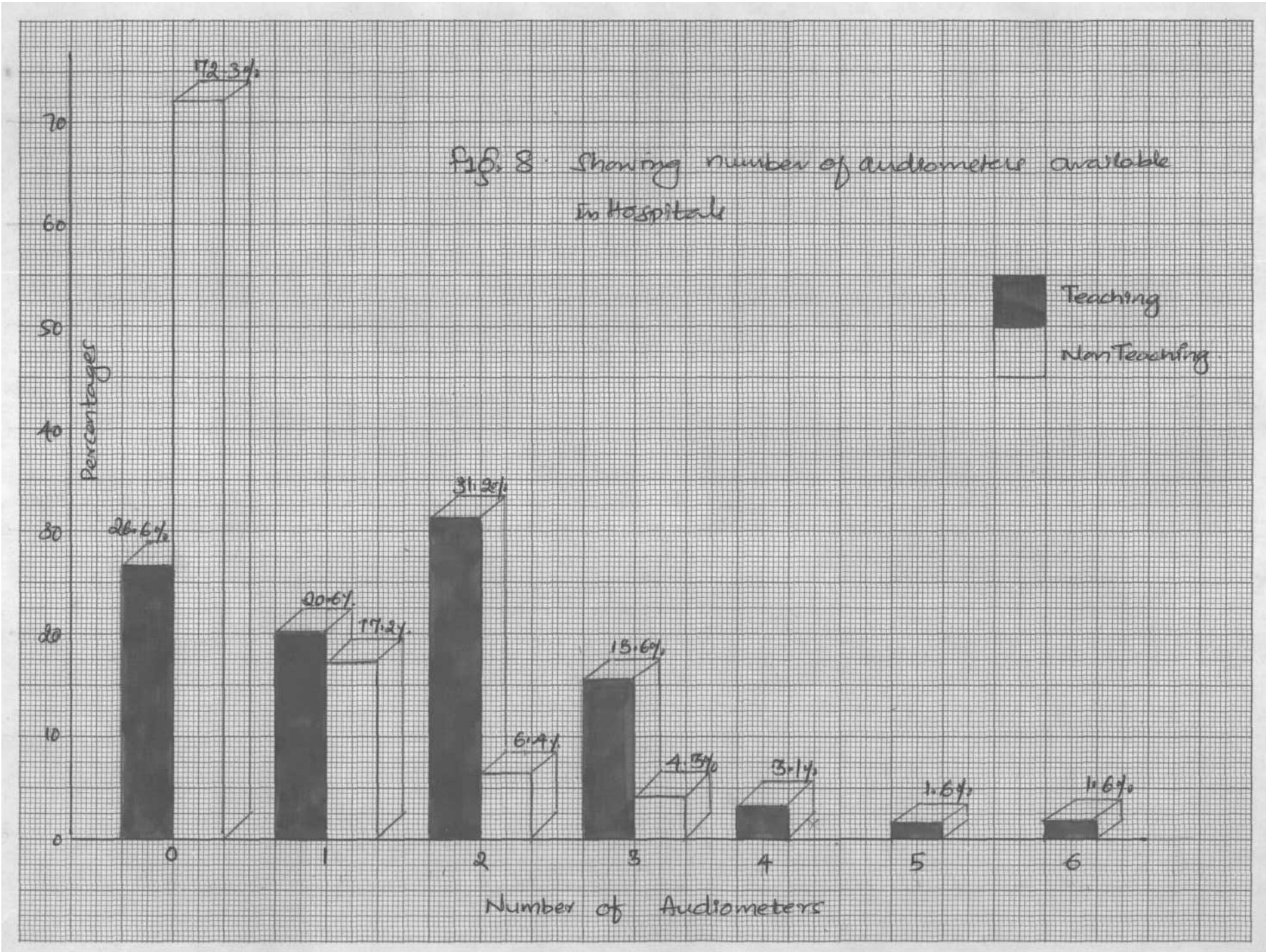


Fig. 8 Showing number of audiometers available in Hospitals
Teaching
Non Teaching
Percentages
0
10
20
30
40
50
60
70
26.6%
72.3%
20.6%
19.2%
31.2%
6.4%
15.6%
4.3%
3.1%
1.6%
1.6%
0
1
2
3
4
5
6
Number of Audiometers

TABLE 13

Showing the number of hospitals having Diagnostic Equipment, Rehabilitation Equipment and Calibration Equipment for Speech and Hearing purposes.

Type of Diagnostic Equipment	Type of Hospitals		TOTAL	
	Teaching hospital	Non-teaching. hospital	No.	%
Audiometers	47	13	60	54.0%
Impedance audiometers	11	1	12	10.8%
Bekesy Audiometers	2	-	2	1.8%
Evoked response audiometers	1	-	1	0.9%
Facilities for free-field audiometry	6	-	6	5.4%
Facilities for Speech audiometry	3	-	3	2.7%
Peep show, reactometer	3	1	4	3.6%
Hearing aids (individual)	28	10	38	34.2%
Individual speech Trainers	8	6	14	12.6%
Group hearing aids	7	1	8	7.2%
Tape Recorders	10	2	12	10.8%
Record players	3	1	4	3.6%
Metronome	1	-	1	0.9%
Stammer Suppressor	1	-	1	0.9%
Shock aversion apperatus	1	1	2	1.8%
Phonic Mirror	1	-	1	0.9%
A F Oscillator	1	-	1	0.9%
Induction Loop	1	4	1	0.9%
Sound level meter	2	-	2	1.8%
Artificial ear	1	—	1	0.9%

Of the rehabilitation equipment, the teaching hospitals had more in number and variety of rehabilitation equipment than non-teaching hospitals. The table shows that 34.2% (N=38) of the hospitals (28 teaching and 10 non-teaching) had a total of 130 body type hearing aids, 10.8% (N=12) of hospitals (10 teaching and 2 non-teaching) had 19 tape recorders, 12.6% of hospitals (8 teaching and 6 non-teaching) had 15 individual speech trainer, 7.2% of hospitals (7 teaching and 1 non-teaching) had 9 group hearing aids and 3.6% of hospitals had 4 record players. The other rehabilitation equipment in use were metronome, shock aversion apperatus, D.A.F. Phonic mirror, induction loop and A F oscillator.

Under calibration equipment, there were 2 sound level meters and 1 artificial ear, all imported, in 2 hospitals.

In performance of diagnostic equipment as viewed by respondents is given in Table 14. It was indicated that out of 46 pure tone audiometers, 23 audiometers were in working conditions and had satisfactory performance. However, there were 5 audiometers in working condition but its performance was not satisfactory and 18 audiometers were not in working condition. Similarly, of 74 clinical audiometers, 50 were in working condition and had satisfactory performance and 17 of them were not in working condition.

TABLE 14

Performance of diagnostic equipment

Diagnostic equipment.	PERFORMANCE		
	Satisfactory and in working condition.	Not satisfactory and in working condition.	Not in working condition.
Pure tone audiometers	23	5	18
Clinical audiometers	50	7	17
Impedance audiometers	11	-	1
Bekesy audiometers	2	-	-
Evoked response audiometer	1	-	—
Facilities for free-field audiometry	6	-	-
Facilities for speech audiometry	3	-	-
Others	3	-	1

Out of 12 impedance audiometers 11 were in working condition and had satisfactory performance but one Indian made impedance audiometer was not working. Other diagnostic equipment as listed were in working condition and had satisfactory performance.

The equipment which were not working due to lack of spare parts are given in the table 15. As the table shows

there were 18 pure tone audiometers, 13 clinical audiometers, 8 individual hearing aids and one impedance audiometer, sound level meter and group hearing aids, not in working condition due to lack of spare parts.

TABLE 15

Showing the number of equipment not working due to lack of spare parts.

Type of Equipment	Number of Equipment No.	%
Pure tone audiometers	18	39.1%
Clinical audiometers	13	17.5%
Impedance audiometers	1	8.3%
Sound level meter	1	50.0%
Individual hearing aids	8	6.1%
Group hearing aid	1	11.0%
TOTAL	42	

TECHNICAL FACILITIES

In table 16, the number of hospitals having sound treated rooms/quiet rooms is given. The data reveals that 36.7% (N=22) hospitals (17 teaching and 5 non-teaching), which had at least one audiometer, had single sound treated room; 31.7% (N=19) of the hospitals (17 teaching and 2

non-teaching) had sound treated test and control room combinations and 25% (N=12) of the hospitals (10 teaching and 5 non-teaching) had quiet rooms for audiometry. Four teaching hospitals (6.7%) reported that sound treated room was under construction. Figure 9 shows the number of hospitals having sound treated rooms/quiet rooms.

TABLE 16

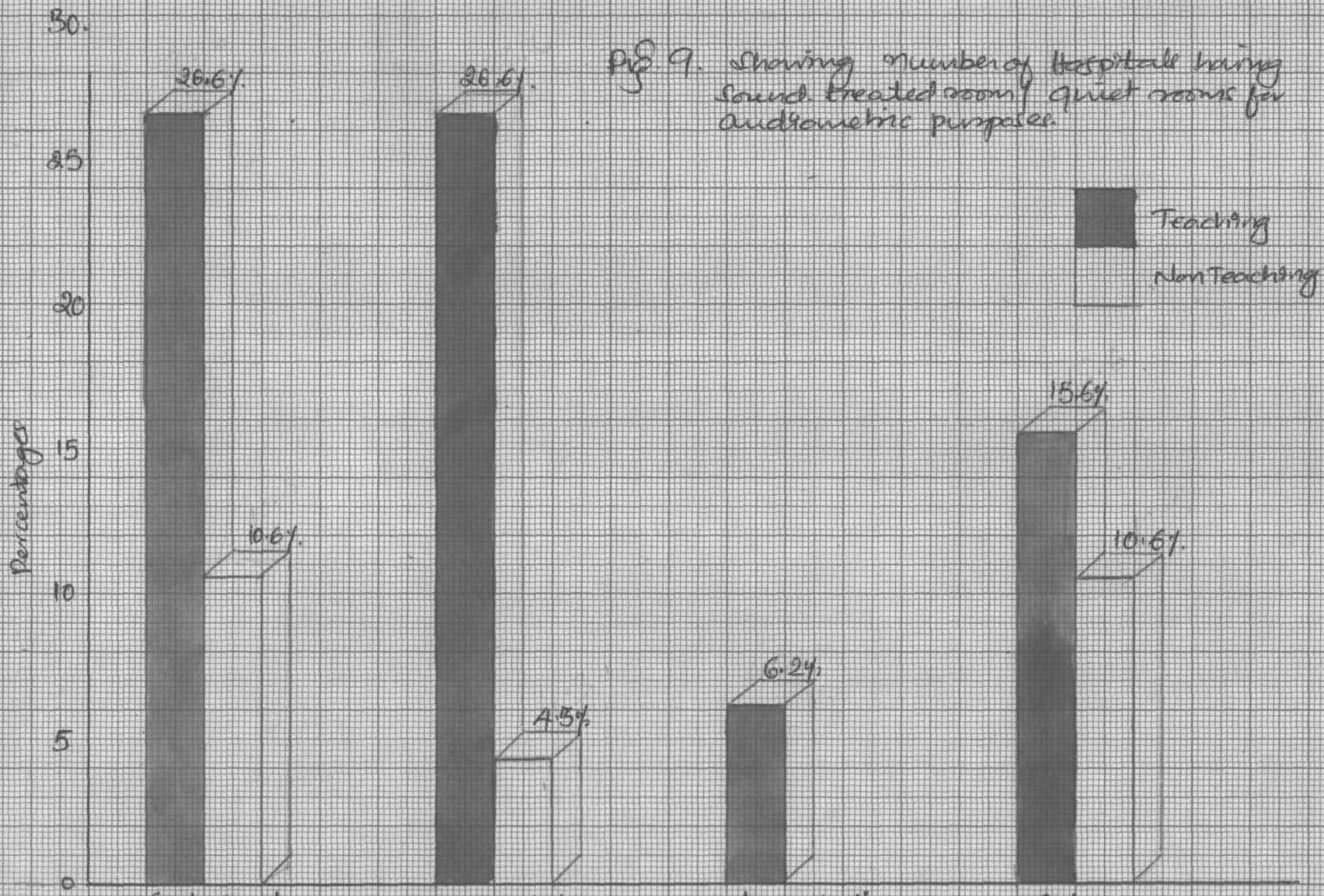
Showing number of hospitals having sound treated rooms/ quiet rooms for Audiometric purpose.

Type of testing room.	Number of hospitals				TOTAL	
	Teaching hospitals		Non-teaching hospitals			
	No.	%	No.	%	No.	%
Single sound treated room	17	26.6%	5	10.6%	22	36.7%
Test and control room combination	17	26.6%	2	4.3%	19	31.7%
Under construction	4	6.2%	--		4	6.7%
Quiet room	16	15.6%	5	10.6%	15	25.3%

It was reported that none of the hospitals had measured noise levels in the rooms using sound level meters at any time. But 60.5% of the respondents reported that noise levels in the rooms was within normal limits or within 40 dB.

Facilities available for calibration and servicing

Fig 9. Showing number of hospitals having sound treated rooms/ quiet rooms for audiometric purposes.



of the equipment are given in table 17. It was indicated that only 2 hospitals had the facilities for calibration of equipment in their hospitals. The other respondents reported that their equipment were calibrated and serviced by different concerns.

TABLE 17

Showing concerns calibrating and servicing Speech and Hearing equipment.

Concerns calibrating/ servicing Sp. & Hg. equipment.	Performance on Calibration of equipment.		Performance on Servicing of equipment	
	Satisfactory	Not satisfactory	Satisfactory	Not satisfactory
A.I.I.M.S. Delhi	1	1	1	1
Arphi, Bombay	7	3	3	5
A.I.I.S.H. Mysore	1	-	-	-
Bangalore	2	2	2	2
Bombay	3	2	2	3
Electronics Corp. Calcutta	1	_	1	_
Electronic testing and development centre, Madras	2	-	_	_
C.S.I.O.	3	-	3	-
N.P.L. Delhi	1	-	2	-
Navjivan, Bombay	2	_	2	-
Pune	1	-	1	-
Rourkella	1	_	1	-
Facilities available in the hospitals itself	2	_	-	-

The list of concerns calibrating and/or servicing the equipment is given in table 17 and also the performance on calibration and/or servicing of these equipment is given in the table. It shows that 9 hospitals were getting their equipment calibrated twice a year from M/s Arphi Incorporated, Bombay on contract basis.

ADDITIONAL NEED OF EQUIPMENT AND PERSONNEL

Table 18 shows the hospitals indicating the additional need of Speech Pathologists only, Audiologists only and both Speech Pathologists and Audiologists.

TABLE 18

Showing the need of Speech Pathologists/Audiologists in Hospitals.

Type of Hospitals.	Speech Pathologists only		Audiologists only		Both Speech pathologists/ & audiologist		TOTAL
	Full time	Part time	Full time	Part time	Full time	Part time	
Teaching	9	—	4	—	31	3	47
Non-teaching	1	—	3	1	8	—	13
Total	10	—	7	1	39	3	60

The data shows that 47 teaching hospitals had indicated the additional need of Speech Pathologists and/or

Audiologists and 13 non-teaching hospitals indicated the need of Speech Pathologists and Audiologists.

In general, teaching hospitals required greater number of professionals than non-teaching hospitals. Figure 9 shows the additional need of Speech Pathologists and/or Audiologists in hospitals.

Table 19 shows the additional need of diagnostic and calibration equipment in the hospitals and table 20 shows the additional need of rehabilitation equipment in the hospitals. As the tables 19 and 20 shows need for additional diagnostic, rehabilitation and calibration equipment was greater in teaching hospitals than in non-teaching hospitals.

Greater need was expressed for impedance audiometers as 30 teaching hospitals and 6 non-teaching hospitals had expressed the need for these equipment. Next in order were Pure tone audiometers, clinical audiometers, Evoked response audiometers, Bekesy audiometers. The other diagnostic equipment were needed such as peep show unit, sound spectrograph, stroboscope, Electronystagmograph and micro processor.

For Calibration purposes, sound level meters were required by 9 teaching and 2 non-teaching hospitals.

TABLE 19

Showing additional need of diagnostic and calibration equipment in Hospitals.

Type of equipment required.	Number of Hospitals: Teaching hospital	Number of Hospitals: Non-teaching hospital	TOTAL
Pure tone audiometer	12	4	16
Clinical audiometer	14	1	15
Impedance audiometer	30	6	36
Bekesy audiometer	8	-	8
Evoked response audiometer	7	3	10
Peep show unit	2	-	2
Sound spectrograph	-	1	1
Stroboscope	1	1	2
Electronystagmograph	1	1	2
Sound level meter	9	2	11
Micro processor	1	—	1

Need was more for individual hearing aids of various models for trial purpose. The other rehabilitation equipment needed are given in table 20, such as speech trainers, group hearing aids, tape recorders, metronomes, speech therapy material, artificial larynx, speech console, Beat frequency oscillator and pitch monitor.

TABLE 20

Showing additional need of rehabilitation equipment in Hospitals.

Type of rehabilitation equipment.	Number of hospitals		TOTAL
	Teaching hospital	Non-teaching hospital	
Hearing aids (Body)	8	2	10
Individual Speech Trainer	4	1	5
Group hearing aids	1	1	2
Tape Recorder	5	1	6
Speech Metronome	2	2	4
Artificial larynx	2	-	2
Speech console	1	-	1
Beat frequency Oscillator	1	-	1
Pitch monitor	1	-	1
Speech therapy material	-	2	2

ADEQUACY OF CLINICAL SERVICE FACILITIES

The data in table 21 indicate that the clinical service facilities were excellent in 5.4% adequate in 22.5% and inadequate in 72% of the hospitals. In teaching hospitals the facilities were adequate in 18% of the hospitals as compared to 4.5% of non-teaching hospitals.

It is also shown in figure 10.

TABLE 21

Showing clinical service facilities in terms of their adequacy.

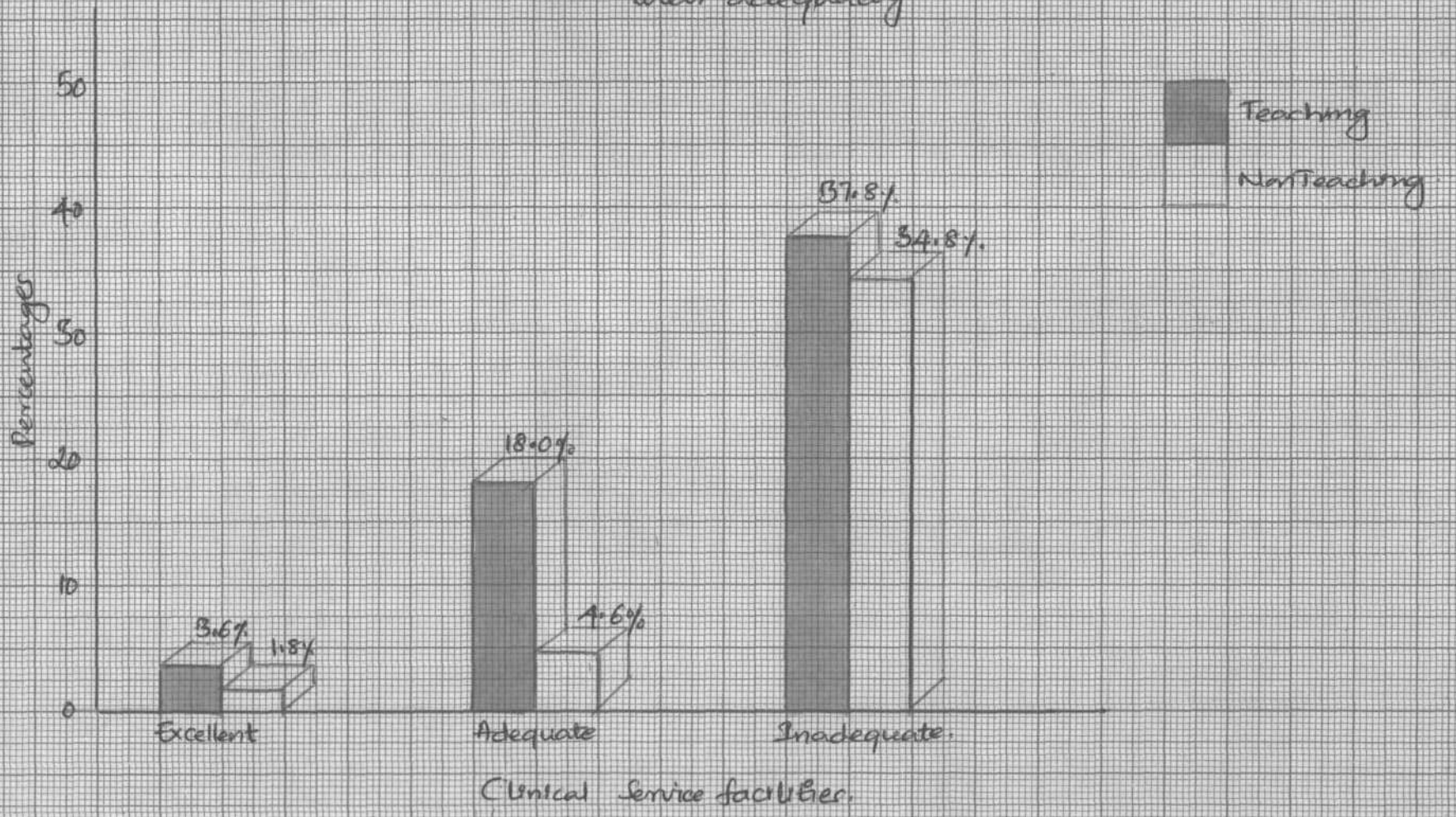
Type of hospital	Clinical Service Facilities					
	Excellent.		Adequate		Inadequate	
	No.	%.	No.	%.	No.	%
Teaching	4	3.6%	20	18.0%	42	37.8%
Non-teaching	2	1.8%	5	4.5%	38	34.2%
Total	6	5.4%	25	22.5%	80	72.0%

The reasons given for the facilities being inadequate were such as too much case load, inadequate facilities for calibration and servicing of equipment, lack of technical facilities and shortage of equipment and technical staff but some of them reported that facilities were adequate for diagnostics purposes but inadequate for rehabilitation purposes.

Information obtained from the questionnaire - B was processed and analyzed separately for representatives and manufacturers of Speech and Hearing equipment. The findings are given below.

A total of 29 questionnaires were sent to manufacturers and representatives of Speech and Hearing equipment in India.

Fig 10. Showing Clinical Service facilities in terms of their adequacy.



Return rate was 58.6%. Out of this 58.6% respondents there were 20.4% manufacturers, 24.1% representatives and 13.7% both manufacturers and representatives of Speech and Hearing equipment in India.

REPRESENTATIVES

There were total of 15 representatives from 6 different countries which included 53.3% from USA companies, 20% from Denmark Companies and 26.6% from other countries.

These representatives have supplied various type of Speech and Hearing equipment to different Indian customers. The following types of equipment have been supplied such as audiometers, impedance audiometers, impedance x - y recorder, bekesy audiometer, evoked response audiometer, warble tone accessory, SISI adaptor, narrow band noise generator, stereo speech trainer, hearing aids, sound level meter kits, audio-meter calibration kits, artificial ear, artificial mastoid and audio test station and anechoice test chamber.

When the respondents were asked to state whether they provide calibration/servicing of these equipment. All of them reported that they provide these services to their customers.

MANUFACTURERS

From the questionnaire it was identified that there were 10 manufacturers of Speech and Hearing equipment in India. Ten per cent of them had collaboration with foreign companies in manufacturing these equipment but reamining 90% did not have any foreign collaboration and they were manufacturing these equipment on their own.

However, only 10% of the manufacturers were manufacturing all the spare parts of the equipment required. Eighty per cent of them were importing various spare parts such as miniature microphone, miniature volume control, receivers, switches, cords, bone conductors, head phones, thermistors and capacitors and other 10% were using all indigenous components.

The following Speech and Hearing equipment have been manufactured in India - clinical audiometers, portable audiometers, screening audiometers, pediatric reactometer, hearing aids, group hearing aids, speech trainers, aversion shock apperatus, aversion noise apperatus, professional head phones, speech console, electronic metronome, and ear mould laboratory equipment.

When the manufacturers were asked to mention difficulties, if any, they find in manufacturing Speech and

Hearing equipment. Most of the manufacturers reported that they find difficulty in importing the spare parts because of too many formalities, non-availability of components indigenously, lack of indigenous testing and calibrating equipment and no specific standards available.

Except one manufacturer, none of them have supplied their product to any foreign country. The reason given for this is that technologically we are far behind the rest of world and the quality does not meet the international specifications.

CHAPTER V

DISCUSSION

Information about Speech and Hearing services, professionals, nature of duties, equipment, technical facilities, additional manpower and equipment need and the types of Speech and Hearing equipment manufactured in India, are discussed in this chapter.

SPEECH AND HEARING SERVICES

Results indicate that there are at least 42 hospitals in India providing Speech and Hearing services to the communicatively handicapped. The largest number of Speech and Hearing services were in state government teaching hospitals having bed strength of over 700 as compared to very low percentage of Speech and Hearing services in non-teaching hospitals. The reason for such type of disparity may be due to the fact that job opportunities are more in teaching hospitals than in non-teaching hospitals or the need to provide Speech and Hearing services is more as being big hospitals.

If we compare the total number of teaching hospitals

in India, numbered around 110, with the number of teaching hospitals providing Speech and Hearing services comes to be around 33% which is far less in number, if we take the need of Speech and Hearing services to the communicatively handicapped in India as a criteria.

The larger number of Speech and Hearing services are found to be located in ENT Departments than in any other department of the hospital. Some hospitals had independent Speech Pathology/Audiology departments. On the other hand in USA the largest number of Speech Pathology services were in non-governmental not-for-profit hospitals and these services were usually either autonomous department or were located in department of rehabilitation medicine (Strandberg 1977). This may be due to the increased recognition and need of these services in ENT department.

By comparing our results with Kapur's (1966) study, it was found that there was definite increase in number of Speech and Hearing services in the hospitals. As at that time only 9 hospitals had Speech and Hearing services. However, the Speech and Hearing services in hospitals have been slower to develop. So strict measures must be taken to increase the growth of the Speech and Hearing services in Indian hospitals.

PROFESSIONAL QUALIFICATIONS

In general, Speech Pathologists and/or Audiologists with under-graduate degree were more in number and were employed in teaching as well as in non-teaching hospitals. On the other hand, professionals with post-graduate degree were more in teaching hospitals. It may be due to the fact that in training institutions, the trainees at under-graduate level are more in number than trainees at post-graduate level.

Regarding the personnel, the present survey indicated that these 42 hospitals had 49 trained Speech Pathologists and/or Audiologists and 2 audiometry technicians who had learnt andiometry by practice. But in 1966 survey, only 5 trained speech pathologists, 4 audiometricians and 10 personnel who had learnt audiometry by practice, were found to be working in hospitals. This shows that there is five times increase in the number of trained speech pathologists and/or audiologists in the hospitals. But it seems that the number of untrained personnel doing audiometry in the hospitals have not reduced. Because at least in 18 hospitals we do not know who does the audiometric work as they have the audiometers but no qualified personnel.

PAY SCALES

A uniform basic pay scale with reference to professional qualification was not found. There were large

overlaps between the pay scales of B.Sc. and M.Sc. degree holders. On average, M.Sc. degree holders were getting higher basic pay scales than B.Sc. degree holders. Similar results were found by Balakrishna (1978), who reported that M.Sc. degree holders were in higher income group than B.Sc. degree holders. However, their monthly income also included income from private practice, or additional services rendered as consultants by them.

PROMOTIONAL AVENUES

The promotional avenues were not found to exist at the time of reporting as the current set up may provide for the employment of only one person. This may be the possible reason for lack of promotional avenues.

This indicates that in past this aspect was not given due importance by the planners when the field was started in India. So in planning future clinics, this aspect should also be taken into account by the planners, otherwise it may had to lessen the moral and create frustration in personnel.

ADMINISTRATIVE WORK

The results indicate that only two third of the Speech Pathologists and/or Audiologists were engaged in some kind of administrative work of their department. There

was no relationship between professional qualification and nature of administrative work except for planning and ordering equipment and materials where M.Sc.'s were found to be more in number. The number of professionals taking part in preparing annual budget were found to be very limited.

This shows that Speech Pathologists and/or Audiologists were not fully involved in administrative work of their department. Their involvement in the administrative work might be limited due to the fact that personnel in this field, as Balakrishna (1978) reported, are of younger age group and having limited experience and their hirarchy in the department may be lower. Usually this work is done by senior persons of the department or the head of the department. However, Speech Pathologist/Audiologists were taking part in planning and ordering equipment and material which was directly related to their work.

NATURE OF DUTIES

Most of the professionals appeared to be engaged in a wide range of clinical activities. The nature of activities depends on the type of employment set up (teaching, non-teaching or research institution) and facilities available in the hospitals.

This survey shows that all Speech Pathologists and/or Audiologists in the hospitals were involved in

diagnostic evaluation and habilitation/rehabilitation of the patient as their main professional activities. Their other activities were research, teaching, maintenance and calibration of equipment, making custom ear moulds, organizing camps and school Speech and Hearing conservation programs. This shows that speech Pathologists/Audiologists were not so much involved in non professional activities. The results of the present study correlates with Curlee's (1975) finding, who found that 80% of the Speech Pathologists and Audiologists were involved in clinical activities, 15% in teaching and 5% in research work.

It is not known how much time these personnel were devoting to each type of activities. The data regarding the case load were not obtained. The type of research work and the facilities available for doing research were not investigated.

The data regarding the nature of duties with reference to professional qualification were not studied. However, Balakrishna (1978) had found that the predominant duties of Speech Pathologists and Audiologists were of clinical work, research and teaching. The nature of duties and qualification of Speech Pathologists/Audiologists correlated to the status of their professional education.

EQUIPMENT

As the time is changing the basic requirements for a Speech and Hearing clinic/centre are also changing. At present the Speech and Hearing clinic/centre needs primary equipment such as clinical audiometer, impedance audiometers facilities for free-field audiometry and Speech audiometry, different models of hearing aids, speech trainers and speech therapy material. Just having these euipment does not fulfil the primary requirements of Speech and Hearing clinic/centre, instead they should also have calibration unit. To carry out audiological evaluations, the clinic should have atleast one sound treated test and control room combination whose ambient noise levels should be within 35 dB SPL on 'C' scale as measured in a prescribed manner.

As reported in earlier section, all together there were 120 audiometers in 54% of the hospitals. In teaching hospitals, 17 of them did not have any audiometer which included 5 hospitals which were offering post-graduate teaching in otolaryngology.

Some hospitals were found to have new sophisticated diagnostic audiometer, bekesy audiometer and evoked response audiometer. Very few hospitals had the facilities for Speech audiometry or free-field audiometry. This indicates that

adequate facilities for testing children and some special type of cases using impedance audiometer and electrophysiological test battery were lacking in hospitals. These kind of facilities must be developed first in the hospitals to provide quality services to the patient of all age group.

To carryout audiological evaluations only 68.4% of the hospitals having at least one audiometer, were found to have single sound treated rooms or test and control room combinations. In other hospitals, the audiometry was carried out in quiet rooms. Since the noise levels were not measured using sound level meter so it is not known how much these rooms were "quiet" for audiometric purposes. None of the hospitals who had sound treated rooms had measured ambient noise levels in a test room using sound treated rooms but reported to be within normal limits.

None of the hospitals had the facilities for instrumental calibration except the two hospitals. Some hospitals were getting their equipment calibrated at different places outside of their working area. However, it is not known whether these equipment were calibrated periodically or not.

Kapur (1966) reported that facilities for equipment and their calibration and servicing facilities were inadequate in the hospitals. As most of the hospitals did not

have any audiometers and those who had the audiometers were not in working conditions.

However, the present study shows increase in the number of measuring equipment in the hospitals but there does not seem to be corresponding improvement in the calibration and/or servicing facilities of these equipment. So whenever a new Speech and Hearing center is planned, besides the personnel and equipment facilities, they should also arrange periodic calibration and/or servicing of these equipment.

The facilities for habilitation/rehabilitation were also found to be lacking as only half of the hospitals had the hearing aids for trial purpose and only few of them had Speech therapy equipment and materials.

ADEQUACY OF CLINICAL FACILITIES

The respondents reported that the clinical service facilities were adequate in only 22.5% of the hospitals and 72% of the hospitals had inadequate facilities. It indicates that either the higher specialization skills were not fully utilized due to non-availability of proper diagnostic equipment, therapy instruments and technical facilities or highly specialized personnel were not gainfully employed in the hospitals in terms of position and salary (Balakrishna 1978).

So there appears to be a minimal number of services available at a large number of hospitals. The result of the present study suggest that comprehensive diagnostic evaluation and rehabilitation services are not readily available.

ADDITIONAL NEED OF PERSONNEL AND EQUIPMENT

The information concerning the balance between man-power supply and the demand is of great importance to man-power planners. However, this is not the aim of the pre-sent survey to project the future manpower need and there-fore cannot be used to make current and future estimates of personnel.

The present study indicates that there is great demand of Speech Pathologists and/or Audiologists in the hospitals than in non-teaching hospitals. This shows that medical professionals in teaching hospitals were aware of the need and existance of Speech and Hearing profession and even some of the hospitals were very much eager to start Speech and Hearing centre, but they were awaiting govern-ment's clearance. The other reasons may be that the need of providing such services is more as being big hospitals or they are in better position to acquire such facilities than non-teaching hospitals. An attempt should be made to educate the administrators of non-teaching hospitals regard-ing the need to start Speech and Hearing centres.

The majority of the hospitals indicated that they require additional diagnostic, rehabilitation and calibration equipment. The need was more for impedance audiometers, clinical and portable audiometers, than evoked response audiometers or Bekesy audiometers because the chances are there that they may not be knowing the need and usefulness of evoked response audiometer and Bekesy audiometer.

It is not known whether the financial support was available to fill the existing positions and to buy the needed equipment. As Curlee (1975) pointed out that there is no necessary relationship between clinical service needs of the communicatively handicapped and job opportunities. But at present, in India, this does not seem to be true as the clinical service facilities are very few in the hospitals. Unless the enough number of hospitals provide such services, job opportunities should be there.

MANUFACTURER'S OF SPEECH AND HEARING EQUIPMENT

The results indicate that there were 15 representatives of Speech and Hearing equipment in India from various foreign companies. These representatives have supplied wide variety of diagnostic and calibration equipment to Indian customers. However, there were more indigenous (N=258) equipment than foreign equipment (N=71) in

the hospitals on compared to earlier study done by Kapur (1966) where he found more foreign equipment were in use than indigenous equipment. Even though the indigenous equipment were more in use, Indian manufacturers were not manufacturing variety of diagnostic and calibration equipment such as impedance audiometers, Bekesy audiometers, evoked response audiometers and audiometric calibration unit etc. The reasons may be that either the demand of these equipment is not more or we are lacking technical skills and facilities in this area than the rest of the world. So we may have to educate the people about need of these equipment and simultaneously make effort to manufacture these equipment indigenously.

None of the manufacturers were manufacturing all the spare parts needed for the equipment, except one manufacturer who claims to be using all spare parts in manufacturing hearing aids, speech trainers. They were importing these parts of the equipment which requires lots of formalities to be completed and ultimately increases the cost of the equipment. However, this aspect needs to be investigated so as to reduce the formalities required to import such spare parts.

This shows how great is the need of these sophisticated diagnostic and calibration equipment in India. As the present survey has also indicated the need of these

sophisticated equipment like Impedance audiometers, Bekesy audiometers evoked response audiometer. So these equipment must be manufactured indigenously and if needed they should try for foreign collaboration. This ultimately reduces the cost of the equipment and better servicing and/or calibration facilities.

All the representatives and the manufacturers were providing calibration and/or servicing of their products at factory except two manufacturers who were providing these services at regional offices or on the spot itself.

It was found that except one manufacturer, none of them have supplied their product to foreign countries. The reason given by them is that the quality of indigenous equipment was far below the international specifications.

Efforts should be made to develop Indian standards at the earliest and they should be brought to the notice of manufacturers. The quality of our product should also be increased so as to meet the International specifications which will promote the export of these equipment also.

CHAPTER VI

SUMMARY AND CONCLUSIONS

The survey was designed to determine the personnel, equipment and technical facilities available in the field of Speech and Hearing in hospitals in India.

The type of equipment manufactured in the field of Speech and Hearing in India was also investigated.

Two types of questionnaires were prepared. A total of 275 questionnaire - A were mailed to different hospitals having 200 and above bed strength as a criterion and 29 questionnaire - B to manufacturers of Speech and Hearing equipment. Return rates were as follows - Questionnaire -A - 40.4%; Questionnaire - B - 58.6%.

The information was gathered from the hospitals about the Speech and Hearing services in hospitals, professionals and their qualification, pay scales, promotional avenues, nature of clinical activities and administrative work, equipment, technical facilities and additional need of personnel and equipment.

The information gathered from the manufacturers was on the types of Speech and Hearing equipment manufactured

in India and their difficulties in manufacturing these equipment.

Data were computed in number and percentages.

On the basis of our findings, following conclusions can be drawn -

(1) More number of Speech and Hearing services were located in the state government teaching hospitals having more bed strength than non-teaching hospitals.

(2) Large number of Speech and Hearing services were in ENT Departments than any other department and some of the hospitals had the independent speech pathology and/or audiology departments.

(3) There was definite increase in the number of speech and hearing services and qualified speech pathologists and/or audiologists in the hospitals.

(4) In hospitals, B.Sc. degree holders were more in number than M.Sc. degree holders. But in the teaching hospitals, M.Sc. degree holders were slightly more in number.

(5) Professional qualification was not related to their basic pay scales. Even though the M.Sc. degree holders, an average, were drawing higher basic pay scales than B.Sc.

degree holders, but in the M.Sc's group some were getting lower basic pay scales, than others with similar qualifications.

(6) At the time of reporting no promotional avenues seemed to exist for Speech Pathologists and/or Audiologists employed in hospitals. In planning for future Speech and Hearing Clinics, this aspect should also be given due consideration.

(7) Only two third of the Speech Pathologists and/or Audiologists were doing administrative work in their department. But there is no systematic relationship between nature of administrative work and professional qualifications except for planning and ordering equipment and material where M.Sc's were more in number.

(8) Majority of the hospitals reported that Speech and Hearing services were inadequate. As only half of the hospitals reported that they had at least one audiometer and some of the teaching hospitals which are recognised for post-graduate teaching in otolaryngology did not have even single audiometer. Other diagnostic equipment in use were impedance audiometers, Bekesy audiometers, evoked response audiometer, PGSR, peep show unit and reactometer. Facilities for Speech audiometry and free-field audiometry were very less in number.

Some of the hospitals did not have sound treated rooms and those who had sound treated rooms, have not measured noise levels in the rooms using sound level meter.

Facilities for calibration and/or servicing of these equipment were very limited in hospitals.

(9) Need for additional Speech Pathologists and/or Audiologists and equipment was greater in hospitals. It is not known whether they had the financial aid to acquire such facilities.

(10) There is definite increase in the use of indigenous equipment. But Indian manufacturers were not found to manufacture variety of sophisticated equipment of which the demand is more, such as Impedance audiometers, Bekesy audiometers, and evoked response audiometers. The equipment which are manufactured in India, none of them were using all indigenous spare parts.

So still they have to become self sufficient in manufacturing all the spare parts indigenously. Their major difficulties were in importing spare parts because of many formalities required, non-availability of indigenous testing and calibration equipment and no specific standards available.

(11) Except one manufacturer, none of them have exported

their equipment to foreign countries as their equipment does not meet the international specifications.

RECOMMENDATIONS FOR FURTHER STUDY

(1) A periodic survey of personnel, equipment and technical facilities in the field of Speech and Hearing in hospitals in India would be of useful to study its growth from time to time and health planning.

(2) It would be of use to explore why the Speech and Hearing services are lacking in non-teaching hospitals.

(3) A survey may be undertaken to study the amount of time, the personnel were devoting to each of these clinical activities identified in the present study.

(4) The present survey may be extended to include the institutions for special cases such as spastics society, aphasics and laryngectomee clubs, to study their existance and its functions.

(5) A survey of type of research work done by Speech Pathologists and Audiologists, their facilities for research, their needs and area of interest would be useful.

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APPENDIX

ALL INDIA INSTITUTE OF SPEECH & HEARING
MANASAGANGOTHRI, MYSORE 570006

Appendix - A

A Survey of Personnel, Equipment and Technical Facilities in the Field of Speech and Hearing in Hospitals in India

QUESTIONNAIRE-A

The information sought through this questionnaire is required for a project undertaken as a part of fulfilment of the requirements for the Master's Degree programme. Hence, me need your cooperation in giving us complete and accurate information. The information obtained will be kept strictly confidential except for use in studying the trends.

Please return this completed questionnaire at your earliest.

1 Is it a teaching hospital? Yes/No

2 It is an undergraduate/post-graduate (DL0, MS) teaching hospital.
(Please indicate by _/ mark)

3 If it is a teaching hospital, to wich college or University it is attached?

4 What is the bed strength in your (a) Hospital_____(b) Department

5 It is a Central Government/state Govt./Quasi-Govt./Private/Missionary Hospital. (Cross out which are not applicable)

6 Do you have a separate unit, where the Speech & Hearing problems of the patients are attended to? ... Yes/No

This Unit is known as Speech & Hearing Clinic/Speech & Hearing Centre/ other _____. (Please indicate by _/ mark)

7 If it is not a separate Unit, to which Unit or Department does it belong? (Specify)

8 Do you have the services of Speech Pathologist and/or Audiologist to attend to patients with Speech & Hearing problems? .... Yes/No

If yes, how many are in:

Full time service _____
Part time service _____
Honoary _____

9 What are their qualifications and pay scales?

	pay Scales RS.
(in Speech & Hearing or other)	_____
BA/BSc (in Speech & Hearing or other)	_____
Diploma/Certificate (in Speech & Hearing or other)	_____
	_____

Other:

10 what are the promotional avenues to the Speech Pathologist and/or Audiologist employed in your hospital?

Nil_____
One step above in Pay scale: Rs. _____

11 Do they take part in administration work? .... Yes/No

If so, their duties include: (Cross out which are not applicable)

(1) Preparing budget

(2) Planning and ordering equipment and material

(3) Establishing test and evaluation procedures, making referrals

(4). None of the above

(5) Other (if any)

12 Their services/duties include the following (Please indicate by _/ mark):

(1) Diagnostic evaluation

(2) Habilitation/Rehabilitation

(3) Research

(4) Teaching

(5) Maintenance & Calibration of equipment

(6) Making custom ear moulds

(7) Others (speclfy)

13 Do you require additional Speech Pathologists and/or Audiologists to manage the current work load? ... Yes/No

If yes, how many additional full-time/part-time Speech Pathologists and/or Audiologists would you like to employ?

14 For diagnostic evaluation of hearing problems, how many sound treated room(s) are available:

Nil_____

(2) Single Room _____

(3) Test & Control room combination _____
(Please specify the numbers in each category)

15 What is the ambient noise level in the test room/quiet room on the C scale as measured with a sound level meter

16 What equipment is available for calibration, diagnostic and rehabilitation purposes?

(Please use an extra sheet if space is not sufficient)

Sl No	Instrument	Type/ Model	Total No.	No. in working condition	Performance satisfactory/ unsatisfactory
1					
2					
3					
4					
5					
6					
7					
8					
9					

17 Which of the equipment are not in Working condition due to lack of spare parts?

18 Do you have facilities for calibration and/or servicing of the equipment?
....Yes/No

(1) Place of servicing _____ (Satisfactory/Unsatisfactory)

(2) Place of calibration _____ (Satisfactory/Unsatisfactory)

19 Do you require additional equipment to meet your needs? .... Yes/No
If yes. specify the number and type of the equipment required:

20 In your opinion, clinical service facilities in your department for cases uith Speech & Hearing disorders are:

Excellent/adequate/inadequate

(Please indicate by _/ mark)

Please comment on your answer:

21 Different hearing aids available for trial on patients are:

Type	Model	No.

ALL INDIA INSTITUTE OF SPEECH AND HEARING
MANASAGANGOTHRI, MYSORE 570006

A SURVEY OF PERSONNEL, EQUIPMENT AND TECHNICAL FACILITIES IN THE FIELD OF SPEECH AND HEARING IN HOSPITALS IN INDIA

QUESTIONNAIRE B

The information sought through this questionnaire is required for a Project undertaken as a part of fulfilment of the requirements for the Master's Degree programme. Hence, We need your cooperation,in giving us complete and accurate information. The information obtained will be kept strictly confidential except for use in studying the trends.

Please return this completed questionnaire at your earliest.

Name of your Industry/Company :

What are the diagnostic and rehabilitative equipment you manufacture in the field of Speech & Hearing?

(a) For import of equipment

3 Are you a representative of any foreign company Which manufactures Speech & Hearing equipment? .... Yes/No

If yes, please give the name of that company and country.

4 What are the foreign equipment you have supplied to different hospitals and/or institutions in India? (Please use an extra sheet if space is not sufficient)

Sl No	Name of the equipment	No.of different models	Name of the hospitals and/or institutions in India

5 Do you provide servicing and/or calibration facilities of these foreign equipment? ..... Yes/No

Give the name of that company, country and details of equipment.

7 Since how many years you are manufacturing these equipment?

8 Do you manufacture all the spare parts required for the equipment?

.....Yes/No

If no., do you import? (Specify):

9 . What are the diagnostic and rehabilitative equipment you have supplied to different hospitals and/or institutions in India?
(Please use an extra sheet if space is not sufficient)

Sl No	Name of the equipment	No.of different models	Name of the different hospitals and/or institutions

10 Do you provide facilities for calibration and/or servicing of these equipment at:

Factory/Regional Offices/On the spot
(Please indicate by _/ mark)

11 What are your difficulties in manufacturing Speech and Hearing equipment?

(c) <u>For export of equipment</u>

12 Have you supplied your equipment to any foreign country? ....Yes/No

If yes, please indicate the number of different models and the country.

Sl.No.	Name of the equipment	No.of different models	Country

13 Do you provide servicing facilities of your equipment in that country?

. . . . Yes/No

14 What are your difficulties in supplying equipment to different countries?

Signature:
Name in Capitals!
Designation: