A STUDY TO ASSESS THE KNOWLEDGE ON PULMONARY TUBERCULOSIS (PULMONARY TB) AND ITS PREVENTIVE PRACTICES AMONG PULMONARY TB PATIENTS IN A SELECTED TB SANATORIUM AT GWALIOR WITH A VIEW TO PREPARE AN INFORMATION BOOKLET

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Abstract: Introduction: It is indeed encouraging that attention is now being detected towards the communicable diseases. Tuberculosis is chronic infective disease that commonly affects the lungs, which remains world wide public health problem, despite the fact that causative organism was discovered more than 100 years ago. The incidence of TB in the world has increased from 8.8 million cases in 1995 to 10.2 million cases in the year 2000, and 11.9 million cases in 2005 and future 2010 there will be 15 million cases, if we fail to give our children a safe environment in this new millennium. India has far more cases of TB than any other country

Tuberculosis which affects everyone without age, sex or status barrier. This causes enormous suffering to the patients, their family and the community at large. Even after paying special attention an increasing morbidity and mortality from TB in the near future is forecast for the world at large. So, every one should help in fighting this major killer disease by knowing the facts about the disease, its detection, treatment and prevention though there is need to be educate the Pulmonary TB patient, family and community to bring down the Pulmonary TB cases so, the investigator has under taken the study to assess the knowledge on Pulmonary Tuberculosis and its preventive practices among Pulmonary TB patients in selected TB sanatorium at Gwalior with to prepare an information booklet.

Objective

1. **To determine the level of knowledge of Pulmonary TB patient regarding Pulmonary TB as measured by structured knowledge interview schedule.**

2. **To identify the preventive practices of Pulmonary TB patient regarding Pulmonary TB as measured by observation checklist.**

3. **To find out the relationship between the knowledge scores and the preventive practice scores obtained by the Pulmonary TB patient.**

4. **To find out the association between the knowledge and preventive practice scores of Pulmonary TB patient with the selected demographic variables**

Method

A descriptive survey design was used for the study. The sample consisted of 50 Pulmonary TB patients who met the inclusive criteria and the sample was selected using purposive sampling technique. Knowledge score was obtained by conducting structured knowledge interview schedule and preventive practice scores were determined by observation check list. The data collected was analysed by using descriptive and inferential statistic.

Result

The result of the present study reveals that majority of the subjects (50%) had an inadequate knowledge scores, whereas 36% and 7% of the subjects had moderately adequate knowledge scores and adequate knowledge scores

respectively. The subjects had inadequate knowledge scores in the area of cause, predisposing factors and sign and symptoms with mean percentage of 18%, 36% and 18% respectively and had moderately adequate knowledge scores in the area of definition and meaning of pulmonary TB, treatment, complication and prevention with the mean percentage of 62%, 50.44%, 74% and 53.20% respectively.

Interpretation and conclusion

The findings of the study showed that there were equal percentages (50%) of Pulmonary TB patients had inadequate knowledge but had obtained moderately adequate preventive practice scores on pulmonary tuberculosis, and there was significant positive correlation found between knowledge scores and preventive practice scores of Pulmonary TB patient ($r = 0.510$, $P = 0.000$, $P < 0.05$). There was significant association found between knowledge score and selected demographic variables age, education, type of family, source of information regarding pulmonary TB and duration of illness. Whereas among the selected demographic variables, only the source of information regarding TB was found highly significant with preventive practice scores of pulmonary TB patients and from the above findings the investigator interpreted that inadequate knowledge scores on Pulmonary TB and moderately adequate preventive practice scores can be a source for spreading the disease if the information on Pulmonary TB and its prevention is not imparted to them so the investigator was motivated to prepare an information booklet and distributed among the Pulmonary TB patients.

Keywords: Knowledge; pulmonary tuberculosis; preventive practices; information booklet.

INTRODUCTION

TB is a chronic infectious disease which remains a worldwide public health problem, despite the fact that causative organism was discovered more than 100 years ago. The incidence of TB in the world has increased.

About 90% of those infected with Mycobacterium TB have symptomatic, latent TB infection (sometimes called LTBI), with only a 10% lifetime chance that a latent infection will progress to TB disease. However, if untreated, the death rate for these active TB cases is more than 50%.

The WHO has designated March 24 of each year as "World TB Day" Lo mark the anniversary of Robert Koch's discovery in 1882 of the cause of TB. This is not a day for calibration. Instead, it is one on which the global community should reflect on the paradoxical fact that, although affective and cheap therapy is available, TB is the leading infectious cause of death. This paradox is surely indicative of tragic failure to use medical advances for the wider benefit of humankind. So, now more than ever, the world is a global village, and because of this fact in concert with the globalization of world economics that ensures that low incidence countries cannot consider themselves free of TB until control is achieved everywhere for everyone.

Objectives of the Study

1. To determine the level of knowledge of Pulmonary TB patient regarding Pulmonary TB as measured by structured knowledge interview schedule.
2. To identify the preventive practices of Puhnonary TB patient regarding Pulmonary TB as measured by observation checklist.
3. To find out the relationship between the knowledge scores and the preventive practice scores of the Pulmonary TB patient
4. To und out the association between the knowledge scores and preventive practice scores of Pulmonary TB patient with the selected demographic.

METHODOLOGY

This chapter deals with the methodology of the study that was selected by the investigator in order to assess the knowledge on Pulmonary Tuberculosis (Pulmonary TB) and its preventive practices among Pulmonary TB patient in a selected TB sanatorium at Gwalior with view to prepare an information booklet.

This chapter includes research approach, research design, setting, sample, sampling technique, development of the tool, pilot study, and procedure for data collection and plan for data analysis.

Research approach

Considering the purpose of the study a descriptive survey approach was planned to be used to assess the knowledge of Pulmonary TB and its preventive practices among Pulmonary TB patient with view to prepare an information booklel in a selected TB sanatorium at Gwalior.

Research design

Sample	Variables	Data collection tools and technique	Plan for data analysis
Sample Fifty Pulmonary **TB** patients who was admitted to the TB sanatorium at the time of study. **Sampling technique** Purposive sampling technique.	**Dependent variables** - Knowledge scores of Pulmonary TB and their - Preventive practice scores **Independent variables** - - Age - Gender - Educational status - Occupation - Number of family members - Type of family - Source of information regarding Pulmonary TB - Duration of illness	**Data collection tools** - Personal proforma - Structured knowledge interview schedule on Pulmonary TB - Observation checklist to identify the preventive practices of Pulmonary TB **Method of data collection** The investigator collects the data from subjects by structured knowledge interview schedule and Observation checklist.	- Frequency and percentage distribution in terms under baseline proforma. - Frequency percentage, mean, SD, mean percentage to detem1ine the knowledge of Pulmonary **TB.** - Karl Pearson correlation coefficient to find the relationship between knowledge scores and preventive practice scores of Pulmonary TB patient. - Chi-square test to find the association of knowledge score and preventive practice scores of Pulmonary TB patient with selected demographic variables.

Descriptive correlative survey design was adopted for the present study is presented in Figure 4.

Figure 4: Schematic representation of the study design

Setting of the study

Setting is the physical location and condition which data collection takes place in a study.

The present study was conducted in Civil Hospital, Morar, Gwalior TB ward. It is district hospital where monthly 30 to 40 Pulmonary TB patients inpatient department and it come under the directorate of health services of MP.

Variables under study

Variables are defined as the characteristics, properties, traits or attributes of a person or thing observed in a study.

Dependent variable

In this study it refers to the knowledge scores and preventive practice scores of patient with Pulmonary TB.

Independent variable

In this study it refers to the selected demographic variables like age, gender, education, religion, occupation, type of family, no of family members, no of room's in house, information regarding Pulmonary TB, source of information Pulmonary TB, duration of illness and habits.

Population

The aggregate or totality of all the objects, subjects or members that conform to a set of specification is population. In this present study the target population is Pulmonary TB patients in TB ward.

Sample

A sample is the subset of a population selected lo participate in a research study.

The sample for the present study comprised of 50 Pulmonary TB patients and who has was admitted to the TB ward of Civil Hospital during time of study.

Criteria for selection of sample

Inclusion criteria

1. Pulmonary TB patient admitted lo the TB ward at the time of study.
2. Pulmonary TB patient who can understand English or Hindi.
3. Pulmonary TB patient who are willing to participate in the study.

Exclusion criteria

1. Health professionals who have Pulmonary TB and admitted in TB ward.
2. Pulmonary TB patient who are not willing lo participate in the study.
3. Pulmonary TB patient who cannot understand English or Hindi.

Sampling technique

Sampling refers to the process of selecting a portion of the population to represent the entire population.

In order to select the sample from the population, investigator adopted purposive sampling technique.

Data collection instruments

Data collection tools are the procedures and instruments used by the researcher to measure the key variables in research problem.

Structured knowledge interview schedule and observation checklist were prepared on the basis of the objectives of the study.

Development of the tool

Description of the tool

The tool consists of 3 parts:

Part I: Personal proforma comprised of 14 items.

Part II: Struct1ired knowledge interview schedule comprised with 28 items. Part Ill: Observation checklist on preventive practices comprised with 14 items.

Testing of the tool

Development of a criteria checklist

Criteria checklist for validation of the tool was prepared, comprising knowledge interview schedule and observation checklist with "Very relevant," "Relevant," "Needs modification," "Not relevant," and "Remarks" columns for the validators to place tick mark depending on the appropriateness and relevance of each item.

Content validity

The prepared tool, along with the objectives, blueprint, answer key, requisition letter, and criteria checklist, was given to 13 experts of which 2 were TB ward Medicine doctors and 3 were from community health nursing department and remaining were from Medical surgical nursing department for establishing content validity. The demographic data consisted of 14 items of which all had 100% agreement. The structured knowledge interview schedule on Pulmonary TB consisted of 32 items out of which 28 had I 00% agreement and four discarded because of repetition as per the suggestions of the experts. The observation checklist on preventive practice was modified as per the suggestions given by the experts.

The final draft of be tool consisted of 28 questions under the assessment of knowledge and 14 in observation checklist for preventive practice of Pulmonary TB.

Reliability of the tool

The reliability of the tool was established by conducting interview schedule and observation checklist on 5 subjects from the selected Govt civil hospital after obtaining permission from the hospital authorities. The reliability test was established using split half method and brown prophecy formula.

The reliability coefficient obtained for knowledge interview schedule was 0.78 and observation checklist was 0.75 and it was considered reliable.

Description of the final tools

The final draft of the tool comprised of three parts:

Part I: **Personal Performa (14 items)**

It included identification data such as Age, Gender, Religion, Educational status, Occupation, Monthly income, Total family members, Type of family, Total rooms in house, Location, Information of Pulmonary TB, Source of information on Pulmonary TB, Duration of illness, and habits.

Part II: Structured knowledge interview schedule on Pulmonary TB

It included a total of 28 structured knowledge interview questions distributed according to the 7 content areas related to knowledge on Pulmonary TB.

Part Ill: Observation checklist on preventive practice of Pulmonary TB

It consists about 14 preventive practices which should be carried out by the Pulmonary TB patient to prevent the spread of Pulmonary TB.

Development of information booklet

Information booklet was developed on Pulmonary TB for the Pulmonary TB patient according to the objective. It was prepared based on review of literature, non- research literature, discussion with experts and personal experience of the investigator

Content validation of information booklet

The content of the information booklet along with the objectives, acceptance form and criteria rating scale was sent to seven experts for validation. There was 100% agreement of the content area with suggestion to change the front picture and add more pictures.

Preparation of the final draft of the information booklet

The information booklet was based on general and specific objectives. No modifications were made in the content area after the validation.

Method of data collection

The investigator obtained the written pernuss1on from Civil surgeon, of District Hospital Gwalior. Data collection period was 6 weeks.

Plan for data analysis

The data of the present study has been planned to be analyzed based on specific objectives and hypotheses. The data obtained from 50 respondents would be analysed by using descriptive and inferential statistics as follows:

- Personal preforma would be analysed using descriptive statistics such as frequencies and percentage.
- Knowledge score of the interview would be analysed in terms of frequency, percentage, mean, standard deviation and mean percentage.
- Preventive practice scores will be analysed by using frequency and percentage.
- Karl Pearson correlation would be used to find out the correlation between knowledge score and Preventive practice score.
- Association of knowledge score with selected demographic variables will be found using chi-square test.
- Association of Preventive practice score with selected demographic variables will be found using chi-square test.

- **Organization of the study findings**
- Descriptive and inferential statistics are used to analyse the data and are represented in the form of tables and diagrams. The data are presented under the following heading.

Section I	:	Description of baseline characteristics.
Section II	:	Description of knowledge of Pulmonary TB patient regarding Pulmonary TB.
Section III	:	Description or preventive practice of Puru.10nary TB patient regarding Pulmonary TB.

Section IV : Relationship between the knowledge and preventive practice of Pulmonary TB patient.

Section V : Association of selected demographic variables with knowledge score and preventive practice scores of Pulmonary TB patient.

- **Section** I: **Description of baseline characteristics**
- This section deals with the baseline characteristics of subjects in terms of frequency and percentage.
- **Table 1: Frequency and percentage distribution of subjects according to baseline characteristics**

SI. No.	Variable	Frequency	Percentage	SI. No.	Variable	Frequency	Percentage
I.	Age in year			7.	Number of family member		
	20-40	25	50		2-4	20	40
	41-60	22	44		5-7	28	56
	61-80	3	6		8- 10	2	4
	Above 80	-	-		11 and above	-	-
2.	Gender			8.	Type of family		
	Male	42	84		Nuclear	33	66
	I7emale	8	16		Joint	17	34
3.	Religion			9.	Number of moms in house		
	Hindu	47	94		I	2	4
	Muslim	2	4		2	14	28
	Christian	I	2		3	22	44
	Others	-	-		4	10 I	20
4.	Education				5 and above	2	4
	Illiterate	18	36	10.	Locality		
	Primary	14	28		Urban	16	32
	Secondary	18	36		Rural	34	68
	Graduate & above	-	-	11.	Durntion ofillnes.'>		
5.	Occupation				I -3 months	9	18
	Unemployed	23	46		4-6 months	16	32
	Professional	0	0		7- LO months	14	28
	Business	I	02		11 and above	11	22
	Agricultural	10	20	12.	lnJormation regarding Pulmonary TB		
	Labour work	16	32		Yes	40	80
	Others	-	-		No	10	20
6.	Monthly income (in rupees)			13.	If yes what is the source of information		
	1500-2000	24	48		Mass media	I	2
	2001-3000	JO	20		HeaJlh personnel	8	16
	3001 -4000	9	18		Family members	I	2
	400 I and above	7	14	14.	Habit		
					Smoking	17	34
					Alcoholism	13	26
					Others	-	-

- **Age**

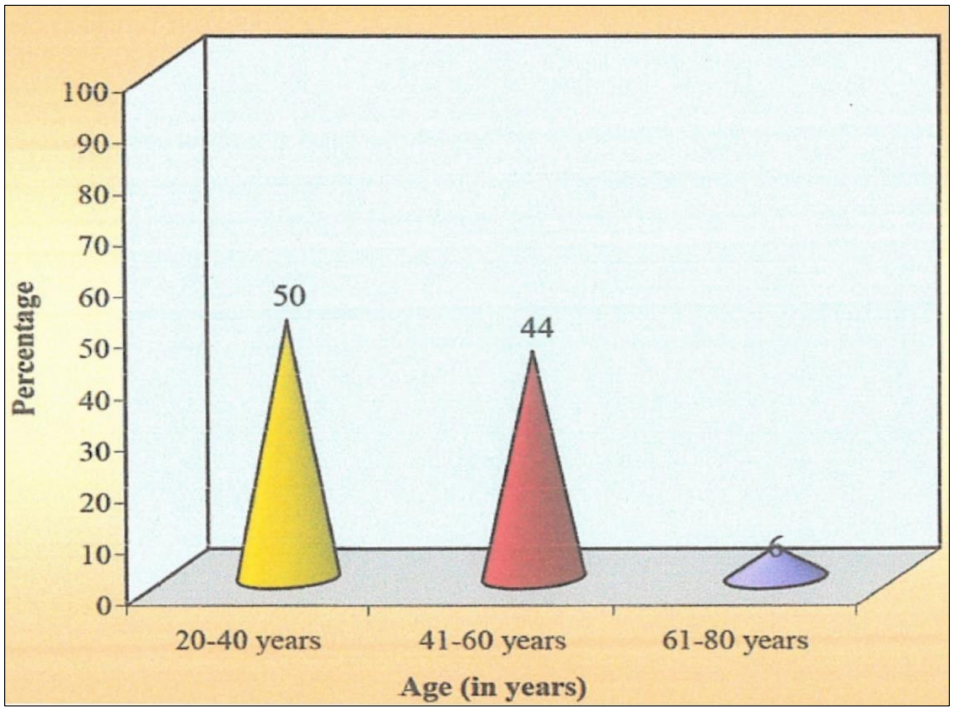


Figure 5: Cone diagram showing the distribution of subjects according to age

Gender

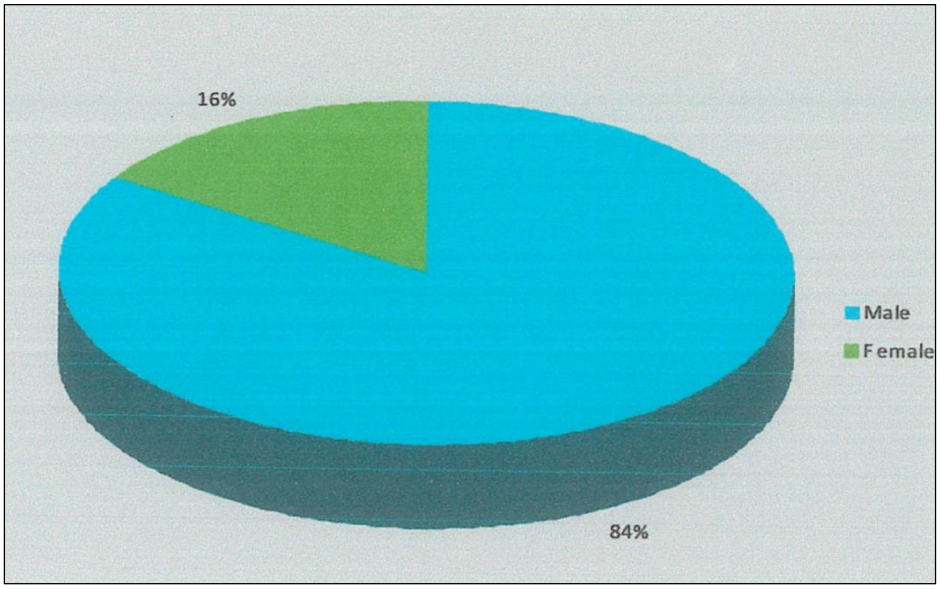


Figure 6: Pie diagram showing the distribution of subjects according to the gender

- **Religion**

- Highest percentages of subjects (94%) were Hindu, and the remaining 4% and 2% were Muslim and Christian respectively.

- **Educational status**

- Equal percentage of subjects (36%) were uneducated and had secondary schooling, where 28% had the primary schooling, and none of theme were graduate.

- **Occupation**

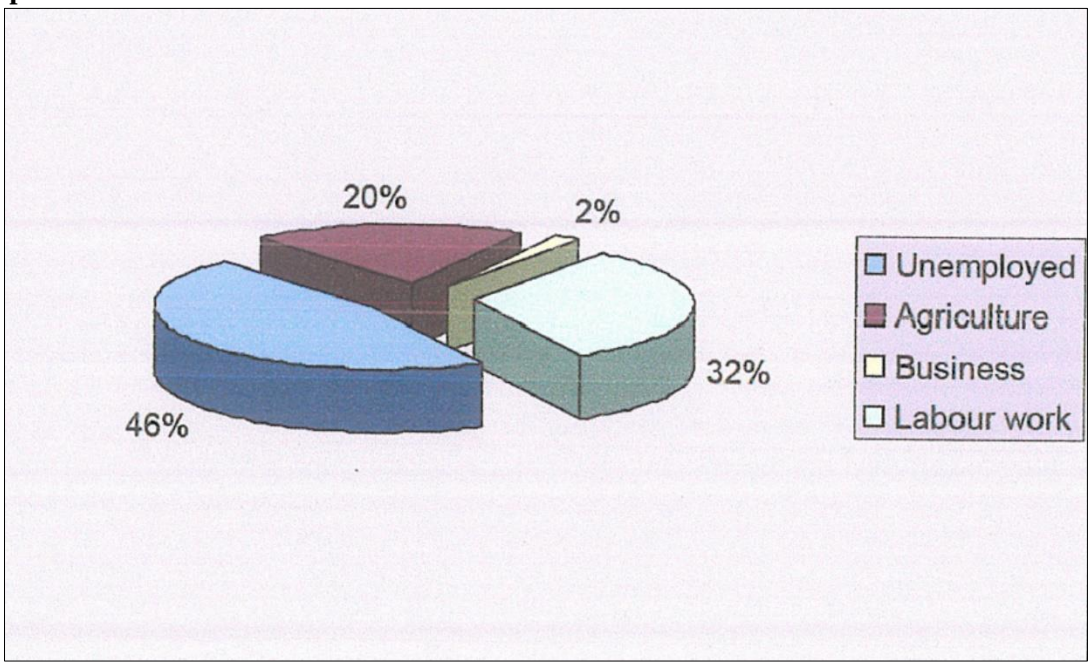


Figure 8: Pie diagram showing the distribution of subjects according to their occupation

- **Income**
- **Number of family members**
- Majority of the subjects (56%) had 5 -7 members in family, 38% had 2 - 4, 4% had 8 -10 and 2% had no one in the family. The data is represented in cylinder diagram Figure 9.

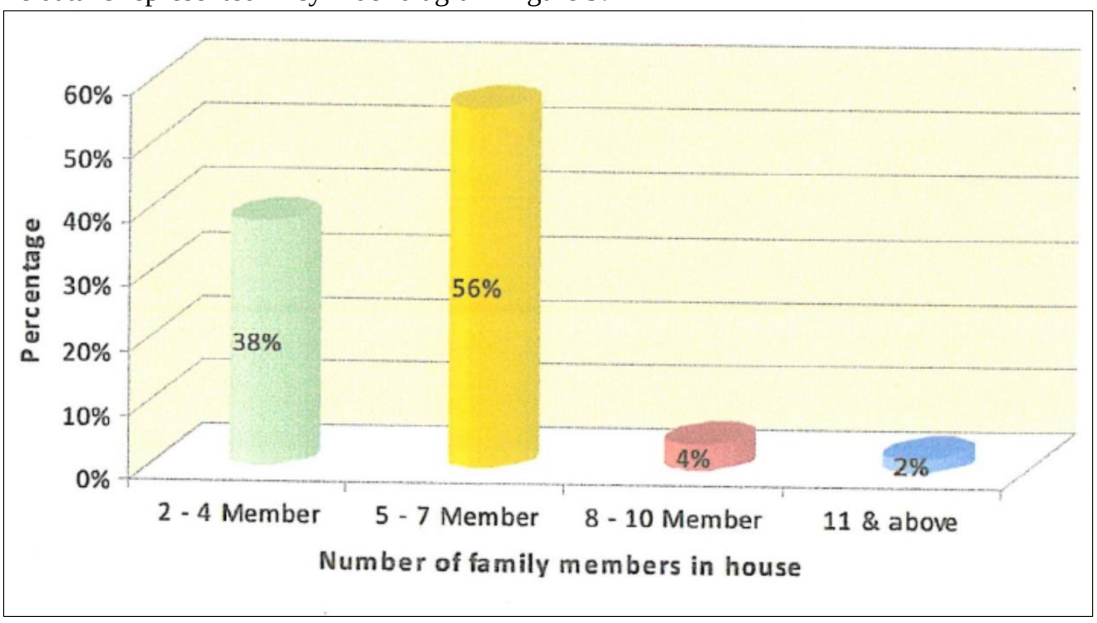


Figure 9: Cylinder diagram showing the distribution of subjects according to the family members in house

- **Type of family**
- Most of the subjects (66%) were living in the nuclear family and remaining 34% of subjects were living in joint family.
- **Number of rooms in house**
- Majority of the subjects (44%) had 3 rooms in house, 28% had 2, 20% had 4 and 4% had more than 5 rooms in house-
- **Locality**
- Majority of the subjects (68%) reside in rural area and remaining 32% reside in urban area.
- **Information regarding Pulmonary TB**
- Majority of the subjects (80%) did not receive any information regarding Pulmonary TB only the 20% subjects received the information regarding Pulmonary TB.

- **Source of information regarding Pulmonary TB**
- Majority of the subjects (16%) have received the information regarding Pulmonary TB from health personnel and equal 2% of subjects received the information respectively from mass media and family members.

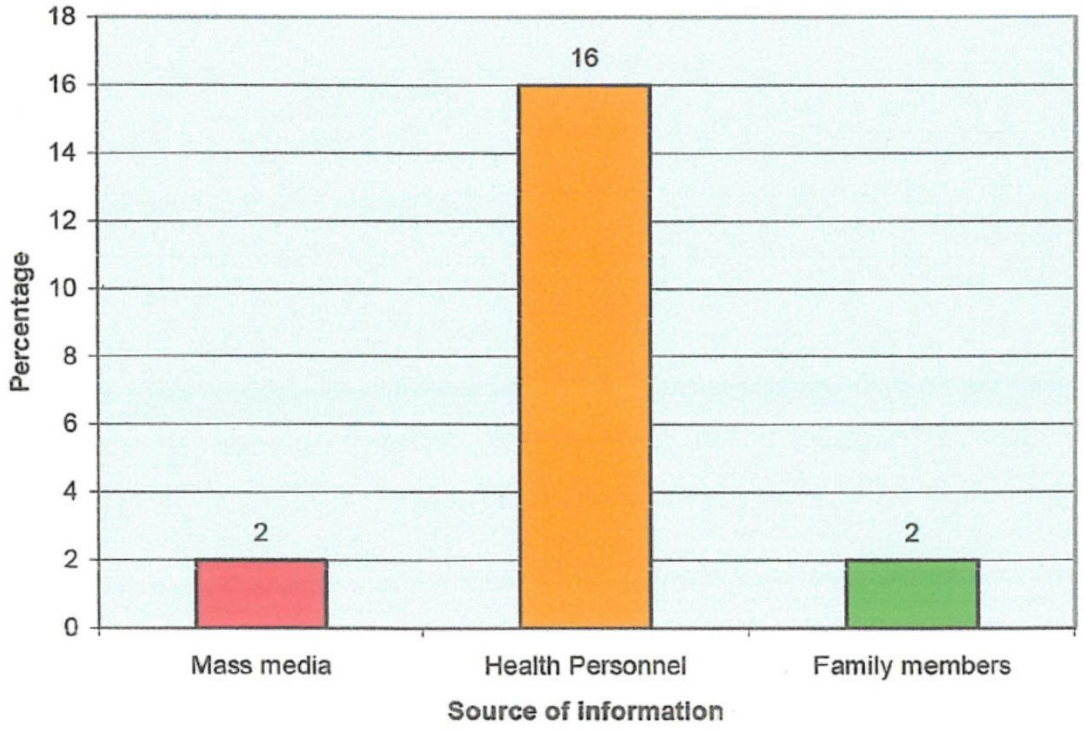


Figure 11: Bar diagram showing the distribution of subjects according to source of information regarding pulmonary TB

Duration of illness

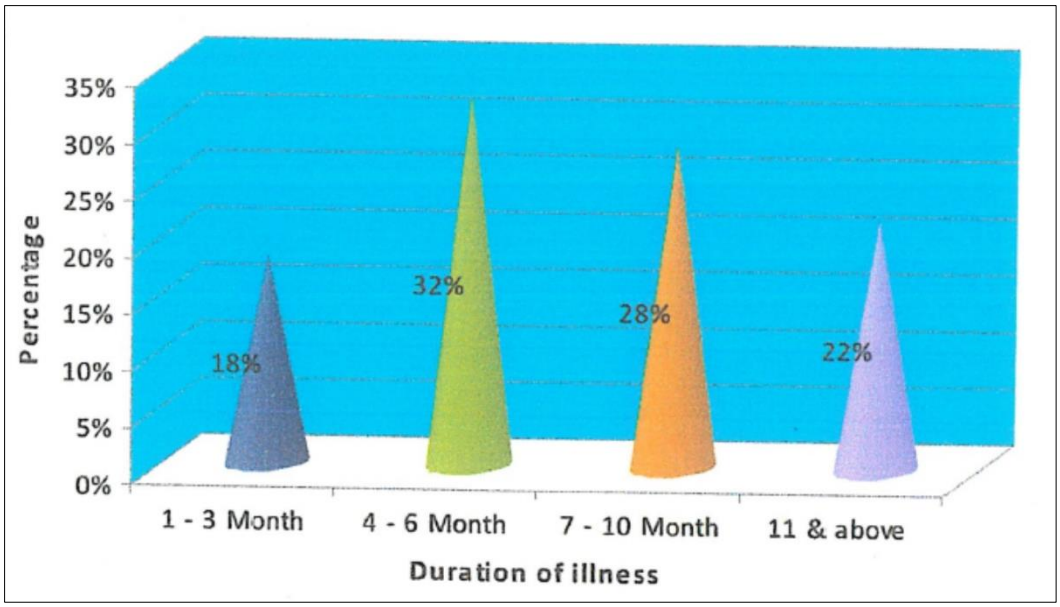


Figure 12: Cone diagram showing the distribution of subjects according to the duration of illness

- **Habit**

Section Il: Description of knowledge of Pulmonary TB patients regarding Pulmonary TB

- **Table 2: Distribution of subjects according to the level of knowledge scores**

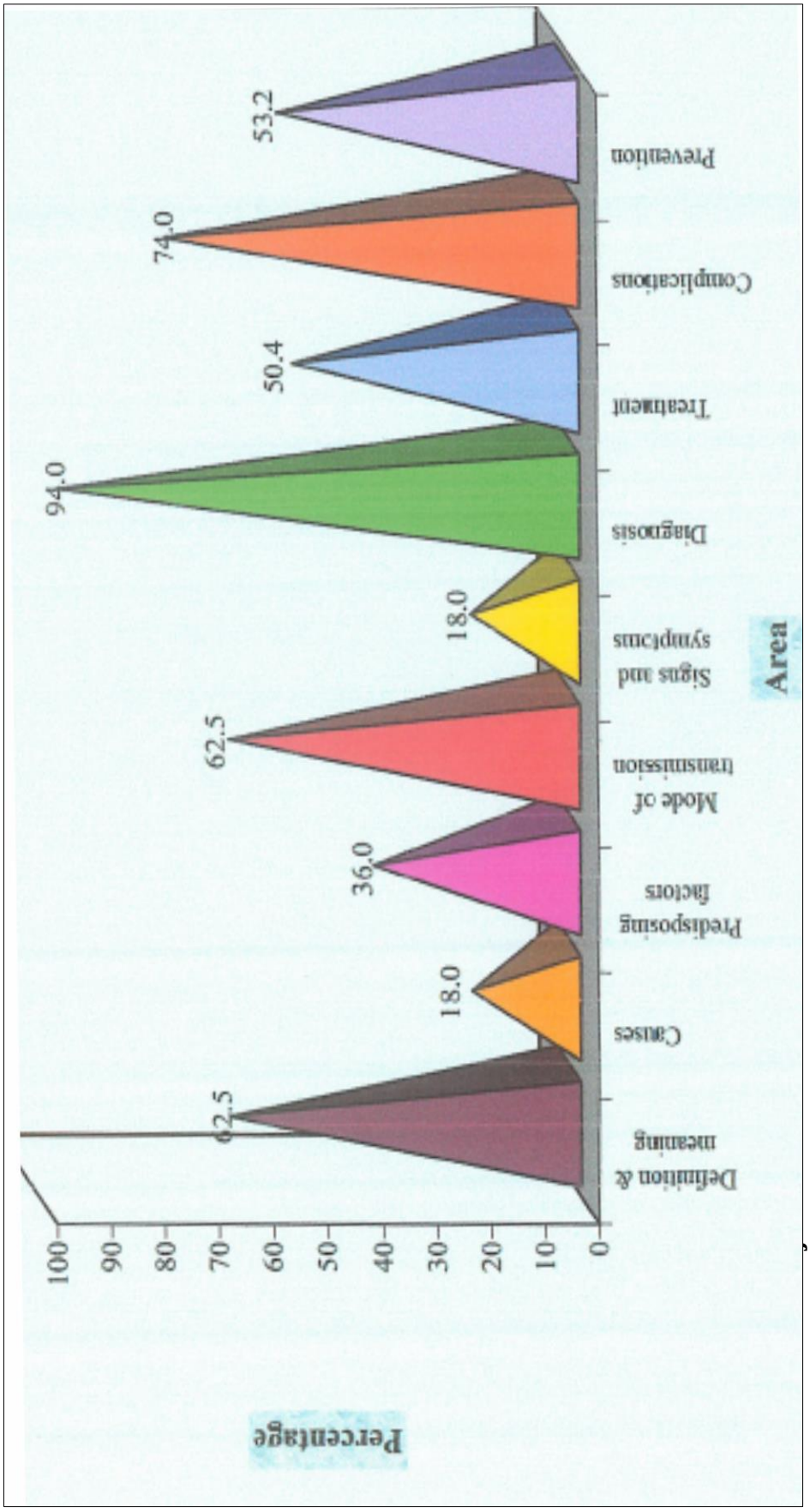
- N = 50

Categories	Score	Percentage	Frequency	Percentage
Adequate knowledge	< 14	< 50%	25	50%
Moderately adequately knowledge	14—21	50 - 75%	18	36%
Inadequate knowledge	21 -28	75 - 100%	07	14%

- Maximum score = 28
- **Area-wise assessment of knowledge scores of the subjects**
- **Table 3: Mean, Standard deviation and mean percentage of knowledge score of subjects in Pulmonary TB**
- N = 50

No.	Area	Max score	Mean	SD	Mean % score	Level of knowledge
1.	Definition and meaning	4	2.50	0.98	62.50	MAK
2.	Causes	1	0.18	0.38	18	
3.	Predisposing factor	2	0.72	0.80	36	IAK
4.	Mode of transmission	4	2.50	1.08	62.50	MAK
5.	Sign and symptoms	1	0.18	0.38	18	
6.	Diagnosis	1	0.94	0.24	94	AK
7.	Treatments	9	4.54	1.61	50.44	MAK
8.	Complication	1	0.74	0.44	74	MAK
9.	Prevention	5	2.66	I .05	53.20	MAK
	Total	28	14.96	6.96	468.64	

- AK: Adequate knowledge; MAK: Moderately adequate knowledge



- IAK: Inadequate knowledge

- **Section Ill: Description of preventive practice of Pulmonary TB patient regarding Pulmonary TB.**

Table 4: Distribution of subjects according to the scores
N = 50

Categories	Score	Percentage	Frequency	Percentage
Adequate practice	< 07	< 50%	11	22%
Moderately adequately practice	07- 10	50 - 75%	25	50%
Inadequate practice	10-14	75 - 100%	14	28%

- Total score = 14
- **Category wise comparison of knowledge scores and preventive practice scores of the subjects**

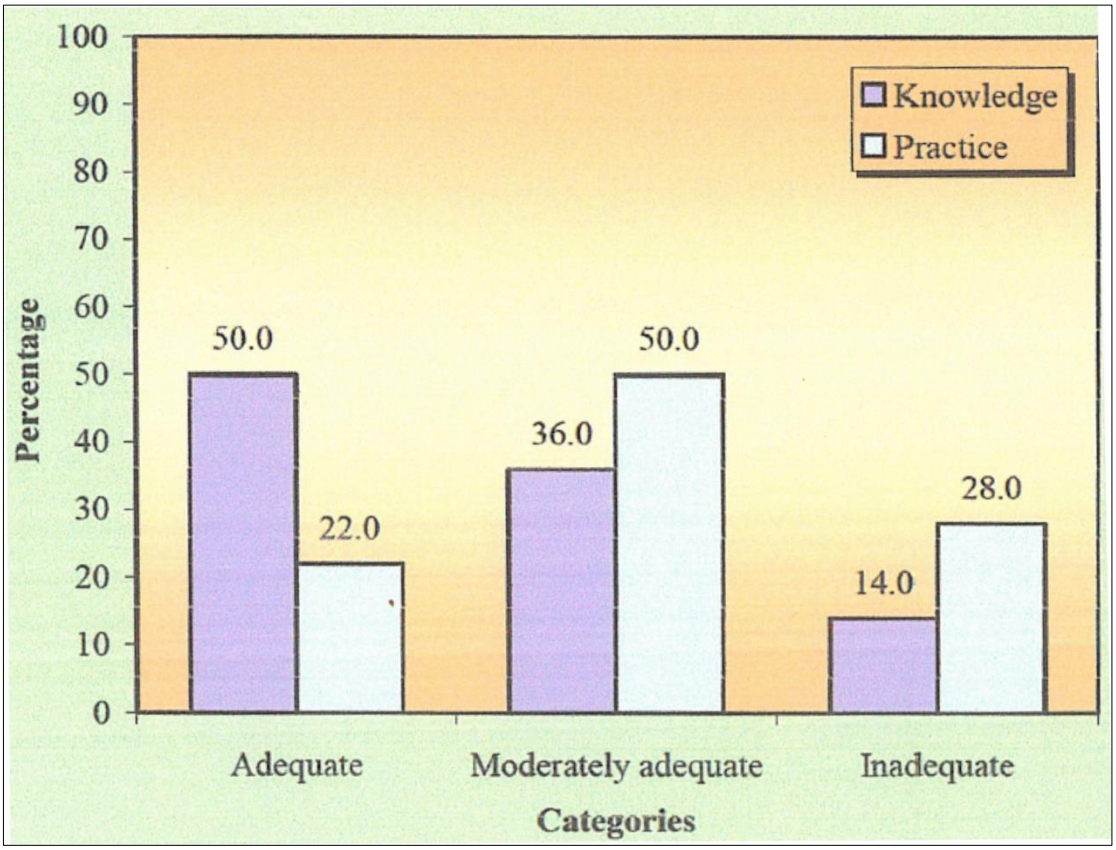


Figure 14: Bar diagram showing the category wise comparison of knowledge scores and preventive practice scores of the subjects

- **Section IV: Relationship between the knowledge scores and preventive practice scores of Pulmonary TB patient**

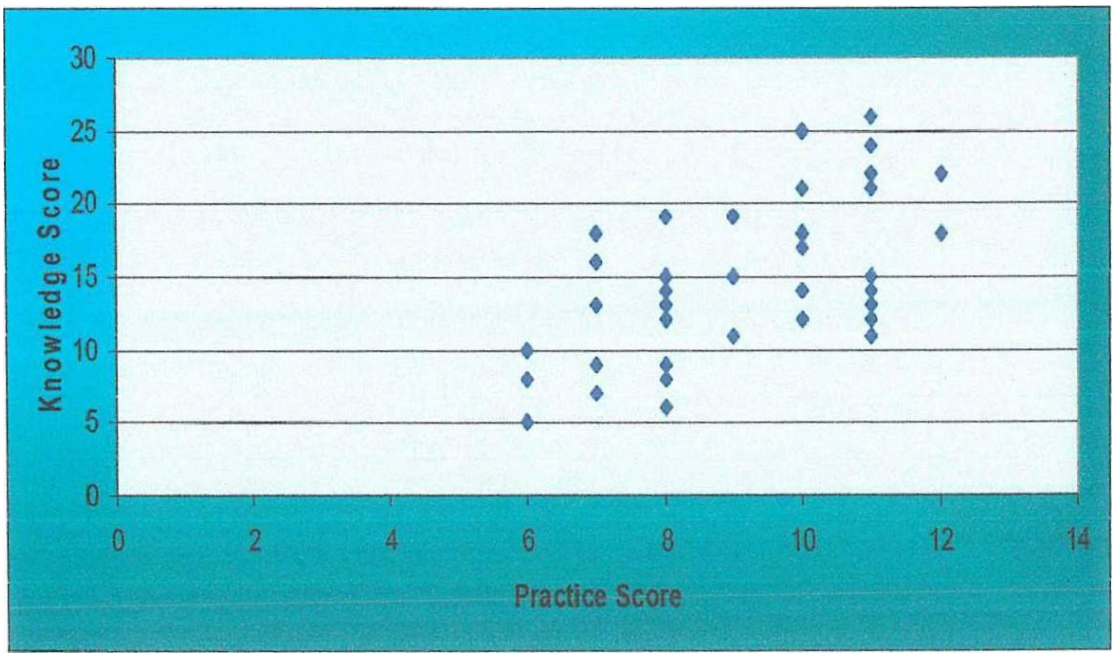


Figure 15: Scattered diagram showing relationship between knowledge scores and preventive practice scores of the Pulmonary TB patients

- The collection between the knowledge score and preventive practice score was found using Karl Pearson's correlation formula. To find the significant correlation between the knowledge score and preventive practice score of Pulmonary
- TB patients, the following research hypothesis was formulated
- $H_{1:}$ There will be significant relationship between knowledge scores and preventive practice scores of Pulmonary TB patients.
- The knowledge scores and preventive practice scores plotted in the scattered diagram shows that there is a positive correlation between knowledge score and preventive practice score ($r = 0.510$, $P = 0.000$, $P < 0.05$).
- **Section V: Association of selected demographic variables with the knowledge scores and preventive practice scores**
- This section deals with the findings of the association between knowledge scores and preventive practice scores with selected demographic variables. The mean knowledge score obtained by the subjects was found to 14.92, and the mean practice score obtained by the subjects was found 9. The number of subjects who were above and below mean were identified and grouped according to the baseline characteristics like age, gender, occupation, number of family members, type of family and information regarding Pulmonary TB.
- **Association between knowledge scores with selected demographic variable**

- **Table 5: Chi- square test showing the association between knowledge scores with selected demographic variables**

Sr. No.	Demographic variables	value	'p' value	df	Significance
1.	Age	10.74	0.005	3	s
2.	Gender	o. 149	0.7	1	NS
3.	Education	11.11	0.004	2	s
4.	Occupation	5.021	0.285	4	NS
5.	Number of family members	6.86	0.076	3	NS
6.	Type of family	5.704	0.174	1	s
7.	Source of information regarding Pulmonary TB	8.56	0.014	2	s
8.	Duration of illness	9.89	0.02	3	s

- S = Significant; NS = Not significant
- **Association between preventive practice scores with selected demographic variables**

Table 6: Chi square test showing the association between selected demographic variables and preventive practice scores

- **N = 50**

No.	Demographic variables	χ^2 value	'p' value	d.f.	Significance
l.	Age	0.796	0.672	3	NS
2.	Gender	0.069	o. 793	1	NS
3.	Education	2.813	0.245	2	NS
4.	Occupation	2.745	0.601	4	NS
5.	Number o f family members	4.687	o. 196	3	S
6.	Type of family	0.041	0.839	1	NS
7.	Source of information regarding Pulmonary TB	6.417	0.04	2	S
8.	Duration of illness	7.164	0.067	3	NS

CONCLUSION

The following conclusions were drawn on the basis of the findings of the study:

- Majority of the subjects had obtained inadequate knowledge score regarding Pulmonary TB.
- Majority of the subjects had obtained moderately adequate practice score in relation to preventive practice of Pulmonary TB.
- There was a significant positive relationship found between the knowledge scores and preventive practice scores of Pulmonary TB patient.
- There was significant association found between knowledge and age of patients, educational, type of family, source of information regarding Pulmonary TB, and duration of illness.
- There was significant association found between preventive practice scores and source of information regarding Pulmonary T B.

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