A Study to Assess the Knowledge and Attitude Regarding Dots Therapy among Dots Providers in Selected Rural Areas at Bhopal (Madhya Pradesh)

Nayana Kalane

Department of Community Health Nursing, Sumantai Wasnik Institute of Nursing
kalanenayana[at]gmail.com

Abstract: *Introduction: In India, tuberculosis remains a major public health problem & it's a communicable disease. Every day approximate 1000 peoples die from it. Tuberculosis is an infectious disease caused by MYCOBACTERIUM TUBERCULI the disease primarily affected the lung & cause pulmonary tuberculosis. It can also affect structure such as intestine, meninges, bone & joints, lymph gland, skin & other tissue of body parts.1 Tuberculosis is a preventable & curable disease, B. C. G. is gift to the30 prevent tuberculosis world given by the scientist Bacilli Calmette Guerin 1927, widely used like bacteria vaccine.2 DOTS (Directly Observed Treatment Short-course) is the name given to the Tuberculosis control strategy recommended by the WHO. According to WHO —The most cost effective way to stop the spread of tuberculosis in communities with a high incidence is by curing it. The best curative method for tuberculosis is known as DOTS. DOTS has five main component:- 1) Government commitment (including political with at all levels & establishment of a centralized & priorities system of TB monitoring recording & training). 2) Case detection by sputum smear microscopy. 3) Standardized treatment regimen directly of 6-8 months observed by a healthcare workers or community health worker for at least the first two month. 4) A drug supply. 5) A standardized recording & reporting system that allows assessment of treatment result.3&8. In India today, two deaths occur every three minutes from tuberculosis. But these death can be prevented with proper care& treatment. TB patients can be cured & the battle against TB can be won. 4 2 TB is an infectious disease caused by a bacterium mycobacterium tuberculosis. It is spread through the air by a person suffering from TB. A single patient can infect 10 or more people in the year. Objectives: a) To assess the knowledge regarding DOTS therapy among DOTS provider. B) To assess the attitude regarding DOTS therapy among DOTS provider. C) To find out the association between knowledge& attitude with selected socio demographic variables. D) To correlate the knowledge and attitude regarding DOTS therapy among DOTS providers. Hypothesis: H1-There is significant There is significant co-relation between knowledge and attitude. H2-There is significant association between knowledge with socio demographic variable. H3-There is significant association between attitude with socio demographic variable. H0– There is no significant co-relation between knowledge and attitude regarding DOTS therapy among DOTS provider. Methodology: A non-experimental, Descriptive design was adopt; Purposive sampling techniques was used to select 30 sample based on certain pre-determined criteria. Results: The data analyzed from the study subjects were analyzed and interpreted in term of the objectives and hypothesis of the study. Descriptive and inferential statistics was used for data analyzed; the level of significance of 5%. The characteristic of the demographic variables described in term of their frequency and percentage distribution which showed that majority 26.6% were in the age group of 15-25 years, majority 80% were male, most of the DOTS providers had got high school education, 73.3% were Hindu. Out of 30 DOTS providers, assessment of knowledge reveals that majority 12 (40%) of DOTS providers had moderate knowledge regarding DOTS therapy, 10 (33.3%) had adequate knowledge and only 8 (26.6%) had inadequate knowledge regarding DOTS therapy. The mean for overall knowledge of DOTS providers as represented in table-6 was 14.29 (S. D. =4.83). The assessment of attitude of DOTS providers revealed in table-7 that majority 20 (66.6%) of DOTS therapy and 10 (33.3%) had neutral attitude regarding DOTS therapy. The mean score of overall attitude was 31.4 (S. D. = 2.92) regarding DOTS therapy. Association of demographic variables with the level of knowledge using chi-square test. Although there was no statistically significant association found between level of knowledge and demographic variables such as age, gender and religion. There was a statistically association found between level of knowledge and demographic variable such as educational status at p<0.05 level. Hence the research hypothesis H2 stated "there will be a significant association between knowledge among DOTS providers regarding DOTS therapy and selected demographic variables" was accepted. This indicates that the level of knowledge of DOTS providers varies according to educational status. Association of demographic variables with the level of attitude using chi-square test. Although there was no statistically significant association found between level of attitude and demographic variables such as age and religion. There was a statistically association found between level of attitude and demographic variable such as educational status and gender at p <0.05 level. Hence the research hypothesis H3 stated "there will be a significant association between attitude among DOTS providers regarding DOTS therapy and selected demographic variables" was accepted. This indicates that the level of attitude of DOTS providers varies according to gender and educational status. The correlation between the knowledge and attitude showed that there was a positive correlation between knowledge and attitude of DOTS provider with regard to DOTS therapy. Hence the Research Hypothesis H1 stated. There will be a significant correlation between knowledge and attitude among DOTS providers regarding DOTS therapy was accepted. Conclusion: The present study assessed the knowledge and attitude regarding DOTS therapy among DOTS providers. On the basis of finding of the study the following of the study the following conclusion were made. Majority of the DOTS providers adequate knowledge regarding DOTS therapy. The study show that there was positive attitude regarding DOTS therapy. There was a positive correlation between knowledge and attitude among DOTS providers regarding DOTS therapy.*

Keywords: assess, knowledge, attitude, DOTS therapy, DOTS provider

1. Background of Study

The technical strategy for DOTS was developed by Karel Styblo of the international union against TB and lung disease in the 1970s and 80s primarily in Tanzania but also Malawi, Nicaragra and Mozambique styblo refined a treatment system of checks and balance that provided high cure rates at a cost affordable for most developing countries. This increased the promotion of people cured of TB from

40% to nearly 80% costing up to 10 per life saved and 3 per new infection avoided.6 In 1989, WHO & the World Bank began investigating the potential expansion of this strategy. In July 1990, the World Bank, under Richard Bumgarner's direction, invited styblo & WHO to design a TB control project for China. By the end of 1991, this pilot project was achieving phenomenal results, more than doubling cure rates among TB patients. China soon extended this project to cover half the country.7 Framework for TB control focusing on five main element & nine key operations. The initial emphasis was on DOT, or directly observed therapy, using a specific combination of TB medicines known as short-course. In 1993, the World Bank's Word Development Report claimed that the TB control strategies used in DOTS were one of the most cost-effective public health investments.2

2. Need of the Study

Tuberculosis is an infectious disease caused by Mycobacterium tuberculosis. It is spread through the air by a person suffering from TB. Controlling TB in India is a tremendous challenge. The TB burden in India is still staggering. Every year 1.8 million person develop the disease of which about 800, 000 died of it, annually 1000 every day. The disease is a major barriers to social & economic development. An estimated 100 million workdays are lost due to illness, society & the country also incur a large a huge cost due to TB nearly US 3 billion in indirect cost & US 300 million in direct cost.9

Tuberculosis is the most common cause of death due to infections disease at the global level. It affects peoples of all age group. WHO published a statistical report on tuberculosis in association with world tuberculosis day 2004. & the report shows that, 40% of the Indian population is 3 infected with the tuberculosis. Tuberculosis remains the single largest infectious disease carrying high death annually, about 5 deaths every minute. Every year about 8 million peoples develop tuberculosis world wide.10&11

3. Review of Literature

A literature review is a select analysis of existing research which is relevant to your topic, showing how it relates to your investigation. It explain and justifies how your investigation may help answer some of the questions or gaps in this area of research.19

The review of literature is organized and presented under the following section. Section A-Literature related to Tuberculosis. Section B-Literature related to DOTS therapy. Section C-Literature related to knowledge & attitude of DOTS provider.

A study investigates how drug resistant micro bacteria, Tuberculosis is transmitted and how this transmission affects treatment and control of tuberculosis particularly in rural area of china. The transmission of tuberculosis is an important factor in planning prevention and treatment practices. These cross sectional study of rural patients who were found to drug resistant micro bacteria tuberculosis over the course of one year examined the typical DOTS

tuberculosis treatment method. Despite the use of DOTS the prevalence of resistant bacteria in rural china continued to increase.399 total patient with genetic information from each patient micro tuberculosis bacteria to determine its location or origin and how it had been transmitted to the rural area and to that specific patient. The researcher also collected demographic information from patient and used their tuberculosis test result from local clinical records. The author found that the genetic information from the tuberculosis bacteria showed that the cases of resistant bacteria often appeared in geographic clusters within a village or other small area. The researcher concluded that there was little geographic spread of the resistant strains of 17 micro bacteria tuberculosis in rural china. From this results, the researcher also concluded that increased case detection within rural villages would be a necessary supplement to the DOTS method of treatment, as well as testing patients for resistant bacteria who are form areas where prevalence of resistant bacteria is high.21

Assumption
1) The DOTS providers have inadequate knowledge regarding DOTS therapy.
2) The DOTS providers have poor attitude regarding DOTS therapy.

Hypothesis
1) **H1-**There is significant co-relation between knowledge and attitude regarding DOTS therapy among DOTS provider.
2) **H2-**There is significant association between knowledge with socio demographic variable.
3) **H3-**There is significant association between attitude with socio demographic variable.
4) **H0–** There is no significant co-relation between knowledge and attitude regarding DOTS therapy among DOTS provider.

Research Approach:-
The research approach for the present study is the **Descriptive survey approach.**

Research Design
In the present study the non experimental design was adapted.

Setting of the Study:-
Rural area at Bhopal.

Sampling Technique:-
purposive sampling.

Sample Size:-30

Sample: DOT'S providers

Inclusion Criteria:-The study include DOTS providers
- At selected rural area.
- Who are willing to participate in the study.
- Include both male and female.

Exclusion Criteria:-The study excludes the participant
- Who are not working in rural area.

- Who are not available at the time of data collection. Those who are not co-operative.

Development and Description of Tool

Questionnaire and Interview technique is one of the most common tools used for collecting data through it the researcher may stimulate the subject to greater insight into her/his own experience, and there by explore significant areas not anticipated in the original plan of investigation. Developing a feeling of confidence in the respondents during the interview also helps in eliciting accurate feelings. The interview techniques is also appropriate when dealing with illiterate, those with language disabilities and those of limited intelligence. Hence to get the relevant responses pertinent to the study, the interview techniques was selected to collect data from the DOTS provider. Based on the conceptual framework and objectives of the study the following tools were developed to collect data-

- Self structured questionnaire was prepared to obtain data regarding the sample characteristics, knowledge of DOTS providers regarding DOTS therapy.
- Attitude scale to determine the attitude of DOTS providers toward DOTS therapy.

Steps in the construction of the tool

The steps selected for the preparing the tool were as follows:

- Review of related literature, books, journals, reports, articles, published and unpublished studies were reviewed to develop the tool.
- Consultation with the guide and experts in the related field.
- Consultation with the statisticians was done for the preparation of the plan for statistical analysis.
- Discussion with the peer group

Preparation of the print

A blue print on self structured questionnaire regarding DOTS therapy was prepared, which consisted of three areas. It depicted the distribution of items as per the objectives and conceptual framework. Then prepared item were subjected to content validation, pre-testing and estimation of reliability.

Development of the tool

SECTION-1 Comprised of demographic data SECTION-2 Comprised of self structured questionnaire on DOTS therapy, which had 25 question

SECTION-3 Comprises of likert scale which had 10 attitudinal statement.

Description of the tool

The self structured questionnaire consisted of three sections-
Section 1:- Demographic data which includes variable like age, sex, education qualification and religion.

Section 2:- The related literature was review for the construction of structures knowledge questionnaire. It consisted of 25 question. All the items were multiple choice question, all of which were scored. A score values of one was allotted to each correct response and for wrong response zero was awarded. Thus there were 25 maximum obtainable scores. The level of knowledge was categorized based on the percentage of score obtained.

Scoring for level of knowledge

The level of knowledge of DOTS therapy was divided into 3 categories:

$\leq$50%-Inadequate Knowledge
51-74%-Moderate Knowledge
$\geq$75%-Adequate Knowledge

Section 3:- Consisted of researcher structured interview schedule based on likert 5 point scale that is strongly agree, agree, undecided, disagree, strongly disagree, there are 10 statement on positive and negative aspect, where a response of strongly agree was allotted a score of five and response of agree was allotted four, undecided three, disagree two and strongly disagree one. Thus giving rise to a score of 100.

Scoring for attitude: The level of attitude of DOTS providers was divided into 3 categories:- $\leq$50%-Negative Attitude 51-74%-Neutral Attitude $\geq$75%-Positive attitude

Content Validity: Content validity is concerned with the sampling adequacy of items, for the construct that is being measured. Content validation is relevant for both affective measures and cognitive measures. The structured interview schedule along with objective and likert scale was submitted to 7 expert Doctors (community medicine), Nursing staff (master of community health nursing) and statistic field. The experts were selected on the basic of their qualification, experience and interest in problem area. Experts are requested to judge to judge the items on the basic of their relevance, clarity, feasibility, appropriateness and organization of the items included in the study. Few suggestions were given to modify some items in the tools. Some were incorporated. The tools were found valid for the study. The modified self structured questionnaire and attitude scale was translated by language expert into Hindi and back into English.

Reliability: Reliability of research instrument is defined as the extent to which the instrument yields the same results on repeated measures. It is then concerned with consistency, accuracy, precision, stability, equivalence and homogeneity. The self structured questionnaire schedule was tested for reliability.

Procedure for Data Collection: A validated structured schedule was used to collect data about DOTS therapy since this technique is feasible and suitable to collect data form the samples. Data collection is gathering of information needed to address research problem. The main study data collection was done 16/12/2015-19/12/2015 a sample of 30 DOTS providers was selected using purposive sampling technique. DOTS providers were explained about the nature of the study and their expected participation in the study before data collection. Then the individual DOTS providers were interview using self structured questionnaire and attitude scale. The confidentiality of the response was assured to the

subjects and maintained. Plan for data collection remained same as per pilot study.

Plan for data analysis: The plan for data analysis includes both Descriptive and inferential statistics. The collected data was organized, tabulated analyzed based on the objectives of the study by using Descriptive statistics i. e. percentage, mean, and standard deviation and inferential statistics i. e. chi-square and coefficient of correlation. The chi-square was used to find the association between demographic variables with knowledge and attitude among DOTS providers. The coefficient of correlation was calculated to find correlation between knowledge and attitude. The finding of the study will be presented in the form of tables and figure.

4. Result

This section presents the analysis and interpretation of data collected from 30 DOTS providers in order to assess the knowledge and attitude. The data collected from DOTS providers with the help of self structured questionnaire and attitude scale was organized, analyzed and interpreted by using Descriptive and inferential statistics. The data collected was based on the objectives of the study.

The data has been organized and presented in four section:

Section A:-Description of sample characteristic.

Section B:-Knowledge and attitude of DOTS providers

Section C:-Association of demographic variables with the level of knowledge and attitude of DOTS providers regarding DOTS therapy.32

Section D:-Correlation between knowledge and attitude of DOTS providers regarding DOTS therapy.

Section A: Percentage Distribution of the Demographic Variables

Table 1: Frequency and percentage distribution of subject according to their age, n= 30

Age	Frequency	Percentage	Age
15-25 years	8	26.6%	15-25 years
26-35 years	18	60%	26-35 years
36-45 years	4	13.3%	36-45 years

Table 2: Frequency and percentage distribution of subject according to their gender. n=30

Male	24	80%
Female	6	20%
other	0	00%

Table 3: Frequency and percentage distribution of subject according to their educational status, n= 30

Educational status	Frequency	Percentage
Middle school	4	13.3%
High school	16	53.3%
Higher secondary school	8	26.6%
Graduate & above	2	6.6%

Table 4: Frequency and percentage distribution of subject according to their religion, n =30

Religion	Frequency	Percentage
Hindu	22	73.3%
Muslim	3	10%
Sikh	0	00%
Christian	5	16.6%
other	0	00%

Section B: Knowledge and Attitude Score of Dots Providers

Part 1- Knowledge of DOTS providers regarding DOTS therapy

Table 5: Frequency and percentage of level of knowledge of DOTS providers regarding DOTS therapy, N=30

Level of Knowledge	Frequency	Percentage
≤50% inadequate knowledge	8	26.6%
51-74% moderate knowledge	12	40%
≥75% adequate knowledge	10	33.3%
Total	30	100

Table 6: Mean, Standard Deviation, and mean percentage of knowledge of DOTS providers regarding DOTS therapy, n=30

Knowledge	Max score	Mean	Standard Deviation	Mean %
Introduction	5	3.55	0.75	71%
Investigation	5	2.93	1.14	58.6%
Medication	8	3.55	1.23	44.3%
Diet plan	7	5.26	1.71	68.6%
Overall knowledge	25	14.29	4.83	60%

Part 2: Attitude of DOTS providers regarding DOTS therapy

Table 7: Frequency and percentage of level of attitude of DOTS providers regarding DOTS therapy, n=30

Level of Attitude	Frequency	Percentage
≤50% (negative)	0	0
51-74% (neutral)	10	33.3%
≥75% (positive)	20	66.6%
Total	**30**	**100**

Table 8: Mean, median, mode and standard deviation of attitude score of DOTS providers regarding DOTS therapy, n=30

Variable	Range of score	Mean	Median	Mode	S. D.
Attitude	10-50	31.4	31.5	38	2.92

Section C: Association between the socio demographic variables and knowledge and attitude score of dots providers.

Table 9: Association between pre-test knowledge score of DOTS therapy among DOTS providers with selected socio-demographic variables

S. No.	Socio demography variable	Total subject	Pre-test knowledge score			df	Chi-square	P value
	Age (year)		Poor	Average	Good			
1	15-25	8	0	3	5	2	2.48	(0.29) NS
	26-35	18	2	7	9			
	36-45	4	0	1	3			
		30						
	Gender		Poor	Average	Good			
2	Male	24	4	8	12	2	0.63	0.06 (NS)
	Female	6	1	2	3			
	other	0	0	0	0			
		30						
	Education		Poor	Average	Good			
3	Middle school	4	0	1	3	3	15.32	0.017 (s)
	High school	16	2	1	13			
	Higher secondary school	8	0	2	6			
	Graduate and above	2	0	1	1			
		30						
	Religion		Poor	Average	Good			
4	Hindu	22	2	16	4	2	1.58	0.453 (NS)
	Muslim	3	0	2	1			
	Sikh	00	00	00	0			
	Christian	5	0	1	4			
	Other	0	0	0	0			
		30						

Table 10: Association between pre-test attitude score of DOTS therapy among DOTS providers with selected socio-demographic variables

S. No.	Socio demography variable	Total subject	Pre-test knowledge score			df	Chi-square	P value
1	**Age (year)**		Poor	Average	Good	2	0.09	(0.95) NS
	15-25	8	0	2	6			
	26-35	18	1	9	8			
	36-45	4	0	1	3			
		30						
2	**Gender**		Poor	Average	Good	2	0.18	0.05 (S)
	Male	24	2	10	12			
	Female	6	0	1	5			
	other	0	0	0	0			
		30						
3	**Education**		Poor	Average	Good	3	12.24	0.05 (s)
	Middle school	4	0	1	3			
	High school	16	2	1	13			
	Higher secondary school	8	0	2	6			
	Graduate and above	2	0	1	1			
		30						
4	**Religion**		Poor	Average	Good	2	1.58	0.453 (NS)
	Hindu	22	2	16	4			
	Muslim	3	0	2	1			
	Sikh	00	00	00	0			
	Christian	5	0	1	4			
	other	0	0	0	0			
		30						

Section D: Correlation the knowledge and attitude among DOTS providers. Table 11-Correlation showing relationship between knowledge and attitude.

S. No	Knowledge score		Attitude score		Coefficient of correlation	t value	P value
	Mean	S. D	Mean	S. D			
1	14.29	4.83	31.5	2.92	0.207	2.447	0.017

5. Summary

- In the present study, it was observed that majority i. e.18 (60%) out of 30 DOTS providers were in the age group of 26-35 years.
- The proportion of 30 IDOTS providers 80% had male.
- The majority 53.3% DOTS providers were high school education.
- Out of 30 DOTS providers 73.3% had Hindu.
- Out of 30 DOTS providers, assessment of knowledge reveals in **table-5** that majority 12 (40%) of DOTS

providers had moderate knowledge regarding DOTS therapy.10 (33.3%) had adequate knowledge and only 8 (26.6%) had inadequate knowledge regarding DOTS therapy. The mean for overall knowledge of DOTS providers as represented in table-6 was 14.29 (S. D. — 4.83).

- The assessment of attitude of DOTS providers revealed in **table-7** that majority 20 (66.6%) of DOTS providers had positive attitude regarding DOTS therapy and 10 (33.3%) had neutral attitude regarding DOTS therapy. The mean score of overall attitude was 31.4 (S. D. = 2.92) regarding DOTS therapy.

Table-9 represented association of demographic variables with the level of knowledge using chi-square test. Although there was no statistically significant association found between level of knowledge and demographic variables such as age, gender and religion. There was a statistically association found between level of knowledge and demographic variable such as educational status at p**<0.05** level. Hence the research hypothesis H2 stated - there will be a significant association between knowledge among DOTS providers regarding DOTS therapy and selected demographic variables‖ was accepted. This indicates that the level of knowledge of DOTS providers varies according to educational status.

Table-10 represented association of demographic variables with the level of attitude using chi-square test. Although there was no statistically significant association found between level of attitude and demographic variables such as age and religion. There was a statistically association found between level of attitude and demographic variable such as educational status and gender at **p <0.05** level. Hence the research hypothesis H3 stated - there will be a significant association between attitude among DOTS providers regarding DOTS therapy and selected demographic variables‖ was accepted. This indicates that the level of attitude of DOTS providers varies according to gender and educational status.

Table-11 showed that there was a positive correlation between knowledge and attitude of DOTS providers with regard to DOTS therapy. Hence the Research Hypothesis H1 stated. There will be a significant correlation between knowledge and attitude among DOTS providers regarding DOTS therapy was accepted.

6. Conclusion

The present study assessed the knowledge and attitude regarding DOTS therapy among DOTS providers. On the basis of finding of the study the following of the study the following conclusion were made-

1) Majority of the DOTS providers adequate knowledge regarding DOTS therapy.
2) The study show that there was positive attitude regarding DOTS therapy.
3) There was a positive correlation between knowledge and attitude among DOTS providers regarding DOTS therapy.

References

[1] Swarnkar's. community health nursing.3rdedition; N. R. publication
[2] Gulani K. K. community health nursing.1st edition. Delhi; kumar publication
[3] Harries AD. Teaching tuberculosis to medical under graduate college of medicine.2003 w.w.w.adhariead Malawi. net
[4] K. park. Prevention and social medicine. m/s banarsidas banot publisher, India; 17th edition.
[5] Basavanthappa BT. Community health nursing.1st edition New Delhi. Jaypee brother; 1998.
[6] Fawarisive. Incidence and prevention practice regarding pulmonary tuberculosis. The nurse's international. Volume 1 no, 1june; 2009.
[7] Bello SI challenge of DOTS implementation strategy in the treatment of tuberculosis in a tertiary health institution. Ilorin, Nigeria, African journal of pharmacy and pharmacology. volume 4, April 2010.