

# A study to assess the effectiveness of Self-Instructional Module on knowledge regarding Multi Drug Resistance Tuberculosis among staff nurses in selected hospital of Gurugram

## Knowledge regarding Multi Drug Resistance Tuberculosis

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### Abstract

**Objective:** To assess the effectiveness of self-instructional module on knowledge regarding multi drug resistance tuberculosis among staff nurses in SGT hospital’.

**Material and Methods:** An evaluative approach with one group pre-test, post-test design was used for the study. The purposive sampling technique was used to select 50 staff nurses as the sample. A structure knowledge questionnaire was used to assess the knowledge and SIM was administered to find its effectiveness. The collected data was analyzed by using descriptive and inferential statistics.

**Result:** The mean percentage of post-test knowledge score (16.48) was higher than the mean percentage of pre-test knowledge score (7.4). The calculated ‘t’ value is greater than the table value (0.05, 49df) i.e. 2.67. It showed a significant difference between mean pre and post-test knowledge scores. Calculated  $\chi^2$  values showed significant association between Education and area of residence of respondents with their post-test knowledge scores.

**Conclusion:** The findings of the study showed that staff nurses had inadequate knowledge regarding multi drug resistance tuberculosis before administration of SIM. The results indicated that the SIM is effective in increasing the knowledge of staff nurses on multi drug resistance tuberculosis.

**Keywords:** Effectiveness, Knowledge, Multidrug Resistance Tuberculosis, Self-Instructional Module

### Introduction

Tuberculosis (TB) is a disease caused by bacteria mycobacterium tuberculosis that are spread from person to person through the air<sup>1</sup>. TB usually affects the lungs, but it can also affect other parts of the body, such as the brain, the kidneys, or the spine. TB is treatable and curable. Tuberculosis is treated by antitubercular drugs.

Drug resistant TB, A person with active TB disease has drug resistant TB if the TB bacteria that the person is infected with, will not respond to, and are therefore resistant to, at least one of the main TB drugs<sup>2</sup>. There are two ways that people get drug resistant TB. **Firstly**, people acquire drug resistant TB when their TB treatment is inadequate, **Secondly**, transmitted or primary drug resistant TB results from the direct

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transmission of drug resistant TB from one person to another<sup>3</sup>. There are two main types of drug resistant TB, MDR-TB and XDR-TB (Extensively drug resistant TB)

Multi-drug-resistant tuberculosis (MDR-TB) is a form of tuberculosis (TB) infection caused by bacteria that are resistant to treatment with at least two of the most powerful first-line anti-TB medications (drugs), isoniazid (INH) and rifampin (RMP)<sup>4</sup>. Almost one in four people in the world are infected with TB bacteria. Extensively-drug-resistant tuberculosis (XDR-TB) is defined as resistance to INH,

rifampicin, flouroquinolon, and one of capreomycin/kanamycine/ amikacin.

The general symptoms of TB disease include: feelings of sickness or weakness, weight loss, fever, and Night sweats<sup>5</sup>.

## Materials and Methods

The research design selected for the present study is Pre- Experimental design (i.e one group pre-test and post-test pre experimental design). In this design pre-test is conducted followed by Post-test for the same group after 7 days.

	Pre-test (O1)	Intervention (X)	Post-test (O2)
Group	Administration of Structured Knowledge Questionnaire on day-1	Administration of Self-instructional module on day-1	Administration of same Knowledge Questionnaire After 7 days.

O<sub>1</sub>: Pre-test to assess the knowledge regarding multi drug resistance tuberculosis.

X: Self-instructional module on knowledge regarding multi drug resistance tuberculosis.

O<sub>2</sub>: Post-test to assess the knowledge regarding multi drug resistance tuberculosis.

## Variables Under Study

Three types of variables were identified in this study. They are:

- Independent variable
- Dependent variable
- Demographic variables

**Independent variable:** Independent variable in this study is self-instructional module (SIM) regarding multi drug resistant tuberculosis.

**Dependent variable:** Dependent variable in this study is knowledge of staff nurses regarding multi drug resistance tuberculosis.

**Demographic variables:** Demographic variables in this study were age, gender, Religion, qualification, area of residence, years of experience.

## Sampling Technique

Sampling is a process of selecting a subset of the population in which entire population is represented.

In this study investigator used purposive sampling technique to draw the samples.

## Sampling Criteria

### Inclusion criteria

- The staff nurses who are working at selected hospital.
- The staff nurses who are willing to participate.

### Exclusion criteria

- The staff nurses who are not willing to participate.
- The staff nurses who are not present at the time of data collection.

## Sample Size

**Sample Size:** The sample size of this study is 50 staff nurses at selected hospital who are available at the time of data collection and fulfill the inclusion criteria.

## Data Analysis and Interpretation

The data was analyzed using descriptive and inferential statistics.

- **Descriptive statistics:** frequency and percentage distribution to present the demographic variables.

- **Mean, range and standard deviation** were used to describe the knowledge regarding multi drug resistance tuberculosis
- **Inferential statistics:** appropriate statistical test chi square and t- test were used to analyze the data.

## Result

Pretest score revealed that majority of the staff nurses 82.0% (41) had Inadequate level of knowledge regarding multidrug resistance tuberculosis and 18.0% (9) of them had moderate level of knowledge. Post-test score revealed that 74.0% (37) of staff nurses had adequate level of knowledge, 26.0% (13) of them had moderate level of knowledge and none of them were having inadequate level of knowledge regarding multi drug resistance tuberculosis.

**Table 1: Comparison of pretest and posttest knowledge scores of staff nurses regarding multi drug resistance tuberculosis**

N= 50

Level of Knowledge	Score	Pretest		Posttest	
		No	%	No	%
Inadequate	<50%	41	82.0	0	0.00
Moderate	50--75%	9	18.0	13	26.0
Adequate	>75%	0	0.00	37	74.0
Total		50	100	50	100

**Table 2: Effectiveness of self-instructional module on knowledge regarding multi drug resistance tuberculosis among staff nurses**

N=50

Area of knowledge	Pre-test		Posttest		Paired 't' test
	Mean	SD	Mean	SD	
Overall	7.4	0.87	16.48	1.29	16.64**

\*\* Significant P< 0.01level, df 49, table value: 2.67

It is confirmed that the overall paired t' test value was 16.64; it is significant in table value 2.67 at 0.01 level. So, it is proved that the SIM was effective in improving knowledge of staff nurses regarding multi drug resistance tuberculosis.

## Conclusion

Out of 50 respondents, in the pre-test, the majority 41 (82.0%) had inadequate knowledge and 9 (18.0%) had moderate knowledge. In post-test 13(26.0%) had moderate knowledge and 37 (74.0%) had adequate knowledge. The calculated t value was 16.64 which is greater than the table value. It concluded that there were significant differences between post-test and pre-test knowledge score on multi drug resistance tuberculosis, indicating that the self-instructional module (SIM) is very effective. Hence, with an increase in knowledge. There was no significant association between pre-test knowledge regarding multi drug resistance tuberculosis with selected demographic variables such as age, gender, religion, education, residential area, years of experience. The investigator concluded that the self-instructional module is an effective educating strategy in improving the knowledge of the staff nurses regarding multi drug resistance tuberculosis. Thus, the self-instructional module conducted by the investigator helped the staff nurses to improve their knowledge.

**Ethical clearance:** taken from departmental research committee, SGT University

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**Conflict of Interest:** Nil

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