



“A Study To Assess The Effectiveness Of Structured Teaching Programme On Knowledge Regarding Prevention And Treatment Of Multidrug Resistant Tuberculosis Among Health Workers In Selected Primary Health Centers At Vijayapur District, Karnataka”

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Abstract

Background: Tuberculosis (TB) remains a global health concern, but its battle has become even more complex with the emergence of Multi-Drug Resistant TB (MDR TB). This intricate issue arises from a combination of factors, including improper treatment management and person-to-person transmission. To effectively combat MDR TB, a multifaceted approach is crucial, ranging from individual adherence to treatment regimens to community-wide awareness. One of the most significant challenges in tackling MDR TB lies in the ability of TB bacteria to adapt and develop resistance to the drugs used to combat the disease.

Objectives: 1. To evaluate the knowledge of health professionals at selected primary health facilities in the Vijayapur District, Karnataka, regarding the prevention and treatment of multidrug-resistant tuberculosis. 2. To evaluate the impact of structured education programmes on knowledge of multi-drug resistant tuberculosis prevention and treatment. 3. To determine the relationship between knowledge scores and particular socio-demographic factors.

Hypothesis: H1: We anticipate observing a notable variance between the knowledge scores of health workers in the pre-test and post-test phases concerning the prevention and treatment of multidrug-resistant tuberculosis. **H2:** We expect to find a substantial correlation between the knowledge held by health workers about the prevention and treatment of multidrug-resistant tuberculosis and certain chosen socio-demographic factors, at a significance level of 0.05.

Methodology: The research design consisted of pre-experimental research design of one group pretest and post-test design. The population selected for the study was health workers of selected Primary Health Centres at Vijayapur district. The study samples were 60 health workers and were selected by using purposive sampling technique. The development of the tool involved steps of test construction i.e. preparing the blue print, selection of items, content validation and establishment of reliability. The content validity of the questionnaire was done and modifications were done according to the suggestions given by the experts. Pre-testing and reliability of the tools were done. The reliability coefficient of the knowledge questionnaire was found to be 0.893. The tool was found to be reliable. **Results:** In the pre-test, level of knowledge of health workers revealed that existing knowledge regarding prevention and treatment of multidrug resistant tuberculosis. There were no study participants having adequate level of knowledge.

Majority 46(76.7%) had inadequate knowledge and remaining 14(23.3%) had moderately adequate knowledge. So it was concluded that Knowledge on prevention and treatment of multidrug resistant tuberculosis among health workers. Whereas in posttest majority 31(51.7%) had adequate level of knowledge, 26(43.3%) had moderately adequate knowledge and only 3(5.0%) had adequate knowledge. that mean paired difference in knowledge score was 10.56 with t-value= 13.9 with p-value less than 0.0001 indicates that structured teaching programme was effective in enhancing the knowledge It was concluded that structured teaching programme regarding prevention and treatment of multidrug resistant tuberculosis among health workers was effective.

Conclusion: The result of the study showed that, there was a significant improvement obtained following Structured Teaching Programme on multidrug resistant tuberculosis. This study enlightens that there is an immense need for teaching programme in Primary Health Centres areas to improve the knowledge of Health workers regarding multidrug resistant tuberculosis.

Keywords: Structured Teaching Programme, multidrug resistant tuberculosis, Health workers, Primary Health Centres.

Introduction

Health, as defined by the World Health Organization (WHO), is not merely the absence of illness but a holistic state that encompasses physical, mental, and social well-being. Disease, on the other hand, can be understood as a deviation from the body's usual structure or function, often accompanied by specific signs and symptoms that differentiate it from physical injury. It's a disruption to the body's equilibrium, causing it to veer away from its normal state.¹

In the realm of healthcare, the concept of health promotion takes center stage. It's about empowering individuals to take control of their own health, to make choices that enhance their well-being. This perspective goes beyond just individual behavior; it encompasses a much wider spectrum of interventions that involve the social and environmental context in which we live. It's a cornerstone of public health efforts, benefiting governments, communities, and individuals alike in their collective journey to tackle health challenges.²

Health promotion involves creating policies that support health, creating environments that foster well-being, nurturing community-driven initiatives, and equipping individuals with the skills and knowledge they need to make informed decisions about their health. It's not just about preventing illness, but also about enhancing the overall quality of life.²

Health is more than just the absence of illness; it's a state of complete physical, mental, and social well-being. Disease represents a disruption to this equilibrium, causing specific signs and symptoms that deviate from the body's normal functioning. Health promotion is the cornerstone of public health efforts, empowering individuals and communities to make informed choices for a healthier life. In the Western Pacific Region, this approach focuses on capacity building, creating health-supportive environments, and prioritizing health literacy. Ultimately, health promotion is an investment in a better, brighter future for all.³

Ensuring a healthy life begins with adopting preventive measures. Taking proactive steps to safeguard your well-being not only enhances your quality of life but also contributes to the overall health of the community.⁴

Tuberculosis, commonly known as TB, is a contagious infection that predominantly affects the lungs but can also spread to other parts of the body, such as the brain and spine. This serious disease is caused by a type of bacteria called *Mycobacterium tuberculosis*. Although TB was a leading cause of death in the past, advancements in medical science have brought about effective treatments. However, treating TB requires dedication, as medications need to be taken for an extended period, usually around 6 to 9 months.⁵

TB is often associated with poverty, HIV infection, homelessness, and confinement in close quarters such as jails or prisons, where the infection can spread easily. Substance abuse, weakened immune systems due to medication or diseases like kidney disease and diabetes, and organ transplants also increase susceptibility to TB. Recognizing Symptoms: Signs of active TB include persistent cough lasting for three weeks or more, coughing up blood or mucus, chest pain, unintentional weight loss, fatigue, fever, and night sweats.⁶

Managing TB: TB is an infectious disease that primarily affects the lungs and is transmitted through airborne droplets released during coughing. Preventive measures include proper hygiene, staying away from individuals with active TB, and ensuring good ventilation in shared spaces. Treating TB: The World Health Organization (WHO) recommends a standardized regimen for treating TB. The primary medications, collectively known as "first-line" treatment, include isoniazid, rifampicin, pyrazinamide, ethambutol, and streptomycin. These medicines are effective against TB bacteria and are administered for varying durations based on the severity of the infection.⁷

One of the most significant challenges in tackling MDR TB lies in the ability of TB bacteria to adapt and develop resistance to the drugs used to combat the disease. This phenomenon underscores the importance of adhering strictly to the prescribed drug regimens. Premature interruption of treatment can inadvertently contribute to the development of drug resistance, rendering the infection even more challenging to manage. Hence, ensuring that patients complete their treatment as prescribed is a critical aspect of preventing the emergence of MDR TB⁸.

The situation becomes even more dire with the emergence of extensively drug-resistant TB (XDR TB). This form of TB, which is even more challenging to treat, has been documented in numerous countries. The complexities surrounding treatment, combined with the spread of drug-resistant strains, underscore the urgency of addressing this issue on a global scale. It's not merely a health concern confined within certain borders; it's a challenge that demands collaboration and collective action⁹.

Material and Methods

Research approach: Evaluative Research Approach.

Research design: Pre-experimental; one group pre-test, post-test design.

Research setting: Primary Health Centers at Vijayapur district.

Population: Health workers.

Sample: Health workers working in selected Primary Health Centers at Vijayapur district .

Sampling technique: Purposive sampling technique.

Sample size: 60 Health workers.

Criteria for selection of the sample

The criteria for sample selection are mainly depicted under two headings, which includes the inclusion and the exclusion criteria.

Inclusive criteria: The study includes: Health workers, who are;

- ✓ Co-operative and willing to participate in the study.
- ✓ Available during the time of data collection.
- ✓ At age group of 25 to 50 years.

Exclusion criteria: The study excludes: Health workers, who are;

- ✓ Not available at the time of data collection.
- ✓ Not co-operative and not willing to participate in the study.

Development of the tool

The tool used for research study was Self-administered knowledge questionnaire which was prepared to assess the knowledge regarding Multi-Drug Resistant TB. The tool was formulated on the basis of the experience of the investigator, review of literature, extensive library search and consultation with experts.

Description of tool: The tool consists of the following sections:

Section A

Socio-demographic variables: The first part of the tool consists of 8 items for obtaining information of the selected socio-demographic factors such as age, gender, religion, family type, occupation, working experience, family income, and education level.

Section B

Self-administered structured knowledge questionnaire: Self-administered structured knowledge questionnaire was prepared in the form of multiple-choice questions. It consists of 30 items regarding Multi-Drug Resistant TB. The total maximum score is 30.

Development of STP (Structured Teaching Programme): Based on the objectives, the STP was prepared. Content validity was taken from seven experts and necessary modifications were done. The STP was pertaining to domains of learning i.e., knowledge.

The following steps were adopted to develop the STP.

- ✓ Development of content blue print.
- ✓ Preparation of STP.
- ✓ Establishment of content validity of STP.

Structured Teaching Programme: The script of Structured Teaching Programme was designed and developed by the investigator with the help of review of literature and suggestion of guide and experts. Structured Teaching Programme was based on following aspects: Introduction, Definition, Purposes, Indications and Contra indications, adverse effects, Procedure, Nurses responsibilities.

Results and Discussion

Majority 23(38.3%) of the health workers were in the age group of 20-21 years followed by 22(36.7%) were between 22-25 years of age, and remaining 15(25.0%) were aged between 26 & above. Majority 45(75.0%) of the health workers were males and remaining 15(25.0%) patients were females. Majority 42(70.0%) of the health workers were Hindu ,9(15.0%) were Muslims, 8(13.3%) were belongs to other caste and only 1(1.7%) Christian. Majority 42(70.0%) of health workers were belongs to nuclear family , 15(25.0%) were belongs joint family and only 3(5.0%) were belongs to the extended family. Majority 29(48.3%) of the study participants had 2 years of experience, 20(33.3%) had more than 3 years of experience and remaining 11(18.3%) had 1 years of experience. Majority 45(75.0%) of the health workers had income between 10000-20000Rs, followed by 10(16.7%) had income less than 10000Rs and remaining 5(8.3%) had income more than 20000Rs. Majority 42(70.0%) of the study participants were completed their high school, 12(20.0%) had completed PUC, 4(6.7%) degree and only 2(3.3%) had primary education.

Table 1. Assessment of the existing level of knowledge regarding prevention and treatment of multidrug resistant tuberculosis among health workers.

SINO	Level of knowledge	Frequency	Percentage
1	Inadequate	46	76.7
2	Moderately Adequate	14	23.3
3	Adequate	00	0.0
	Total	60	100.0

The data in the above table revealed that existing knowledge regarding prevention and treatment of multidrug resistant tuberculosis. There were no study participants having adequate level of knowledge. Majority 46(76.7%) had inadequate knowledge and remaining 14(23.3%) had moderately adequate knowledge

Conclusion: It was concluded that Knowledge on prevention and treatment of multidrug resistant tuberculosis among health workers

Table 2. Comparison of level of knowledge regarding prevention and treatment of multidrug resistant tuberculosis among health workers

SINO	Level of knowledge	Pre-test		Post-test	
		Frequency	%	Frequency	%
1	Inadequate	46	76.7	3	5.0
2	Moderately Adequate	14	23.3	26	43.3
3	Adequate	00	0.0	31	51.7
	Total	60	100.0	60	100.0

The data noted that knowledge regarding prevention and treatment of multidrug resistant tuberculosis among health workers has increased after structured teaching programme. After structured teaching programme, majority 31(51.7%) had adequate level of knowledge, 26(43.3%) had moderately adequate knowledge and only 3(5.0%) had adequate knowledge

Conclusion: It was determined that following an organised instruction programme, health workers' understanding of the prevention and treatment of multidrug-resistant tuberculosis dramatically increased.

Table 3. Paired t test for comparing knowled geregarding prevention and treatment of multidrug resistant tuberculosis among health workers

Paired Differences			t	df	Sig. (2-tailed)
Mean	Std. Deviation	SE Mean			
10.56	5.85	0.75	13.9	59	<0.0001(S)

The data showed that mean paired difference in knowledge score was 10.56 with t-value= 13.9 with p-value less than 0.0001 indicates that structured teaching programme was effective in enhancing the knowledge

Conclusion:

It was concluded that structured teaching programme regarding prevention and treatment of multidrug resistant tuberculosis among health workers was effective

Testing of hypotheses

H₁: There is significant difference between mean pre-test and post-test knowledge scores of Health workers before and after receiving Structured Teaching Programme on multidrug resistant tuberculosis.

Table 2 showed that enhancement in knowledge score on multidrug resistant tuberculosis among teachers after Structured Teaching Programme was significant. So, research hypothesis H₁ was accepted. This indicates the gain in the knowledge score is statistically significant at P value 0.05 level. The result indicates that Structured Teaching Programme on multidrug resistant tuberculosis is effective in improving the knowledge level of health workers.

H₂: There is significant difference between pre-test and post-test knowledge score regarding multidrug resistant tuberculosis among Health workers.

Conclusion

On the basis of the findings, the investigator concluded that the intervention using Structured Teaching Programme regarding multidrug resistant tuberculosis was effective in enhancing the knowledge of Health workers. The improved knowledge regarding multidrug resistant tuberculosis will enable them to make informed choices in decision making and adopting a healthy lifestyle, which will, in turn, help the health workers to improve the education and Practice.

Implications of the Study

The findings of the study have implications for Research and administration. Based on the study results, the nurses can organize awareness campaign through different media to increase the awareness regarding multidrug resistant tuberculosis. Nursing professionals can make significant contribution to health promotion among health workers.

Recommendations

On the basis of the findings of the study, the following recommendations have been made for further study:

- 1) The study can be conducted on a larger sample.
- 2) A comparative study can be conducted to find out the effectiveness of Structured Teaching Programme between Other health workers.
- 3) An evaluatory study can be conducted to find out the effectiveness of structured Teaching Programme among two different groups of health professionals.

Declarations

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Ethical Approval: The proposal for the study was approved by the Institutional Review Board of the Tulza Bhavani College of nursing Vijayapur.

Author Contributions: All authors contributed to the conception and design of the work, drafted the manuscript, revised it critically for important intellectual content, gave final approval of the version to be published and agreed to be accountable for all aspects of the work.

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