A Study to Assess the Effectiveness of Structural Teaching Programme Regarding Management of Tuberculosis on the Knowledge among Staff Nurses in Selected Hospital of Bhopal (MP)

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Abstract: *Tuberculosis presents a significant global health concern as it is a highly contagious bacterial illness primarily afflicting the lungs. It poses a substantial public health challenge, especially in low- and middle-income nations, owing to its capacity for rapid transmission and its substantial toll on global health in terms of sickness and death. The imperative to address and eliminate TB remains a top priority within the realm of international healthcare. Thus, I conducted this study to assess the effectiveness of a structured teaching program regarding management of tuberculosis on the knowledge among staff nurses. A structured knowledge questionnaire was used to collect the pre-test and post-test data. The result of the study showed a significant difference between the pre-test and post-test knowledge scores regarding management of tuberculosis. Therefore, it can be concluded that the structured teaching program is effective in enhancing the knowledge of staff nurses.*

Keywords: Tuberculosis, management, staff nurses, knowledge

1. Introduction

Tuberculosis (TB) continues to be a prominent cause of infectious disease-related fatalities on a global scale, with approximately 3 million cases of tuberculosis going unrecognized and untreated in 2013.[1]

Latent Mycobacterium tuberculosis infection serves as the source of the tuberculosis pandemic. The worldwide prevalence of M. tuberculosis infection has been newly recalculated to be at 24%.[2]

Tuberculosis (TB) is a global health challenge caused by Mycobacterium tuberculosis, affecting not only the lungs but various body parts. Each year, millions of new TB cases and deaths are reported. TB poses a substantial burden on public health, particularly in developing countries, and the World Health Organization (WHO) offers comprehensive data on its prevalence, mortality rates, and efforts to combat the disease.[3]

Mycobacterium tuberculosis, the bacterium responsible for TB, spreads through the air when an infected person coughs or sneezes, leading to its transmission.[4] Common TB symptoms include a persistent cough, fever, weight loss, and night sweats.[5] Tuberculosis, caused by the Mycobacterium tuberculosis pathogen, is one of the deadliest infectious diseases, accounting for over a billion deaths in the last two centuries, with 10.4 million new cases and nearly 1.7 million deaths in 2017.[6]

Healthcare workers (HCWs) are crucial in the global fight against TB, but they face a high risk of TB infection due to frequent exposure to TB patients.[7]

Thus, I have conducted this study to assess the knowledge of nurses regarding management of tuberculosis and deliver a structure teaching programme to evaluate its effectiveness on their knowledge.

Aim of the study:
This pre-experimental study was done to assess the effectiveness of a structured teaching program regarding management of tuberculosis on the knowledge among staff nurses.

Objectives of the study:
1) To assess the level of pre-test knowledge among staff nurses regarding management of tuberculosis.
2) To assess the effectiveness of planned teaching programme regarding management of tuberculosis among staff nurses.

Subjects and Methods:
Quantitative pre-experimental research approach and one group pre-test, post test research design
Population: Staff nurses
Sample: Staff nurses of selected hospital Bhopal
Sample size: 30
SamplingTechnique: Convenience sample technique
Null Hypothesis- All the null hypotheses were tested at 0.05 level of statistical significance
Research Hypothesis: There will be a significant difference between the pre-test and post-test knowledge scores of the staff nurse.

Variables:
Independent: Structured teaching program regarding management of tuberculosis
Dependent: Knowledge of staff nurses regarding management of tuberculosis

Data collection tools & techniques:

A structured knowledge questionnaire was used for assessing the knowledge regarding the management of tuberculosis which consists of two section. Section A consists of the demographical variables and section B consists of 20 multiple choice questions related to management of tuberculosis which carries 1 mark each. The maximum score was 20 and minimum score was 0.

Ethical clearance:

Ethical permission was obtained from the administrative authorities of the selected hospital of Bhopal, MP and consent form was obtained from each participant prior to the data collection.

2. Results

Table 1: Demographical variables of the staff nurses, n=30

S.NO.	Variables	Frequency	Percentage
1.	**Age**		
	A. 21yrs & below	21	70%
	B. 25 – 35yrs	6	20%
	C. 36 – 45yrs	3	10%
	D. 46yrs & above	0	0%
2.	**Working Experience**		
	A. 0-1	24	80%
	B. 1-5	3	10%
	C. 5-10	3	10%
	D. 10-above	0	0%
3.	**Working Area**		
	A. ICU	3	10%
	B. Causality	0	0%
	C. HDU	3	10%
	D. ICCU	12	40%
	E. General word	12	40%
	F. Other	0	0%
4.	**Medium**		
	A. Hindi	18	60%
	B. English	12	40%

Table 1 shows 70% staff nurses were 21 years and below old, 80% were having less than 1 year experience, around 40% were belong to the working area of ICCU and general ward each, and 60% were having Hindi as mode of communication.

Table 2: Distribution of staff nurses based on the pre-test knowledge scores, n=30

Category	Range	Frequency	Percentage	Means	Standard deviation
Good	21-30	02	6.66%		
Average	10-20	20	66.66%	13.3	6.84
Poor	0-10	08	26.67%		

Table 2 shows that 7% staff nurses were having good knowledge, 66% were having average knowledge, and 27% were having poor knowledge regarding the management of tuberculosis during the pre-test. The mean knowledge score was 13.3 with a standard deviation of 6.84.

Table 3: Distribution of staff nurses based on the post-test knowledge scores.n=30

Category	Range	Frequency	Percentage	Means	Standard deviation
Good	20-30	10	33.34%		
Average	10-20	19	63.33%	18.43	4.84
Poor	0-10	01	03.33%		

Table 3 shows that 34% staff nurses were having good knowledge, 63% were having average knowledge, and 3% were having poor knowledge regarding the management of tuberculosis during the post-test. The mean knowledge score was 18.43 with a standard deviation of 4.84.

Table 4: T-test score to assess the difference between pre-test and post-test. n=30

Pre test mean	Post test mean	Dt	T test
13.3	18.43	58	t-test value is 3.26 significant level at 0.05 at dt 58

Table 4 shows that there is a significant difference between the pre-test and post-test knowledge score regarding management of tuberculosis among staff nurses. Thus, the null hypothesis is rejected.

3. Discussion

Tuberculosis (TB) is an extremely contagious infectious illness triggered by the Mycobacterium tuberculosis bacterium. While it mainly targets the lungs, it can also affect various body regions. Transmission occurs through the air when an infected individual coughs or sneezes. Typical signs encompass a persistent cough, fever, weight loss, and night sweats. Successful treatment requires a prolonged course of antibiotics, and global health initiatives are focused on minimizing its spread through early identification and management, given its ongoing status as a major global health issue. Thus, healthcare workers are an essential part in the prevention of this disease. So, nurses should have adequate knowledge regarding its management and prevention.

4. Conclusion

From the result of the study, it can be concluded that the structured teaching program is effective in enhancing the knowledge of staff nurses regarding the management of tuberculosis.

References

[1] Schito M, Migliori GB, Fletcher HA, McNerney R, Centis R, D'Ambrosio L, Bates M, Kibiki G, Kapata N, Corrah T, Bomanji J, Vilaplana C, Johnson D, Mwaba P,

Maeurer M, Zumla A. Perspectives on Advances in Tuberculosis Diagnostics, Drugs, and Vaccines. Clin Infect Dis. 2015 Oct 15;61Suppl 3(Suppl 3):S102-18. doi: 10.1093/cid/civ609.

[2] Churchyard G, Kim P, Shah NS, Rustomjee R, Gandhi N, Mathema B, Dowdy D, Kasmar A, Cardenas V. What We Know About Tuberculosis Transmission: An Overview. J Infect Dis. 2017 Nov 3;216(suppl_6):S629-S635. doi: 10.1093/infdis/jix362.

[3] Global tuberculosis report 2021 (no date) World Health Organization. Available at: https://www.who.int/publications/i/item/9789240037021

[4] Basic TB facts (2016) Centers for Disease Control and Prevention. Available at: https://www.cdc.gov/tb/topic/basics/default.htm

[5] Tuberculosis (2021) Mayo Clinic. Available at: https://www.mayoclinic.org/diseases-conditions/tuberculosis/symptoms-causes/syc-20351250

[6] Bussi C, Gutierrez MG. Mycobacterium tuberculosis infection of host cells in space and time. FEMS Microbiol Rev. 2019 Jul 1;43(4):341-361. doi: 10.1093/femsre/fuz006.

[7] Vigenschow A, Edoa JR, Adegbite BR, Agbo PA, Adegnika AA, Alabi A, Massinga-Loembe M, Grobusch MP. Knowledge, attitudes and practices regarding tuberculosis amongst healthcare workers in Moyen-Ogooué Province, Gabon. BMC Infect Dis. 2021 May 27;21(1):486. doi: 10.1186/s12879-021-06225-1.