**Scholars Journal of Applied Medical Sciences**
Abbreviated Key Title: Sch J App Med Sci
ISSN 2347-954X (Print) | ISSN 2320-6691 (Online)
Journal homepage: https://saspublishers.com

OPEN ACCESS

**Medical Surgical Nursing**

# A Study to Assess the Impact of Structured Teaching Programme on Knowledge Regarding Self Protection Practices against Tuberculosis among Staff Nurses Working at H.S.K Medical College Hospital and Research Centre Bagalkot

Dr. Shridhar G Pujari[1*]

[1]Associate Professor Dept. of Medical Surgical Nursing, Shri BVVS Sajjalashree Institute of Nursing Sciences, Navanagar Bagalkot Karnataka, India

**DOI:** https://doi.org/10.36347/sjams.2025.v13i03.009 | **Received:** 03.02.2025 | **Accepted:** 07.03.2025 | **Published:** 08.03.2025

***Corresponding author:** Dr. Shridhar G Pujari
Associate Professor Dept. of Medical Surgical Nursing, Shri BVVS Sajjalashree Institute of Nursing Sciences, Navanagar Bagalkot Karnataka, India

**Abstract** **Original Research Article**

***Background of the study:*** Throughout the world, poor people, health care workers and those from disadvantaged social groups suffer most illness and die sooner. Tuberculosis continues to rank among the world's most serious health problems, despite the remarkable achievements of discovering effective diagnostics measures. The bacillus causing Tuberculosis, Mycobacterium tuberculi was identified and described on March 24, 1882 by Dr Robert Koch. Tuberculosis is infectious disease characterized by persistent cough. The organism primarily affects and causes pulmonary tuberculosis, and as the disease advances it spreads to other parts of the body like kidney, bones, menninges etc. Tuberculosis remains a worldwide health problem. Recently released global TB report card 2008 indicates that India not only retains a high burden of TB about also is at substantial risk for developing multidrug resistant TB on a large scale as problematic, the report called indicates that current treatment practices may be contributing to the growing incidence of multidrug TB. It notes there may be a higher risk of multidrug resistant TB developing in the 20% of TB patients in India who present for retreatment after receiving DOTS. Every year TB develops in nearly 2 million people in India, Despite the government of India's effort to control TB, the disease continuous to kill 2 people every 3 minute or nearly 1000 daily, according to TB control organization of India and nearly 1 million cases are smear positive; an estimated 40% of the Indian population is latently infected with M. tuberculi. ***Methodology:*** This was quasi experimental study, with 50 subjects were selected through simple random sampling technique. One group pre test post test design was used. Data was collected by means of a structured questionnaire which was divided into 2 sections (socio- demographic data and knowledge regarding self-protection practices against tuberculosis). The reliability of the tool was established by Split Half method. The Karl pearson s coefficient of correlation r = 0.8165 structured teaching programme on self-protection practices against tuberculosis was developed. Content validity of the tool was established by six experts. Data was analyzed by using descriptive and inferential statistical in terms of frequency, percentage, mean, standard deviation, student "t' test values. ***Result:*** It was proved that there was increase in the knowledge level of staff nurses after implementing structured teaching programme thus structured teaching programme on self-protection practices against tuberculosis among staff nurses was effective. Out of 50 subjects 27 (54%) of subjects had inadequate knowledge, 12 (24%) subjects had a Satisfactory and only 11 (22%) had adequate knowledge regarding self-protection practices against tuberculosis before in teaching programme (pre test). However after teaching programme (post test) about 26(52%) subjects had a adequate knowledge and 21 (10%) satisfactory knowledge regarding prevention and self protection practices against tuberculosis and inadequate only 3(6%). ***Conclusion:*** The study proved that structured teaching programme on self protection practices against tuberculosis was scientific, logical and cost effective strategy.

**Keywords:** Staff nurses, self protection practices against tuberculosis, structured teaching programme.



## INTRODUCTION

From time immemorial man has been interested to control diseases. The medicine man, the priest, the herbalist and magician, all undertook in various ways to cure man's disease or bring relief to sick. It has been truly said that medicine was conceived in sympathy, born out of necessity and that the first doctor was the first man and the first women was the first nurse [1].

The one who cares the sick is also human being with same structure and physiology the patient has. So

they always work with a risk of confronting the disease they are trying to decultivate or destroy. The risk will be on its top when they deal with communicable diseases.

Tuberculosis continues to rank among the world most serious health problems, despite the remarkable achievements of discovering effective diagnostics measures. The bacillus causing Tuberculosis, Mycobacterium tuberculi was identified and described on March 24, 1882 by Dr Robert Koch. Tuberculosis is infectious disease characterized by persistent cough. The organism primarily affects and causes pulmonary tuberculosis, and as the disease advances it spreads to other parts of the body like kidney, bones, meninges etc. [2].

Tuberculosis remain a worldwide health problem. Recently released global TB report card 2008 indicates that India not only retains a high burden of TB about also is at substantial risk for developing multidrug resistant TB on a large scale As problematic, the report called indicates that current treatment practices may be contributing to the growing incidence of multidrug TB. It notes there may be a higher risk of multidrug resistant TB developing in the 20% of TB patients in India who present for retreatment after receiving DOTS. Every year TB develops in nearly 2 million people in India, Despite the government of India's effort to control TB, the disease continuous to kill 2 people every 3 minute or nearly 1000 daily, according to TB control India organization and nearly 1 million cases are smear positive; an estimated 40% of the Indian population is latently infected with M. tuberculi [3].

Tuberculosis is a chronic condition, it requires continuous medical care. The environment and socio-economic risks associated with this condition are severe in developing countries like India. Un-awareness, poverty, under nutrition, poor housing, large family, and occupation have a measure influence on disease prevalence. The suffering is due to pulmonary tuberculosis is increasing despite excellent treatment available[4].

## MATERIALS AND METHOD

It was a study Quasi Experimental study (one group pre test post test design) was selected to evaluate the effectiveness of structured teaching programme on knowledge regarding self protection practices against tuberculosis among staff nurses with the sample size of fifty (50) working at H.S.K Hospital and research center Bagalkot, Karnataka, India.

**Study Participants:** Staff nurses working at tuberculosis wards of H.S.K Hospital and research center Bagalkot, Karnataka, India.

**Sample Size:** Sample is a small portion of the population selected for observation and proper technique.[44] The sample for the present study composed of 50 staff nurses.

**Settings of Study:** Study was conducted in tuberculosis wards of HSK hospital and research centre Bagalkot, Karnataka India.

**Data collection instrument**: A socio- demographics questioner was used to collect the demographic variables; structured knowledge questioner was used to assess the knowledge on practice against TB.

**Data collection process:** The data collection process involves the precise, systematic gathering of information relevant to the research purpose questions, or hypothesis of a study.

The data was collected among 50 staff nurses working at H.S.K Medical college hospital and research centre Bagalkot The pre test knowledge questionnaire was administered, which were followed by an STP, which was followed by the post test after 7 days. The data collection process was terminated after thanking the participants for their participation and co–operation.

**Plan for data analysis:**

Analysis is the systematic organization and synthesis of research data and the testing of the research hypothesis by utilizing the obtained data.

Data was analysed by both descriptive and inferential statistics on the basis of the objectives and hypothesis of the study.

## RESULT

The data was presented under following sections.

**Section I:** Findings related to socio demographic variables

In this study the data collected was organized, tabulated, analyzed and interpreted by means of statistical tables and graphs and is presented under the following headings.

**Table: Distribution of respondents according to socio-demographic variables. N = 50**

| Socio-Demographic variables | No of respondents | Percentage |
|---|---|---|
| **Age (in years)** | | |
| 20-30 years | 22 | 44.00 |
| 30-40 years | 18 | 36.00 |
| 40 and above years | 10 | 20.00 |

| Socio-Demographic variables | No of respondents | Percentage |
|---|---|---|
| **Gender** | | |
| Male | 20 | 40.00 |
| Female | 30 | 60.00 |
| **Religion** | | |
| Hindu | 30 | 60.00 |
| Muslim | 11 | 22.00 |
| Christian | 9 | 18.00 |
| **Monthly Income** | | |
| Rs. 3000-6000 | 19 | 38.00 |
| Rs. 6001-9000 | 16 | 32.00 |
| Rs. 9001-12000 | 10 | 20.00 |
| Rs. 12001 and above | 5 | 10.00 |
| **Professional qualification** | | |
| Gen nursing & midwifery | 43 | 86.00 |
| Basic B. Sc. Degree | 0 | 0.00 |
| Post certificate B. Sc | 7 | 14.00 |
| M. Sc. Nursing | 0 | 0.00 |
| **Work Experience (in years)** | | |
| < 5 years | 29 | 58.00 |
| 5-10 years | 13 | 26.00 |
| 11 and above years | 8 | 16.00 |
| Have you attended any service education related to Tuberculosis | | |
| Attended | 15 | 30.00 |
| Not attended | 35 | 70.00 |
| Total | 50 | 100.00 |

**Table 2: Distribution of study subjects according to levels of knowledge in pre test and post test**

| Test | Levels of knowledge | Number | % |
|---|---|---|---|
| Pre test | Inadequate | 27 | 54.00 |
| | Satisfactory | 12 | 24.00 |
| | Adequate | 11 | 22.00 |
| | Total | 50 | 100.00 |
| Post test | Inadequate | 3 | 6.00 |
| | Satisfactory | 26 | 52.00 |
| | Adequate | 21 | 42.00 |
| | Total | 50 | 100.00 |

**1. Assessment of pretest and post test knowledge level:**

**Level of knowledge:**

The results of the above table clearly indicated that, out of 50 subjects 27 (54%) of subjects had inadequate knowledge, 12 (24%) subjects had a Satisfactory and only 11 (22%) had adequate knowledge regarding self-protection practices against tuberculosis before in teaching programme (pre test). However after teaching programme (post test) about 26(52%) subjects had a adequate knowledge and 21 (10%) Satisfactory knowledge regarding prevention and self protection practices against tuberculosis and inadequate only 3(6%).

"Research hypothesis **$H_1$**: There is significant difference in the knowledge of staff nurses regarding self protection practices against tuberculosis before and after administration of structured teaching programme" as stated by the investigator earlier was accepted.

**Table 3: Mean and SD values of pre and post test scores of knowledge and its dimensions**

| Area wise analysis | Max. score | Pre test | | Post test | | Mean (%) | |
|---|---|---|---|---|---|---|---|
| | | Mean | Std. Dev. | Mean | Std. Dev. | Pre test | Post test |
| Knowledge about general information | 10 | 5.28 | 2.01 | 8.20 | 1.48 | 52.80 | 82.00 |
| Knowledge about prevention and self protection practices against TB | 26 | 12.46 | 4.34 | 22.36 | 2.25 | 47.92 | 86.00 |
| Total knowledge | 36 | 17.74 | 5.01 | 30.56 | 3.04 | 49.28 | 84.89 |

Table reveals aspect wise pre-test mean percentage knowledge score on. Aspect wise mean percentage knowledge score regarding prevention and self protection practices against TB obtained from respondents. The pre test total knowledge mean score is found to be (17.74± 5.01), compared to post test it is (30.56± 3.04). It indicated that the change of total knowledge scores (percentage) from pre to post test is about 52.80%. But about 29.2 % in knowledge about general information and 38.08% in knowledge about prevention and self protection practices against TB. It means that after S T P the knowledge scores are significantly higher than before S T P.

**Table 4: Comparison of pre and post test scores of knowledge and its dimensions by staff nurses paired t-test**

| Variables | Test | Mean | Std. Dv. | Mean Diff. | SD Diff. | Paired t-value | p-value |
|---|---|---|---|---|---|---|---|
| Knowledge about general information | Pre test | 5.2800 | 2.0106 | | | | |
| | Post test | 8.2000 | 1.4846 | -2.9200 | 1.8277 | -11.2971 | 0.0000* |
| Knowledge about prevention and self protection practices against TB | Pre test | 12.4600 | 4.3435 | | | | |
| | Post test | 22.3600 | 2.2475 | -9.9000 | 3.9188 | -17.8634 | 0.0000* |
| Total knowledge | Pre test | 17.7400 | 5.0053 | | | | |
| | Post test | 30.5600 | 3.0383 | -12.8200 | 4.0491 | -22.3878 | 0.0000* |

*p<0.001*

* Significant at 0.001% Level

From the results of above table, we clearly seen or observed that, the pre test and post test total knowledge scores are found to be statistically significant (t= -22.3878, P= 0.0000). It means that the post test knowledge scores (30.5600± 3.0383) is higher than pre test scores (17.7400± 5.0053).

Similarly the dimension like knowledge about general information the post test scores are higher (8.2000± 1.4846) as compared to (5.2800± 2.0106) and found to be statistically significant (t= --11.2971, P= 0.0000) and the knowledge about prevention and self protection practices against TB. The post test scores are higher than pre test scores, found to be statistically significant (t= -17.8634, P =0.0000). In other words, the post test scores of total knowledge and its dimensions are higher than the pre test scores.

## DISCUSSION

The results of the staff nurses clearly indicated that, out of 50 subjects 27 (54%) of subjects had inadequate knowledge, 12 (24%) subjects had a Satisfactory and only 11 (22%) had adequate knowledge regarding self-protection practices against tuberculosis before in teaching programme (pre test). However after teaching programme (post test) about 26(52%) subjects had a adequate knowledge and 21 (10%) satisfactory knowledge regarding prevention and self protection practices against tuberculosis and inadequate only 3(6%).

The comparison of mean and SD of knowledge variables of staff nurses on self protection practices against tuberculosis. The mean score of overall level of knowledge among staff nurses in the pre test was 17.74with standard deviation about 5. 53.

This indicated that knowledge of staff nurses was inadequate and it was necessary for the investigator to improve the knowledge of subjects by giving specific information on self protection practices against tuberculosis, which would enable them to prevent from tuberculosis.

The level of knowledge among staff nurses in the post test. In the present study it was observed that in the post test out of 50 subjects majority 26 (52.00%) of them had satisfactory knowledge, 21 (42.00%) of them had adequate knowledge, and there were only 3 (6.00%) of subjects with inadequate knowledge.

Comparison of mean and standard deviation of knowledge variables of staff nurses on self protection practices against tuberculosis. The overall mean score for level of knowledge among staff nurses in the post test was 30.56 (3.04) and the mean percentage was 84.89%.

Comparison of mean and standard deviation and mean difference for knowledge variables among staff nurses in pre and post-test. The present study reveals the mean difference obtained between pre and post test for knowledge about general information and knowledge about prevention and self protection practices against TB 17.74, 5. 53, 30.56, 3.03, 4.04, and -22.38 this depicts that “p value *p<0.001*obtained for these knowledge variables was highly significant. The overall mean difference obtained between the pre and post test level of knowledge variables was -12.82 with paired t value -22.38 which was highly significant at *p<0.001*.

The above findings states that “Research hypothesis **$H_1$** There is significant difference in the knowledge of staff nurses regarding self protection practices against tuberculosis before and after

administration of structured teaching programme" as stated by the investigator earlier was accepted.

Association was done between post test level of knowledge and demographic variables among staff nurses by f & t test. All the demographic variables such they include age in years, religion, gender, income per month, professional qualification, year of experience, and in service education related to TB showed significant association with the post test level of knowledge of staff nurses. Therefore, the research hypothesis **$H_2$** "There is significant association between knowledge level of staff nurses regarding knowledge about prevention and self protection practices against tuberculosis with selected variable" as stated by the investigator earlier was accepted.

The conclusions drawn from the study are as follows:

Majority of staff nurses were willing to participated in the study. The staff nurses had some knowledge about self-protection practices against tuberculosis. They gave free and frank responses regarding self-protection practices against tuberculosis.

Further, the conclusion drawn on the basis of the findings of the study includes:

- Knowledge of staff nurses regarding the self-protection practices against tuberculosis was inadequate before the administration of STP.
- The STP was effective in increasing the knowledge of staff nurses, i.e., over all and in all various aspects of TB and its self protection practice.
- There was significant association between the gain in knowledge scores and selected demographic variables.

## RECOMMENDATIONS

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

- A similar study can be replicated on a large sample to generalize the findings.
- A comparative study on the effectiveness of the practices used currently should be carried out.
- A study on the attitude and practices of staff nurses on self-protection practices against tuberculosis may be helpful for developing for specific strategies of education.
- An experimental study can be undertaken with a control group for effective comparison of the result.

## REFERENCES


1. Drobniewski, F., Balabanova, Y., Zakamova, E., Nikolayevskyy, V., & Fedorin, I. (2007). Rates of latent tuberculosis in health care staff in Russia. *PLoS medicine*, *4*(2), e55.
2. Menzies, D., Joshi, R., & Pai, M. (2007). Risk of tuberculosis infection and disease associated with work in health care settings [state of the art series. Occupational lung disease in high-and low-income countries, edited by M. Chan-Yeung. Number 5 in the series]. *The International Journal of Tuberculosis and Lung Disease*, *11*(6), 593-605.
3. Dorothy Chanda, 'Impact of Tuberculosis --- [PLOS Med, 2006]: 410 – 515.
4. Journal of occupational and environmental Medicine-Mitchell, et al Risk of tuberculosis in correctional---- [Jun 2005] 47:6.
5. A text book of K. Park, Preventive and social medicine, 18th ed. New Delhi: Bhanot: 2005: 146 – 9.
6. Challu, V. K. (2005). Involvement of youth for tuberculosis advocacy – an innovate experiment. National tuberculosis Jan *4*(2), 71 -5.
7. Jayakumar. D, [J. Ado Nurse 2004] Dec 48 (5).
8. Stuart R.L. 'Assessing the risk of tuberculosis infection among [Med. J August 2001] Jun 4: (11), 569 – 73.
9. Kant, L. (2001). Childhood tuberculosis: increasing but neglected. *Indian Journal of Tuberculosis*, *48*(1), 1-2.
10. Kayanja H. K. Tuberculosis infection among health care workers --- [Pub Med – indexed for MEDLINE Aug 2001]: 521 – 631.
11. Text book of Joyce M. Black, Vol -2 "Medical Surgical Nursing" [6th edition 2001]: 1720 to 1724.
12. The Nursing Journal of India, Vol. LXXXXII, No, 8 [Feb 2000] page 181 – 183.
13. Shimouchi, A., Hirota, S., Koda, S., & Mui, K. (2007). Discussion on incidence of tuberculosis patients among nurses in Osaka City. *Kekkaku (Tuberculosis)*, *82*(9), 697-703.
14. SHIIMOUCHI, A., Koda, S., & Ochiai, H. (2007). A survey on nosocomial infection of tuberculosis in nursing homes for elderly in Osaka City. *Kekkaku (Tuberculosis)*, *82*(3), 179-184.
15. Kurane, S., & Kudoh, S. (2003). The importance of the examination of, education on, and infection control of tuberculosis in medical school hospitals in Japan. *Kekkaku (Tuberculosis)*, *78*(9), 573-580.
16. Singla, N., Sharma, P. P., & Jain, R. C. (1998). Awareness about tuberculosis among nurses working in a tuberculosis hospital and in a general hospital in Delhi, India. *The International Journal of Tuberculosis and Lung Disease*, *2*(12), 1005-1010.
17. Shimouchi, A., Hirota, S., Koda, S., & Mui, K. (2007). Discussion on incidence of tuberculosis patients among nurses in Osaka City. *Kekkaku (Tuberculosis)*, *82*(9), 697-703.
18. Pujari, S. G. (2009). *A Study to Assess the Impact of Structured Teaching Programme on Knowledge Regarding Self Protection Practices Against Tuberculosis Among Staff Nurses Working at HSK Medical College Hospital and Research Centre Bagalkot, Karnataka* (Master's thesis, Rajiv Gandhi University of Health Sciences (India)).
19. Kurane, S., & Kudoh, S. (2003). The importance of the examination of, education on, and infection control of tuberculosis in medical school hospitals in Japan. *Kekkaku (Tuberculosis)*, *78*(9), 573-580.
20. Jayakumar. D, J. Ado Nurse 2004 Dec 48 (5).