Research Article

A Descriptive Study to Assess the Knowledge and Practice of Self-care regarding Transmission, Prevention and Management of Pulmonary Tuberculosis among Staff Nurses Working at SMHS Hospital Srinagar with a view to Develop an Information Booklet

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DOI: https://doi.org/10.24321/2348.2133.202201

I N F O

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How to cite this article:
Wani MR, Amin N, Yasmin B, Wani D. A Descriptive Study to Assess the Knowledge and Practice of Self-care regarding Transmission, Prevention and Management of Pulmonary Tuberculosis among Staff Nurses Working at SMHS Hospital Srinagar with a view to Develop an Information Booklet. Ind J Holist Nurs. 2022;13(1):1-6.

A B S T R A C T

Introduction: Pulmonary tuberculosis is a highly contagious disease with a high fatality rate. The goal of this study was to analyse staff nurses' knowledge and self-care practices related to pulmonary tuberculosis transmission, prevention, and management.

Methodology: Staff nurses at SMHS Hospital in Srinagar were assessed for their knowledge and practice of self-care regarding transmission, prevention, and management of pulmonary tuberculosis using a quantitative research approach. We used a non-probability handy sampling strategy.

A panel of experts validated the provided tool (structured knowledge questionnaire) and intervention (structured practise checklist). The data was analysed using descriptive and inferential statistics.

Results: The study found that 53.3 percent of staff nurses had strong knowledge, with the area of signs, symptoms, and diagnosis having the most knowledge. The knowledge score and demographic variables like professional qualification and working experience, as well as the self-care practice score and demographic variables like age and professional qualification, had a significant relationship. When it came to transmission, prevention, and management of pulmonary tuberculosis, the highest number of staff nurses practised mediocre self-care. A substantial positive association was discovered between knowledge and practice scores related to pulmonary TB self-care among staff nurses.

Conclusion: People can die from pulmonary TB. As a result, it is critical for staff nurses to have appropriate expertise in this field so that they can provide adequate assistance to the people.

Keywords: Assess, Knowledge, Practice, Self-care, Pulmonary

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Introduction

Pulmonary tuberculosis is a disease that occurs in the lungs and is caused by a bacillus called Mycobacterium tuberculosis. This bacteria can affect the lungs hence the name pulmonary tuberculosis, while it can also affect the intestines or spinal cord thereby being referred to as extrapulmonary tuberculosis. Pulmonary tuberculosis is one of the primary reasons for illness and mortality at a global level. This disease has been present in society since a long time. Thus we can say that it has been part of the human civilisation itself.[1]

Global Report on TB by WHO (2018) states that pulmonary tuberculosis spreads from one individual to another. The bacteria can transmit through various routes of exit be it cough, sneezing or sputum through the air via droplets. If a person inhales these bacteria, even a few can lead to the development of disease in the host. We must know that an active case of tuberculosis can infect 5-15 other people who live close to him or her. The signs and symptoms during the latent stage remain mild and are cough, fever, sweats, and weight loss. Thus the person may consider it to be something else and delay his health-seeking behaviour or treatment. This leads to the transfer of more bacteria from the infected person to others.[2]

All age groups can have pulmonary tuberculosis. The people infected with HIV have the highest risk of having pulmonary tuberculosis. People having problems of alcoholism, malnutrition, polluted air within the living area, recent infection with tuberculosis, acute kidney diseases, low weight, cancers of the neck and head, and diseases like diabetes mellitus, silicosis, and tobacco smoking are at a higher risk for pulmonary tuberculosis. This risk is higher in immune-compromised persons and malnourished individuals.[3]

Schiffman G states that general signs and symptoms of pulmonary tuberculosis include productive cough, mucopurulent or purulent sputum, haemoptysis, breathlessness, weight loss, anorexia, fever with night sweats, malaise, wasting, and significant nail clubbing.[4]

Lalloo G et al. expressed that it is difficult to diagnose pulmonary tuberculosis by clinical manifestations as it needs extensive knowledge of the disease process. Initially, it is very necessary to diagnose by starting with a chest radiograph and multiple sputum cultures. We can make confirmatory tests by identifying microorganisms in samples like pus, sputum or tissue biopsy.[5]

Objectives of the Study

- To assess the knowledge score regarding transmission, prevention, and management of pulmonary tuberculosis among staff nurses working at SMHS Hospital, Srinagar

- To assess the practice score of self-care regarding transmission, prevention, and management of pulmonary tuberculosis among staff nurses working at SMHS Hospital, Srinagar

- To associate the knowledge score regarding transmission, prevention, and management of pulmonary tuberculosis among staff nurses working at SMHS Hospital, Srinagar with selected demographic variables (age, professional qualification, working experience, and exposure to any training programme related to self-care regarding transmission, prevention, and management of tuberculosis)

- To associate the practice score of self-care regarding transmission, prevention, and management of pulmonary tuberculosis among staff nurses working at SMHS Hospital, Srinagar with selected demographic variables (age, professional qualification, working experience, and exposure to any training program related to self-care regarding transmission, prevention and management of tuberculosis)

- To correlate the knowledge score of pulmonary tuberculosis and practice score of self-care regarding transmission, prevention, and management of pulmonary tuberculosis among staff nurses working at SMHS Hospital, Srinagar

Methodology

Research Approach

While going through the problem statement and objectives of the research study, quantitative research approach was found to be the most appropriate to achieve the purpose of the study and hence was used.

Research Design

In this study, a non-experimental research design was used for the overall research process. A subtype of this design, descriptive research design, was selected from this broad area and was implemented in this study.

Setting of the Study

The present study was conducted at SMHS Hospital, Srinagar, Kashmir. The selection of setting was done on the basis of set criteria like problem statement, feasibility of conducting the research study, availability of the sample, study subjects and familiarity of the researcher with the research setting.

Sampling Technique & Sample

Non-probability convenient sampling technique was utilised for the selection of study subjects during the study as the researcher has previous working experience with the study subjects. The sample size for the present research study comprised 60 staff nurses working at SMHS Hospital, Srinagar, Kashmir.

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Informed consent was obtained from all participants and ethical clearance and permission were obtained from concerned authorities. The duration of study was 6 weeks.

Descriptive and inferential statistics were used for the analysis of data. Information booklets were provided to staff nurses to enhance their knowledge and practice of self-care regarding transmission, prevention, and management of pulmonary tuberculosis.

Results

The data from Table 1 reveals that 5% of staff nurses had poor knowledge, 41.7% had fair knowledge, and most of the staff nurses (53.3%) had good knowledge regarding transmission, prevention, and management of pulmonary tuberculosis.

The data from Table 2 reveal that the maximum number of staff nurses i.e., 66.7%, had average practice of self-care, 25% had good practice of self-care, and the least number of staff nurses i.e., 8.3%, had poor practice of self-care regarding transmission, prevention, and management of pulmonary tuberculosis.

The findings from Table 3 reveal a significant association between the knowledge score and demographic variables like professional qualification (p = 0.008) and working experience (p = 0.024) while no significant association was found between the knowledge score and demographic variables like age (p = 0.082) and exposure to any training programme (p = 0.293) at p < 0.05 level of significance.

The findings from the Table 4 reveal that there was a significant association between the self-care practice score and demographic variables like age (p = 0.009) and professional qualification (p = 0.001) while no significant association was observed between the self-care practice score and demographic variables such as working experience (p = 0.122) and exposure to any training programme (p = 0.69) regarding transmission, prevention, and management of pulmonary tuberculosis at p < 0.05 level of significance.

Table 1.Frequency and Percentage Distribution of Knowledge Score of Staff Nurses regarding Transmission, Prevention, and Management of Pulmonary Tuberculosis

N = 60

Knowledge Score	Category	Frequency of Knowledge Score	Score Percentage
0-12	Poor knowledge	3	5
13-25	Fair knowledge	25	41.7
26-38	Good knowledge	32	53.3
Total		60	100

Table 2.Frequency and Percentage Distribution of Practice Score of Self-care among Staff Nurses

N = 60

Practice Score	Category	Frequency of Practice Scores	Percentage of Practice Scores
0-5	Poor practice	5	8.3
06-10	Average practice	40	66.7
11-15	Good practice	15	25
Total		60	100

Table 3.Association of Knowledge Score of with Selected Demographic Variables

N = 60

Demographic Variables	Categories	Knowledge Score						Chi-square Value	DF	P Value	Result
		Poor		Fair		Good					
		n	%	n	%	n	%				
Age (in years)	21-30	2	66.7	9	36	4	12.5	11.2	6	0.082	NS
	31-40	1	33.3	13	52	16	50				
	41-50	0	0	3	12	7	21.9				
	≥ 51	0	0	0	0	5	15.6				
Professional qualification	GNM	1	33.3	17	68	21	65.6	17.48	6	0.008	S*
	BSc Nursing	0	0	2	8	8	25				

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	MSc Nursing	0	0	2	8	3	9.4			
	FMPHW	2	66.7	4	16	0	0			
Working experience (in years)	01-10	3	100	21	84	15	46.9	11.22	4	0.024	S*
	11-20	0	0	4	16	12	37.5			
	21-30	0	0	0	0	5	15.6			
Exposure to any training programme related to self-care	Yes	0	0	1	4	5	15.6	2.45	2	0.293	NS
	No	3	100	24	96	27	84.4			

S* - Significant, NS - Non-significant

Table 4.Association of Practice Score of Self-care regarding Transmission, Prevention and Management of Pulmonary Tuberculosis among Staff Nurses with their Selected Demographic Variables

N = 60

Demographic Variables	Category	Practice Score of Self-care						Chi-square Value	DF	P Value	Result
		Poor		Fair		Good					
		n	%	n	%	n	%				
Age (in years)	21-30	5	100	7	17.5	3	20	17.13	6	0.009	S*
	31-40	0	0	23	57.5	7	46.7				
	41-50	0	0	7	17.5	3	20				
	≥ 51	0	0	3	7.5	2	13.3				
Professional qualification	GNM	0	0	32	80	7	46.7	56.81	6	0.001	S*
	BSc Nursing	0	0	5	12.5	5	33.3				
	MSc Nursing	0	0	2	5	3	20				
	FMPHW	5	100	1	2.5	0	0				
Working experience (in years)	01-10	5	100	28	70	6	40	7.28	4	0.122	NS
	11-20	0	0	9	22.5	7	46.7				
	21-30	0	0	3	7.5	2	13.3				
Exposure to any training programme related to self-care	Yes	0	0	4	10	2	13.3	0.741	2	0.69	NS
	No	5	100	36	90	13	86.7				

S* - Significant, NS - Non-significant

Table 5.Correlation between Knowledge Score of Tuberculosis and Practice Score of Self-care regarding Transmission, Prevention, and Management of Tuberculosis among Staff Nurses

N = 60

Item	Mean ± SD	Median	r Cal.	r Tab.	DF	P Value	Result
Knowledge	24.7 ± 5.39	23.47	0.743	0.25	58	< 0.001	Significant
Practice	9.4 ± 2.751	9.53					

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The data from Table 5 reveal that there is a significant positive correlation between the knowledge score of pulmonary tuberculosis and practice score of self-care among staff nurses as the coefficient of correlation was computed as r = 0.743 and is found to be significant at 0.001 level of significance.

Discussion

The results from the study revealed that the maximum number of staff nurses (50%) were in the age group of 31-40 years, followed by 25% in the age group of 21-30 years, 16.7% in the age group of 41-50 years while the least number (8.3%) of study subjects were in the age group of 51 years or above.

The study result is supported by a study by Bhandari SR et al. It showed that most of the staff nurses, i.e. 62%, were in the age group of 31-40 years, 28% were between 41 and 50 years and 10% were in the age group of above 51 years.[6]

The results from the study revealed that the highest number of the staff nurses i.e., 65% had GNM as their professional qualification, followed by 16.7% with BSC Nursing, and 10% with FMPHW while the least (8.3%) were MSc Nursing qualified. This is supported by a study by Trajman A et al. in which 70% of the participants were Diploma Nurses, 18% were BSc, 6% were MSc, and 8% were FMPHW.[7]

In this study, the maximum number of staff nurses, i.e. 65%, had a working experience of 1-10 years, 26.7% of the study subjects had 11-20 years of working experience, and 8.3% had an experience of 21-30 years.

A similar result was seen in a study by Bhandari SR et al., in which 60% of the respondents had a working experience of 1-10 years, 35% had a working experience of 11-20 years, and 5% had a working experience of 21-30 years.[6]

In the present study, 10% of the staff nurses had exposure to a training programme related to self-care while 90% did not have exposure to any training programme related to self-care regarding transmission, prevention, and management of tuberculosis. This was also seen in a study by a study by Trajman A et al., which revealed that 85% had not undergone any training while 15% were exposed to a training programme related to self-care.[7]

The results from the study revealed that 5% of staff nurses had poor knowledge, 41.7% had fair knowledge, and most of the staff nurses (53.3%) had good knowledge regarding transmission, prevention, and management of pulmonary tuberculosis. The mean ± SD of staff nurses was 24.7 ± 5.393 and the median was 23.47. The staff nurses had the highest knowledge in the area related to signs, symptoms, and diagnosis with a mean ± SD score of 48 ± 4.99, followed by knowledge in the area related to meaning, causes, and mode of transmission of pulmonary tuberculosis with a mean ± SD score of 45.14 ± 6.76 and in the area related to prevention and management of pulmonary tuberculosis with a mean ± SD score of 39.06 ± 8.75.

The maximum number of staff nurses i.e., 66.7%, had average practice of self-care, 25% had good practice of self-care and the least number of staff nurses i.e., 8.3% had poor practice of self-care regarding transmission, prevention, and management of pulmonary tuberculosis. The mean ± SD of the practice of staff nurses was 9.4 ± 2.751 and the median was 9.53.

A significant correlation between the knowledge score and demographic variables such as professional qualification and working experience and no significant association between the knowledge score and demographic variables such as age and exposure to any training programme was found at p < 0.05 level of significance.

A significant correlation between the self-care practice score and demographic variables such as age and professional qualification and no significant correlation between the self-care practice score and demographic variables such as working experience (p = 0.122) and exposure to any training programme (p = 0.69) regarding transmission, prevention, and management of pulmonary tuberculosis was found at p < 0.05 level of significance.

A significant positive correlation between the knowledge score of pulmonary tuberculosis and the practice score of self-care among staff nurses was found to be significant at 0.001 level of significance.

Nursing Implications

The study findings have several implications in nursing. They can be categorised under the following headings:

Nursing Practice

The findings of the present study could be utilised to improve the methods and modalities of care rendered by staff nurses while providing care to tuberculosis patients and caring for their families.

- The nurses should provide health teaching when a patient comes to the department for treatment
- Nursing professionals themselves need to improve their practice of self-care regarding transmission, prevention, and management of pulmonary tuberculosis
- Teaching programmes can be conducted for staff nurses as it would allow all of them to enhance their knowledge regarding transmission, prevention, and management of pulmonary tuberculosis

Nursing Education

- The nursing curriculum should be strengthened by equipping with knowledge regarding various teaching strategies to disseminate health information and

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advanced technology in the medical profession related to the prevention and management of pulmonary tuberculosis

- Students can be encouraged to take up projects and research studies related to knowledge and practice of self-care regarding pulmonary tuberculosis so that new updates on knowledge and practice will come out
- The staff nurses can improve their knowledge of prevention, transmission, and management of pulmonary tuberculosis
- The study can be used as an ideal model for teaching descriptive research design to the students

Nursing Administration

- Nurse administrators should plan various policies for health education programmes to impart health education regarding the prevention, transmission, and management of pulmonary tuberculosis
- The nurse administrator should go for CNE activities for staff nurses in the form of conferences, webinars, seminars

Nursing Research

- A similar study may be replicated using a large sample, thereby findings can be generalised
- True/ quasi-experimental study can be performed on knowledge and practice of self-care regarding prevention, transmission, and management of pulmonary tuberculosis
- A comparative study can be conducted among staff nurses on the knowledge and practice of self-care regarding transmission, prevention, and management of pulmonary tuberculosis
- A similar study can be conducted among other health workers
- A similar study is required with a sample having different demographic characteristics in different settings

Limitations

- Samples were only selected from Government SMHS Hospital, Shireenbagh, Srinagar and a small sample limits the generalisation of the study
- The use of a structured knowledge questionnaire restricts the amount of information that could be collected from the respondents
- The time period was small (6 weeks)
- The tools used were non-standardised

Conclusion

Pulmonary tuberculosis is an infectious disease, and if not treated, can also prove to be fatal. Hence proper treatment for the disease is essential which requires staff nurses to be aware of and updated on pulmonary tuberculosis. Programmes and activities must be conducted to help the staff nurses gain more knowledge and be proficient in this area.

Source of Funding: None

Conflict of Interest: None

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