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Effectiveness of Sensitization Programme: Infection Prevention and Control Among Patient With Tuberculosis

Shiv Shankar Tyagi

Bareilly International University, Bareilly, India

Prema Balusamy

Department of Nursing, University of Hafr Al Batin, Kingdom of Saudi Arabia

Abstract---Introduction: Tuberculosis is an infectious disease caused by mycobacterium tuberculosis. It affects the lungs and other organs. The disease is spread through the air when people who are sick with pulmonary TB expel the bacteria. Most productive age group is affected by tuberculosis. In India, 70% of all patients are aged between 15 and 54 years and 2/3 rd of male are affected with tuberculosis. The first effective pharmacological therapies were discovered. For drug-susceptible TB illness, a 6-month regimen of four first-line medicines is presently recommended: isoniazid, rifampicin, ethambutol, and pyrazinamide. AIM- Effectiveness of Sensitization Programme: infection prevention and control among patient with tuberculosis. Methodology- a Quantitative Quasi experimental research approach was used for the study. Tuberculosis patient registered with dots Centre in Rohilkhand medical college & Hospital (Experimental group) Bareilly District and Varun arjun Medical College & Rohilkhand Hospital (Control Group) Banthara, Shahjahanpur district. The level of knowledge was assessed using structured knowledge questionnaire and practice was observed by practice checklist. The pretest was conducted, Intervention was implemented and posttest knowledge, practice and Attitude were assessed for the experimental group.

Keywords---effectiveness, infection, prevention, sensitization, tuberculosis.

Introduction

Mycobacterium tuberculosis is the cause of TB. It has a great impact on the lungs and other organs. The tuberculosis bacterium is transmitted via the air when ill

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Corresponding author: Tyagi, S. S.

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individuals exhale it. Around 10% of those infected with M tuberculosis will get TB in lives (1). Once the leading causes in preventable health in adults is Tuberculosis worldwide. TB case and death are more common in middle and low income population. Effective control measure in health setting can reduce³ the risk of TB transmission². The control measures for tuberculosis are necessary to reduced the morbidity and mortality rates disease and to prevent the transmission of TB by airborne droplets (3). Two years ago, global leaders met at the united nations (UN) for the first high-level conference on TB pledges to speed up the effort to eliminate world's leading infectious diseases killer. Those pledges have provide hope for millions of TB patients across the globe who are dying or suffering from the disease — Tuberculosis is a preventable and curable illness, and the number of individuals treated for it has increased, with over 14 million people receiving treatment in 2018 and 2019. Since 2015, the number of individuals receiving TB prevention therapy has quadrupled, from 1 million in 2015 to over 4 million in 2019. According to a WHO 2020 report on India, the effect of the COVID-19 pandemic on TB services has been significant, with a 50 percent decrease in tuberculosis case detection over three months. NTEP is a centrally sponsored scheme that is being implemented under the aegis of NHM with state and central government coordination. Various committees such as NTEG Nations tuberculosis co-morbidity coordination committee, NLCC, National Technical expert group on treatment, NTWG, and others are working to track and treat tuberculosis.

WHO recognised that the knowledge, practice and attitude survey regarding tuberculosis has to included in the advocacy, communication and social mobilisation strategy. India is one among the high burden countries identified by WHO and one third of world TB burden holds by India (4). Tuberculosis is a major public health concern. Despite the efforts of World health organisation and various national programmes, the global burden of tuberculosis is still alarming. Most productive age group is affected by tuberculosis. In India, 70% of all patients are aged between 15 and 54 years and 2/3 rd of male are affected with tuberculosis. Tuberculosis control efforts are still not impressive and not sufficient and it is acknowledged for the same. TB infection control goal is to minimise the risk of Tb transmission within the population by the combination of different measures. Early and quick diagnosis, as well as appropriate treatment of TB patients, are the cornerstones of such infection control (5).

Every year 10 million people are affected world wid. 1.6 million people are dying from the illness, with over 4000 people dying every day despite the fact that it is treatable. 3.6 million individuals infected with TB go misdiagnosed and untreated each year. To narrow this gap, significant effort is required, and nurses on the front lines play a critical role in identifying, diagnosing, and treating these patients (6). On 22 march 2019, the international council for nurses agreed on the world tuberculosis day that the theme of this year for world TB day is It is time to end TB. The key commitments of the head holds the state, to bring TB to the notice of ministries, health experts, impacted communities, as well as community and local level leaders. Nurses spend the majority of their time with patients. As a result, when they are equipped with information about tuberculosis, it will help everyone. It almost always leads to better adherence,

better results, and a healthier community for everyone. TB free world in 2030, this goal will be reached through the goals of International council for nurses (7).

Need of the study

In India, two people die of tuberculosis every three minutes. In India's battle against TB, HIV infection, poverty, a lack of political will, and, most all, corrupt government are all significant obstacles. HIV infection, poverty, lack of political will, and, above all, corrupt administration are all major challenges in India's fight against tuberculosis. Poor primary health-care infrastructure in rural areas of many states; unregulated private health-care, leading to widespread irrational use of first- and second-line anti-TB drugs; HIV infection; poverty; lack of political will; and, above all, corrupt administration are all major challenges in India's fight against tuberculosis.⁸ NTCP and the National Rural Health Mission (NRHM), a reform effort aiming at improving primary health care in rural regions, are working together on a project. In addition, the NTCP has developed a variety of programmes to enhance TB care in collaboration with the business sector and the Indian Medical Association (IMA) (9).

Surprisingly, in India, many still believe that tuberculosis is a disease that only affects the poor, especially those who live in slums. The wealthy and privileged must be aware that their chefs, maids, and drivers may be asymptomatic carriers of tuberculosis right in their mansions, putting them at risk of contracting the illness even if they do not enter the slums. Humans may acquire tuberculosis through unpasteurized milk or dairy products produced from raw milk, since there is evidence that bovine tuberculosis (*Mycobacterium bovis*) can be transferred to humans (10, 11). Soha (2020) conducted a study to Assess the efficacy of a structured training programme on adult learners' knowledge of tuberculosis prevention. The research found that the average pre-test knowledge score was 9.016 and the average post-test knowledge score was 12.46. The results of this study show that a structured training programme is quite successful in increasing adult knowledge regarding tuberculosis (12).

Chindo Ibrahim Bisalla et.al (2017) conducted a study to assess Effectiveness of health education intervention in improving knowledge, attitude, and practices regarding Tuberculosis among HIV patients. The findings of the study revealed that mean Attitude score in intervention group vs. control group was 33.14 ± 3.76 vs. 29.52 ± 4.67 , $p < 0.001$. A significant higher mean attitude scores in the intervention group compared to the control group (13). TB is referenced in the Vedas and ancient Ayurvedic texts of India. The fight against tuberculosis in India can be divided into three periods: the early period, before the discovery of x-ray and chemotherapy; the post-independence period, when nationwide TB control programmes were established and implemented; and the current period, when a WHO-assisted TB control programme is in place.

Aim of the study

To assess the effectiveness of sensitization programme among Tuberculosis patient regarding TB infection prevention and control measures.

Methodology

A Quantitative Quasi experimental research approach was used for the study. Tuberculosis patient registered with dots Centre in Rohilkhand medical college & Hospital (Experimental group) Bareilly District and Varun arjun Medical college & Rohilkhand Hospital (Control Group) Banthara, Shahjahanpur district. The level of knowledge was assessed using structured knowledge questionnaire and practice was observed by practice checklist. The pretest was conducted, Intervention was implemented and posttest knowledge and practice were assessed for the experimental group.

Reliability

The reliability of the tool was determined by split half method and r-value of structured knowledge questionnaire was 0.97 which shows tool is highly reliable. The r-value of practice checklist was 0.89 which shows highly reliable. The r-value of practice checklist was 0.92. It shows that the item in the tool is highly reliable the average time to complete the test was 30 minutes.

Pilot study

The data collection was done from 01.03.2021 to 20.03.2021. The researcher selected 6 samples from both experimental and control group by probability purposive sampling technique. After a brief self-introduction, the investigator explained the purpose of the study and obtained consent from the subject. The average time taken 30 minute. This signified the feasibility and practicability to conduct the main study.

Result

Interpretation of the demographic variables (Experimental group)

- Maximum (42.5%) of TB patient were in the age group of 41-50 years. Followed by 40% of patient belong to the age group of 51 years and above, 10% were in the age group of 31-40 years, 5% were of the age of 21-30 years and only 2.5 was in the age group \leq 20 years
- Majority (60%) of TB patients were male. Remaining 40% patient were female
- Maximum (37%) of TB patient had secondary education, followed by 32.5% of patients studied up to higher secondary education, 17.5% were in the category of no formal education, 10% were in the category of graduate and above and 2.5% were in the category of primary education.
- Maximum (55%) of patient were employed, followed by 42.5% were retired and remaining 2.5% were unemployed.
- Maximum (42.5%) of TB patient had income 10001-20000 rupees. Remaining 40%, 17.5% of the study participant had monthly income less than 10000 and 20001-30000 rupees respectively.
- Most (80%) of TB patient were part of joint family and only 20% of patient were living in a nuclear family

- Majority (65%) of the TB patient having secondary TB and remaining 35% TB patients having primary TB
- Majority (92.5%) of TB patient got information from hospital/health workers, followed by 5% of patients got information through mass media and remaining 2.5% of the patient got information from study centre.

Interpretation of the demographic variable shows that (Control group)

- Maximum (42.5%) of TB patient were in the age group of above 51 years. Followed by 37.5% of TB patient belong to the age group of 41-50 years and above, 12.5% were in the age group of 31-40 years, 5% were of the age of \leq 20 years and only 2.5 was in the age group 21-30 years
- Majority (60%) of TB patients were female. Remaining 40% patient were male
- Maximum (37.5%) of TB patient had primary education, followed by 32.5% of patients studied up to higher secondary education, 27.5% were in the category of no formal education, 10% were in the category of graduate and above and 2.5% were in the category of primary education.
- Maximum (55%) of patient were unemployed, followed by 45% were employed.
- Maximum (42.5%) of TB patient had income 20001-30000 rupees. Followed by 40% of TB patients had income 10001-20000 and remaining 17.5% of the study participant had monthly income less than 10000 rupees.
- Most (75%) of TB patient were part of joint family and only 25% of patient were living in a nuclear family
- Majority (75%) of the TB patient having primary TB and remaining 25% TB patients having secondary TB
- Majority (75%) of TB patient got information from hospital/health workers, followed by 12.5% and 12.5 of patients got information through mass media and study centre.

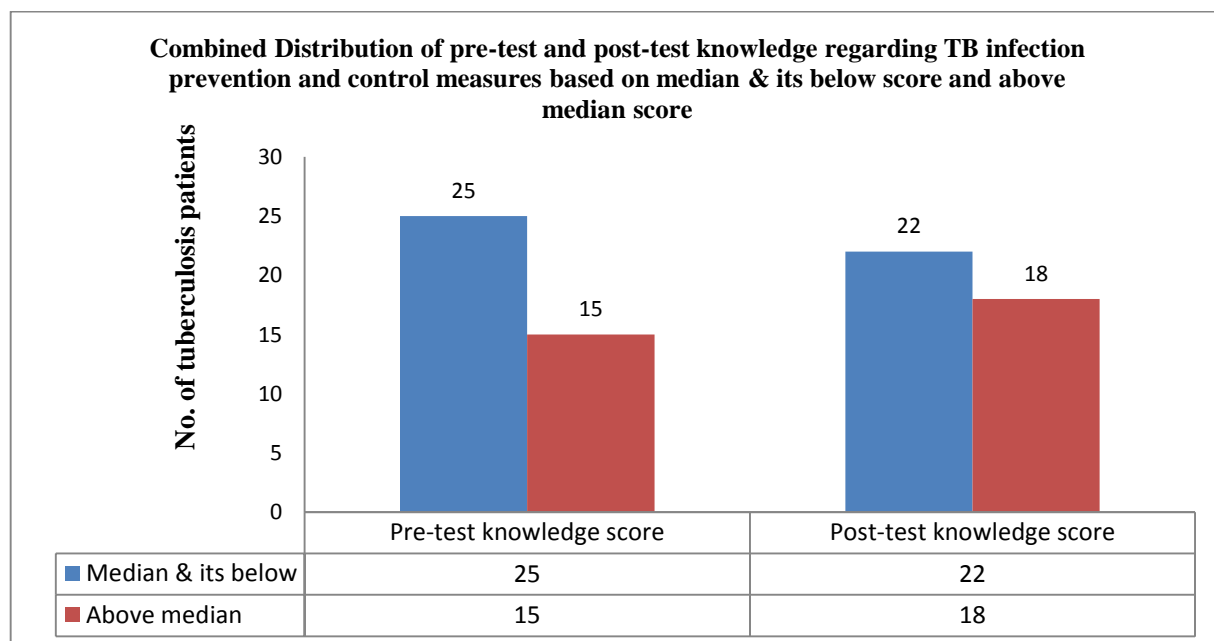


Figure 1. Distribution of pre-test and post-test knowledge regarding TB infection prevention and control measures based on median & its below score and above median score

Table 1

To evaluate the effectiveness of Sensitization Programme regarding TB infection prevention and control measure among TB patient in experimental group and control group

Knowledge Score	Mean	Mean %	SD	Enhancement %	df	'p' value	't' value	Inference
Pre- test Knowledge score	14.9	49.6	2.19					
Post-test knowledge score	18.4	60	1.73	10.6	39	.00	18.02	S

To find out the association the between pre-test knowledge, attitude and practice score regarding TB infection prevention and control measures among TB patient in experimental groups with their selected socio-demographic variables. The association of pre-test knowledge of tuberculosis patients regarding TB infection prevention and control measures among TB patients with their selected socio-demographic variables such as age in years, gender, education, occupation, family income per months, types of family, types of TB and source of information. The results revealed that there is no significant association between pre-test knowledge of TB patients with their socio-demographic variables. Hence the research hypothesis H2 is rejected and null hypothesis is accepted.

Discussion

The goal of the study was to see how beneficial a Tuberculosis Sensitization Program was in terms of TB infection prevention and control. A literature review aided the researcher in a variety of ways. It aided in determining what is previously known, what is still unknown and untested, justifying the need for replication, and shedding insight on the study's viability and potential issues. It also aids in the discovery of potential methodological tools that shed light on methods to improve data gathering efficiency and obtain useful information on how to improve data analysis efficacy. The research used a quasi-experimental non-randomized control group design to evaluate the efficacy of a Tuberculosis patient sensitization programme in terms of TB infection prevention and control measures using two groups. One control group and one experimental group. The present study was conducted. Sample size was comprised of 80 patients in which 40 patients in experimental group and 40 patients in Control group. The sampling technique used was convenient sampling. A questionnaire was prepared to assess the demographic profile and knowledge, attitude and practices of patients. Content Validity of tool was validated by a panel of number of experts from medical and nursing field, who had expertise in developing such instruments. The tool was tested for the reliability among 8 patients 4 experimental group and 4 control group. The internal consistency was computed using Pearson's Correlation formula with split half technique. Reliability co- efficient was found to be 0.89. The tool was found to be reliable. Pilot study was done on 10% patients conveniently selected to experimental group and control group based on inclusion and exclusion criteria. The tool and the information were found feasible and practicable. Findings revealed that it is feasible and effective to conduct the study. No further changes were done after pilot study in the tool. The researcher then proceed for the main study on 80 samples. Based on the objectives and the hypothesis, the data was analyzed using both inferential statistics and descriptive. The descriptive statistics used for the frequency, average mean, percentage, standard deviation.

Conclusion

Present study was concluded that the level of knowledge, attitude and practice regarding TB infection prevention and control measures among TB patients. The level of knowledhe attitude and practices were not at par in the pretest. That shows that there is still urgent need to impart the knowledge and need to change the attitude and practices among TB patients to combat the mortality of this disease. The study's findings demonstrated that the progressive sensitization programme on knowledge, attitude, and practise regarding tuberculosis infection prevention and control measures was effective in raising knowledge, attitude, and practise regarding tuberculosis infection prevention and control measures. There was poor adherence and response level regarding TB-IPC among the study participants. Overall, good knowledge did not have a positive influence on adherence. The role of sensitization program is significant for the dissemination of accurate information and the modification of attitudes and lifestyles. This TB education intervention could be used as culturally competent intervention and could assist teachers or communities in delivering continuous health education to the adolescents about TB.

Regardless of differences in socio-demographic characteristics, the study found that all TB patients in the experimental and control groups improved their knowledge, attitude, and practise about TB infection prevention and control strategies. PTB patients' general understanding of TB was low, which could jeopardise the RNTCP's success in the near future. There is a need to develop ways to improve the country's socioeconomic status and literacy, as well as to develop and implement a culturally relevant IEC system. Alternatively, the RNTCP may need a policy shift in case findings, such as a shift from a passive to an active case finding method.

Conflict of interest

The authors certify that they have no involvement in any entity with any financial/ non-financial interest in the subject matter or materials discussed in this paper.

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