Effect of Structured Teaching Programme on Knowledge regarding Pulmonary Tuberculosis and its Management among Patients of Pulmonary Tuberculosis

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Abstract

In view of ways to enhance knowledge of tuberculosis (TB), it was decided to undertake a study to ascertain effectiveness of structured teaching programme on 60 patients of TB with 30 each in experimental and control groups. Analysis of pre-test and post-test in both the groups revealed that structured teaching programme was quite helpful in enhancing the knowledge about TB among the patients.

Infectious diseases are major public health issues for both developed and developing coun-tries. Africa and India both suffer significant population losses each year from infectious and parasitic diseases. Approximately 5 million people in Africa and 2 million people in India, mostly children and young adults, die each year because of these diseases. Africa and India's 7 million infectious disease deaths account for 70 percent of infectious disease deaths and 13 percent of all deaths worldwide. Diseases prevalence caused a total of 10 million deaths in 1998; the infectious diseases most prevalent in developing world were HIV / AIDS, diarrhoeal diseases (cholera, dysentery, typhoid fever and rotavirus), tuberculosis (TB), malaria and measles (World Health Organisation).

Tuberculosis is an ancient disease that has left its traces in stone age skeletons and Egyptian mummies. Now TB epidemic is worse than at any other time in human history. TB is among the 10 causes of global mortality. Among infectious diseases, tuberculosis is the single largest killer of young populations in the world.

Facts regarding Tuberculosis

- Estimated 140 lakh people have TB infection.
- Estimated 35 lakh are sputum-positive.
- About 22 lakh new cases every year, including about 10 lakh sputum-positive.
- 5 lakh people in India die from TB every year, more than 1000 every day.
- One sputum positive case can infect 10-15 healthy individuals in a year.

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Khan, et al (2006) conducted a study on knowledge, attitude and misconceptions about tuberculosis in Pakistan. A total of 170 patients were selected from 2 teaching hospitals, 112 from private and 58 from public hospitals. The results showed that 11 (7%) patients thought TB was not an infectious disease and 18 (10.6%) patients did not consider it as a preventable disease. The study concluded that misconceptions concerning TB are common in Pakistani patients and lack of knowledge on TB is alarming.

Need for the study

In the new millennium, the incidence of TB in the world is estimated to have increased from 8.8 million cases in 1995 to 10.2 million cases in the year 2002 and 11.9 million cases by 2005. In 1995, three million people died due to TB in the world. WHO estimates that about one-third of the world population is infected with Mycobacterium Tuberculosis and another 300 million will be infected in the next decade. About 95 percent of TB cases and 98 percent of the TB deaths are occurring in developing countries. The contagion parameter suggests that where TB is endemic, each infectious case will result in between 20 and 28 secondary infections.

Mortality due to TB in India

Everyday:

- More than 20,000 people become infected with TB
- More than 5000 persons develop TB
- More than 1000 die because of TB
- One person dies of TB every minute

Every year:

- 20,000 people develop TB
- 500,000 people die of TB

Sanz Barbero B (2009), in a descriptive and analytical study on knowledge, attitude and perceptions of Latin American immigrant population of tuberculosis over 15 years old in community of Madrid showed that a high percentage had correct knowledge of disease (77.3%), its transmission (94.7%) and treatment (77.3%). The researchers concluded that after hospital discharge, a high percentage had correct knowledge about the disease, although there is a high prevalence of erroneous beliefs on its transmission.

Malenga et al (2010) in a cross sectional study on management of pulmonary tuberculosis patients in urban setting in Zambia on 105 patients selected randomly showed that respondents delayed to seek treatment (68%) even when knowledge of TB symptoms was high (78%). The study concluded that there is a need to emphasise the importance of submitting follow-up sputum during patient education and counselling in order to enhance patient adherence and treatment outcome.

Objectives

The objectives of the present study were :

1. To assess the knowledge regarding pulmonary TB among clients with pulmonary TB.
2. To determine the effect of structured teaching programme regarding pulmonary TB in terms of gain in knowledge.
3. To determine the association between gain in knowledge scores and selected demographic variables.

Table 1: Schematic representation of the research design

Group	Pre-test	Intervention	Post-test
Experimental group	O_1	X	O_2
Control group	O_3	-	O_4

Where,
O_1 = Pre-test knowledge score in experimental group
O_2 = Post-test knowledge score in experimental group
X = Structured teaching programme on pulmonary tuberculosis and its management
O_3 = Pre-test knowledge scores in control group
O_4 = Post-test knowledge scores in control group

Table 2: Analysis of knowledge scores in experimental group

Group	Minimum	Maximum	Mean	SD	t-value	p-value
Pre-test	3	19	8.23	3.9	25.96	<0.001
Post-test	21	30	26.53	2.11		

Analysis of knowledge scores in control group

Group	Minimum	Maximum	Mean	SD	t-value	p-value
Pre-test	8	15	11.53	1.83	3.25	<0.001
Post-test	8	14	11.27	1.74		

Research Methodology

To accomplish the objectives and considering the feasibility, the research design selected for the present study was untreated control group design with pre-test and post-test research design which belonged to quasi experimental design (Table 1).

Variables : The independent variable in the present study is structured teaching programme on pulmonary tuberculosis and its management, and dependent variable is knowledge of the pulmonary tuberculosis clients, and attribute variables are personal characteristics data which include age, sex, educational qualifications, occupation and marital status.

Sample and size: The sample had 60 clients with pulmonary tuberculosis, 30 each in experimental and control groups.

Sampling technique: Non-probability convenience was found more appropriate to make this study more feasible.

Data collection technique: A demographic proforma was prepared to collect relevant demographic data and structured questionnaire was prepared to assess the knowledge of the pulmonary tuberculosis clients. Structured interview schedule method was followed to collect the demographic data and to assess the knowledge of patients with tuberculosis.

Data collection procedure : Data collection was carried out from 10 to 30 June 2007. On day one, the purpose of the study was explained to the samples and an informed consent was taken before starting the study. A pre-test was conducted by administering a structured interview schedule for 60 pulmonary tuberculosis clients (30 each in experimental and control groups). On the same day, STP was administered to the experimental group. The post-test was conducted by using the same structured interview schedule at day 7 of administration of the STP.

Table 3: Comparison of mean score of experimental pre-test and control pre-test

Group	Student's t-test	p-value
Experimental and Control group	4.20	<0.001

df = 58

Table 4: Comparison of mean score of experimental post-test and control post-test

Group	Student's t-test	p-value
Experimental and Control group	30.55	<0.001

df = 58

Results

- In the experimental group pre-test score was minimum 3 and maximum 19, and mean was 8.23 and median was 7 and SD was 3.9 (Table 2). In experimental group post-test score was minimum 21 and maximum 30 and mean was 26.53 and median was 26.5 and SD was 2.11.
- The obtained t-value was 25.96, statistically significant at 0.001 level, so null hypothesis was rejected and research hypothesis was accepted. So there was significant gain in knowledge score regarding pulmonary TB among the subjects of experimental group.
- In control group, pre-test minimum score was 8 and maximum was 15, mean 11.53 and SD was 1.83; post-test minimum score was 8 and maximum 14 and mean 11.27 and SD was 1.74.
- The obtained t-value was 3.25, statistically significant at 0.01 level, so null hypothesis was rejected and research hypothesis was accepted. So there was significant gain in knowledge score regarding pulmonary TB among the subjects of control group.
- The obtained t-value was 4.20, statistically significant at 0.001 level, therefore null hypothesis was rejected and research hypothesis was accepted (Table 3).
- The obtained t-value was 30.55, statistically significant at 0.001 level, therefore null hypothesis was rejected and research hypothesis was accepted (Table 4).

Discussion and Implications

The findings of the present study are in congruence with the study on effectiveness of structured teaching programme on pulmonary tuberculosis and its management among pulmonary tuberculosis clients. The obtained t-value 25.96 was statistically significant at 0.001 level which showed that structured teaching programme was helpful to improve the knowledge of pulmonary tuberculosis and its management among the subjects of experimental group.

On the basis of the findings of the study it can be concluded that structured teaching programme was effective in increasing the knowledge of the clients. Nurses are one of the key health team members can act as a facilitator and support in the increasing the potential abilities of the patients. The most effective way to fight TB is to stop it as the source. Health education is an important aspect of nursing practice. For effective health education, nurses should have adequate knowledge regarding tuberculosis. So nursing education programme should incorporate these factors in the nursing curriculum. Nursing curriculum should provide an opportunity to plan and conduct teaching programmes in variety of setting viz. family, community, industry, hospitals and other health care agencies.

Recommendations

Similar study can be replicated on a larger sample. A comparative study may be conducted between rural and urban areas. A case study may be conducted to find out the beliefs and practices of the people in the community.

Future research can be done to find out the (i) attitude and practices of TB clients, or (ii) practices of health care providers in educating TB clients.

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