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Research Article

A Study to Assess the Effectiveness of Planned Teaching Program on Knowledge regarding Pulmonary Tuberculosis among Clients registered at District Tuberculosis Centre, Pulwama, Jammu and Kashmir

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ABSTRACT

Aim: The study aimed to assess the existing knowledge regarding pulmonary tuberculosis (TB) among clients before the implementation of the planned teaching program. **Materials and Methods:** One group pre-test post-test pre experimental approach was adopted for the study. The study was conducted on 57 clients registered at District TB Center, Pulwama, who were selected by total enumerative scattered sampling technique. Data were collected by administering a structured knowledge interview schedule. The content validity of the tool and teaching plan was established. The reliability of the tool was established by testing the internal consistency using test–retest method. **Results:** The results of the present study indicate that among 57 subjects, 30 (52.63%)subjects had moderately adequate level of knowledge regarding pulmonary TB, 22 (38.60%) subjects had an inadequate level of knowledge, and only 5 (8.77%) subjects had adequate knowledge before planned teaching program, whereas in post-test, the majority of the subjects, 56 (98.25%), had an adequate level of knowledge regarding pulmonary TB and only 1 (1.75%) subject had a moderate level of knowledge after planned teaching program. The mean pre-test knowledge score was 28.31 which improved to 43.68 in post-test ($P < 0.001$). **Conclusion:** This study concluded that the planned teaching program is effective tool to improve the knowledge of clients regarding pulmonary TB.

Keywords: Clients, Directly observed treatment short-course, Knowledge, Planned teaching program, Pulmonary tuberculosis

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Introduction

Tuberculosis (TB) is an infectious disease known to have existed from ancient times. The disease has been perpetuated and maintained in the human population. It represents a dynamic balance between man and mycobacterium tubercle bacilli. TB is a chronic infectious disease caused by tubercle bacilli (*Mycobacterium TB*), and the disease primarily affects lungs and causes pulmonary TB. It can also affect the meninges, intestine, and bones.[1,2]

In 1993, the WHO took an unprecedented step and declared TB as a global emergency. Hence, a great concern was about the modern TB epidemic. It is estimated that, between the year 2002 and 2020, nearly one billion people will be newly infected, 2000 million will get sick, and 35 million will die from TB if prevention is not further strengthened. Moreover, if left untreated, each person with active TB will infect 10–15 people in a year.[3]

Annual status report, TB India 2011 states that TB continues to remain as one of the major communicable

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diseases in the world, particularly in developing countries. In 2010, there were estimated 8.8 million incident cases of TB globally. Mortality figures in TB reveal 1.1 million deaths among HIV-negative cases and an additional 0.35 million deaths among people who were HIV positive. In the state of Jammu and Kashmir, the published figures in 2010 revealed that, of 87,080 suspects, 8673 were sputum positive.[4-6]

TB is a major public health problem in India, coupled with rising number of cases of acquired immunodeficiency syndrome (AIDS) in whom the most common opportunistic infection is TB and has gained even greater importance. The success of the Revised National TB Control Program depends on the passive efforts of the health institutions. Therefore, it is important that the basic knowledge about the disease, availability of treatment, and prevention of TB should be clear among the individuals in the community. Equally important is to assess the impact of various strategies adopted for improving knowledge and compliance.[7]

Planned teaching program refers to a systematic way of educating people. Various studies have shown that planned teaching program has been very effective in preventing and improving knowledge on various diseases. A planned teaching program done on the effectiveness of AIDS education program on adolescent girls of Andhra Pradesh showed that there was a significant increase in the knowledge level after administering planned teaching program, which proves that planned teaching program is an effective method to use in improving the knowledge level of the people.[8]

Statement of the Problem

A study to assess the effectiveness of planned teaching program on knowledge regarding pulmonary TB among clients registered at District TB Center, Pulwama, Jammu and Kashmir.

Objectives of the study

The objectives of the study were as follows:

1. To assess the existing knowledge regarding pulmonary TB among clients before implementation of planned teaching program (pre-test).
2. To assess the knowledge regarding pulmonary TB among clients after implementation of planned teaching program (post-test).
3. To compare the pre-test and post-test knowledge scores regarding pulmonary TB among clients.
4. To determine the association of pre-test knowledge scores regarding pulmonary TB among clients with their selected demographic variables, i.e., age, gender, marital status, type of family, educational status, occupation, and income per month.

Hypotheses

- H1: There is a significant difference between the mean pre-test and post-test knowledge scores of clients regarding pulmonary TB at $P \leq 0.05\%$ level of significance.
- H2: There is a significant association of pre-test knowledge scores of clients regarding pulmonary TB with their selected demographic variables, i.e., age, gender, marital status, type of family, educational status, occupation, and income per month at $P \leq 0.05\%$ level of significance.

Materials and Methods

Research approach

A quantitative research approach was used.

Research design

Pre-experimental, one group pre-test post-test design pre-experimental research design was adopted.

Setting of the study

The present study was conducted at District TB Center, Pulwama, Jammu and Kashmir.

Population

Clients registered at the District TB Center, Pulwama, Jammu and Kashmir, were selected as population for the present study.

Sample

The sample for the current study is 57 clients registered at District TB Center, Pulwama.

Sampling technique

District TB Center, Pulwama, consisted of three TB units (TU), namely TB unit Tral (TU Tral), TB unit Shopian (TU Shopian), and TB unit Pulwama (TU Pulwama). First, the selection of the TB unit Pulwama was done by non-random method (i.e., convenience sampling). Then, total enumerative scattered sampling was used to select 57 subjects for the present study.

Development of a tool for data collection

It consists of two parts.

Section A

It deals with the demographic data related to the patients with Pulmonary TB. It includes age, gender, marital status, type of family, educational status occupation and income per month.

Section B

It includes the knowledge about general aspects of pulmonary TB, treatment and its side effects, prevention and spread of Pulmonary TB.

Validity of instrument

To ensure the content validity of the prepared tool, it was submitted to 12 experts. Among these 12 experts, eight were nursing experts, three medical experts, and one statistician.

Reliability

The reliability of the tool was established by testing the internal consistency. The internal consistency was assessed using test–retest method. Coefficient correlation was found 0.96 which indicated the high degree of reliability of the tool.

Data collection procedure

A formal written permission was obtained from the state TB officer Kashmir Division (State TB cell directorate of health services Jammu and Kashmir) and District TB Officer, Pulwama. Data were collected from May 25, 2015, to June 23, 2015.

The subjects were approached, and rapport was established by self-introduction. Informed written consent was obtained from the subjects to confirm their willingness to participate in the study. The subjects were taken at directly observed treatment short-course sections of different health centers, and structured knowledge interview schedule was administered by the investigator for conducting the pre-test. Planned teaching program was administered to the same subjects on the same day after pre-test using the computer slides and flip book. Post-test was carried out 5 days after the administration of planned teaching program using the same interview schedule to assess the effectiveness of planned teaching program on pulmonary TB.

Analysis of data

Both descriptive and inferential statistics analyzed on the basis of the objectives and hypotheses of the study. Mean, median, range, and standard deviation calculated. Paired "*t*-test" was used to determine the significant difference between the pre-test and post-test knowledge scores. To determine the association of pre-test knowledge scores with the demographic variables of clients, ANOVA and *t*-test test were used. The findings were interpreted and presented with the help of tables and graphs. The level of significance was set at the conventional level of 0.05% to test the hypotheses.

Results

The data and findings were organized and presented under the following sections:

- Section I: Description of demographic variables of subjects.
- Section II: Assessment of knowledge level of subjects regarding pulmonary TB before and after implementation of the planned teaching program.
- Section III: Comparison of pre-test and post-test knowledge scores of subjects regarding pulmonary TB.
- Section IV: Association of pre-test knowledge scores with selected demographic variables (age, gender, marital status, type of family, educational status, occupation, and income per month).

Section I

Description of demographic variables of subjects

- Out of 57 subjects,
  - 23 (40.4%) were in the age group of >40 years, (22), 38.6% were in the age of 20–40 years and only (12) 21.1% subjects were in the age group of ≤20 years.
  - 29 (50.9%) were females and only 28 (49.1%) were males.
  - 36 (63.2%) were married, and only 21 (36.8%) were unmarried.
  - 40 (70.2%) were belonging to joint family and only (29.8%) were from nuclear family.
  - 27 (47.4%) were illiterate, 22 (38.6%) subjects had educational qualification up to secondary, and only 8 (14%) subjects were graduate and above.
  - 31 (54.5%) were from labor class, 13 (22.8%) were students, 10 (17.5%) subjects were from business class, and only 3 (5.3%) subjects were an employee.
  - 25 (43.9%) had monthly income ≤5000 Indian rupees, 19 (33.3%) had monthly income 5000–10,000, and only 13 (22.8%) had monthly income >10,000 Indian rupees.

Section I

Assessment of knowledge level of subjects regarding pulmonary TB before and after implementation of planned teaching program

In pre-test majority of the subjects, 30 (52.63%) had a moderately adequate level of knowledge regarding pulmonary TB, 22 (38.60%) subjects had an inadequate level of knowledge, and only 5 (8.77%) subjects had an adequate level of knowledge before planned teaching program, whereas in post-test, the majority of the subjects 56 (98.25%) had an adequate level of knowledge regarding pulmonary TB, only 1 (1.75%) subject had a moderately

adequate level of knowledge, and none had an inadequate level of knowledge as shown in Figure 1.

Section III

Comparison of pre-test and post-test knowledge scores of subjects regarding pulmonary TB

The mean post-test score (43.68) was greater than the mean pre-test score (28.31) with a mean difference (=15.37) [Figure 2] at $P < 0.001$ and [Figure 3] which indicates that there is a high significant difference between pre-test and post-test mean knowledge score. Hence, there is enough evidence that this change occurred due to intervention and not by chance.

Section IV

Association of pre-test knowledge scores with selected demographic variables (age, gender, marital status, type of family, educational status, occupation, and income per month)

Age ($P \leq 0.006$), marital status ($P \leq 0.011$), educational status ($P \leq 0.001$), occupation ($P \leq 0.001$), and income per month ($P \leq 0.009$) of subjects were found to have a significant association with the pre-test knowledge score. Conversely, no association was found between gender and type of family with the pre-test knowledge score ($P > 0.05$).

Discussion

While comparing the knowledge scores of subjects regarding pulmonary TB, the mean post-test score (43.68) was greater than the mean pre-test score (28.31) with mean difference (=15.37) at $P < 0.001$ which indicates that there is a high significant difference between pre-test and post-test mean knowledge score and hence confirmed that the planned teaching program was effective in increasing the knowledge of clients. The finding of the study was found similar to a study conducted by Patidar *et al*. on the effectiveness of structured teaching program on knowledge regarding prevention and control of TB among internship GNM students. The result of the study indicates that total pre-test mean percentage was 52.73% and post-test mean percentage 81.05% which shows an increase in post-test knowledge compared to the pre-test knowledge score and concluded that structure teaching program is an effective tool to improve the knowledge of students on prevention and control of TB.[9,10]

Conclusion

Planned teaching program improved the knowledge of clients regarding pulmonary TB. Improvement in knowledge was assessed by taking post-test after 5 days.

Acknowledgment

I express my gratitude and thanks toward all who have directly or indirectly helped me to complete this study and their support in each major step of the study.

Limitations of the study

1. The size of the sample was small (57), which impose limitation in generalization.
2. The sample was selected only from District TB Center, Pulwama, and hence, generalization can only be made for the sample studied.

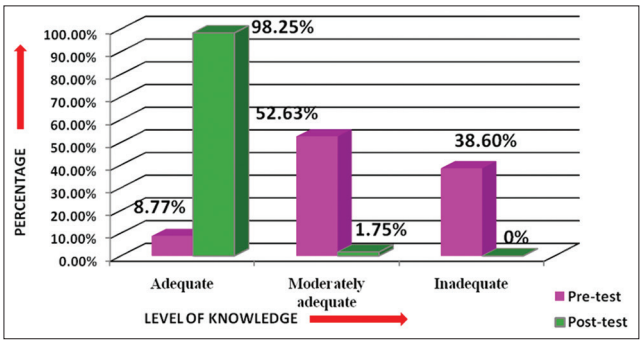

Figure 1: Bar diagram showing a comparison between pre- and post-test levels of knowledge

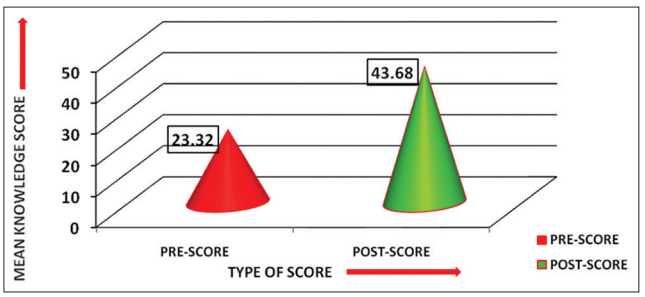

Figure 2: Cone diagram showing overall mean knowledge score

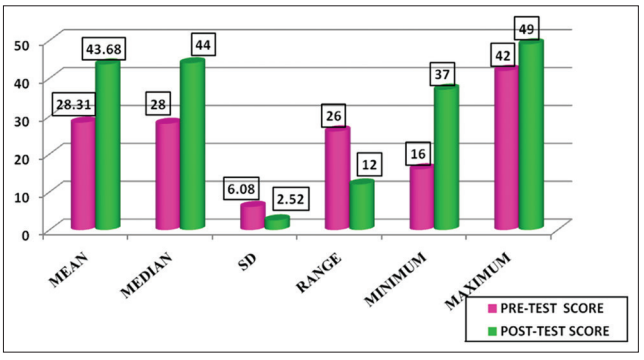

Figure 3: Cylinder diagram showing a comparison between mean, median, standard deviation, minimum, maximum, and range of pre-test and post-test knowledge scores of subjects regarding pulmonary TB

3. The effectiveness of planned teaching program was assessed in terms of knowledge gain only. Practice and attitude domains were not included.
4. The researcher did not use a control group. Hence, the investigator had no control over the events that took place between pre-test and post-test.
5. Data collection period was limited to 4 weeks only.

Ethical standards

Prior permission was obtained from the concerned authorities of MMINSR SKIMS Soura Srinagar, and Ethical Committee SKIMS Soura, Srinagar, for ethical clearance and permission. Permission was also accorded from the head of the concerned area (State TB Officer and District TB Officer) to conduct the study on the pulmonary TB clients. Permission was obtained by taking informed consent from subjects, before their inclusion as sample in the study. Privacy, confidentiality, and anonymity were guarded.

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The authors did not receive any financial support from any third party related to the submitted work.

Conflicts of interest

The authors had no relationship/condition/circumstances that present a potential conflict of interest.

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