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Effectiveness of participatory learning programme on knowledge of tuberculosis and its prevention among high school children

Cover Page Footnote

The authors express their gratitude to the Heads of the schools and the students who participated in the study for their kind support during study period.

Effectiveness of participatory learning programme on knowledge of tuberculosis and its prevention among high school children

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Abstract

Introduction: Tuberculosis is one of the causes of death among young people and adults in the world, accounts for nearly two million deaths per year. The study was undertaken with the objective of finding the effectiveness of participatory learning programme on knowledge of tuberculosis and its prevention among high school children and thus educates the students help to shape their perception about tuberculosis. **Methods:** The study was done with an evaluative approach and pre experimental one group pretest posttest design. Multistage random sampling was adopted for the selection of schools. Proportionate sampling technique was used to select eighth and ninth standard students and 88 students (60.5% male and 39.5% of female) participated. A structured knowledge questionnaire was administered to eighth and ninth standard students. On day 2, and 3, participatory learning programme on knowledge of tuberculosis and its prevention was done on day 7, posttest was taken. **Results:** Majority of the students were of 14 years, 58 (65.9%) and lived in rural area 81(92%). Most of them had teachers as a source of information 43(48.9%). The majority of the children had poor knowledge 47 (53.4%) and only 2 (2.2%) of them had good knowledge in the pretest whereas in posttest 73(82.9%) children had good and 15(16.9%) had average knowledge. The study result showed a significant improvement in knowledge scores on tuberculosis and its prevention among high school children ($t=25.124$ and $p=0.00$). **Conclusion:** The study found that participatory learning programme was good in improving the knowledge on tuberculosis and its prevention among the high school children.

Key Words: Effectiveness, high school children, participatory learning programme, tuberculosis

Introduction

Tuberculosis is a public health threat found globally (Global Tuberculosis Report, 2014). It is found that 74 to 100 % of patients with HIV are infected with pulmonary tuberculosis (Pal, 2005) which is caused

by a bacterium called Mycobacterium tuberculosis (Pal, Zenebe, & Rahman, 2014). The World Health organization's 2014 theme "Reach the three Million" reports that three million out of nine million people infected with tuberculosis are not properly diagnosed and treated. Most them inhabit in the world's poorest communities.

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A survey on tuberculosis prevalence was done from 2002 to 2011 in Cambodia (Mao, et al., 2014) to assess the impact of the national tuberculosis control programme. The 2002 survey revealed a prevalence of smear-positive cases in every 269 per 100 000. In addition, the year 2010 and 2011 report showed the declined prevalence of tuberculosis due to the

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decentralization of the DOTS programme. It shows that the DOTS regimen is more effective at reducing symptomatic cases than without symptoms of tuberculosis.

A tuberculosis prevalence survey was conducted by (Gopi, et al., 1997) in Raichur district, Karnataka, to find out the prevalence of pulmonary tuberculosis among people who are above 15 years. Using two-stage cluster sampling 72,448 samples were selected. Based on the symptoms questioning and sputum examination it is found that the symptomatic were increased as age increased and it is higher among males (11.9%) than among females (7.1%). The predominant symptom was cough among the 87% of symptomatic and among 92% of cases detected. This study shows that the improvements in health care delivery system in the tuberculosis awareness programme are important in eradication of the disease in the country.

This study was done by the researcher for the assessment of the knowledge of high school students about tuberculosis. "Participatory learning programme" was thought to be the best method to impart knowledge to the students, so that they can spread the health messages to their siblings, parents, and neighbors and then ultimately the message spread to the community.

Materials and Methods

The study design was pre experimental one group pretest and posttest design. The schools were selected randomly using lottery method. Proportionate sampling technique was used to select eighth and ninth standard students from the Government Schools of Udupi district. There were 88 students (60.5% male & 39.5% of female) selected for the study. The following sampling criteria were used for selecting the children: children studying in eighth and ninth standard, willing to participate in the study. Conceptual framework was based on system's model by WHO SEARO model.

The tools used for data collection were tool 1: demographic proforma and tool II: A structured knowledge questionnaire on tuberculosis and its prevention, which was developed by the investigator consisting of 26 items. The knowledge scores were divided as poor (0-9), average (10-18), and good (19-

26). The content validity was established by submitting the tool to seven experts. Modifications were done based on their suggestions. The reliability of the tool was tested on 20 samples using split half method and the reliability score was 0.7, hence the tool was found reliable. The tool was pre tested on 10 students and the pilot study was conducted in December 2015 among 30 students. The study was found feasible and the required sample size was calculated at 95% confidence interval. The ethical clearance was taken from the institutional ethical committee, Kasturba hospital, Manipal and written consent and assent were taken from the participants.

Data collection was carried out after getting permission from the authorities, and taking written informed consent from the participants. On day one the pretest was conducted by administering tool 1: demographic Proforma and tool II: A structured knowledge questionnaire on tuberculosis and its prevention to the eighth and ninth standard students of selected Government Schools of Udupi district. It was followed by administration of participatory learning programme on knowledge of tuberculosis and its prevention that included two hours group discussion on prevalence, etiology, risk factors, and mode of transmission of tuberculosis. On daytwo, a quiz was conducted using a structured questionnaire consisting 13 items with one single correct answer and a script of role play on tuberculosis and its prevention was given and explained and prepared seven students for role play. On third day, the role-play was conducted based on the script given to the selected students, followed by the discussion regarding their understanding on message conveyed through the role-play. On day seven, the researcher conducted a posttest to assure that these students were equipped with the necessary knowledge on tuberculosis and its prevention.

Results

Sample characteristics

The data collected from 88 children studying in eighth and ninth standard using demographic proforma are depicted in Table 1.

Table 1:
Sample Characteristics N=88

Sample characteristics	Frequency	Percentage
Age (years)		
13	15	17.0
14	58	65.9
15	15	17.0
Gender		
Female	26	29.5
Male	62	70.5
Religion		
Hindu	81	92
Muslim	7	8.0
Type of family		
Nuclear	69	78.4
Joint	19	21.6
Area of living		
Rural	81	92.0
Urban	6	6.8
Semirural	1	1.1
Educational status of father		
Illiterate	9	10.2
Upper primary	29	33.0
Lower primary	26	29.5
High school	20	22.7
PUC and above	4	4.5
Previous source of information on tuberculosis		
Yes	77	87.5
No	11	12.5
Specify the source		
Not received information on tuberculosis	14	15.9
Mass media	7	7.9
Teachers	43	48.9
Family members	5	5.7
Health personnel	19	21.6
Available health facility near home		
Primary health Centre	52	59.1
Clinic	10	11.4
Nursing home	10	11.4
Hospital	16	18.2

The data presented in Table 1 show that among the age group taken under consideration for the study, majority of children, 58 (65.9%) were in the age of 14 years, and the majority were males 62 (60.5%). Most of the children, 81 (92%) were Hindu by religion and source

of information obtained was mainly by teachers 43 (48.9%).

Description of pretest level of knowledge on tuberculosis and prevention among high school children

The pretest knowledge was assessed using structured knowledge questionnaire to 88 high school children. The pretest knowledge scores percentage distribution is depicted below. The data in Figure 1 show that most of the children 47(53.4%) had poor knowledge. Only 2 (2.2%) of the children had good knowledge on tuberculosis and its prevention.

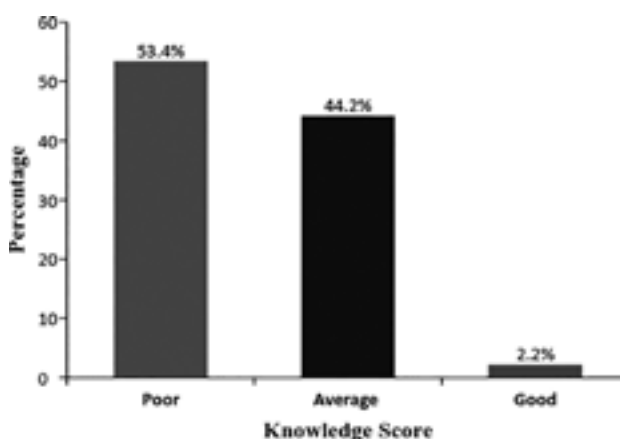


Figure 1: Bar Diagram Showing the Percentage Distribution of Pretest Knowledge Score

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Table 2:
Pre-Test and Post-Test Knowledge Scores of Children on Tuberculosis and its Prevention

Level of Knowledge	Pre-test (n= 88)		Post-test (n= 88)	
	Frequency	Percentage	Frequency	Percentage
Poor	47	53.4	0	0
Average	39	44.2	15	16.9
Good	2	2.2	73	82.9

The data presented in the Table 2 show that the majority of children 47 (53.4 %) had poor knowledge in the pretest and only 2 (2.2%) had good knowledge, in the post test majority 73 (82.9%) had good knowledge whereas 15 (16.9%) had average knowledge.

Significant difference between mean pretest and posttest knowledge scores of high school children

Table 3:
Mean Standard Deviation, Mean Difference, t-value, and p-value of Pretest and Posttest Knowledge Scores of High School Children
N=88

Knowledge	Pretest and Posttest		t value	df	p value
	Mean \pm SD	Mean Difference			
Pretest	9.5 \pm 2.7	11.75	25.124	87	.000*
Posttest	21.2 \pm 3.01				

*Significant at $p < .05$ level of significance

The data in the Table 3 show a statistically significant difference in the mean pretest and posttest knowledge scores of the high school children ($t = 25.124$, $df = 87$, $p < .05$). This indicates the significant gain in the knowledge in the posttest, and so the effectiveness of participatory learning programme in improving the knowledge of the children.

Discussion

The present study showed that 47 (53.4%) of the children had poor knowledge and only 2(2.2%) of the children had good knowledge on tuberculosis and its prevention in the pretest.

These findings are supported by a study conducted to determine the effectiveness of awareness programme on tuberculosis among eighth and ninth standard students in Pune city in 2008 for one-month period. The study findings revealed that 49% students gave correct answer for the causative agent of tuberculosis as bacterium. Only 58% of students answered about the proper modes of transmission of tuberculosis and only 64% of them answered about the spread of tuberculosis. Only 34 (25%) students mentioned about the diagnosis of tuberculosis by sputum examination. Only 58 (43%) students knew about the duration of treatment under DOTS. Forty-one (30%) students knew about the prevention of tuberculosis and only 62% of them knew the importance of BCG vaccine (Gothankar, 2013).

Present study, shows a significant difference between the mean pretest and posttest knowledge scores which indicates that the participatory learning was a good teaching method ($t = 25.124$, $P < 0.05$). This finding is at par with a study done among schoolchildren and

adults in community, a participatory health education on malaria in Ghana. In order to find effectiveness a participatory education activity on malaria control was designed and the schoolchildren gave these messages to their communities. A survey was done pre and post intervention, the intervention group of 105 children and 250 adults, and the control group consisted of 81 children and 133 adults. After the intervention it was found that the adults here was an increase in usage of bed net with insecticide from 21.5% to 50.0% ($p < 0.001$) and prevalence of parasite in schoolchildren reduced from 30.9% to 10.3% ($p = 0.003$). Thus, it had a good impact on schoolchildren, and adults. Thus, it can be used as a complementary approach in any other discipline (Ayi, et al., 2010).

Limitations

The limitation of the study was that it was conducted on a small sample size, so the generalizability of the findings is limited.

Conclusion

The participatory learning programme was found useful in improving the schoolchildren's knowledge on tuberculosis and its management. It also helps learners to contribute in different ways to achieve both individual and shared learning goal and do peer-to-peer learning. In addition, it helps the society because these children go back to community and society and bring awareness in their homes and society.

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