Effectiveness of two teaching methods on Knowledge regarding Tuberculosis among village people

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Abstract: *A quasi experimental study was conducted to evaluate the effectiveness of two teaching methods on knowledge of Tuberculosis. The study comprised two groups of population from different villages, which were randomly selected by the reserchers for intervention. Total samples were 64 (n=33 exposed to PTP and n=31 exposed to PTP with role play), who were selected by convenient sampling technique. Pretest was taken for both groups with the help of structured knowledge questionnaire on tuberculosis and after seven days post assessment was done. Result shows that gain in knowledge of PTP group was 3.2 and in PTP with role play group was 7. Thus it can be concluded that in both groups knowledge has been improved but gain in knowledge was more in PTP with role play group. Mean difference of gained knowledge was 3.83 which was significant at p<0.05 level. Thus PTP with role play was more effective than the PTP, to improve the knowledge of village people regarding tuberculosis.*
Keywords: *Planned Teaching programme, Role Play, Tuberculosis*

I. Introduction

"Teaching refers to the activities that are designed and performed to produce changes in the learner's behavior." (Clark). Through teaching we can educate or upgrade the knowledge of people. There are various teaching methods such as, demonstration, lecture, role playing, discussion, workshop etc and these methods are selected for teaching according to the topic and level of learners. Effective use of AV aids makes the teaching more intrusting and aids in concentration. It helps teachers to clear the concept of learner by providing a true picture of information. Use of AV aids during community health teaching can help people to improve their learning and to modify their thoughts, believes, concepts regarding health issues.

Most popular method used for community teaching is planned or structured teaching programme. Planned teaching consist teaching content in a sequence and covers large amount of material. K. Gnana Latha had used structured teaching program to improve the knowledge of patients about pulmonary tuberculosis. Result shows that teaching program was highly effective to enhance the knowledge of the study subject.

Hence structured teaching programme alone is effective, but addition of audio visual aids makes the teaching interesting, helps learners to be active and alert, and increases their memorization. One of the popular AV aid is role play, which is enjoyed by everybody. Role playing is a teaching strategy and a problem solving technique in which, participants act out a role (Shaftel 1982). In this many characters are performed from the real situations, which create interest among the audience, increase understanding, and create emotional attachment. Akbar Hassanzadeh, Arezu Vasile and Zahra Zare compared two teaching methods; lecture and role play to improve the knowledge and performance of high school students regarding first aid. The result shows that the group who were receiving role play had higher knowledge score as compared to lecture method. So the investigators want to investigate the best and effective teaching method for the community people to improve their knowledge regarding health issues.

1.1 Problem Statement

"A study to assess the effectiveness of Planned Teaching Program versus Planned Teaching Program with Role Play on knowledge regarding tuberculosis among the adults of selected community areas, Dehradun, Uttarakhand 2014"

1.2 Objectives
* To assess the effectiveness of planned teaching programme.
* To assess the effectiveness of planned teaching programme with Role Play.
* To compare the effectiveness of planned teaching programme and planned teaching programme with role play.
* To find association between knowledge score and selected socio-demographic variable.

II. Methodology

The research design for this study was quasi-experimental with two group pre-test –post-test design. The study was conducted in two villages which were randomly selected from Doiwala block, Dehradun, Uttarakhand and further randomly divided for intervention. Total 64 subjects (n=33 exposed to PTP and n=31 exposed to PTP with role play), were selected by convenient sampling technique who qualified the eligibility criteria of the study. Tools used for the study consist two sections. Section A consist sample characteristics which includes age, gender, marital status, educational status, occupation, family income, type of family, history of TB among family members and previous information regarding TB. Section B was structured knowledge questionnaire which consist 30 close ended multiple choice questions with three options. The areas of the questions were meaning of TB, causes, risk factors, mode of transmission, incubation period, clinical manifestations, diagnostic evaluation, complications, treatment and prevention. Tools were prepared by the investigators and content validity was done by various nursing experts in particular field. Ethical permission was obtained from the ethical committee of the parent institute before data collection. Data was collected and analyzed by descriptive and inferential analysis.

III. Result And Analysis

Sample characteristics of PTP group

Data presented in table no. 1 shows that majority of the adults, 14 (43%) were between the age group of 30-40 years. Among 33 adults, 30 (91%) were female and three (09%) were males. Mostly adults 32 (97%) were married and regarding education, 13 (39%) had secondary education, 12 (37%) had primary education, eight (24%) did not had any formal education. Among 30 females, most of them 22 (67%) were housewife, four had private job, two had government job and two were self employed. Among three males, one had government job and two were self employed.

Most of the families 14 (42%) had monthly income of Rs. 4000-8000 and 11 (33%) had between Rs. 9000-13000. Twenty (61%) adults belongs to nuclear family, 12 (36%) belongs to joint family. Among 33 adults, 31 (94%) did not had any infection of tuberculosis and only one (3%) had family history of tuberculosis. Eight (24%) adults had already received information about tuberculosis, among them four (50%) received from media, two (25%) received from health workers and two (25%) received from colleagues.

Table No.1: Socio-demographic characteristics of study subjects of PTP group

(n=33)

Sample characteristics	Frequency	Percentage
Age of the adults (in years)		
20-30 years	04	12
30-40 years	14	43
40-50 years	07	21
50-60 years	08	24
Gender of the adults		
Male	03	09
Female	30	91
Marital status		
Married	32	97
Widow	01	03
Educational status		
Illiterate	08	24
Primary education	12	37
Secondary education	13	39
Graduate	00	00
Occupational status		
Government service	03	09
Private service	04	12
Self employed	04	12
Unemployed	00	00
Housewife	22	67
Family monthly income		
4000-8000	14	42
9000-13000	11	33
14000-18000	03	10

Above 18000	05	15
Type of family		
Joint family	12	36
Nuclear family	20	61
Extended family	01	03
History of previous infection of TB		
Yes	02	06
No	31	94
Family history of TB		
Yes	01	03
No	32	97
Previous information about TB		
Yes	08	24
No	25	76
Sources of information (n=8)		
Media	04	50
Colleague	02	25
Books	00	00
Health worker	2	25

Sample characteristic of PTP with Role Play group

Table No.2: Socio-demographic characteristics of PTP with Role Play group

(n=31)

Sample characteristics	Frequency (f)	Percentage (%)
Age of adults (in years)		
• 20-30 years	04	13
• 30-40 years	07	22
• 40-50 years	12	39
• 50-60 years	08	26
Gender of the adults		
• Male	13	42
• Female	18	58
Marital status		
• Married	28	90
• Unmarried	03	10
• Divorced	00	00
• Widow	00	00
Educational status		
• Illiterate	08	26
• Primary education	21	68
• Secondary education	02	6
• Graduate	00	00
Occupational status		
• Government service	01	03
• Private service	07	23
• Self employed	05	16
• Unemployed	01	03
• Housewife	17	55
Family monthly income		
• 4000-8000	19	61
• 9000-13000	09	29
• 14000-18000	02	07
• Above 18000	01	03
Type of family		
• Joint family	15	48
• Nuclear family	16	52
• Extended family	00	00
History of previous infection of TB		
• Yes	00	00
• No	31	100
Family history of TB		
• Yes	01	03
• No	30	97
Previous information about TB		
• Yes	12	39
• No	19	61
Source of information (n=12)		
• Media	08	66
• Colleague	02	17
• Books	00	00
• Health worker	02	17

Data presented in table no.2 shows that majority of the adults, 12 (39%) were between the age group of 40-50 years followed by eight (26%) between the age group of 50-60 years. Among 31 adults, 18 (58%) were females and 13 (42%) were males. Mostly adults, 28 (90%) were married and three (10%) were unmarried.

Regarding education most of 21 (68%) adults had primary education. Among 18 female, most of them 17 (55%) were housewife. Seven male (23%) had private service, Five (one female and four male) 16% were self employed, one male (3%) had government service and one (3%) was unemployed. Only one (3%) family had monthly income more than Rs.18000. Sixteen (52%) adults belonged to nuclear family whereas 15 (48%) adults were from joint family.

Among 31 adults, no one had history of tuberculosis, only one (3%) had family history of tuberculosis. Twelve adults (39%) had previous knowledge regarding tuberculosis, from them eight (66%) got information from media, two (17%) received information from health workers and two (17%) received information from colleagues.

Personal variables

Table no. 3 shows that both PTP and PTP with Role Play had majority of participants between the age group of 40-60 years (45% and 65% respectively, n=35). Chi-square test was performed to find the difference between two groups in terms of age distribution. There was no significant difference (x^2= 2.34) between the PTP and PTP with Role Play group in terms of age distribution.

Regarding gender distribution between two groups, result shows that both the groups had majority of female participants (91% and 58% respectively n=48). Chi-square value (7.53) shows significant difference between PTP and PTP with Role Play group in terms of gender distribution. Regarding education majority of samples (39% and 68%, n=33) had primary education in both the groups. Chi-square value (10.47) shows significant difference between PTP and PTP with Role Play group in terms of education level.

Table no. 3. Shows frequency and percentage distribution of the personal variable of PTP and PTP with Role Play group

n=64

Personal Variables	Group Frequency and percentage %		x^2 Value	p Value
	PTP	**PTP with Role Play**		
Age				
20-40 years	18(55%)	11(35%)	2.34	3.84
40-60 years	15(45%)	20(65%)		
Gender				
Male	3(9%)	13(42%)	7.53	3.84
Female	30(91%)	18(58%)		
Education				
Uneducated	8(24%)	8(26%)		
Primary	12(37%)	21(68%)	10.47	5.99
Secondary	13(39%)	2(6%)		

Comparison of knowledge between PTP and PTP with Role Play

Table no. 4. Shows comparison between mean pre-test and post-test knowledge score of PTP and PTP with Role Play group

n=64

Group	Pretest knowledge score Mean±SD	Post test knowledge score Mean±SD	Mean Difference	t value	p value
PTP	15.3±3.4	18.5±2.7	3.2	3.05	2.03
PTP with role play	10.5±1	17.5±2.4	07	4.85	2.04

At p<0.05 level at significance

Table no. 4 shows that in PTP group, the mean pre-test knowledge score was 15.3±3.4 and post-test knowledge score was 18.5±2.7. The mean difference of 3.2 was found. Paired t-test was applied which shows significant difference between pre-test and post-test knowledge score (t= 3.05; p<0.05). Hence it can be interpreted that the knowledge was significantly improved from pre-test to post-test which can be attributed to PTP method of teaching.

In PTP with Role play group, the mean pre-test knowledge score was 10.5±1 and post-test knowledge score was 17.5±2.4. The mean difference was 7. Paired t-test shows significant difference between pre-test and

post-test knowledge score (t=4.85: p<0.05). Hence it can be interpreted that the knowledge was significantly improved from pre-test to post-test which can be attributed that PTP with Role play method of teaching. Therefore it can be interpreted that the knowledge score of participants in both group was significantly improved due to respective interventions.

Table no. 5. Shows the difference between Mean gain in knowledge scores of PTP and PTP with Role Play (n= 64)

Effect size	PTP Mean±SD	PTP with RP Mean±SD	Mean Difference	t-value	p value
Mean gain in knowledge score					
	3.2±2.7	07±4.8	3.8	3.84	2.001

At p<0.05 level of significance

It was found that both methods of teaching results improvement in knowledge. In order to determine which method was more effective, effect size was calculated. The effect size of the knowledge scores for both groups was calculated by subtracting mean pre-test scores from mean post-test scores.

Table no. 5 shows that mean gain in knowledge score in PTP group was 3.2±2.7 and PTP with Role Play group was 7±4.8. The difference of the mean gain in knowledge score between groups was found 3.8. This difference was significant (t=3.84) at p<0.05 level of significance. Hence it can be interpreted that the gain in knowledge in PTP with Role play group was significantly higher than the PTP group.

Association between pre-test knowledge score with socio-demographic variables

Table No. 6. Association between knowledge score of adults with socio-demographic variables of PTP group (n = 33)

Variables	Median and Above median (f)	Below median (f)	Chi-square Value
Age of the adult			
20-40 years	08	10	0.48
40-60 years	04	11	
Gender			
Male	03	01	1.34
Female	09	20	
Educational qualification			
Illiteracy-Primary education	06	14	0.88
Secondary-Higher education	06	07	
Occupation			
Housewife	09	13	0.15
Job	03	8	
Marital status			
Married	12	20	NA
Unmarried	00	01	
Type of family			
Joint family	05	08	0.04
Nuclear family	07	13	
Family income			
More than Rs. 10,000	03	04	0.16
Less than Rs. 10,000	09	17	

df$_1$- 3.84 at the level of p <0.05   **NA = Not Applicable**

Data presented in table no.6 depicts statistically non significant association between the pre-test knowledge score of the adults with socio-demographic variables such as age(0.48), gender(1.34), educational qualification(0.88), occupation(0.15), type of family(0.04), family income of the adults (0.16) at p<0.05 level of significance. Chi-square was computed to find association between pre-test knowledge score and the selected variables.

Data presented in table no.7 also depicts statistically non significant association between the pre-test knowledge score of the adults with socio-demographic variables such as age(0.78), gender(.78), occupation(2.59), type of family(1.64), family income of the adults (.005) at p<0.05 level of significance. Chi-square was computed to find association between pre-test knowledge score and the selected variables.

Table No.7 Association between knowledge score of adults with the selected socio demographic variables in PTP with Role Play Groups

n = 31

Variables	Median and Above median (f)	Below median F	Chi-square Value
Age of the adult			
20-40 years	07	04	**0.78**
40-60 years	08	12	
Gender			
Male	08	06	0.78
Female	07	10	
Educational qualification			
Illiteracy-Primary education	12	16	NA
Secondary-Higher education	03	00	
Occupation			
Housewife	06	12	**2.59**
Job	09	04	
Marital status			
Married	12	16	NA
Unmarried	03	00	
Type of family			
Joint family	05	10	1.64
Nuclear family	09	07	
Family income			
More than Rs. 10,000	02	02	**0.005**
Less than Rs. 10,000	13	14	

df_1- 3.84 at the level of $p < 0.05$ **NA = Not Applicable**

IV. Conclusion

Based on the findings of the study, following conclusion were drawn that both interventions were effective as a teaching method. But planned teaching program with Role Play was more effective to improve the knowledge of the adults regarding Tuberculosis.

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