



“A STUDY TO EVALUATE THE EFFECTIVENESS OF STRUCTURED TEACHING PROGRAMME ON KNOWLEDGE REGARDING TUBERCULOSIS TREATMENT AND IT'S PREVENTION AMONG THE TUBERCULOSIS PATIENT'S FAMILY MEMBERS OF SELECTED RURAL AREAS IN AHMEDABAD CITY”

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ABSTRACT

Study: Investigator conducted a “a study to evaluate the effectiveness of structured teaching programme on knowledge regarding tuberculosis treatment and it's prevention among the tuberculosis patient's family members of selected rural areas in Ahmedabad city”

Background: Tuberculosis is a disease caused by a bacterium called Mycobacterium tuberculosis. Tuberculosis is one of the most prominent mycobacterium diseases known to humankind. That rural people are not taking proper treatment of tuberculosis and they are not aware of prevention so that is important to have a knowledge regarding tuberculosis treatment and it's prevention among the tuberculosis patient's family members to stop the spread of infection.

Objective:

1. To assess the pre-test knowledge on tuberculosis treatment and its prevention among the tuberculosis patient's family members in selected rural areas of Ahmedabad city.
2. To assess the post-test knowledge on tuberculosis treatment and it's prevention among the tuberculosis patient's family members in selected rural areas of Ahmedabad city.
3. To determine the effectiveness of planned teaching Programme on tuberculosis treatment and its prevention among the tuberculosis patient's family members in selected rural areas of Ahmedabad city.
4. To find out the association between socio-demographic variables and pre-test knowledge score regarding tuberculosis treatment and its prevention among the tuberculosis patient's family members on selected rural areas of Ahmedabad city.

Research Methodology:

Under pre-experimental research design total, 80 tuberculosis patients' family members were recruited through non probability convenient sampling. Knowledge objective and demographic variable were assessed through pre-test with the help of structured knowledge questionnaire. Afterward structured teaching programme on tuberculosis treatment and its prevention was administered along with audio-visual aid. Followed by Post-test was carried out after 07 days.

Result:

Study result revealed that **The Area wise** mean pre-test knowledge score of area related to introduction about tuberculosis treatment and its prevention. As introduction score was 3.00, pretest mean was 0.89 and SD was 0.67, posttest mean 1.94 and SD was 0.66, and mean % was 64.58, and knowledge gain in term of percentage was 35%. As causes, sign and symptoms score are 9.00, the pretest mean was 4.66 and SD was 1.11 the mean % was 51.8 and posttest mean 7.00 and SD was 1.10, mean % was 77.78, mean difference was 1.05 and gain in knowledge related to causes, sign and symptoms was 25.97%. As diagnosis score was 5.00, the pretest mean was 1.64, SD was 0.56, mean % was 32.75 and posttest mean 2.98, SD 0.91, mean % was 59.50, mean difference was 1.34, gain related to diagnosis in terms of percentages was 26.75. As treatment score 7.00, pretest mean was 2.01 and SD was 0.95, the mean% was 28.75 and the posttest mean was 2.76 and SD was 1.16, the mean% was 39.46, the mean difference was 0.75 and gain in knowledge related to treatment in terms of percentage was 10.71. As prevention score was 6.00, the pretest mean was 2.24 and SD was 0.97, the mean% was 37.29. The posttest mean was 2.61 and SD was 0.95, the mean% was 43.54, the mean difference was 0.38. The gain in knowledge related to prevention in terms of percentages was 6.25. The total score was 30.00, total pretest mean was 11.44 and total pretest SD was 2.01, the total mean% was 38.13. The total posttest mean was 17.29 and total SD 2.04, total mean% was 57.63, the total mean difference 5.85, the total gain in terms of percentages was 19.50. **The comparison between pre-test and post-test knowledge scores** obtained by the respondents regarding tuberculosis treatment and its prevention among the tuberculosis patient family members. The mean pretest score was 11.44 and the mean post-test score was 17.29. The mean difference between pre-test and post-test knowledge score is 5.85. The table also shows that the standard deviation (SD) of mean difference for pre-test is 2.00 and for post-test is 2.03. The "t" test value is 29.64 and tabulated value is 1.98 at 0.05 level of significance. The calculated "t" value was greater than the tabulated "t" value. **It reveals that a structure Teaching Programme was effective in terms of knowledge among the samples.** Investigators conclude that there was significant increase in the mean post-test knowledge score as compared to the mean pre-test knowledge score after administration of a stature Teaching Programme.

Conclusion:

There was significant increase in the mean post-test knowledge score as compared to the mean pre-test knowledge score after administration of a stature Teaching Programme. It conclude that structure teaching Programme was effective in terms of knowledge among the tuberculosis patient's family members of selected rural areas. The association between the pre test score and demographical variables was tested by using chi- square test. There was significant association between gender, marital status and pre-test knowledge score. This indicates that the selected socio demographic variable had significant association with pretest knowledge score. Thus, It conclude that There was significant association between pre test score and selected demographical variables.

Key Words

Structured teaching programme, the effectiveness of structured teaching programme, knowledge regarding tuberculosis treatment, knowledge regarding prevention of tuberculosis, tuberculosis patient's family members, rural areas.

INTRODUCTION

Infectious diseases are more prevalent in the developing countries which include HIV or AIDS, DIARRHEAL DISEASES like CHOLERA and DYSENTERY, TYPHOID, TUBERCULOSIS, MALARIA and MEASLES. Tuberculosis is an ancient disease. On March 24, 1882, Robert Koch announced the discovery of tubercle bacillus. He would have least expected that the world would be fighting hard to control TB, an easily curable disease, even after 125 years. Tuberculosis is a disease caused by a bacterium called Mycobacterium tuberculosis. The bacteria usually attack the lungs, but TB bacteria can attack any part of the body such as the kidney, spine, and brain. If not treated properly, TB disease can be fatal. Tuberculosis is one of the most prominent mycobacterium diseases known to humankind. Increasing cases world-wide led to the World Health Organization (WHO) declaring a global emergency in April 1993. Tuberculosis spreads from person to person by airborne transmission. An infected person releases droplet nuclei through talking, coughing, sneezing, laughing, or singing. Larger droplets settle, smaller droplets remain suspended in the air and are inhaled by the susceptible person. The signs and symptoms of tuberculosis are insidious. Most patients have a low grade fever, cough, night sweats, fatigue, and weight loss. The cough may be productive, or mucopurulent sputum may be expectorated.

The incidence of tuberculosis varies across the world. It is one of the major health problems in developing countries due to overcrowding, poor ventilation, unhygienic living conditions, low socio economic status and high prevalence of pulmonary tuberculosis in adult. Tuberculosis has emerged as the greatest danger to India threatening the health of millions. Everyone is at risk; tomorrow it could be me or you. Today in India tuberculosis kills more people than any other infectious disease. Every minute 3-4 die of tuberculosis, more than 1000 die every day and more than 5 lakhs die every year. Dr. L.S. Chauhan, Director General (TB) at the Ministry of Health and Family Welfare, says that there are around 1.8 million new cases every year. Improved standards of living and better sanitation have resulted in a steady decline in the incidence of tuberculosis in developed countries. Hospital records reveal high incidence of tuberculosis in many Asiatic countries. Efforts to end TB in India through implementation of the National Strategic Plan (2017-2025) has completed the first three years of implementation. During this period, the Programme has seen tremendous success and is better poised today, to meet the ambitious goal pronounced by our Honorable Prime Minister at the Delhi end TB summit in March 2018 of ending the TB epidemic by 2025 from the country, five years ahead of SDG (sustainable development goals) goals for 2030. The Programme has now been renamed as National Tuberculosis Elimination Programme (NTEP) from Revised National Tuberculosis Control Program (RNTCP).

Objectives of the studies were

1. To assess the pre-test knowledge on tuberculosis treatment and its prevention among the tuberculosis patient's family members in selected rural areas of Ahmedabad city.
2. To assess the post-test knowledge on tuberculosis treatment and its prevention among the tuberculosis patient's family members in selected rural areas of Ahmedabad city.
3. To determine the effectiveness of planned teaching Programme on tuberculosis treatment and its prevention among the tuberculosis patient's family members in selected rural areas of Ahmedabad city.
4. To find out the association between socio-demographic variables and pre-test knowledge score regarding tuberculosis treatment and its prevention among the tuberculosis patient's family members on selected rural areas of Ahmedabad city.

Methods

Under pre-experimental research design total, 80 tuberculosis patients' family members were recruited through non probability convenient sampling. Knowledge objective and demographic variable were assessed through pre-test with the help of structured knowledge questionnaire. Afterward structured teaching programme on tuberculosis treatment and its prevention was administered along with audio-visual aid. Followed by Post-test was carried out after 07 days.

RESULT**ANALYSIS AND INTERPRETATION OF DEMOGRAPHIC VARIABLES OF THE SAMPLES.****Table 1** Frequency and percentage distribution of samples based on Demographic Variables. (N=80)

SR. NO	DEMOGRAPHIC VARIABLES	FREQUENCY	PERCENTAGE	
		(f)	(%)	
1	AGE IN YEARS	21-30	10	12.5
		31-40	23	28.7
		41-50	16	20
		51-60	22	27.5
		61-ABOVE	9	11.3
2	RELIGION	HINDU	54	67.5
		MUSLIM	17	21.3
		CHRISTAIN	5	6.3
		OTHER	4	5
3	GENDER	MALE	42	52.5
		FEMALE	38	47.5
		TRANSGENDER	0	0
4	MARITAL STATUS	MARRIED	60	75%
		UNMARRIED	8	10%
		DIVORCED	5	6.3%
		WIDOW	7	8.8%
5	INCOME OF FAMILY	≤10000	22	27.5%
		10001-20000	44	55%

		20001-30000	9	11.3%
		≥30000	5	6.3%
6	TYPES OF HOUSE	KUTCHA	11	13.8%
		PUCCA	58	72.55
		KUTCH-PUCCA	11	13.8%
7	ENVIRONMENT OF HOUSE	CLEAN	30	37.5%
		UNCLEAN	50	62.5%
8	SOURCES OF INFORMATION	RADIO/ TELEVISION	7	8.8%
		HEALTH WORKER	40	50%
		NEWSPAPER/ MAGAZINE	16	20%
		FRIENDS	6	7.5%
9	TYPE OF FAMILY	NUCLEAR	59	73.8%
		JOINT	21	26.3%

The **table 1** shows that the distribution of samples by age majority of the samples 23(28.7%) belong to the age group of 31-40 years, 10 (12.5%) samples belong to the age group of 21-30 years, 16(20%) samples belong to the age group of 41-50 years, 22 (27.5%) samples belongs to the age group of 51-60 years. 9 (11.3%) belongs to 61 years and above. As regards to religion 54(67.50%) of the samples where Hindu, 17(21.3%) of the samples where Muslim, 5 (6.3%) of the samples where Christian and 4(5%) of the samples where other religion. by gender 42(52.5%) samples are male and 38(47.5%) samples are female. As Marital status 60(75%) samples are married, 8(10%) samples are unmarried, 5(6.3%) samples are divorced, 7 (8.8%) samples are widow. As income of the family 22(27.5%) samples income are ≤10000, 44(55%) samples income are 10001-20000, 9(11.3%) samples income are 20001-30000, and 5 (6.3%) samples income are ≥30000. As type of house 11(13.8%) samples are leaving in kutch house, 58(72.55%) samples are leaving in pucaa house, 11(13.5%) samples are leaving in kutch-pucca house. As environment of house 50(62.50%) samples are having unclean environment and 3(37.50%) samples are clean environment. As source of information 7(8.8%) samples are got information from radio/television, 40(50%) samples are got information from health worker, 16(20%) samples are got information from Newspaper/ Magazine, 6(7.5%) samples are got information from their friends. As type of family 59(73.8%) samples is have nuclear family, 21(26.3%) samples are have joint family.

Figure 1 Bar graph showing distribution of Demographic Variables

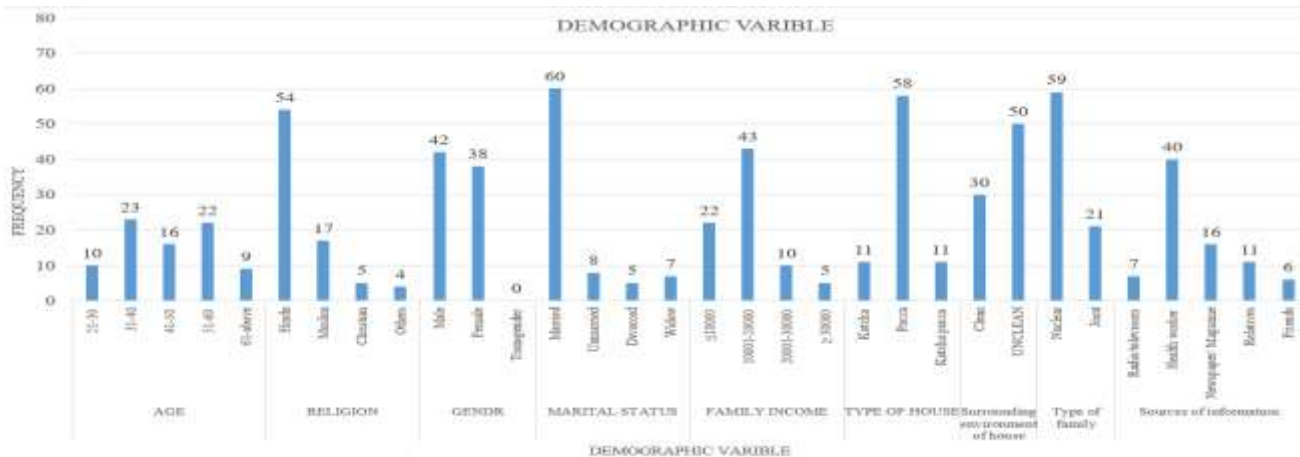


Table 2 Area wise Mean; Mean Percentage and Percentage gain of pre-test and Post-test Knowledge Score of samples regarding First aid Knowledge. (N=80)

ITEM	SCORE	PRE TEST		MEAN %	POST TEST		MEAN %	MEAN DIFF	% GAIN
		MEAN	SD		MEAN	SD			
INTRODUCTION	3.00	0.89	0.67	29.58	1.94	0.66	64.58	1.05	35.00
CAUSES, SIGNS AND SYMPTOMS	9.00	4.66	1.11	51.81	7.00	1.10	77.78	2.34	25.97
DIAGNOSIS	5.00	1.64	0.56	32.75	2.98	0.91	59.50	1.34	26.75
TREATMENT	7.00	2.01	0.95	28.75	2.76	1.16	39.46	0.75	10.71
PREVENTION	6.00	2.24	0.97	37.29	2.61	0.95	43.54	0.38	6.25
TOTAL	30.00	11.44	2.01	38.13	17.29	2.04	57.63	5.85	19.50

Table 2 Shows that the mean pre-test knowledge score of area related to introduction about tuberculosis treatment and its prevention. As introduction score was 3.00, pretest mean was 0.89 and SD was 0.67, posttest mean 1.94 and SD was 0.66, and mean % was 64.58, and knowledge gain in term of percentage was 35%. as causes, sign and symptoms score are 9.00, the pretest mean was 4.66 and SD was 1.11 the mean % was 51.8 and posttest mean 7.00 and SD was 1.10, mean % was 77.78, mean difference was 1.05 and gain in knowledge related to causes, sign and symptoms was 25.97%. As diagnosis score was 5.00, the pretest mean was 1.64, SD was 0.56, mean % was 32.75 and posttest mean 2.98, SD 0.91, mean % was 59.50, mean difference was 1.34, gain related to diagnosis in terms of percentages was 26.75. As treatment score 7.00, pretest mean was 2.01 and SD was 0.95, the mean% was 28.75 and the posttest mean was 2.76 and SD was 1.16, the mean% was 39.46, the mean difference was 0.75 and gain in knowledge related to treatment in terms of percentage was 10.71. As prevention score was 6.00, the pretest mean was 2.24 and SD was 0.97, the mean% was 37.29. The posttest mean was 2.61 and SD was 0.95, the mean% was 43.54, the mean difference was 0.38. The gain in knowledge related to prevention in terms of percentages was 6.25. The total score was 30.00, total pretest mean was 11.44 and total pretest SD was 2.01, the total mean% was 38.13. The total posttest mean was 17.29 and total SD 2.04, total mean% was 57.63, the total mean difference 5.85, the total gain in terms of percentages was 19.50

Figure 2 Bar Graph showing the Distribution of Area wise Mean Knowledge score.

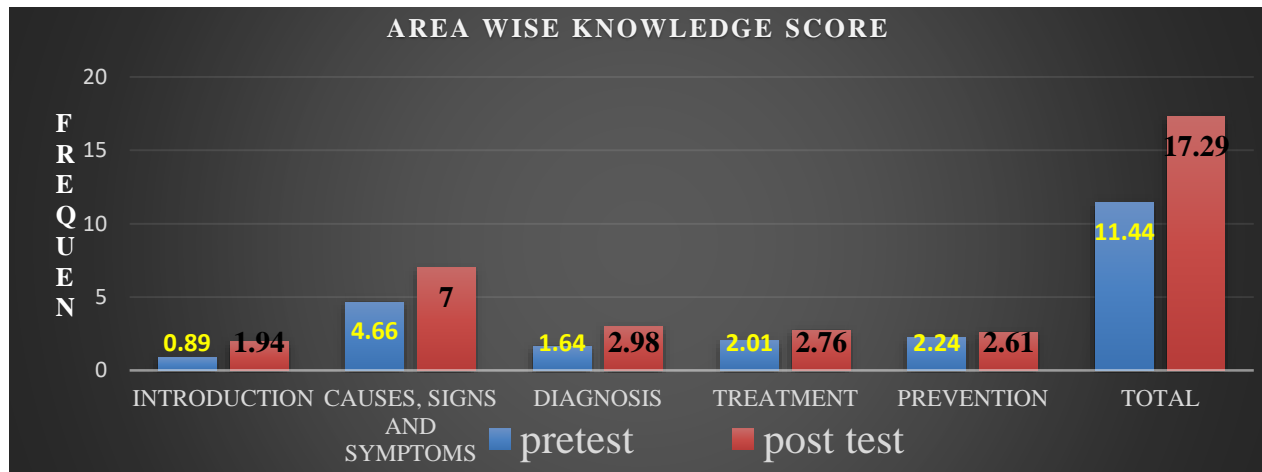


Table: 3 Level of knowledge before and after Administration of structure teaching Programme.(N=80)

Level of knowledge	Pre-test		Post-test	
	Frequency	Percentage %	Frequency	Percentage%
POOR (0-10)	24	30%	00	00%
AVERAGE (11-20)	56	70%	75	93.75%
GOOD (21-30)	00	00%	05	6.25%
TOTAL	80	100%	80	100%

Table: 4.3.1 shows the total 56(70%) of the samples had Average, 00(00%) of the sample had Good and 24(30%) sample had poor knowledge in pre-test, whereas 75(93.75%) samples had Average, 05(6.25%) samples had Good, and 0(0%) samples had poor knowledge in posttest regarding tuberculosis treatment and its prevention

Figure 3 Bar Graph showing the Distribution of before and after score of knowledge

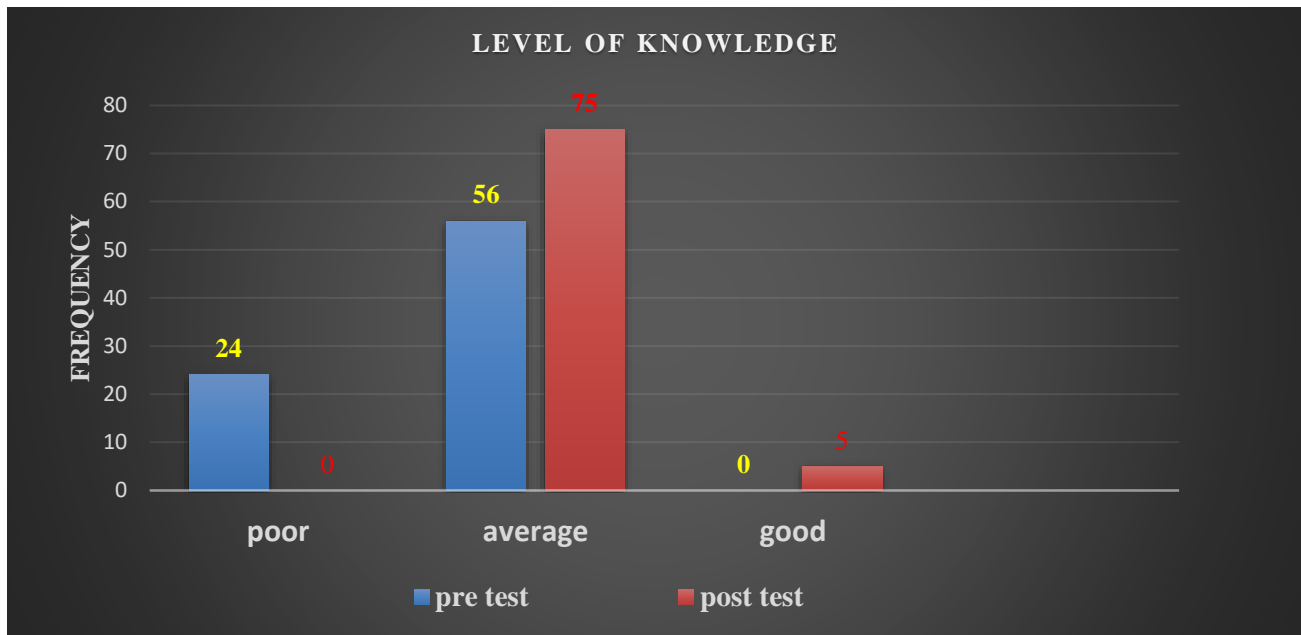


TABLE 3 Mean, Mean Difference, Standard Deviation (SD) and 't' test value of the pre-test and post-test knowledge score of the samples.(N=80)

Knowledge test	Mean	Mean difference	Std. Deviation	Calculated 'T' value	DF	table value	sig/non sig
pretest	11.44	5.85	2.00	29.64	79.00	1.98	Sig
posttest	17.29		2.03				

Table 3 shows the comparison between pre-test and post-test knowledge scores obtained by the respondents regarding tuberculosis treatment and its prevention among the tuberculosis patient family members. The mean pretest score was 11.44 and the mean post-test score was 17.29. The mean difference between pre-test and post-test knowledge score is 5.85. The table also shows that the standard deviation (SD) of mean difference for pre-test is 2.00 and for post-test is 2.03. The "t" test value is 29.64 and tabulated value is 1.98 at 0.05 level of significance. Bar graph reveals that the mean post-test knowledge score was significantly higher than the mean pre-test knowledge score. The calculated "t" value was greater than the tabulated "t" value. Therefore the null hypothesis H0 was rejected and research hypothesis H1 was accepted and it reveals that a structure Teaching Programme was effective in terms of knowledge among the samples. Investigators conclude that there was significant increase in the mean post-test knowledge score as compared to the mean pre-test knowledge score after administration of a stature Teaching Programme.

ANALYSIS AND INTERPRETATION OF THE DATA RELATED TO THE KNOWLEDGE OF THE SAMPLES BEFORE AND AFTER ADMINISTRATION OF THE STRUCTURE TEACHING PROGRAMME. Table 2 Area wise Mean, Mean Percentage and Percentage gain of pre-test and Post-test Knowledge Score of samples regarding First aid Knowledge. (N=80)

Demographic Variable		PRE TEST		TOTAL	CHI SQUARE	DF	TABLE VALUE	SIG/ NON SIG
		AVERAGE	POOR					
1.AGE (IN YEARS)	21-30	6	4	10	2.386	4	9.49	NON SIG
	31-40	14	9	23				
	41-50	12	4	16				
	51-60	17	5	22				
	61-ABOVE	7	2	9				
2.RELIGION	HINDU	39	15	54	1.001	3	7.82	NON SIG
	MUSLIMS	11	6	17				
	CHRISTIANS	3	2	5				
	OTHERS	3	1	4				
3.GENDER	MALE	22	20	42	3.863	1	3.84	SIG
	FEMALE	28	10	38				
4.MARITAL STATUS	MARRIED	23	37	60	8.173	3	7.82	SIG
	UNMARRIED	6	2	8				
	DIVORCED	4	1	5				
	WIDOW	5	2	7				
5.INCOME OF FAMILY	<=10000	16	6	22	1.678	3	7.82	NON SIG
	10001-20000	32	12	44				
	20001-30000	5	4	9				
	≥30000	3	2	5				
6.TYPES OF HOUSE	KUTCHA	6	5	11	1.923	2	5.99	NON SIG
	PUCAA	41	17	58				
	KUTCHA PUCAA	9	2	11				
7.SURROUNDING ENVIRONMENT OF HOUSE	CLEAN	20	10	30	0.254	1	3.84	NON SIG
	UNCLEAN	36	14	50				
8.TYPE OF FAMILY	NUCLEAR	41	18	59	0.028	1	3.84	NON SIG
	JOINT	15	6	21				
9.SOURCES OF INFORMATION ABOUT TUBERCULOSIS	RADIO/ TELEVISION	6	1	7	4.341	4	9.49	NON SIG
	HEALTH WORKER	29	11	40				
	NEWSPAPER/ MAGAZINE	11	5	16				
	RELATIVES	8	3	11				
	FRIENDS	2	4	6				

Table 2 shows Age group with the pre-test knowledge scores, the calculated value of chi-square 2.386 was less than 9.49, the table value of chi square at the 4 degree of freedom and 0.05 level of significance. Therefore age was not significant for the knowledge of the samples. Religion group with the pre-test knowledge scores, the calculated value chi-square 1.001 was less than table value 7.82, the table value chi-square at the 3 degree of freedom and 0.05 level of significant. Gender group with the pre-test knowledge score, the calculated value of chi-square 3.863 was not less than 3.84, the value of chi-square at the 1 degree of freedom and 0.05 level of

significance. Therefore gender was significant for the knowledge of the samples. Marital status group with the pre-test knowledge scores, the calculated value of chi-square 8.173 was not less than 7.82, the table value of chi-square at the 3 degree of freedom and 0.05 level of significance. Therefore marital status was significant for the knowledge of the samples. Income of family with the pre-test knowledge scores, the calculated value of chi-square 1.678 was less than 7.82, the value of chi-square at the 3 degree of freedom and 0.05 level of significance. Therefore family income was not significant for the knowledge of samples. Type of house with pre-test knowledge scores, the calculated value of chi-square 1.923 was less than 5.99, the table value of chi-square at the 2 degree of freedom and 0.05 level of significance. Therefore type of house was not significant for the knowledge of samples. Surrounding environment of house group with pre-test knowledge score, the calculated value of chi-square 0.254 was less than 3.84, the table value of chi-square at the 1 degree of freedom and 0.05 level of significance. Therefore surrounding environment of house was not significant for the knowledge of samples. Type of family with the pre-test knowledge score, the calculated value of chi-square 0.028 was less than 3.84, the table value of chi square at the 1 degree of freedom and 0.05 level of significance therefore type of family was not significant for the knowledge of samples. Sources of information group with the pre-test knowledge score, the calculated value of chi-square 4.341 was less than 9.49, the table value of chi square at the 4 degree of freedom and 0.05 level of significance. The source of information was not significant for the knowledge of samples.

DISCUSSION

Present study conducted to evaluate the effectiveness of structured teaching programme on knowledge regarding tuberculosis treatment and its prevention among the tuberculosis patient's family members of selected rural areas in ahmedabad city. In order to achieve objectives pre experimental one group pre test post test design was adopted. The data collected from 80 samples shows that the mean pretest score was 11.44 and the mean post-test score was 17.29. The mean difference between pre-test and post-test knowledge score is 5.85. it reveals that a structure Teaching Programme was effective in terms of knowledge among the tuberculosis patient's family members of selected rural areas in ahmedabad city.

CONCLUSION

The study findings strongly suggests that there was significant increase in the mean post-test knowledge score as compared to the mean pre-test knowledge score after administration of a stature Teaching Programme. It conclude that **structure teaching Programme was effective in terms of knowledge among the tuberculosis patient's family members of selected rural areas.** The association between the pre test score and demographical variables was tested by using chi- square test. **There was significant association between gender, marital status and pre-test knowledge score.** This indicates that the selected socio demographic variable had significant association with pretest knowledge score. Thus, It conclude that There was significant association between pre test score and selected demographical variables.

Conflict of interest: The authors declare that they have no competing interests

Ethics declarations

Ethics approval and consent to participate

JG Coolege of nursing, Ahmedabd ethics committee were reviewed this study and granted ethical approval. A consents form has been obtained from participants.

Consent for publication

Written consent for publication was obtained from each participant.

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