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EFFECTIVENESS OF STRUCTURED TEACHING PROGRAMME ON KNOWLEDGE AND PRACTICE REGARDING WATER PURIFICATION METHODS AMONG WOMEN

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ABSTRACT

Introduction : Water pollution is the pollution of bodies of water, such as lakes, rivers, seas, the oceans, as well as groundwater. There are different methods of water purification available in home for make the water drinkable. Objectives : Evaluate the effectiveness of structured teaching programme on knowledge and practice regarding water purification methods among women. Material and method: Quantitative approach was used and the study design was quasi experimental pre test post test control group design. The main study was conducted in March 2017. Out of 60 participants 30 were selected as control group and 30 were selected as experimental group using non probability convenient sampling technique. The data were analyzed and interpreted using descriptive and inferential statistics. Results: Mean post test knowledge score (23.83) of experimental group was higher than control group (13.47)(t=6.918,p<0.05). The mean post test practice score (15.13) of experimental group was significantly higher than control group (11.17) (t=4.629, p < 0.001). Hence it is evident that structured teaching programme is effective in improving knowledge and practice of women regarding water purification methods. The study revealed that there was no significant association between pre test knowledge score and demographic variables except age of women (chi square 14.5, p<0.025) and previous knowledge on water purification methods(chi square 8.28, p<0.016). The demographic variables such as age (chi square 16.59, p<0.011), educational status (chi square 16.014,p<0.014) and previous knowledge on water purification (chi square 6.38,p 0.041) are significantly associated with practice scores of women regarding water purification methods. There is a positive correlation with knowledge and practice (r=0.663, p < 0.001). Conclusion: The study concluded that structured teaching programme improved the knowledge and practice of women regarding water purification methods.

INTRODUCTION

It is a well-known fact that clean water is absolutely essential for healthy living. Adequate supply of

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fresh and clean drinking water is a basic need for all human beings on the earth, yet it has been observed that millions of people worldwide are deprived of this [1].

To be clean, the water should undergo a number of treatments necessary to make it drinkable. The purpose of water treatment is to remove contaminants present in



the water or reduce the concentration of such contaminants to make the water fit for its desired end-use. Depending on the incoming water quality and the enduser's expectations, different kinds of water treatment can be applied². Women are more engaged in cooking, cleaning and all other house hold activities. Food preparation and handling also done by women usually. So it is important that the women need to know water hygiene and water purification methods at households and she should be aware regarding safe handling of water resources.

Objectives

1. Evaluate the effectiveness of structured teaching programme on knowledge and practice regarding water purification methods.

2. Determine the association between pre test knowledge and practice scores and selected demographic variables.

3. Correlate knowledge and practice regarding water purification methods among women.

Hypotheses

• H₁: There is a significant difference between mean post test knowledge scores and practice scores of women regardingwater purification methods in the experimental group and control group

• H₂: There is a significant association between the pre test knowledge scores and practice scores of women regarding water purification methods and selected demographic variables

• H₃: There is a significant correlation between knowledge and practice scores of women regarding water purification methods.

Ethical consideration

The study was approved by the institutional ethical committee. Administrative sanction for conducting study was obtained from Angadipuram Panchayath. The participants were informed that participation was voluntary and they had freedom to withdraw from the study and informed consent was obtained from all the participants. Confidentiality was maintained. No ethical issues were aroused during the course of the study.

MATERIALS AND METHODS

Research design : The study design used for this present study is quasi experimental pre test post test control group design. In this study there are two groups of study subjects; a control group and an experimental group.

Study Setting and study population: The study was conducted in 6^{th} and 14^{th} ward of Angadippuram Panchayath. Of the two, one was randomly selected to be by the pre test. The structured teaching programme

Sample and sampling technique: The sample size of the study was 60 women of selected wards of Angadipuram Panchayath. Of which 30 women were in the experimental group and 30 women were in the control group. The sampling technique adopted for this study was non probability convenient sampling technique.

Study Variables: In this study the independent variable is structured teaching programme on water purification methods and dependent variable is knowledge and practice regarding water purification methods. Demographic variables are age, educational status, occupation, marital status, monthly income, type of family, previous knowledge and source of information.

Pilot study: Pilot study was done among women in selected wards of Melattur Panchayath from 6-02-2017 to 20-02-2017. The pilot study revealed that the appropriateness of methodology, comprehensibility of the tool and practicability of intervention. The data collected was found to be amenable to statistical analysis. Hence considering the feasibility and practicability of the study, there were no modification; the investigator proceeded with the main study.

Data collection process

The formal permission for data collection was obtained from Principal, Al- Shifa College of Nursing and Secretary Angadipuram Grama Panchayath. The researcher conducted the main study from 13thMarch to 21st March. The data collection was done in 3 phases.

In first phase the researcher collected the demographic variables using structured interview schedule which includes age, educational status, occupation, marital status, monthly income, type of family, previous knowledge and source of information. The knowledge level is assessed by self administered structured knowledge questionnaire consist of 30 multiple choice questions related to importance, need and methods of different water purification. A score value of 1 was awarded to each correct response and maximum score on knowledge questionnaire was 30. The practice was assessed by structured practice questionnaire which consist of 20 yes or no questions. A score value of 1 was awarded to each correct response. Maximum score on practice questionnaire was 20.

In the phase 2 the experimental group were divided in to two groups consisting 15 participants and structured teaching programme on water purification methods was administered to these groups by using AV aids for the duration of 1 hour and 30 minutes followed included the aspect such as sources of water, meaning and



reasons of water pollution, prevention and control of water borne diseases and different methods of water purification at household level including boiling, chlorination of well and filtration.

In the phase 3 on the eighth day post test was done for the experimental and control group using same knowledge and practice questionnaire used for pre test [2].

Statistical analysis

Frequency and percentage distribution were used to study the demographic variables of women. Mean and Standard deviation were used to determine the pre test and post test knowledge score. Independent 't' test was used to determine the effectiveness of structured teaching programme on knowledge and practice regarding water purification methods. Chi-square test was used to find out the association of knowledge and practice with selected demographic variables. Correlation between knowledge and practice was done using karl pearsons correlation. The level of significance for the study was set as 0.05.

RESULTS

Section I: Distribution of demographic characteristics of women and it's association.

In the experimental group 10 (33.33%) participants are in the age group of 19 - 29 years where as in control group 11(36.7%) participants are in the age group of 40 - 49 years. Regarding education in the experimental group 10 (33.3%) and control group 12 (40%) having high school level of education. In the experimental group 26 (86.7%) and in control group 20 (66.7%) were married. Regarding income, in the experimental group 10 participants (33.33%) had monthly income between rupees 1971-5852 and in the control group 8 participants (26.7%) had monthly income of rupees 5853 - 9754. In the experimental group 19 participants (70%) were belongs to nuclear family. In experimental

group 20 (66.7%) participants and in control group 19 (63.33%) had previous knowledge on water purification methods. In the experimental group 8 (40%) participants had the source of previous knowledge on water purification methods through electronic media where as in control group 9 (47.4%) participants had through personnel sources.

Table 1 depicted that there was a significant association of pre test knowledge score and age of women (chi square 14.5,p<0.025) and previous knowledge on water purification (chi square 8.28, p<0.016). It also revealed that there was significant association between pre test practice scores and selected demographic variables such as age (chi square 16.59, p<0.011), educational status (chi square 16.014,p<0.014) and previous knowledge on water purification (chi square 6.38,p<0.041).

Section II: Assessment of effectiveness of structured teaching programme on water purification methods.

Table 2 depicted that the mean post test knowledge score 23.83 ± 5.55) of experimental group was higher than control group (13.47 ± 6.04) and calculated t value (6.918) was statistically significant with a p value 0.001. Hence it is evident that structured teaching programme is effective in improving the knowledge of women regarding water purification methods.

The analysis shows that the mean post test practice score (15.13 ± 3.84) of experimental group was significantly higher than control group (11.17 ± 4.45) and calculated t value (4.629) was statistically significant with a p value 0.001. So it is evident that structured teaching programme is effective in improving the practice of women regarding water purification methods.

Section III: Correlation between knowledge and practice of women regarding water purification methods.

The study revealed that there is a positive correlation with knowledge and practice with a 'r' value of 0.663 and p value of 0.001.

s.no	Demographic variables	Experimental group		Control group		Knowledge		Practice	
		Ν	%	Ν	%	Chi square	P value	Chi square	P value
AGE IN YEARS									
1	a.19 -29	10	33.33	10	33.3	14.5	0.025	16.6	0.011
	b.30-39	3	10	4	13.3				
	c.40-49	8	26.7	11	36.7				
	d.50-59	9	30	5	16.7				
				EDU	CATIONA	L STATUS			
2	a. Illiterate	6	20	3	10	6.7	0.350	16.01	0.014
	b. primary	8	26.7	4	13.3				
	c.High school	10	33.3	12	40				
	d.Higher secondary and above	6	20	11	36.7				

Table 1. Frequency distribution of women based on demographic variables

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	MARITAL STATUS								
3	a.Married	26	86.7	20	66.7	9.4	0.15	7.6	0.270
	b.Unmarried	1	3.3	3	10				
	c.Widow	3	10	3	10				
	d.Divorced	0	0	4	6.7				
	MONTHLY INCOME								
	a.>39,020	2	6.7	1	3.3	7.13	0.894	6.28	0.901
	b.19,510-39,019	2	6.7	1	3.3				
	c.14,633-19.509	3	10	3	10				
4	d.9,755-14,632	0	0	7	23.3				
	e.5,583-9,754	8	33.3	6	20				
	f.1,971-5,852	10	33.33	6	20				
	g.<1,970	5	16.7	4	13.3				
TYPE OF FAMILY								•	
5	a.Nuclear family	19	63.3	21	70	0.3	0.86	2.36	0.307
	b.joint family	11	36.7	9	30				
PREVIOUS KNOWLEDGE							•		
6	a.Yes	20	66.7	19	63.3	0.2	0.016	(29	0.014
	b.No	10	33.3	11	36.7	8.2	0.016	0.38	0.014
	SOURCE OF INFORMATION								
	a.Printed media	6	30	2	10.5	0.75	0.27	11.59	0.072
7	b.Electronic media	8	40	7	36.8				
	c.Personal sources	6	30	9	47.4				
	d.Others	0	0	1	5.3				

Table 2. Effectiveness of structured teaching programme in experimental and control group.

S no	parameter	Group	Mean+ SE	Significance of	f unpaired t test
				Con-Exp post test	Con-Exp pre test
	Knowledge	Con- pre test	13.40+6.01	t = 6.918	t= -1.86
1		Con-post test	13.47+6.04		P = 0.086
1		Exp- pre test	13. <u>10</u> +1.19	p=0.001	
		Exp-post test	Mean+SE Significance of Con-Exp post test $13.40+6.01$ $t = 6.918$ $13.47+6.04$ $p=0.001$ $23.83+5.55$ $t=4.62$ $11.17+4.45$ $p=0.001$ $9.20+4.17$ $p=0.001$		
		Con- pre test	10. <u>30</u> +4.32	t=4.62	t=-1.004
2	Draatiaa	Con-post test	11.17+4.45		p=0.320
2	Flactice	Exp- pre test	9.20+4.17	p=0.001	
		Exp-post test	15.13+3.84		

Table 3. Correlation between knowledge and practice

Variables Frequency		Pearson correlation	P value					
Knowledge	60	0 663	0.001					
Practice	60	0.003						

DISCUSSSION

The present study evaluated the effectiveness of structured teaching program on knowledge and practice regarding water purification methods and found that the structured teaching program was effective in improving the knowledge and practice of women [3-8].

Analysis of the present study revealed that there was significant association between pre test knowledge scores and age of women and previous knowledge on water purification(p < 0.05) and there was significant association between pre test practice scores and selected demographic variables such as age, educational status and

previous knowledge on water purification methods (p< 0.05). The present study is in tune with the study conducted to assess the knowledge and practice regarding water purification, sanitation and hygiene among women in selected villages of Uduppi District. The study found that there was a significant association between knowledge and age, information on water sanitation and hygiene (p < 0.05). The study also found that there was a significant association between practice and age, education, information on water, sanitation and hygiene (p< 0.05)[3].

The present study revealed that there is a positive

correlation with knowledge and practice (r = 0.663, p = 0.001). The findings were supported by the study conducted to assess the knowledge and practice regarding water purification, sanitation and hygiene among women in selected villages of Uduppi District. The study inferred that as knowledge increases practice also improves [9-13].

CONCLUSION

The study concluded that structured teaching programme was effective in increasing the knowledge and practice regarding water purification methods among women.

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