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Effectiveness of Planned Teaching Program on Knowledge Regarding Breast Self-Examination among Women in Selected College, Bangalore

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Abstract

Introduction: Cancer has been increasing massively and gaining more concerns as a public health problem in both developed and developing countries. Breast cancer prevalence rates in women outweigh those of other cancers. Globally, 6,70,000 women died from breast cancer. In India 13.5% incidence is reported, ranking it second among cancers in Indian women. Early diagnosis of breast cancer affords a better chance of survival and a better prognosis. Breast self-examination (BSE) is a tool for early detection that involves physical and visual inspections to check for possible breast cancer signs and symptoms. The current study aimed to assess women's knowledge of breast self-examination and the effectiveness of planned teaching programs.

Methodology: A pre-experimental one-group pre-test post-test study design was carried out to assess the effectiveness of the planned teaching program on knowledge regarding breast self-examination. A non-probability convenient sampling technique was used to select 90 subjects, aged between 18-25. A self-administered questionnaire containing demographic variables and items on BSE was administered to assess the participant's knowledge levels.

Results: In the pre-test results, 73.3% of the participants had low knowledge, and 26.7% had average knowledge. On the other hand, 11.1% had average post-test knowledge and 88.9% had good post-test knowledge. The pre-test mean score was 10.588±3.176 and the post-test mean score was 20.211±1.604. The obtained 't' value is –26.562 and the calculated p-value is 0.00 statistically significant at $p<0.05$. It was observed that there was a significant association between the knowledge and selected socio-demographic variables like type of family, history of breast cancer in the family, and awareness of breast self-examination.

Conclusion and Interpretation: The study revealed that 88.9% of participants acquired adequate knowledge after the education program with a mean score of 20.211. The findings indicate that the pre-test knowledge level and a

few demographic factors, such as family type, history of breast cancer in the family, and awareness of breast self-examination, were significantly associated. At a significance level of $p<0.05$, it indicates that women's knowledge regarding BSE had increased following the Planned teaching program.

Keywords: Knowledge; Women; Breast self-examination.

Introduction

Cancers are a group of diseases characterized by any uncontrolled growth and spread of abnormal cells. In addition to some internal variables (genetic mutations, hormones, immunological circumstances, and random mutations), cancer is caused by a variety of external factors (tobacco, chemicals, radiation, and infectious organisms).[1]

Cancer is the primary cause of mortality globally, accounting for 10 million fatalities. Cancer is estimated to affect one in nine Indians, with lung and breast cancers being the most common cancer. [2]

Breast cancer is the primary cause of cancer death among women (15%). 3 The most commonly seen type of breast cancer is invasive based on the hormones estrogen and progesterone, either endogenous or exogenous, which promote the growth and proliferation of breast cells and stimulate the growth factors such as transforming growth factor-alpha.[4]

A benign or malignant tumor can be breast cancer 5. Usually, it affects the breast's upper outer quadrant.

Breast cancer is responsible for 10.6% (90,408) of all fatalities and 13.5% (1,78,361) of all cancer incidence in India, with a cumulative risk of 2.81 %. [6]

The high rate of breast cancer death in India is brought on by late discovery, a lack of knowledge about screening techniques, and the absence of screening initiatives.

An early diagnosis guides a better prognosis and early detection of breast cancer. Breast self-examination is a tool for early detection that involves palpating and inspecting the breast to check for signs and symptoms of breast cancer assessed by visual and physical inspections[7].

Women themselves find breast masses through routine breast exams, and relevant changes increase the likelihood of finding the lesion. The BSE is a crucial part of any adult woman's health regimen. The American Cancer Society recommends performing breast self-examinations every month after menarche. Women should be familiar with how their breasts normally look and feel and should report any changes to a healthcare provider right away.[8]

In developing countries where mammography access is limited and clinical breast examination is not routinely done, breast self-examination remains the best option for women of all menarche ages.[9] It is simple, inexpensive, easy to perform in private, convenient, and does not require special equipment.

Materials and Methods

Study Design: Pre-experimental one group pre-test post-test design

Variables

Independent variables: Planned teaching program

Dependent variables: Knowledge of women regarding breast self-examination

Attribute variables: Socio-demographic variables such as Age, Religion, Year of the study, Type of family, Place of residence, Age of menarche, History of breast cancer in the family, History of other cancer in the family, Exercise, involvement in the care of breast cancer patients, heard about breast self-examination, source of information, Aware about breast self-examination and Perform breast self-examination.

Setting of the study: The study was conducted in Faculty of Management and Commerce, MS Ramaiah University of Applied Science, Bangalore

Sample size: 90 women

Sampling technique: Non-probability convenient sampling technique

Criteria for sample selection: The sample was selected with the following pre-determined criteria

Inclusion criteria

- Women age group 18-25 years.
- Those who are willing to participate.
- Those subjects who understand English

Exclusion criteria

Subjects who were not present during the time of the data collection

Development of Tool

After an extensive review of the literature, discussion with experts, and the investigator's personal and professional experience the tool was developed. The questionnaire is developed to assess the effectiveness of the planned teaching program on knowledge regarding breast self-examination and it will cover aspects of breast self-examination. The constructed tools consist of the following sections:

Section-A: Socio-demographic data

The first part of the tool consists of demographic variables such as age, educational status, religion, type of family, place of residence, age of menarche, family history of breast cancer, family history of other cancer, exercise, involvement in the care of breast cancer patients, heard about breast self-examination, source of information, aware about breast self-examination and perform breast self-examination.

Self-administered knowledge questionnaire: Knowledge questionnaire regarding the inclusion of breast cancer and breast self-examination. Planned teaching was prepared on knowledge regarding breast self-examination. The content validity of the questionnaire was ascertained by experts and guides in nursing and various fields of medicine.

Content Validity

The content validity was obtained from 9 experts, comprising 2 Heads of the Department of Medical-Surgical Nursing, 2 professors of Medical-Surgical Nursing, 3 Assistant professors of Medical-Surgical Nursing, and 2 Physicians from different colleges and Hospitals, in Bangalore.

Reliability

The report of the tool was established by using Cronbach's alpha method. The variance of each item and variance of the tool was done. The reliability score obtained was r=0.843 which concluded that the tool was reliable.

Ethical clearance

Ethical clearance was obtained from was obtained from University Ethics Committee for human trials of Ramaiah University Of Applied Sciences on July 2023 (Reference no: EC-23/27-pg-RINER)

Pilot Study

The pilot study was conducted at Ramaiah Institute of Technology, Bengaluru. A total of 10 subjects were selected using a non-probability convenient sampling technique based on the selected criteria. On completion of the pilot study, it was found that the study was feasible and practicable to conduct the main study.

Data Collection Procedure

The data collection for the main study was conducted in the Faculty of Management and Commerce, M.S. Ramaiah University of Applied Science, Bangalore. Formal permission was obtained from the Principal of M.S. Ramaiah Institution of Nursing Education and Research and the Principal of the Faculty of Management

and Commerce, M.S. Ramaiah University of Applied Science, Bangalore. A total of 90 subjects who met the selected criteria were selected using a non-probability convenient sampling technique. Self- introduction was given by the student researcher and the purpose of the study was explained to each subject and written consent was obtained from subjects to participate in the study. A self-administered questionnaire was administered to collect the data from the subjects. A pre-test was conducted, and after completion, a planned teaching program was administered to the subjects for 45 minutes with the help of PowerPoint, followed by 7-day intervals, post-test was conducted to evaluate the effectiveness of the planned teaching program on knowledge regarding breast self-examination. Subjects were requested to answer all the research tools completely. The average time taken by the subjects was 15-20 minutes. Confidentiality was maintained by not mentioning the subject's name in the tool.

Statistical Methods

Statistical analysis for the study was done using IBM SPSS version 20. The results obtained are discussed in the following area.

Section A: Frequency and percentage distribution of socio demographic variables

Section B: Frequency and percentage distribution of knowledge regarding breast self-examination.

Section C: Association of knowledge regarding breast self-examination with socio-demographic variables by using the chi-square test.

Results

Table 1: Frequency and percentage distribution of subjects about age and gender n=90

Sl.No	Socio-demographic variables	Frequency	Percentage(%)
1.	Age in years		
	18-19 years	34	37.8
	20-21years	35	38.9
	22-23years	15	16.7
	24-25 years	6	6.7
2.	Religion		
	Hindu	64	71.1
	Muslim	13	14.4
	Christian	12	13.3
	Others (Jain, Sikh)	1	1.1
3.	Year of Study		
	1st Year	59	65.6
	2nd Year	13	14.4
	3rd Year	12	13.3
	4th Year	6	6.70
4.	Type of family		
	Joint family	14	15.6
	Nuclear family	75	83.3
	Extended family	1	1.1
5.	Place of residence		
	Urban	48	53.3
	Rural	42	46.7
6.	Age of menarche		
	12-13 years	33	36.7
	13-14 years	43	47.8
	14-15 years	11	12.2
	15-16 years	3	3.3
7.	Do you have a history of breast cancer in the family?		
	Yes	10	11.1
	No	80	88.9
8.	Does your family have a history of other cancers such as ovarian or prostate cancer?		
	Yes	5	5.6
	No	85	94.4

9.	Do you exercise		
	Yes, regular	31	34.4
	Yes, irregular	50	55.6
	No	9	10.0
10.	Have you been involved in the care of breast cancer patients at the hospital/home?		
	Yes	9	10.0
	No	81	90.0
11.	Have you heard about breast self-examination?		
	Yes	59	65.6
	No	31	34.4
12.	If yes, the source of information		
	Mass media	41	45.6
	Family and friends	26	28.9
	None	23	25.6
13.	Are you aware of breast self-examination?		
	Yes	45	50.0
	No	45	50.0
14.	Do you perform breast self-examination?		
	Yes	10	11.1
	No	80	88.8

Table 1: Depicts that the majority of subjects 38.9% were in the age group 20-21 years old and over four-fifths (71.1%) were Hindu. A majority of the subjects (65.6%) and a maximum (83.3%) belong to nuclear families and reside majority (53.3%) in Urban areas. Regarding the age of menarche majority (47.8%) started at the age of 13-14 years. Most (88.9%) had no family history of breast cancer, the majority (94.4%) had no family history of other cancers, and (90.0%) had not been involved in the care of breast cancer patients. Maximum (55.6%) exercises irregularly, most (65.6%) have heard about breast self-information, and mass media (45.6%) is the major source of information. A substantial majority (50%) were aware of breast self-examination, and most subjects (88.8%) had no history of performing breast self-examination.

Table 2: Frequency and percentage distribution regarding level of knowledge in pre-test and post-test n-90

PRE-TEST LEVEL OF KNOWLEDGE			
S.N	Level of knowledge	Frequency	Percentage %
1.	<50 inadequate	66	73.3%
2.	51-75% moderately adequate	24	26.7%
3.	>75% Adequate	-	-
POST-TEST LEVEL OF KNOWLEDGE			
1.	51-75% moderately adequate	10	11.1%
2.	>75% adequate	80	88.9%
3.	<50 inadequate	-	-

Table 2 depicts the frequency and percentage distribution of level of knowledge among women about breast self-examination, the majority of subjects 73.3% had inadequate knowledge during the pre-test whereas the majority of subjects 88.9% had adequate knowledge after the post-test.

Table 3: Mean and Standard Deviation Before And After Planned Teaching Program (PTP) By Using Paired T-Test N=90

PAIRED T-TEST SAMPLES STATISTICS					
S.N	Variables	Mean	Std. deviation	t-value	p-value
1.	Pretest score	10.588	3.176	-26.562	0.000
2.	Post-test score	20.211	1.604	df=89	

Table 3 shows the overall pretest mean score was 10.588 with a standard deviation of 3.176. The post-test mean score of 20.211 with a standard deviation of 1.604 was high with t '-26.562'significant at p< 0.05 value. Hence the research hypothesis (H1) states that 'The mean post-test knowledge score of the participants regarding breast self-examination is significantly higher than the mean pre-test knowledge score after the planned teaching program' was accepted.

Table 4: Association of pre-test level of knowledge with selected socio-demographic variables such as type of family, history of breast cancer in the family, and awareness of breast self-examination n=90

S.N	Socio-demographic variables	Knowledge		Statistical analysis used (Chi-square/fisher's exact test)	P value
		Inadequate knowledge	Moderate knowledge		
1.	Type of family				
a)	Joint family	10	11	8.455	0.015
b)	Nuclear family	33	35	df=2	
c)	Extended family	-	1	S	
2.	Do you have a history of breast cancer in the family			6.392	
a)	Yes	4	6	df=1	0.011
b)	No	62	18	S	
3.	Are you aware of breast self-examination			3.636	
a)	Yes	29	16	df=1	0.057
b)	No	38	7	S	

NS=Not significant, S=Significant, df=degree of freedom

Table 4 depicts that there is a significant association of pre-test level of knowledge with socio-demographic variables such as type of family, history of breast cancer in the family, and awareness of breast self-examination

Discussion

The study's findings revealed that among 90 samples, 80 (88.9%) had adequate knowledge and 10 subjects (11.1%) had moderate knowledge after the planned teaching program. The mean score after the intervention was 20.211 ±1.604, and the calculated 't' value was (-26.562) at a p-value of 0.000 thus there is a significant improvement in the knowledge after the Planned teaching program. Also, hypothesis (H1) states, "The mean post-test knowledge score of the participants regarding breast self-examination is significantly higher than the mean pre-test knowledge score after the planned teaching program" has been accepted.

In a pre-experimental study, "Assessing the effectiveness of a planned teaching program on knowledge and skills regarding breast self-examination among female high school teachers," similar results were seen across 30 samples in South Goa. The post-test findings demonstrate an increase in knowledge following the educational program with a mean knowledge score of 20.37±2.83, while the pre-test mean score was 10.30 ±2.98. At the $p<0.05$ level, the paired "t" value was $t(29)=14.42$, which is more than the table value (2.05).

The study findings are contradicted by a pre-experimental one-group pretest-posttest study conducted in Moradabad, India among 160 women using a purposive sampling technique "To assess the effectiveness of planned teaching program regarding breast self-examination on knowledge among women in a selected village at Moradabad". The study reveals that 94% of the subjects had poor knowledge regarding breast self-examination.

The association between the study variable with socio-demographics was computed by using the Chi-square test. The findings of the present study revealed that the computed chi-square value was more than the table value at (P 0.05) for all the socio-demographic variables so there was no association between age, religion, year of the study, type of residence, age of menarche, history of other cancer in the family, exercise, involvement in the care of breast cancer patients, heard about breast self-examination, source of information and perform breast self-examination. However, a significant association was seen between pre-test knowledge with socio-demographic variables such as type of family, family history of breast cancer, and awareness of breast self-examination.

The findings are consistent with a descriptive cross-sectional study in a selected community of Uttarakhand

on knowledge regarding breast self-examination among middle-aged women. A systematic randomized sampling was used to select 62 samples and a structured knowledge questionnaire was administered to assess the knowledge. The result shows a significant association of pre-test knowledge with type of family, history of breast cancer in the family, and awareness of breast self-examination with $p<0.05$ regarding breast self-examination.

Limitation

The study is limited to assessing knowledge and did not attempt to measure the attitude and practice of women towards breast self-examination.

Conclusion

- In the present study, among the 90 women studying at, the Faculty of Management and Commerce, M.S. Ramaiah University of Applied Sciences, Bangalore, it was found that the majority of women had adequate knowledge regarding breast self-examination after PTP. The study findings revealed that the majority of subjects 26.7% had moderate knowledge and 73.3% had inadequate knowledge before the planned teaching program.
- The majority of the subjects 88.9% had adequate knowledge and 11.1% had moderate knowledge with no inadequate knowledge after the planned teaching program.
- The pre-test mean score and standard deviation was 10.588 ± 3.176.
- The post-test mean score and standard deviation after the intervention was 20.211 ± 1.604.
- The obtained 't' value is -26.56, and the calculated p-value is 0.00 statistically significant at $p<0.05$
- The chi-square value findings revealed that there was no association between socio-demographic variables and knowledge of the women regarding breast self-examination in the pre-test knowledge level. However, the association was seen in relation to the pre-test knowledge with type of family, family history of breast cancer, and, awareness of breast self-examination.

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