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A study to evaluate the effectiveness of information package on knowledge of breast self-examination among women at lady Doak college, Madurai.

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Abstract:

Introduction: Breast cancer is among the prevalent causes of morbidity and mortality in women all over the world. Breast Self-Examination (BSE) is an important tool that can be used to detect the disease earlier and increase the chances of survival. But ignorance and poor knowledge on BSE among young women is one of the serious issues. **Aim**: The aim was to examine the effectiveness of an information package on knowledge about Breast Self-Examination in undergraduate and postgraduate students of Zoology Department in Lady Doak College, Madurai. **Methodology:** A one-group pre-test pre-experimental post-test quantitative evaluative methodology was taken. Convenience sampling was applied in selecting 100 students. The structured knowledge questionnaire was used to collect data and comprised of 30 items and socio-demographic variables as a measure of BSE. The pre-test data were carried out prior to the intervention after which an information package was administered using PowerPoint presentation, models and pamphlets. The same tool was used to gather the post-test data. Analysis of data was done using descriptive and inferential statistics such as frequency, percentage, and chi-square test. **Results:** In the pre-test, low knowledge in 25% and moderate in 75% students and high knowledge in none of the students were observed. Low knowledge was reduced to 21 in the post-test, moderate knowledge to 50 and high knowledge to 29. Significant association of course of study, type of family and source of information with levels of knowledge was found. **Conclusion:** The information package was successful in increasing the knowledge of the students on Breast Self-Examination. A frequent educational intervention is suggested to raise the level of awareness and focus on early detection among young women.

Keywords: Brease cancer, Knowledge, Brease self-examination

INTRODUCTION

Women's health differs from men's in many unique ways and is an important aspect of population health. The World Health Organization (WHO) defines health as a state of complete physical, mental, and social well-being, not merely the absence of disease. Women's health has been described as a "patchwork quilt with gaps," reflecting fragmentation among specialties and lack of integrated care (National Institutes of Health, 1992). Reproductive health refers to complete physical, mental, and social well-being in all matters related to the reproductive system. It aims to promote women's health across the lifespan (WHO**).** The breast consists of glandular and fatty tissue influenced by estrogen**.**

Breast development begins during fetal life and is supported by Cooper's ligaments (Ross and Wilson). In India, reproductive health problems remain prevalent. Studies report high rates in cities such as Mumbai (54%) and Chennai (28%), while rural Tamil Nadu showed a 23.8% prevalence of reproductive tract infections (ICMR, 2021–2022). Common breast-related problems include fibroadenoma, cysts, fibrocystic changes, nipple abnormalities, lactation issues, and breast cancer. Breast cancer is the most common cancer among Indian women, with an incidence rate of 25.8 per 100,000 and mortality of 12.7 per 100,000 women. Postmenopausal women show notable rates of breast lumps, cysts, and fibrocystic changes

Risk factors include family history, BRCA1/BRCA2 mutations, hormonal changes, increasing age, multiple pregnancies, poor breastfeeding, previous benign breast disease, obesity, physical inactivity, alcohol use, and smoking (Ramdas Nayak). Breast self-examination (BSE) is the regular examination of one's own breasts to detect abnormalities early (Brunner and Suddharth). It should be performed monthly, preferably 5–7 days after menstruation, and on the same date each month for postmenopausal women. BSE includes three patterns (circular, wedge, and sweeping) and five basic steps. All women, especially those with dense breasts or a family history of breast cancer, should practice BSE. Regular BSE promotes early detection, familiarity with breast changes, empowerment, convenience, and cost-free screening. By practicing monthly BSE, women can improve early diagnosis and increase their chances of successful treatment and survival.

NEED FOR THE STUDY

With globalization, life expectancy is increasing, and hospital visits have become more frequent. Studies report that nearly 1,00,000 deaths occur annually due to medical negligence, with many resulting from preventable hospital-acquired infections, highlighting the importance of quality healthcare services. Globally, hospitals such as Huntington Hospital/Northwell Health have promoted nursing excellence through certification and professional development, leading to high standards of patient care. Such institutions have surpassed international benchmarks by fostering a strong culture of nurse excellence. In India, the growing medical tourism sector has increased the need for maintaining high healthcare standards. Nurses play a vital role in patient care, creating a continuous demand for improving nursing practices. Inspired by Magnet hospitals in the USA, India initiated efforts to enhance nursing standards, including the 2011 report on "Reshaping the Nursing Profession in Indian Hospitals."

Recently, India has taken significant steps toward nursing excellence. In March 2025, Lilavati Hospital, in collaboration with the Mayo Clinic, launched the country's first Nursing Excellence Training Program, training 120 nurses in critical care, OT nursing, and leadership. This initiative aims to strengthen professional competence and improve the quality of patient care nationwide.

MATERIALS AND METHODS

Design of study and Study Population.

The research design was a quantitative evaluative design based on a one-group pre-test post-test design of pre-experimental nature to evaluate the level of effectiveness of an information package on Breast Self-Examination knowledge. The population of the study was made up of undergraduate and postgraduate female students of the Department of Zoology, Lady Doak College, Madurai. These students formed the population that is available and adult women with higher education formed the target population. One hundred students, who fulfilled the selection criteria, were selected to participate in the study.

The inclusion criteria involved the undergraduate and postgraduate students of the Zoology Department that were willing to participate in the study and could be contacted during the data collection period. Students who volunteered not to take part or were absent during the data collection process were not included in the study.

Tools

The structured knowledge questionnaire designed by the researcher was used to collect the data. Section A had socio-demographic variables which encompassed age, course, religion, parental education, family history, habits, menstrual cycle, and age of menarche. Section B was a 30-question multiple choice questionnaire on Breast Self-Examination. A mark was given to each correct answer with the highest number being 30. According to the obtained scores, the level of knowledge was divided into low, moderate, and high.

Ethical Clearance

The concerned authorities of Lady Doak College, Madurai gave the study ethical clearance. The Principal and Head of the department of Zoology were approached to give formal permission before starting the study. All the participants were made aware of the research aim and their information privacy assured. The informed consent was taken verbally, and every participant was informed about a right to exit the study process at any moment without any repercussions.

Data Collection Procedure

The researcher gathered the pre-test data utilizing the structured questionnaire of knowledge via Google forms after getting the institutional approval and the consent of the participants. After the pre-test, an information package about Breast Self-Examination was provided through power point presentations, models, and pamphlets. Enough time was given to interaction and clarifying doubts. In order to determine the effectiveness of the information package, post-test data were collected with the same questionnaire via Google Form to collect the data after intervention.

Data Analysis

The data gathered were arranged, coded, and the data were analyzed with the help of the descriptive and inferential statistics The summary of socio-demographic variables

and knowledge levels was done using descriptive statistics frequency and percentages. To know the relationship between knowledge scores and the chosen socio-demographic variables, inferential statistics, especially the chi-square test was used. The findings were explained based on the study objectives.

RESULT

Demographic Variables

According to the socio-demographic profile of the participants, the majority of the students (63) were younger than 20 years, and 43 percent of respondents were first-year students. Most of them were Muslims (44%), then, Hindu (23%). In terms of parent education, 35 percent of the fathers were non-formally educated and 35 percent of the mothers were higher secondary educated. Over fifty-seven percent (57) of the students were in nuclear families and thirty-seven percent lived in urban locations. There was a majority of self-employed fathers (54%), and most mothers (72) were in the others category of occupation.

The number of all participants is 100% unmarried. Fifty percent (50) of the students identified themselves as having reading as their daily routine and 32 percent of the students spent time in front of televisionor cell phone. The majority of the respondents (80) had regular menstrual cycles with 74% of them having menarche between the ages of 10 and 14 years. Only 12% of them had a family history of breast related complaints. The television, radio and the internet were the major information sources (51%). (Table 1).

Level of Knowledge

The comparison of pre-test and post-test knowledge levels shows that the low level decreased from 25% to 21% and the moderate level decreased from 75% to 50%, while the high level increased from 0% to 29% in the post-test, indicating improvement after the intervention. (Table 2). The chi-square test revealed that course of study, type of family, and source of information had a statistically significant association with the level of knowledge on Breast Self-Examination, whereas other socio-demographic variables did not show any significant association. (Table 3)

Table 1: Socio-Demographic variables. (n = 100)

S. No	Socio-Demographic Variables	Category	Frequency (f)	Percentage (%)
1	Age (years)	< 20	63	63
		20–30	28	28
		> 30	9	9
2	Year of Study	First Year	43	43
		Second Year	13	13
		Third Year	26	26
		Postgraduate	18	18
3	Religion	Hindu	23	23
		Muslim	44	44
		Christian	12	12
		Others	21	21
4	Father’s Education	Non-formal	35	35
		Primary	26	26
		Higher Secondary	24	24
		Graduation	15	15
5	Mother’s Education	Non-formal	18	18
		Primary	26	26
		Higher Secondary	35	35
		Graduation	21	21
6	Type of Family	Nuclear	57	57
		Joint	43	43

7	Area of Residence	Rural	31	31
		Suburban	32	32
		Urban	37	37
8	Father's Occupation	Government	13	13
		Private	5	5
		Self-employed	54	54
		Business	8	8
		Others	20	20
9	Mother's Occupation	Government	3	3
		Private	8	8
		Self-employed	6	6
		Business	11	11
		Others	72	72
10	Family Income (₹/month)	< 7,315	30	30
		7,316–21,913	45	45
		21,914–36,526	16	16
		> 36,527	9	9
11	Marital Status	Single	100	100
		Married	0	0
12	Daily Habits	Reading	50	50
		TV/Mobile	32	32
		Indoor Games	3	3
		Outdoor Games	5	5
		None	10	10
13	Menstrual History	Regular	80	80
		Irregular	20	20
14	Age of Menarche (years)	< 10	6	6
		10–14	74	74
		> 14	20	20
15	Family History of Breast Complaints	Yes	12	12
		No	88	88
16	Source of Information	Print Media	21	21
		TV/Radio/Internet	51	51
		Health Personnel	6	6
		Family/Social Circle	3	3
		Others	19	19

Table 2: Level of knowledge (n = 100)

Level of knowledge	Pre test		Post test	
	F	%	F	%
Low level	25	25%	21	21%
Moderate level	75	75%	50	50%
High level	0	0%	29	29%

Table 3: Association between knowledge with their selected socio demographic variables. (n = 60)

S. No	Socio-Demographic Variables	Low f (%)	Moderate f (%)	High f (%)	χ^2 / df / p / Significance
1	**Course**				12.95 / 6 / 0.0439 / S
	First year	11 (11)	22 (22)	10 (10)	
	Second year	4 (4)	9 (9)	0 (0)	
	Third year	2 (2)	11 (11)	13 (13)	
	Postgraduate	4 (4)	8 (8)	6 (6)	
2	**Type of Family**				6.103 / 2 / 0.00473 / HS
	Nuclear	7 (7)	32 (32)	18 (18)	
	Joint	14 (14)	18 (18)	11 (11)	
3	**Source of Information**				8.074 / 8 / 0.0206 / S
	Print Media	2 (2)	18 (18)	1 (1)	
	TV/Radio/Internet	11 (11)	22 (22)	18 (18)	
	Health Personnel	1 (1)	3 (3)	2 (2)	
	Family/Social Circle	0 (0)	1 (1)	2 (2)	
	Others	7 (7)	6 (6)	6 (6)	

S = Significant ($p < 0.05$); HS = Highly Significant ($p < 0.0$

DISCUSSION

The findings of the study showed that in the pre-test, 1/4 students were lowly knowledgeable and 3/4 were moderate knowledgeable and no student was knowledgeable on Breast Self-Examination. In the post-test results, the level of low knowledge was reduced to 21 percent and moderate knowledge was reduced to 50 percent and the high level of knowledge was raised to 29 percent after the intervention. The chi-square test also showed that the level of knowledge was significantly related to the course of study, type of family, and source of information. These results show that the information package was functional in enhancing the knowledge of students on Breast Self-Examination.

CONCLUSION

The authors came up with the conclusion that the information package was successful at enhancing the level of knowledge related to Breast Self-Examination among the students as it was found that there was an increase in the level of high knowledge and a decrease in the level of low and moderate knowledge among the students after the intervention.

RECOMMENDATIONS

In colleges, similar education programs should be carried out on a regular basis in order to enhance awareness of Breast Self-Examination. It is possible to have health education programs longer to other students in other departments and institutions.

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