

Original Research Article

A study to assess the effectiveness of breast self-examination demonstration on practice of breast self-examination among women employed in a selected hospital, Bengaluru

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ABSTRACT

Background: In 2020, 2.3 million women worldwide were newly diagnosed with breast cancer, leading to 685,000 reported deaths. One of the main reasons for this high mortality is delayed detection, which could be reduced through regular breast self-examination (BSE). Women working in housekeeping roles often have limited education and low awareness of BSE due to their socioeconomic status. Educating this group can serve as a gateway to broader community awareness. This study was undertaken to assess how effective a demonstration-based intervention is in improving BSE practices among this population.

Methods: A quantitative one-group pre-test post-test study design was used. The sample included 69 women aged 20–60 years from the housekeeping department of a tertiary hospital in Bengaluru, selected through purposive sampling. Participants initially demonstrated their BSE skills using a dummy model. They then received hands-on training in three techniques-circular, wedge and sweeping. After seven days, they were reassessed through re-demonstration. Data were evaluated using both descriptive and inferential statistical methods.

Results: Before the intervention, 92.76% of participants showed poor BSE practice (mean=1.22, SD=1.69). Post-intervention, none exhibited poor practice; 73.91% had average and 26.09% had good practice levels (mean=5.83, SD=1.98), indicating a significant improvement.

Conclusions: The results show that demonstration-based teaching significantly enhances BSE practice. Such approaches are practical and effective in promoting early detection, particularly among underserved women.

Keywords: Breast self-examination, Breast cancer

INTRODUCTION

Breast cancer (BC) is the most common type of malignant tumour seen in women. It has now become a global public health burden. Breast cancer is the leading type of cancer among women worldwide, with about 2 million new cases and 627,000 deaths every year.¹ The incidence of breast cancer has been increasing in different regions

of the world. The expected incidence rate of breast cancer is similar in different countries. However, breast cancer is due to lack of early screening methods and treatment of breast cancer. Worldwide, breast cancer is the second common cancer next to lung cancer and fifth cause of cancer mortality. In western countries, majority of breast cancer cases were reported in stage 1 or stage 2. Whereas in India 46% were reported in advanced stage.² The late diagnosis of the disease is due to several factors such as,

no existence of high-quality primary level screening program, lack of regional treatment centers, over dependence on large tertiary cancer hospital, high out of pocket expenditure and non-participation of women in the awareness program.

The rapid rise in number of BC cases has been associated with growing urbanization and rapid lifestyle changes. Many studies have found that women living in urban India were more vulnerable to BC than those from rural areas.² Breast self-examination (BSE) is a breast cancer screening method in which a woman examines and feels her breasts for lumps, distortions and swellings.³

Objectives

To compare the pre-test and post-test practice scores regarding BSE among employed women in selected hospital, Bengaluru. To determine the association between pre-test practice score of breast self-examination with the selected baseline variables.

METHODS

Research approach

This research follows a quantitative approach. The research design used in this study is one group pre-test post-test design.

Target population

Women aged 20-60 years employed in a selected hospital, Bengaluru. Accessible population were women employed in housekeeping department in a tertiary care hospital.

Sample and sampling technique

Assuming 21% and 34% of the pairs are positive at the pre and post respectively, the correlation between paired observations is 70% and after applying continuity correction the sample size was 69. Sampling technique was purposive sampling technique.

Inclusion criteria

Women those who are employed in a selected hospital in Bengaluru were included in inclusive criteria.

Exclusion criteria

Women who were ante-natal and lactating mothers and who are diagnosed with breast cancer were excluded.

Study duration

The study period was 8 months from February 2023 to September 2023. Study initiation date was 3rd June 2023 and completion date-21st September 2023.

The methodology undertook is the framework for conducting the study. The chapter deals with the description of the methodology and different steps used for collecting and organizing the data. This includes description for the research approach, research design, settings, sampling technique and development of teaching module, data collection and data analysis.

Research approach and design

Quantitative Research Approach and One Group Pre-test post-test design.

Target population

Women aged 20-60 years employed in a selected hospital, Bengaluru.

Accessible population

Women employed in House Keeping Department in a tertiary care hospital

Sample and sampling technique

Assuming 21% and 34% of the pairs are positive at the pre and post respectively, the correlation between paired observations is 70% and after applying continuity correction the sample size is 69 and Purposive Sampling Technique.

Instruments

Section A

Proforma to collect the baseline variables.

Section B

Checklist on practice of Breast Self-Examination demonstration.

Data analysis

Descriptive statistics is by using mean, SD and paired t test. Inferential statistics by using Fischer's exact test.

Outcomes

The findings of the study showed an improvement in the post test score of women on the practice of breast self-examination.

Data collection method

After obtaining ethical clearance from IEC and concerned authority, the subjects were selected using purposive sampling method based on inclusion and exclusion criteria. The purpose of the study was explained to the

subjects using the subject information sheet was given and a written informed consent obtained. Baseline variables were elicited by using a baseline proforma. The pre-test score of the breast self-examination demonstration was obtained by a self-structured observational checklist.

After which they were demonstrated the 3 techniques of breast self-examination on a simulated dummy by the researchers. After a period of seven days, they were asked to re-demonstrate the techniques on a dummy. And the post test score of breast self-examination demonstration was obtained with the same checklist. The duration of demonstration was 25-30 minutes and the time duration of data collection was 10-15 minutes.

Data analysis plan

Analysis is the systematic organization and synthesis of research and the testing of research hypothesis using these data, data analysis will be done. Data was analysed using differential and inferential statistics in a stepwise manner.

Organization of data in the master sheet

Computation of the differential statistical values of Mean, Standard deviation and Paired t test to identify effectiveness of Breast Self-Examination demonstration. The computation of inferential statistical values of Fischer's exact test to identify the association of the pre-test score and the baseline variables.

Tool validity

The tool was sent for validation to 5 experts from nursing field.

The modifications were incorporated as per their opinion and in discussion with the guide.

Description of tool

Section 1

Proforma to collect the baseline variables.

Section 2

Checklist on practice of breast self-examination demonstration.

Section 1: Proforma to collect the baseline variables

A self-structured questionnaire was used for the collection of the baseline variables of the subject. In the study baseline variables are related to the subjects which includes the age, educational status, marital status, family history, perception and practice of breast self-examination.

Section 2: checklist on practice of breast self-examination demonstration

Scoring

It includes Total steps-11, Correct step-1, Incorrect step-0

Interpretation of practice score

Good practice – 8 to 11, Average practice -4 to 7, Poor practice -0 to 3 were in this.

RESULTS

The analysis and interpretation of the data were based on the objectives of the study using descriptive and inferential statistics. The significant findings are presented in tables and graphs.

Organization and presentation of the data

The obtained data were entered in the master sheet for tabulation and statistical processing. The analysis of the data was organized and presented under the following sections.

Section I

Description of baseline variables of employed women in selected hospital.

Section II

Description of comparison of pre and post-test practice score of breast self-examination.

Section III

Effectiveness of pre-test and post test score by mean, standard deviation and correlation.

Section IV

Description of association of pre-test practice score with selected baseline variable.

Section I: Description of baseline variables of employed women in selected hospital

Table 1 shows that majority 40.58% (28) of the women employed were in the age group of 40–49 years. It is evident that 52.17% (36) of the women employed were illiterate.

Majority of the women 97.10(67) were married. Among the women employed majority 97.10% (67) had no family history of breast cancer and the 100% (2 among 69) had first degree relationship with the patient. Majority 68.12%

(47) had heard about breast self-examination and among that 95.74% (45) had heard from awareness class, 2.13% (1) each had heard from social media and other sources. Among them 50.72% (35) had not practiced breast self-examination before.

Section II: Description of comparison of pre and post-test practice score of breast self-examination

Table 2 show that 92.76% (64) of the women had poor practice, 4.34% (3) of the women had average practice and 2.90% (6) had good practice. Table 2 shows that 0% (0) of the women had poor practice, 73.91% (51) of the women had average practice and 26.09% (18) had good practice.

Section III: Effectiveness of pre-test and post test score by mean, standard deviation and correlation

Table 3.1 shows that mean post-test practice score (5.83) is apparently higher than mean of pre-test practice score (1.22). The mean difference is 4.61. The paired t value at does (68) obtain is 17.36 using paired t test. It is significant at 0.05 level that the demonstration of Breast Self-Examination had enhanced the increase in the post test score. Hence research hypothesis H1 was accepted.

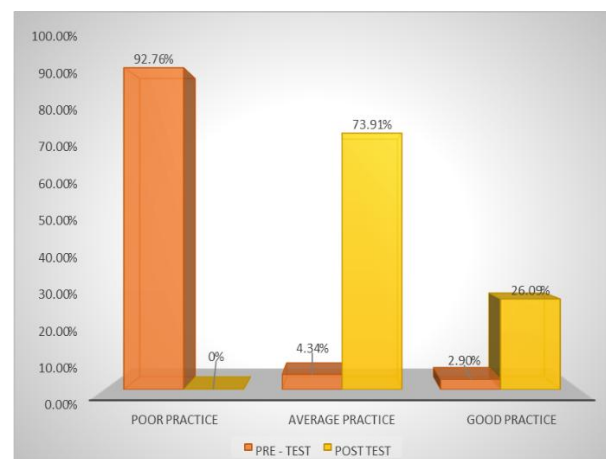


Figure 1: Percentage distribution of practice of breast self-examination based on pre and post-test level of practice.

Section IV: Description of association of pre-test practice score with selected baseline variable.

Table 4 shows that there is no significant association between the pre-test score and the age, educational status, marital status, the perception and practice of breast self-examination.

Table 1: Frequency, percentage distribution of baseline variables (n=69).

S. no.	Baseline variables	Frequency (f)	(%)	Mean age (in years)
1.	Age (in years)			
	20-29	5	7.25	43.34
	30-39	17	24.64	
	40-49	28	40.58	
	50- 59	19	27.54	
2.	Educational status			
	Illiterate	36	52.17	
	Primary school	7	10.14	
	Middle school	12	17.39	
	High school	13	18.84	
	Intermediate or School or diploma	1	1.45	
3.	Marital status			
	Married	67	97.10	
	Unmarried	2	2.90	
4.	Family history of breast cancer			
	Yes	2	2.90	
	No	67	97.10	
4.1	If yes, relationship with the patient			
	1 st degree	2	100	
5.	Have you heard about breast self-examination			
	Yes	47	68.12	
	No	22	31.88	
5.1	If yes, source of information			
	Social Media	1	2.13	
	Awareness class	45	95.74	
	Others	1	2.13	
6.	Have you practiced breast self-examination before			
	Yes	34	49.28	
	No	35	50.72	
6.1	If yes, how often			

Continued.

S. no.	Baseline variables	Frequency (f)	(%)	Mean age (in years)
	Once in a month	5	14.71	
	Once in 6 months	2	5.88	
	Once in a year	5	14.71	
	Daily	22	64.70	

Table 2: Frequency and percentage of pre-test practice level of the women employed in a selected hospital.

S. no.	Level of practices	Frequency	(%)
1.	Poor practice	64	92.76
2.	Average practice	3	4.34
3.	Good practice	2	2.90
4.	Poor practice	0	0
5.	Average practice	51	73.91
6.	Good practice	18	26.09

Table 3: Mean, SD and paired t test of post-test score level of practice with the pre-test score level.

Test	Maximum score	Range	Mean	SD	Paired t-test	P value
Pre-test	11	0-9	1.22	1.69	17.36	<0.001*
Post test	11	4 -11	5.83	1.98		

*Significant

Table 4: Association of pre-test practice score with selected baseline variable.

S. No.	Baseline variables	Frequency (f)	Poor practice	Average practice	Good Practice	P value
1.	Age (in years)					0.3 ^{NS}
	20-29	5	4	0	1	
	30-39	17	16	1	0	
	40-49	28	27	1	0	
	50-59	19	17	1	1	
2.	Educational status					0.9 ^{NS}
	Illiterate	36	33	2	1	
	Primary School	7	7	0	0	
	Middle School	12	11	0	1	
	High School	13	12	1	0	
	Intermediate /School or Diploma	1	1	0	0	
3.	Marital Status					0.9 ^{NS}
	Married	67	62	3	2	
4.	Family History of Breast Cancer					0.9 ^{NS}
	Yes	2	2	0	0	
	No	67	62	3	2	
5.	Have you heard about breast self-examination					0.5 ^{NS}
	Yes					
	No					
6.	Have you practiced breast self-examination before					0.3 ^{NS}
	Yes	34	30	2	2	
	No	35	34	1	0	

NS-Not Significant

DISCUSSION

This chapter presents the major findings of the study discussed with reference to similar studies conducted by other researchers. The present study aimed to assess the effectiveness of breast self-examination demonstration on practice of breast self-examination among women employed on a selected hospital, Bengaluru. One group pre-test post-test design was adopted for the study. The population of the study was employed women from

selected hospital in Bengaluru. Sample size was 69. Structured questionnaire and checklist developed by the researchers was used to elicit knowledge and practice of employed women respectively.

Section 1: Finding related to baseline variables

The study samples in the present study consisted of 69 women from housekeeping department of a selected

hospital between the age of 20 to 69 years in the experimental group.

Among the 69 women of experimental group 7.25% (5) belong to the age group of 20-29, 24.64% (17) belong to the age group of 30-39, 40.58% (28) belong to the age group of 40-49, 27.54% (19) belong to the age group of 50-59. In the present study 52.17% (36) were illiterate, 10.14% (7) were of primary school education, 17.39% (12) were of middle school education, 18.84% (13) were of high school education and 1.45% (1) was of intermediate school or diploma education. About 97.1% (67) were married women, 2.9% (2) were unmarried women. 2.9% (2) had the family history of breast cancer and 97.1% (67) do not have the family history of breast cancer.

Out of 2.9% (2) who had the family history of breast cancer, 100% (2) were first degree relatives. Among these 68.12% (47) of the women from housekeeping department have heard about breast self-examination and remaining 31.88% (22) have not heard about breast self-examination. The sources of information were 2.13% (1) from social media, 95.74% (45) from awareness class, 2.13% (1) were from other sources (family members). About 49.28% (34) of women have practiced self-breast examination before and 50.72% (35) have not practiced self-breast examination before. Out of 49.28% (34) of subjects who have practiced self-breast examination before, 14.71% (5) practiced once in a month, 5.88% (2) practiced once in 6 month, 14.71% (5) practiced once in a year and 64.7% (22) practiced daily.

Section 2: Findings related to practice of breast self-examination of women employed in selected hospital

The present study showed that the pre- test score of the women ranged from 09 with total score of 11. The level of practice was arbitrarily grouped under three categories which are poor practice (0-3), average practice (4-7), good practice (8-11). In the present study the pre-test showed that, 92.76% (64) had poor practice, 4.34% (3) had average practice, 2.9% (2) had good practice with mean of 1.22 and standard deviation of 1.69.

A similar study was conducted to assess the practice of breast self-examination and associated factors among female health professionals working in public hospitals of Harari regional state: Eastern Ethiopia multi-centre study. Among a total of 362 female health professionals, 171 (47.2%) respondents were ever practiced breast self-examination, 229 (63.3%) had good knowledge of breast self-examination and 252 (69.6%) had a favourable attitude toward breast self-examination. The findings of this study implied that the practice of breast self-examination among female health professionals is low.³

A study conducted on assessment of breast self-examination practice and associated factors among female workers in Debre Tabor Town public health

facilities, North West Ethiopia, from April 23 to May 23, 2018. A total of 421 female workers in Debre Tabor Town public health facilities were included. About 137 (32.5%) of the participants had practiced breast self-examination and 64 (15.2%) of them performed it monthly. This cross-sectional study showed that the prevalence of breast self-examination was low.⁴

Section 3: Findings related to the effectiveness of demonstration on practice of breast self-examination

The investigator assessed the effectiveness of BSE with respect to the comparison of the pre-test and post-test scores of the experimental group.

The present study showed that in pre-test practice scores of experimental groups, 92.76% had poor practice, 4.34 had average practice, 2.9% had good practice. In the post test scores, none had poor practice, 73.91% had average practice, 26.09% had good practice. The overall mean of post-test score (5.83) for experimental group is apparently higher than overall mean of pre-test scores (1.22). The mean difference is being 4.61. The SD for pre-test score is 1.69 and SD for post-test score is 1.98.

A study was conducted to assess the effectiveness of educational intervention on breast cancer knowledge and breast self-examination among female university students in Bangladesh: a pre-post quasi experimental study. This study suggested that the educational program on breast cancer and BSE has been effective in improvement of knowledge and BSE practice levels of women. A significant percentage of change in BSE practices was obtained after educational intervention between pre-test and post-test that is 21.3% to 33.8% with a p value, $p < 0.001.5$

A study was conducted on increasing breast cancer awareness and breast examination practices among women through health education and capacity building of primary healthcare providers: a pre-post intervention study in low socioeconomic area of Mumbai, India. This study found a significant improvement in knowledge of BC signs and symptoms, risk factors and BSE practices among study participants following our health education interventions.²

The association between practice score and selected baseline variables like age, educational status, marital status, family history of breast cancer, relationship with the patient, previous knowledge, previous experience, source of information, frequency of practice were computed by using Fisher's exact test and found that there is no significant association between the practice score demonstration on and age (p value: 0.3), education (p value: 0.9), marital status (p value: 0.9), family history of breast cancer (p value: 0.9), previous knowledge (p value: 0.5), previous experience (p value: 0.3), source of information (p value: 0.9), frequency of practice (p value: 0.4).

This study is limited only to a particular group of women in an institution.

CONCLUSION

This research makes a valuable contribution to women's health by demonstrating the positive impact of breast self-examination (BSE) demonstrations on improving women's BSE practices. The results clearly show a significant improvement in BSE performance after the intervention, shifting participants from poor to average and good practice levels. These findings emphasize the importance of hands-on education in raising awareness and enhancing skills related to early breast cancer detection. The study also sheds light on various demographic and educational factors that influence BSE practice, reinforcing the essential role of nurses in promoting community health. Overall, the research offers valuable evidence to guide nursing education, community outreach and policy development for better breast cancer prevention strategies.

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Conflict of interest: None declared

Ethical approval: The study was approved by the Institutional Ethics Committee

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