

## Female' Knowledge about Breast-Self-Examination: Effect of an Educational Program

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### Abstract

**Background:** Early detection of breast cancer is crucial for disease control, with mammography being the gold standard for early detection. Nurses possess the knowledge and skills to educate patients on breast self-examination, a professional obligation to promote and preserve health and prevent sickness.

**Aim:** The current study was conducted to evaluate effect of an educational program on female workers' knowledge about breast-self-examination.

**Subjects and Methods: Design:** A quasi-experimental design was used.

**Sample and Settings:** A study from Beni-Suef University selected 323 working women aged 18-60 without cancer, chemotherapy, radiation, or psychological disorders as a purposeful sample.

**Tools:** A Structured Interviewing Questionnaire Sheet and women's general knowledge about breast self-examination.

**Results:** 3.8% of the female in the study were between the ages of 17 and 22 and 69.0% of them were city dwellers. Also, 70.0% had no breast issues, 50.5% of them were aware that the first step in the early detection of breast cancer was BSE. Furthermore, 48.3% were unaware of how to perform BSE, and 74.9% did not practice it. There was statistically significant improvement in female workers' knowledge regarding all items of general information about breast self-examination after program implementation ( $p \leq 0.05$ ).

**Conclusion:** Based on the findings of the present study, it can be concluded that was a highly statistically significant improvement in female workers' knowledge regarding general information about breast self-examination during the posttest compared to after program implementation.

**Recommendations:** Study the effect of other socio-demographic factor (age, education, income, occupation) on females' knowledge regarding breast self-examination

**Keywords:** Knowledge, Breast-Self-Examination an Educational Program

### 1. INTRODUCTION

Since the nurse plays the role of a health educator in the community, she needs to be specially trained in breast cancer screening and early diagnosis, working in the areas of coordination, communication, education, and target population recognition [1-5].

Research has highlighted the significance of nurses as community role models and health educators. Through home visits, community events, or phone conversations in some situations, nurses inform the public about cancer

and teach them how to spot early warning signals, such as palpable breast abnormalities [6-10]. In addition to educating people about the availability and significance of cancer screenings, nurses assist in identifying members of the community who may be eligible for tests. Due to their close relationships with the community, nurses can recognize both systemic and individual impediments to cancer screening [11-15]. As soon as the patient arrives at the health center, the nurse reviews their medical history, determines if a screening is necessary, and evaluates them for cancer risk factors and

symptoms, namely for breast and cervical cancer. Here, we cover both screening for asymptomatic women and early cancer detection, which is the discovery of cancer warning indicators [16-20].

The PHC relies heavily on nurses' early detection of breast cancer to encourage patients to follow through on health promotion, treatment, and rehabilitation plans. Furthermore, during care at Basic Health Units (BHU), it is important to seize any chance for engagement, as this could strengthen the nurse's position as a change agent whose activities are close to users [21-25].

Inform patients about the advantages of eating a diet high in fruits and vegetables, exercising, keeping a healthy weight, avoiding tobacco, consuming less alcohol, and minimizing radiation exposure [26-30]. Women should be encouraged to discuss their worries about breast screening, cancer risks, and available treatments. Your patients must be well-informed on breast cancer and practical preventative measures. Breast cancer can kill people at any age; therefore, identifying the risk factors is essential to preventing the disease [26]. In her role as a counselor, the nurse can encourage the monthly BSE practice and increase public awareness of breast cancer. Their involvement in teaching and counseling women who are concerned about their risk of breast cancer is growing [31].

As a professional counselor who provides patients and other members of interdisciplinary teams involved in the treatment process with expert advice and direction, the nurse plays a dynamic role in breast cancer therapy. Nurses can assist patients by raising problems that might not always be obvious to other team members, thereby allowing treatment to proceed more quickly when necessary. Stated differently, the nurse assists patients by serving as a liaison with other medical professionals [32].

To offer full nursing care and assistance, a nurse must be appropriately qualified and maintain current knowledge and skills. To ensure the achievement and upkeep of high standards of practice, the care route should be routinely evaluated and modified in response to new evidence [33]. As a caregiver, the nurse should gauge the woman's level of worry throughout the screening procedure and offer the required support while they wait for the final screening findings. A patient's risk for anxiety and depression includes a history of both anxiety and depression, pessimism, damaged family ties, a lack of social support, lower educational

attainment, stressful non-cancer life events, and poor social functioning [34].

Nurses can prevent certain problems that arise from diagnosing breast cancer in women who are at a higher risk of psychological morbidity by identifying individuals who are at risk and providing support and comfort during the pre-diagnostic stage [34].

Women's health nurses should have easy access to evidence-based information and be able to incorporate scientific knowledge into their clinical practice as researchers. When interacting with women, nurses need to be able to educate them on the normal structure of the breast, abnormalities, breast cancer risk factors, and the benefits, limitations, and risks associated with breast screening techniques. Nurses help women make decisions about which screening methods are best for their unique situations by providing them with this information [35].

Nurses have a critical role as patient advocates, ensuring that patients are safe, well-cared for, and supported during the study endeavor. Nursing research provides a theoretical or scientific basis for nursing care. It is a meticulous, methodical inquiry or study that produces new data while confirming and enhancing that which already exists [35].

To ensure that the greatest number of people receives treatment, nurses can facilitate the identification of research problems, assist with data collection, and, under supervision, apply study findings in practice [36-39].

Through their national nursing associations, nurses can participate in research-based, culturally sensitive nurse education and information programs regarding the causes, symptoms, and concerns of breast cancer. Nurses and national nurse groups should be at the forefront of raising public and professional knowledge of the psychological and physical effects of breast cancer on women [36].

## **2. AIM OF THE STUDY**

The current study was conducted to evaluate effect of an educational program on female workers' knowledge about breast-self-examination.

## **3. SUBJECT AND METHOD**

### **3.1. Research Design**

The study utilized an interventional, quasi-experimental research design with a pretest and posttest to achieve its objectives.

### 3.2. Subjects and Settings

A study from Beni-Suef University selected 323 working women aged 18-60 without cancer, chemotherapy, radiation, or psychological disorders as a purposeful sample.

### 3.3. Tools of Data Collection

*Tool I: A Structured Interviewing Questionnaire Sheet*

It focused on the age of marriage and place of residence of the female subjects, among personal information, history of breast problems, breast self-examination practice.

*Tool II: Women's General Knowledge about Breast Cancer*

The study concerned about the women's knowledge about breast self-examination screening for early detection of breast cancer (define breast self-examination, the primary goal of breast self-examination, what age should women start performing BSE regularly, frequency of performing breast self-examination, abnormal signs that were detected, when should breast self-examination be done after menopause, duration, and methods of performing breast self-examination), ... etc (24 items). System of scoring: The questions were scored in degrees, with correct responses earning points and incorrect ones gaining zero points, with categories including good, average, average, and poor scores.

### 3.4. Fieldwork

*Preparatory phase*

To verify substance, expertise, correctness, and relevance, an expert jury assessed the data gathering instruments that the researcher developed using a review.

*Phase (I): Assessment Phase*

The pretest assessment evaluates females' knowledge about breast self-examination through interviews, personal characteristics data, and baselines to compare and assess the effectiveness of an educational program.

*Phase (II): Planning Phase*

The researcher created an instructional program based on pre-test data to enhance females' understanding of breast self-examination, adjusting it to their specific needs.

*Phase (III): Implementation Phase*

Program implementation included a theoretical session aimed to acquire women with general knowledge regarding breast self-examination through an explanation of the definition of breast self-examination, the primary goal, age which women to start performing regularly, number of times women should perform, the changes should women look for during, the best time to perform, the manner should be performed, correct behavior if a lump or abnormality is found during, not a common sign of BC that may be detected during BSE, correct behavior if the women have breast implants, recommended age group to have regular clinical breast examinations in addition to BSE, technique involves raising one arm above head while performing to better examine breast tissue, part of breast is often the location of breast lumps found during BSE, changes in the breast might be considered normal and not indicative of breast cancer, a recommended step during BSE, the time typically take to perform, correct behavior if women have family history of BC, recommended position for performing, pattern of movement is recommended for palpating breast tissue during, recommended pressure to apply while palpating the breast tissue during, part of the hand is typically used to perform breast palpation during, part which should be examined visually during BSE while standing in front of a mirror.

*Phase (IV): Evaluation phase*

Female participants' knowledge and application of preventative behaviors were evaluated using post-tests; those exhibiting aberrant indications were referred to maternal healthcare centers for additional research.

### 3.5. Statistical Design

Women's knowledge and application of preventative behaviors were compared before and after implementation using SPSS version 20 data analysis, with p-values 0.05 signifying statistical significance.

## 4. RESULTS

**Table (1)** shows that, Over half (53.8%) of the female employees in the study were between the ages of 17 and 22. Regarding where they lived, over two-thirds (69.0%) of them were city dwellers.

**Table 1.** Percentage distribution of the studied female workers regarding to their socio-demographic data (n=323).

Items	No.	%
Age of marriage		
17-22 years	142	53.8

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23-25 years	92	34.8
> 25 years	30	11.4
<b>Place of residence</b>		
Rural area	100	31.0
Urban area	223	69.0

**Table (2)** presents that, of the studied females, about three quarters (70.0%) had no breast issues. Regarding BSE, over half (50.5%) of them were aware that the first step in the early detection of breast cancer was breast self-examination.

Furthermore, fewer than half (48.3%) of them were unaware of how to perform breast self-examination, and nearly three-quarters (74.9%) did not practice it.

**Table 2.** Percentage distribution of the studied female workers regarding their history of breast cancer (n=323).

Items	No.	%
<b>Had Breast problems</b>		
No	226	70.0
Yes	97	30.0
<b>Breast self-examination was the first method in the early diagnosis of BC</b>		
No	160	49.5
Yes	163	50.5
<b>Breast self-examination practice</b>		
No	242	74.9
Yes	81	25.1
<b>Why you do not practice BSE</b>		
Forgetfulness or neglect	78	32.2
Considering it unnecessary	47	19.4
Not knowing how it is practiced	117	48.3

**Table (3)** illustrates that there was statistically significant improvement in female workers' knowledge regarding all items of general

information about breast self-examination after program implementation ( $p \leq 0.05$ ).

**Table 3.** Percentage distribution of the studied female workers' knowledge regarding breast self-examination (n=323).

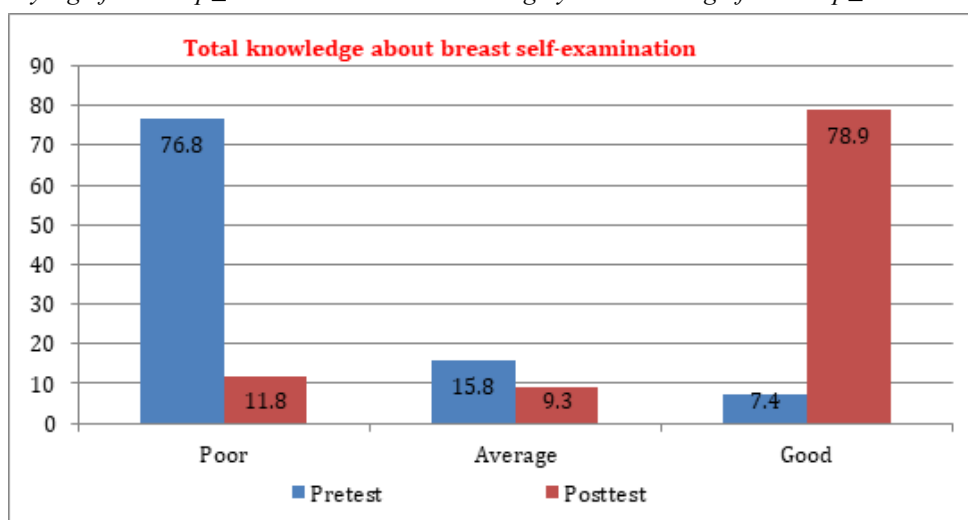
Breast self-examination	Pretest		Posttest		X <sup>2</sup>	p value
	Correct	Incorrect	Correct	Incorrect		
	%	%	%	%		
Definition of Breast Self-Examination (BSE)	48.9	51.1	81.1	18.9	4.108	0.043*
The primary goal of BSE	40.6	59.4	78.3	21.7	4.139	0.042*
Age which women to start performing BSE regularly	<b>31.9</b>	68.1	<b>75.5</b>	24.5	7.087	0.008**
Number of times women should perform BSE	46.4	53.6	76.8	23.2	6.421	0.011*
The changes should women look for during BSE	45.2	54.8	78.3	21.7	9.453	0.002**
The best time to perform BSE	47.4	52.6	74.6	25.4	4.029	0.045*
BSE should be done after menopause	48.0	52.0	74.0	26.0	13.187	0.000**
The manner BSE should be performed	44.3	55.7	79.3	20.7	3.970	0.046*
Correct behavior if a lump or abnormality is found during BSE	46.1	53.9	76.8	23.2	29.546	0.000**
NOT a common sign of B.C that may be detected during BSE	49.5	50.5	82.4	17.6	6.711	0.010**
Correct behavior if the women have breast implants	45.8	54.2	79.9	20.1	37.782	0.000**
Recommended age group to have regular clinical breast examinations (CBE) in addition to BSE	42.7	57.3	75.2	24.8	4.376	0.036*
Technique involves raising one arm above head while performing BSE to better examine breast tissue	<b>32.5</b>	67.5	<b>78.6</b>	21.4	5.182	0.023*

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Part of breast is often the location of breast lumps found during BSE	42.1	57.9	77.4	22.6	4.301	0.038*
Changes in the breast might be considered normal and not indicative of breast cancer	<b>38.7</b>	61.3	<b>74.9</b>	25.1	4.034	0.045*
NOT a recommended step during BSE	44.0	56.0	76.8	23.2	10.144	0.001**
The time BSE typically take to perform	41.8	58.2	78.6	21.4	17.013	0.000**
Correct behavior if women have family history of B.C	39.3	60.7	82.4	17.6	5.713	0.017*
Recommended position for performing (BSE)	42.4	57.6	74.9	25.1	4.851	0.028*
Pattern of movement is recommended for palpating breast tissue during BSE	41.5	58.5	76.8	23.2	11.838	0.001**
Recommended pressure to apply while palpating the breast tissue during BSE	42.7	57.3	78.9	21.1	10.182	0.001**
Part of the hand is typically used to perform breast palpation during BSE	42.1	57.9	79.3	20.7	4.340	0.037*
Part which should be examined visually during BSE while standing in front of a mirror	<b>33.4</b>	66.6	<b>81.4</b>	18.6	4.986	0.026*

\* Statistically significant at  $p \leq 0.05$

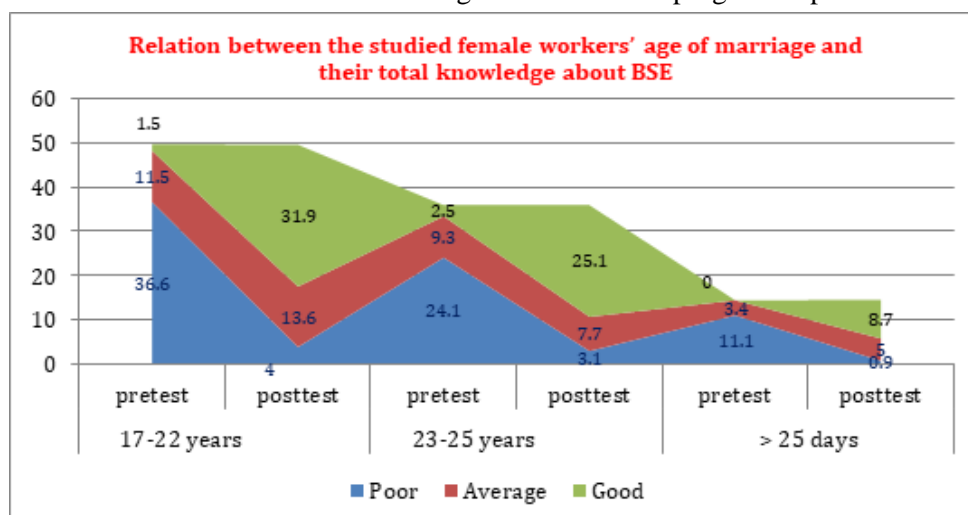
\*\* Highly statistical significant at  $p \leq 0.01$



**Figure 1.** Total knowledge about breast self-examination, ( $n = 223$ ,  $X^2 = 7.465$ ,  $p$  value = 0.006\*\*)

**Figure (1)** illustrates that there was a highly statistically significant improvement in female workers' knowledge regarding general information about breast self-examination during

the posttest as  $p \leq 0.01$  compared to the pretest, as noticed that most (76.8%) of females had poor knowledge in the pretest, which improved to 11.8% after program implementation.

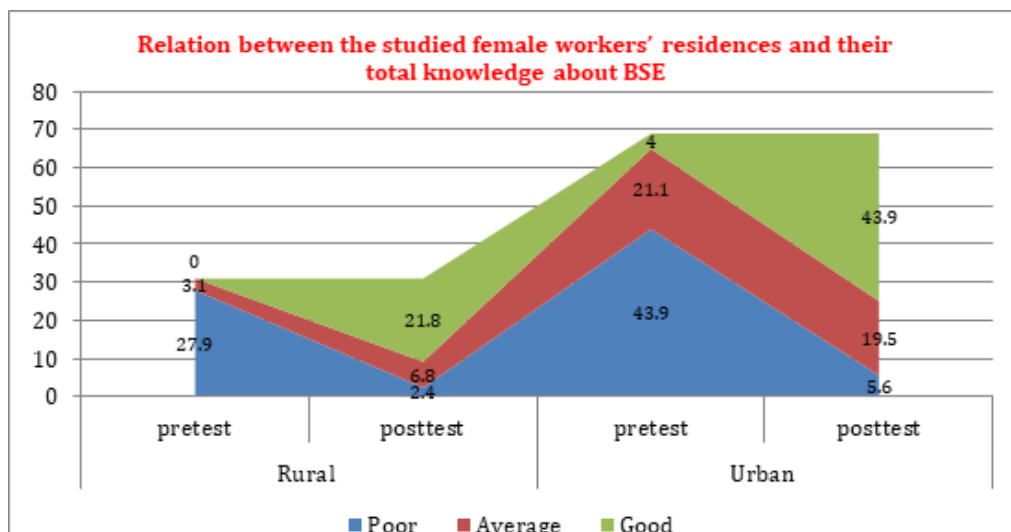


**Figure 2.** Relation between the studied female workers' age of marriage and their total knowledge about breast self-examination



**Figure (2)** reveals relation between the studied female workers total knowledge regarding BSE score with their age of marriage. As 36.6% of

females whose age of marriage was 17-22 years had poor knowledge before the program, which increased to 4% after the program.



**Figure 3.** Relation between the studied female workers' residences and their total knowledge about breast self-examination

**Figure (3)** reveals relation between the studied female workers total knowledge regarding BSE score related to place of residence, as noticed that 27.9% & 43.9% of females who live in rural & urban areas, respectively, had poor knowledge before the program, which increased to 0.0% & 4.0% after the program.

## 5. DISCUSSION

Early detection of breast cancer is crucial for disease control, with mammography (MMG) being the gold standard for early detection. Nurses possess the knowledge and skills to educate patients on breast self-examination (BSE), a professional obligation to promote and preserve health and prevent sickness [40-49]. The aim of the study was evaluate effect of an educational program on female workers' knowledge about breast-self-examination. Regarding female workers' total knowledge level about breast self-examination, the finding of the present study clarified that there was a highly statistically significant effect of the health education program on improvement in the female workers' total knowledge level about breast self-examination, as prior to the health education program, more than three-quarters of them had a poor level of knowledge, whereas, after one month, it improved to almost one-tenth.

This finding is in accordance with **Akarsu et al. (2022)**, who studied "evaluation of breast self-examination training in Turkish women living in northwestern Turkey" and showed that significant improvements were observed in the

post-test (after training, after one month, and three months of training) scores for steps of BSE after the intervention [50]. Also, this result is in the same line with **Rakhshani et al. (2022)**, who assessed "the effect of educational intervention on knowledge, attitude, and practice of women towards breast cancer screening" and proved that the mean score of practice in the experimental group significantly increased after the educational intervention compared to the pre-intervention score [51]. This finding may be due to a lack of health educational programs directed to increase the women's awareness of BSE and that the educational program, which was supported with media and animations, was necessary to increase knowledge and create proper health attitudes and beliefs and to perform breast self-examination accurately and correctly.

The current study found that women's total knowledge improved across all age of marriage categories, with regard to the association between the studied female's total knowledge score and her age of marriage (before & post-program). In which more than one-third of females their age of marriage (17-20 years) had poor knowledge pretest, which regressed to only 0.9% during posttest. This finding is supported by **Ahmed et al. (2019)** who found no significant relationship between a health promotion program and female breast self-examination knowledge and practice, both pre- and post-intervention [15].

Related to place of residence, there was less than one-tenth of females that live in urban areas had good knowledge before the program, which

increased to around one-half after the program. This finding is in accordance with **Al-Mousa et al. (2020)**, who investigated “knowledge, attitude, and practice around breast cancer and mammography screening among Jordanian women” and showed that participants living in urban areas have significantly higher knowledge about breast cancer signs and symptoms compared with participants living in rural areas [52]. From the researcher's point of view, women who live in urban areas had a greater chance to get information easily and quickly than women who live in rural areas.

## 6. CONCLUSION

Based on the findings of the present study, it can be concluded that was a highly statistically significant improvement in female workers' knowledge regarding general information about breast self-examination during the posttest compared to after program implementation.

## RECOMMENDATION

- Study the effect of other socio-demographic factor (age, education, marital status, income, occupation) on females' knowledge regarding breast self-examination

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