



## PREVENTING BREAST CANCER VIA HEALTH EDUCATION AMONG PAKISTANI RURAL WOMEN: A QUASI- EXPERIMENTAL STUDY

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### Abstract

**Background:** Breast cancer develops from the abnormal growth of cells in the breast. It mostly affects women and is a leading source of illness and death around the world. Breast cancer claimed the lives of around 627 thousand women worldwide, according to the World Health Organization. Breast cancer is the leading cause of death and illness among women in low- and middle-income nations (World Health Organization). Despite having sufficient knowledge and a good attitude towards breast self-examination (BSE), urban women in Pakistan do not practice it.

**Objective:** To increase awareness of BSE through training, with the goal of improving early breast cancer diagnosis rates and survival in Pakistan.

**Study design:** quasi-experimental study

**Place and Duration:** This study was conducted in PPHI Karachi from June 2022 to June 2023

**Methodology:** There were a total of 400 women selected to be a part of this research who lived in rural areas. All the women included in this research were those who had reached puberty and had no history of breast cancer. Those females who have not reached their puberty were not a part of this research. Cronbach's alpha coefficient was found to be 0.5 for all questionnaire items. The questionnaire was used to collect data in small group settings, with the help of community workers who spoke with the women before the sessions began.

**Results:** Most of the females involved in this research were in the age group of 26 years to 35 years. Overall, 43% of the participants were students. A total of 60% of the women were unmarried.

Before the test, 274 females were aware of breast cancer, but after the test, the number increased to 398. Those who believed BSE was a valuable tool performed significantly better on the post-test. For BSE frequency, half of the participants increased their knowledge of monthly examinations, for the timing being shortly after the menstrual cycle, and for all three fundamental processes of BSE.

**Conclusion:** Prior to the intervention, women had little awareness and were unaware of BSE, putting them at a higher risk of developing breast cancer.

**Keywords:** breast self-examination, breast cancer, rural women, Pakistan

## INTRODUCTION

Breast cancer develops from the abnormal growth of cells in the breast [1]. It mostly affects women and is a leading source of illness and death around the world [2]. Breast cancer claimed the lives of around 627 thousand women worldwide (World Health Organization) [3]. According to the Global Cancer Statistics for 2018, breast cancer is the second most common cancer in women, trailing only lung carcinoma with a prevalence rate of 24.2% [4]. This cancer also has a high mortality rate of 15 deaths per 1000 cases [5]. Breast cancer is the most common cancer among women worldwide, followed by colorectal cancer and lung carcinoma.

Breast cancer is the leading cause of death and illness among women in low- and middle-income nations. According to World Health Organization data, Pakistan has a female breast cancer prevalence rate of 36.8%, making it the Asian country with the highest age-standardized incidence rate (ASIR) for this kind of cancer [6]. Breast cancer is caused by a combination of factors, including genetics, age, gender, high hormone levels, lack of parturition, individual lifestyle, less breastfeeding, and environmental factors. Nonetheless, the root cause remains unknown [7].

Despite having sufficient knowledge and a good attitude towards breast self-examination (BSE), urban women in Pakistan do not practice it. Women in rural areas, on the other hand, not only lack understanding about BSE but also have a negative attitude towards it, leading to delayed action for the majority of them. A study in Karachi, Pakistan, on BSE awareness and practices among young women found that, while they had a favorable attitude and understanding of BSE, their actual practice was inadequate [8]. Similarly, additional research on BSE awareness and practices in Pakistan demonstrates that women, despite knowing about it, do not engage in BSE [9, 10].

Women in rural areas have a negative impression about breast cancer, owing to the fact that the breast is frequently regarded as a sexual organ, creating a cultural taboo around addressing it. This bad attitude derives from a lack of understanding, restricted educational access, and general ignorance. As a result, raising education and awareness can aid in the practice of breast self-examination (BSE), which is critical in detecting breast cancer symptoms early. Previous research has found a link between BSE and breast cancer identification at an early stage [11]. We began this quasi-experimental study with the intention of increasing BSE awareness through training, with the goal of improving early breast cancer diagnosis rates and survival in Pakistan.

## METHODOLOGY

This study is quasi-experimental research. There were a total of 400 women selected to be a part of this research who lived in rural areas. Several factors were considered while calculating the sample size. Those factors include the percentage of women at their reproductive age, the total number of women in the Union Council, and the prevalence of breast cancer among Pakistani women. All the women included in this research were those who had reached their puberty and had no history of breast cancer.

**Exclusion criteria:** Those females who have not reached their puberty were not a part of this research.

We developed a questionnaire based on past studies. Using a mannequin and an information pamphlet based on World Health Organization recommendations, we taught women about breast self-examination. Prior to our main study, we conducted a test run with 30 women who were similar

to our main sample to ensure the reliability of our questionnaire. These 30 ladies were not included in the main study.

Cronbach's alpha coefficient was found to be 0.5 for all questionnaire items. The questionnaire was used to collect data in small group settings, with the help of community workers who spoke with the women before the sessions began. Each workshop was limited to 10 to 15 women and featured BSE instruction that included hands-on practice with a mannequin and the use of our self-developed brochure. The intervention lasted two months, with a four-week break between the pre-test and post-test phases, with the same questionnaire used in both.

SPSS version 25 was used to analyze the data. The categorical variables were described in terms of percentages and frequency. In order to check the difference in the knowledge and practice of BSE, a paired t-test was conducted. A significant p-value was considered to be less than 0.05.

## RESULTS

There were a total of 400 women included in this research who had reached puberty age and had no history of breast cancer. Table 1 shows the demographic data of the women involved in this research.

**Table number 1: demographic data of the women involved in this research.**

Variables	N	%
<b>Age (years)</b>		
• 14 to 25	32	8.0
• 26 to 35	194	48.5
• 36 to 45	98	24.5
• 46 to 55	48	12.0
• 56 to 65	20	5.0
• 65+	8	2.0
<b>Occupation</b>		
• Student	172	43.0
• Teacher	82	20.5
• Community worker	36	9.0
• Housewife	110	27.5
<b>Marital status</b>		
• Married	146	36.5
• Unmarried	240	60.0
• Divorced	12	3.0
• Separated	2	0.5
<b>Education</b>		
• Higher education	80	20.0
• Primary education	36	9.0
• Secondary education	206	51.5
• Higher secondary education	28	7.0
• Uneducated	50	12.5

Table number 2 shows the improvement in knowledge after intervention.

**Table number 2: improvement in knowledge after intervention**

Variables	Pre-test	Post-test
<b>Breast Cancer Knowledge</b>		
• Yes	274	398
• No	126	2
<b>Family history</b>		
• Yes	34	30
• No	366	370
<b>Relationship</b>		
• Cousins	6	6

● <b>Father</b>	1	1
● <b>Mother/Daughter</b>	3	3
● <b>Maternal relatives</b>	10	10
● <b>Paternal relatives</b>	14	14
<b>Source of information</b>		
● <b>Family/friends</b>	112	86
● <b>Media</b>	112	92
● <b>Training</b>	0	190
● <b>Hospital/Doctor</b>	34	24
● <b>No source of information</b>	126	0
● <b>Books</b>	16	8

Those who believed BSE was a valuable tool performed significantly better on the post-test. For BSE frequency, half of the participants increased their knowledge of monthly examinations, for the timing being shortly after the menstrual cycle, and for all three fundamental processes of BSE. Table number 3 shows the knowledge patients had related to BSE before and after the test.

**Table number 3: BSE knowledge before and after the test**

<b>Variables</b>	<b>Pre-test</b>	<b>Post-test</b>
<b>BSE a useful tool for early detection of breast cancer</b>		
● <b>Yes</b>	160	396
● <b>No</b>	240	4
<b>BSE Frequency</b>		
● <b>Daily</b>	46	18
● <b>Weekly</b>	103	98
● <b>Monthly</b>	102	270
● <b>Yearly</b>	13	4
● <b>No idea</b>	136	10
<b>BSE Time</b>		
● <b>After menstrual cycle</b>	52	308
● <b>Before menstrual cycle</b>	50	28
● <b>During menstrual cycle</b>	60	18
● <b>During pregnancy</b>	10	11
● <b>During breastfeeding</b>	56	26
<b>Methods of doing BSE</b>		
● <b>Feeling breast with hands</b>	106	46
● <b>Inspecting breast in mirror</b>	26	10
● <b>Feeling armpits with hands</b>	6	2
● <b>All first three options</b>	2	322
● <b>No idea</b>	112	10
● <b>Ultrasound/ Mammography</b>	148	10

## **DISCUSSION**

Breast cancer treatment becomes difficult in advanced stages, emphasizing the need for early detection of its signs and symptoms. Breast self-examination (BSE) is regarded as an effective, efficient, and cost-effective tool for detecting and diagnosing breast cancer in low- to middle-income nations [12, 13]. Surprisingly, many women, even those with a high degree of education, were unaware of the existence of breast cancer. Women with a family history of breast cancer showed some awareness of the disease and BSE in the pretest. Those who were aware of breast cancer, on the other hand, had a negative attitude towards performing BSE. Our findings are consistent with those of other studies involving populations with similar features [14, 15].

Breast cancer is becoming more common in less developed countries, such as Pakistan, owing to a lack of understanding about breast screening. Surprisingly, even when women are aware of breast cancer and have a family history of it, a significant number are unaware of breast self-examination (BSE). Similarly, a study conducted in Iraq showed a similar pattern, with women having information about breast cancer and appreciating its importance, reflecting the findings of our study [16].

During the initial assessment (pre-test) in our current study, there was a significant lack of both knowledge and actual practice of breast self-examination (BSE). However, during the subsequent evaluation (post-test), we noticed considerable improvements in both aspects. Following the dissemination of information on BSE, a separate research study in Ethiopia found a rise in the practice of BSE among midwifery trainees [17]. Similarly, post-test intervention research including Malaysian women revealed significant gains in their BSE knowledge and practice on a monthly basis [18].

Furthermore, another study in India looked at the assessment of breast cancer and BSE among young women, with participants reporting a willingness to practice BSE [19]. Significant differences in pre-test and post-test outcomes were seen, as in prior similar research.

This was research to actively address and reduce the incidence of breast cancer (BC). The post-test phase saw fewer dropouts, and having a large sample size benefited in determining the success of the intervention. However, it is worth emphasizing that we were unable to totally eliminate the likelihood of bias arising from sources of information other than our intervention. In Pakistani society, women living in rural regions are frequently hesitant and difficult to connect with for these types of activities. Our findings are consistent with those of other studies conducted in comparable circumstances [20].

## **CONCLUSION**

Prior to the intervention, women had little awareness of BSE, putting them at a higher risk of developing breast cancer. Breast self-examination (BSE) is a low-cost and effective approach to detecting breast cancer at an early and treatable stage.

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This study was conducted without receiving financial support from any external source.

## **Conflict in the interest**

The authors had no conflicts related to the interest in the execution of this study.

## **Permission**

Prior to initiating the study, approval from the ethical committee was obtained to ensure adherence to ethical standards and guidelines.

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