

# Knowledge and Practices of Breast Self-Examination (BSE) Among Urban Women of A Low-Resource Country Pakistan

Zohra Jabeen<sup>1</sup>, Sulhera Khan<sup>2</sup>, Farhat Jafri<sup>3</sup>, Amir Hussain Khan<sup>4</sup>, Marium Khan<sup>5</sup>, Nighat Shah<sup>6</sup>

## Abstract

**Objective:** To assess the knowledge, attitude & practices of breast self-examination among women residing in the district 'Central' of Karachi and to determine the knowledge, attitude and practices of breast self-examination among high risk Ca breast women residing in the district central of Karachi.

**Methods:** This descriptive, cross-sectional, questionnaire-based, study was carried out among women attending a charitable hospital in Karachi, in 2019. The data was collected through a convenience sampling technique, and was analyzed by using SPSS version 24.0. Descriptive statistics of socio-demographic variables were presented as mean  $\pm$  SD for continuous variables and frequency or percentages for categorical variables. The Chi-square test was used to test the association between knowledge, attitude and practice regarding Ca breast and breast self-examination, p-value <0.05 consider significant,

**Results:** The mean age of the 172 participants was 30.73 $\pm$ 6.84 years, 34.9% were educated with primary education, and 41.9% had 5-7 family members. 90.1% participants were married and 92.4% were housewives. All were Muslims. 65.7% females had heard of BSE and source of information was their family members. However, 50.6 % were practicing BSE, while 24.1% execute it monthly, 75.9% preferred to examine their breasts with fingers of the opposite hand, 77.3% of females agreed BSE was important for breast health. There was an association between age and practices of BSE and was 63.3% highest among participants aged 31-40 years and was lowest 42.7% among those between 20-30 years of age (p=0.041). About 75% of the females who were graduated, performed BSE as compared to only 40% uneducated females (p=0.270)

**Conclusion:** The practices of breast self-examination were low and there is dire need of implementation of health education programme on BSE for early detection of Ca breast. The practice of breast self-examination is low and required implementation of health education programme on BSE for early detection of Ca breast.

**Keywords:** Breast cancer, Breast self examination (BSE), Awareness, screening

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## Introduction

Internationally, carcinoma (Ca) of the breast is the most common cancer affecting women and the foremost cause of cancer-related deaths among females<sup>1</sup>. It is the most significant cause of morbidity and mortality among women in both developing

as well as developed countries. In 2018 about 2.1 million females were diagnosed with Ca breast, comprising nearly 1 in 4 cancer cases among women<sup>2</sup>. Its incidence in developed countries is higher due to early detection while mortality is highest in under-developed countries due to lack of resources for screening of Ca breast and its possible treatment. In developed countries mortality rate has been decreased by promoting the importance of early detection and regular screening programs, and improved therapeutic methods<sup>3</sup>. The incidence of early-onset Ca, breast is rising in women under 40 years of age and facts prove that early onset of Ca. breast is more aggressive than late onset of the disease in women >40 years of age<sup>4</sup>.

<sup>1,3</sup> Department Of Community Medicine, Karachi Medical and Dental College

<sup>2</sup> Jinnah Post Graduate Medical Centre

<sup>4</sup> Sindh Government Children Hospital-Poverty Eradication Initiative

<sup>5</sup> Dr. Ruth K. M. Pfau Civil Hospital

<sup>6</sup> Appna Institute of Public Health, Jinnah Sindh Medical University

**Correspondence:** Dr. Zohra Jabeen  
Department Of Community Medicine,  
Karachi Medical and Dental College  
Email: zohraj62@gmail.com

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The screening tests for Ca breast are monthly BSE, Clinical Breast Examination (CBE) and mammography. Early detection is essential to better disease outcomes. The BSE method was accepted by the National Cancer Institute and the American Cancer Society (ACS)<sup>5</sup>.

-Breast self-examination (BSE) is a Ca. Breast screening method and women should begin BSE in their twenties, and they should be aware of the normal shape of their breasts if they observe any obvious changes in their breasts, any lump, distortions or swelling, they should discuss it with their healthcare providers<sup>6</sup>. According to the American Cancer Society (ACS), BSE is a choice for females and advises that women should begin BSE in their twenties. It is pragmatic as more than 65% of Ca. breast is detected by breast self-examination<sup>7</sup>.

Pakistani women develop Ca breast at earlier ages at least 10 years before as compared to western women with late diagnosis. Pakistan is an underdeveloped country with limited resources and the rate of Ca breast is on the rise. One in every nine females is affected by Ca breast in her lifetime which is the highest incidence in Asia. However, Pakistan is a developing country with limited resources and low literacy; mammography is not widely available in country. BSE is presently only a screening method. It is not a diagnostic tool<sup>8</sup>. The contributing factors to a high prevalence of Ca breast are both modifiable and non-modifiable factors. Non-modifiable factors are female, older age, family history, genetic mutations, reproductive history (birth of the first child after 30 years of age) density of breast tissue. Modifiable factors are use of some drugs like intake of diethylstilbestrol during pregnancy might be associated with a greater risk of breast cancer in children, physical activity reduced the risk of Ca. breast in females, Smoking and intake of Processed Food/Diet<sup>9</sup>.

BSE is a relatively simple, convenient, cost-effective noninvasive screening test for the recognition of Ca breast at the initial stages. This can be carried out by women themselves without the help of health experts and does not require any special machines. Researchers have reported sensitivity,

specificity and predictive value of BSE to detect breast cancer of 58.3%, 87.4% and 29.2% respectively<sup>10</sup>. (10) At present the burden of disease is increasing worldwide. Yet, no practical strategy is available for the primary prevention of Ca breast. Hence the aim of screening (secondary prevention) is early detection and treatment of it before lymphatic and hematogenous metastases. Secondary prevention is the early detection and prompts treatment of the Ca. breast. BSE is easy and simple screening technique for detection of any lump/ any changes in breast skin, and requires only five minutes to carry out BSE regularly. There is a positive association between practices of BSE and the detection of disease in its initial stage. Most breast tumors are self-recognized by BSE performers who perform them routinely<sup>11</sup>. (11)

This study was carried out to find out the frequency of breast self-examination and knowledge about Ca. breast among women of Karachi.

Objective of the study was to assess the knowledge, attitude & practices of breast self-examination among women residing in the district central of Karachi and to determine the knowledge, attitude & frequency of breast self-examination among high risk Ca breast women residing in the district central of Karachi. This would help in devising health education intervention for women performing BSE.

### **Subjects and Methods**

The study was conducted among women attending the Gynecology and Pediatrics outpatient departments (OPD) of a charitable hospital situated in North Karachi, Pakistan for the period of 6 months in 2019 after getting ethical approval from Ethical Review Committee (IRB), Jinnah Sindh Medical University (JSMU). It was a descriptive cross-sectional study. The sample size was calculated by Raosoft software assuming a margin of error of 5%, with a two-sided confidence level of 95%, and a prevalence of 12%. The required sample size came out to be 161<sup>12</sup>. Assuming a refusal rate of 15%, 172 potential subjects were approached. A total of 172 females 20-60 years of age, who were

willing to take part in this study with written consent were included and females not willing to participate or those who had any breast disease like fibroadenoma, a breast cyst, other benign fibrocystic masses were excluded. The data was collected through a convenience sampling technique. Information was gathered with a pretested close-ended structured questionnaire. The questions were designed to determine the level of awareness, knowledge, attitudes, and practices about Ca breast and BSE. The structured questionnaire had three sections: sociodemographic variables, awareness and practice assessment. The questionnaire was initially constructed in English language and for the understanding of the participants was later translated into Urdu. To sustain the validity of the questionnaire it was back-translated into English. Confidentiality was maintained and no incentive was proposed to them for participation in the study. Data was entered and analyzed by using SPSS version 24.0. Descriptive statistics of socio-demographic variables were presented as mean  $\pm$  SD for continuous variables and frequency or percentages for categorical variables. Categorical data were divided into categories of sex, educational status, family size and employment status. The Chi-square test was used to test the association between knowledge, attitude and practice regarding Ca breast and breast self-examination, p-value  $<0.05$  was considering significance.

## **Results**

Table 1 demonstrates the socio-demographic characteristics of participants. The mean age of the participants was  $30.73 \pm 6.84$  years (range was 20-45 years), of these 59.9% (n= 103) were aged between 20-30 years. Most of the females 34.9% (n= 60) were educated with primary education while 33.1% (n=57) had no formal education. 41.9% (n=72) participants had 5-7 family members. Majority of participants 90.1% (n=155) were married and 92.4% (n=159) were housewives. All the participants were Muslims.

Table 2 shows the comparison of overall knowledge regarding Ca breast and BSE between participants who had and had not performed BSE. Most

of the participants 45.9% (n=79) had the opinion that Ca breast is preventable and 62.8 % (n=108) did not know how it could be prevented. It was seen that 68.0% (n=117) had a view that Ca breast can be cured and 48.3% (n=83) had a belief that it could be cured with medicines. Most of the participants 65.7% (n=113) had heard of BSE and most of them 65.7% (n=113) had acquired knowledge regarding BSE from their family members.

Table 3 elaborated that out of 172 participants 50.6 % (n=87) were practicing BSE. The mean age of participants to start BSE was  $27.20 \pm 6.27$  years (range was 18-45 years). It was observed that 51.7% (n=45) participants were performing BSE weekly, while 24.1% (n=21) performed it monthly. Most of the females, 36.0% (n=62) preferred to carry out BSE in the bathroom while 5.8% (n=10) performed it when lying on the bed. The majority 87.4% (n=76) carried it out on any day of the month and only 5.7% (n=5) performed BSE after menses. Most of the females 75.9% (n=66) preferred to examine their breasts themselves by palpating with fingers of the opposite hand 19.5 % (n=17) with palms. It was seen that 77.3% (n=13) of females agreed BSE was important for breast health and early detection of breast pathology.

Table 4 demonstrates that most of the high-risk participants had positive attitudes towards BSE and performed it regularly. Out of the 172 participants, 18.6 %, (n=32) participants had a positive family history of Ca breast, among them, 78.1% (n=25) regularly performed BSE. Out of the 172 participants, 15.6% (n=27) were postmenopausal and among them 63.0% (n=17) performed BSE. Out of the 15.6% (n=27) postmenopausal women, 25.9% (n=7) were those who gained weight after menopause and only 71.4% (n=5) practiced BSE. Out of the 172 participants, 10.4% (n=18) were those females who used oral contraceptive pills for a long period and among them, 66.7% (n=12) examine their breasts regularly.

Table 5 shows the relationship between practices of BSE by age and level of education. The practice of BSE was highest among participants aged 31-40 years 63.3% (n =31) and was lowest

42.7% (n=44) among those between 20-30 years of age ( $p=0.041$ ). The graduate participants more commonly performed BSE 75% (n=6) as compared to uneducated participants 40.4% (n=32), ( $p=0.270$ ).

**Table 1.** Socio-demographic characteristics of participants (n=172)

Variable	N	%
Age in years (mean±SD)	30.73±6.84	
<b>Age group (years) (n=172)</b>		
20-30	103	59.9
30-40	49	28.5
>40	20	11.6
<b>Marital status (n=172)</b>		
Married	155	90.1
Widow	17	9.9
<b>Level of Education (n=172)</b>		
Illiterate	57	33.1
Primary	60	34.9
Metric	31	18.0
Intermediate	16	9.3
Graduate	8	4.7
<b>Number of households (n=172)</b>		
2-4	70	40.7
5-7	72	41.9
8-10	19	11.0
>11	11	6.4
<b>Employment status(n=172)</b>		
Housewife	159	92.4
Working women	13	7.6

**Table 2.** Comparison of overall knowledge regarding Ca breast and BSE between participants who had and had not performed BSE (n=172)

Variables	Performed BSE n(%)	Not performed BSEn(%)	Total n (%)	p-value
Can Ca breast be prevented? (n=172)				
Yes	57 (65.5)	22 (25.9)	79 (45.9)	0.001 <sup>a</sup>
No	3 (3.4)	4 (4.7)	7 (4.1)	
Don't know	27 (31.0)	59 (69.4)	86 (50.0)	
How can Ca breast be prevented? (n=172)				
Dieting	1 (1.1)	0 (0)	1 (0.6)	0.001 <sup>a</sup>
Vaccination <sup>3</sup> (3.4)	6 (7.1)	9 (5.2)	15 (8.6)	
Breast self-examination	48 (55.2)	6 (7.1)	54 (31.4)	
Don't know	35 (40.2)	73 (85.9)	108 (62.8)	
Can Ca breast be cured? (n=172)				
Yes	75 (86.2)	42 (49.4)	117 (68.0)	0.001 <sup>a</sup>
No	1 (1.1)	1 (1.2)	2 (1.2)	
Don't know	11 (20.8)	42 (79.2)	53 (30.8)	
How can Ca breast be cured? (n=172)				
Medically	50 (57.5)	33 (38.8)	83 (48.3)	0.001 <sup>a</sup>
Spiritually	5 (5.7)	4 (4.7)	9 (5.2)	
Breast self-examination	20 (23.0)	3 (3.5)	23 (13.4)	
Don't know	12 (13.8)	45 (52.9)	57 (33.1)	
Have you heard about breast self-examination before?				
Yes	76 (87.4)	37 (43.5)	113 (65.7)	0.001 <sup>a</sup>
No	11 (12.6)	48 (56.5)	59 (34.3)	
Source of information regarding BSE? *				
Home				
Yes	56 (64.4)	20 (25.3)	113 (65.7)	0.001 <sup>a</sup>
No	31 (35.6)	59 (74.7)	90 (54.3)	
Friends				
Yes	17 (19.5)	9 (11.4)	26 (15.7)	0.149 <sup>a</sup>
No	70 (80.5)	70 (88.6)	140 (84.3)	
Media				
Yes	19 (21.8)	11 (13.9)	30 (18.1)	0.186 <sup>a</sup>
No	68 (78.2)	68 (86.1)	136 (81.9)	

**Table 3.** Practice of breast self-examination among participants

Variables	N	%
Can you perform a breast self-examination? (n=172)		
Yes	87	50.6
No	85	49.4
Age of starting BSE (years)	27.20±6.27	
How often it should be performed? (n=87)		
Daily	2	2.3
Weekly	45	51.7
Monthly	21	24.1
Yearly	19	21.8
At what time BSE should be done? (n=87)		
Before menses	5	5.7
During menses	1	1.1
After menses	5	5.7
Any day of the month	76	87.4
Where do you perform BSE? *(n=87)		
In front of the mirror	1	0.6
While bathing	62	36.0
On bed	10	5.8
Anywhere	15	8.7
How do you do BSE (n=87)		
By palpating with fingers	66	75.9
By palpating with palm	17	19.5
Anyhow	4	4.6
Is BSE important for breast care? (n=172)		
Yes	133	77.3
No	25	14.5
Don't know	14	8.1

(\*Multiple choice question)

**Table 4.** Attitude towards BSE of those respondents having positive risk factors

Variables	Practices of breast self-examination		p-value
	Yes, n (%)	No, n (%)	
Positive family history of Ca breast (n=32)	25 (78.1)	7(21.9)	0.001 <sup>a</sup>
Postmenopausal women (n=27)	17 (63.0)	10(37.0)	0.001 <sup>a</sup>
Weight gain after menopause (n=7)	5 (71.4)	2 (28.6)	0.001 <sup>a</sup>
Prolong use of oral contraceptive pills (n=18)	12 (66.7)	6(33.3)	0.001 <sup>a</sup>

(a = Chi-square test as a test of significance)

**Table 5.** Attitude towards breast self-examination by age and level of education among participants

Characteristics	Practices of breast self-examination		p-value
	Yes n (%)	No n (%)	
Age group (years) (n=172)			
20-30	44 (42.7)	59 (57.3)	
31-40	31 (63.3)	18 (36.7)	0.041 <sup>a</sup>
>40	12 (60.0)	8 (40.0)	
Total	87(50.6)	85 (49.4)	
Level of education (n=172)			
Illiterate	23 (40.4)	34 (59.6)	
Primary	32 (53.3)	28 (46.7)	0.270 <sup>a</sup>
Metric	18 (58.1)	13 (41.9)	
Intermediate	8 (50.0)	8 (50.0)	
Graduate	6 (75.0)	2 (25.0)	
Total	87 (50.6)	85 (49.4)	

(a = Chi-square test as a test of significance)

## Discussion

The previous studies done in Pakistan showed the decreased practice of BSE among females ranging from 23% to 57%<sup>13</sup>. This study evaluates the knowledge and practices of BSE and shows that the positive attitude of the participants towards BSE was 50.6%, which is similar to a study conducted in Baluchistan Pakistan in 2020 showed that 50.5 % women were practicing self-breast examination<sup>14</sup> and lower than 87.2% in a study conducted by Ahmad A et al.<sup>15</sup> This discrepancy might be because our participants were not highly educated. Only 34.9% of females had received primary education whereas, 33.1% were illiterate, and only 4.7% had graduated.

Ca breast awareness and BSE is associated with the level of education of the participants. In our study, 75% of graduates performed BSE and these findings are alike the results of studies carried out in Karachi by Shahbaz et al.<sup>12</sup> and in Rawalpindi by Gilani et al<sup>16</sup>. (16).

The mean age of our study participants was comparable with the mean age of a study conducted in Karachi Pakistan by A Ali et al<sup>17</sup>.

The practice of BSE was highest among women of 31-40 years of age in our study however; BSE practice was highest under 20 years of age among the participants of a study done in Karachi<sup>15</sup>.

In this study only 24.1% participants performed BSE monthly. Our study results are comparable with a study conducted in Karachi by Rasool et al in 2019 reported that 24.9% participants performed BSE monthly<sup>8</sup>. Our results inconsistent to another study carried out by Das AM et al. in India revealed that only 29.8% of their study participants performed BSE monthly<sup>18</sup>. (18) This study suggested that only a small percentage of females perform BSE monthly which might be the reason for the late detection of Ca breast and its increased prevalence in Pakistan. A small number of our study participants practices BSE after menses and majority of them performed BSE while bathing. Batool T

et al. revealed in their study that 20% of the participants examined their breast after menses and 40% performed it in front of the mirror<sup>19</sup>.

Our study suggested that 65.7% of females acquired knowledge regarding BSE from their family members, a similar finding revealed by Gilani SA et al. in their study<sup>16</sup> (16) but Rasool M S et al. proposed that media was the major source of BSE knowledge among their participants<sup>8</sup>.

Among our study females, it was seen that 18% of females had a family history of Ca breast out of which 78% examined their breasts themselves. Our results consistent with a study done by Freitas AG et al<sup>20</sup>. This study also reflected the high prevalence of Ca breast, as 18.6 %, and participants had a positive family history of Ca breast, slightly less prevalence 17.33% was found in other study conducted by Naqvi AA et al in Pakistan<sup>21</sup>.

Our study participants believed that BSE can help in early recognition of breast disease our finding in Congruent to work by Asmare K et al in Ethiopia<sup>22</sup>.

Our study results revealed that participants had insufficient knowledge of Ca. breast and BSE. Only half of the participants performed BSE this might be due to lack of awareness about the steps of BSE. This may be the main reason of increased mortality among Ca. breast patients leading to late detection and negative outcomes. Pakistan is a low resource country and prevalence of Ca. breast is increasing due to lack of knowledge about screening methods of Ca. breast, Despite having the awareness regarding Ca. breast and positive family history most of the females don't know BSE, similar results were reported in an another study conducted in Pakistan<sup>23</sup>.

The main issue accountable for this ignorance of Ca breast and BSE is lack of education along with the stance of society which considers it a disgraceful secret. More energetic efforts are required to aware the community regarding this critical issue about open discussions.

## Conclusion

The practice of breast self-examination is low in Pakistan and required implementation of health education programme on BSE for early detection of Ca breast. It is the responsibility of government and health care providers to raise the awareness of Ca breast in October that is the month of International Breast Cancer Awareness Month through social media and primary health care centers.

## Conflict of Interest

Authors have no conflict of interest and no grant/funding from any organization.

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