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Research Article

**AWARENESS AND PRACTICES OF BREAST CANCER
PREVENTIVE MEASURES AMONG WOMEN OF LAHORE,
PAKISTAN: A CROSS-SECTIONAL SURVEY**¹Mahwish Javeed, ²Razia Bano, ³Abida Shafiq, ⁴Samra Sardar, ⁵Dr. Khizar Nabeel Ali¹Nursing Lecturer, Sharif College of Nursing Lahore, ²Principal, Sharif College of Nursing Lahore, ³Nursing Lecturer, Sharif College of Nursing Lahore, ⁴Charge Nurse, General Hospital Lahore, ⁵Senior Lecturer, Alshifa School of Public Health.**Abstract:**

Background: Breast cancer is a top most health problem worldwide. Since Pakistan has very high occurrence of breast cancer in Asia and the major factor behind this high rate is lack of awareness and delay in diagnosis and treatment, any down-staging due to early detection will considerably lessen morbidity as well as treatment cost.

Objective: The purpose of this study was to determine the knowledge of breast cancer risk factors, early threatening signs and screening practices among women and association between socio-demographic variables with breast self-examination performance.

Methods: This was a cross sectional study carried out in Lahore, Pakistan with 112 women, which were selected randomly from two selected towns of Lahore. Data were collected by using structured questionnaire. SPSS version 19 was used to analyze the data. Chi square was used to discover the association between socio-demographic variables and BSE practices.

Results: Overall awareness of breast cancer risk factors was 32%. Awareness about warning signs of breast cancer was 45%. Seventy two percent women never heard about breast self-examination. Approximately 78% women never performed breast self-examination. Eighty nine percent women did not know the correct technique of performing BSE. Age, education level, occupation and family income were significantly associated ($p < 0.001$) with BSE performance in this study.

Conclusion: This study has shown insufficient knowledge of breast cancer as well as poor screening practices among women which confirms the fact that it is essential to educate the woman about breast cancer. Awareness of particulars about breast cancer will help us to accomplish the common goal- prevention.

Keywords: Breast cancer, BSE (Breast self-examination), CBE (Clinical breast examination), Mammography, awareness, practices, Lahore, Pakistan.

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INTRODUCTION:

Breast cancer is a malignant tumor that develops in breast due to uncontrolled growth of common targets including lactating cells, ducts and lobules while fibrous and fatty connective tissues of breasts represent less common targets. Breast cancer has always been known to mankind while Egyptians being the first one to record the disease some 3500 years ago [1]. Seen mostly in developed countries yet the mortality toll due to breast cancer is 60% in developing countries [2]. Contributing factors for breast cancer mortality include, budgetary cuts on health, lack of cancer institute's, lack of trained oncology professionals, poor literacy levels, lack of awareness regarding disease and lack of efforts by government [1].

Breast cancer indeed is a public health issue in Pakistan, resulting in loss to life, financial issues, social and psychological stress due to its high incidence and prevalence [2]. Globally, it is most common life threatening illness in females [3]. Incidence of breast cancer saw a rise in 20th century, particularly in Westernized Nations, attributed to increased awareness and screening mammograms. However, the start of the 21st century the incidence rates declined, attributed again to the level of awareness and mammography, in Western Nations [4]. Geographically highest rates of prevalence were observed in North American, Northern and Western Europe, New Zealand and Australia⁵. Intermediate trends were observed in Eastern and Central Europe, while the rates in Asia and Africa were lowest. Ethnic and racial variances suggest that the Asians, Hispanics and American Indians had lower prevalence of Breast Cancer than Non-Hispanic and white women [5]. Comparison with other nations yielded more frequent prevalence of breast cancer in Pakistan than any other Asian country⁶. The incidence rate for Pakistani women is 50/100,000 which is even greater than India 19/100,000 [6]. The reason can be attributed to ignorance, low socio-economic status of women, lack of awareness, and lack of open discussion about breast cancer as it is considered as taboo in conservative societies. The high mortality in Pakistan can also be majorly attributed to undiagnosed and untreated cases. Only 9.5% of urban and 4.8% of rural women avail clinical breast cancer screening. While the screening breast cancer radiological services in this respect are present only for 2.5% Urban and 0.7% rural women which is an alarming situation that needs to be addressed properly [7].

Agha Khan University reported that around 97% women need awareness campaigns regarding breast

cancer while most cases appear in the later stages of disease in and majority of this spectrum is comprised of the women appearing from lower socio-economic classes [8]. A research in a Rawalpindi hospital noted that 46% women had knowledge regarding the issue, which is less when compared to awareness level of Indian and Iranian women, 56% and 64% respectively⁷. Increasing age and previous familial history indeed serve to increase the susceptibility of developing breast cancer in some stage of life while breastfeeding is as a protective factor and alcohol consumption significantly increases the risk of breast cancer [9]. Warning signs of this disease includes growth lumps in all parts of the breast, skin irascibility or dimpling, pain in the breast and nipple, thickening of breast, turning in of the nipple and discharge from nipples [5].

Breast self-examination (BSE), Clinical breast examination (CBE) and mammography are widely recognized practices of breast cancer detection and screening [9]. A study from Pakistan showed only 35% female nurses with good knowledge about risk factors of breast cancer [10]. Another study revealed that over 50% females knew the symptoms of breast cancer, more than 50% females ensured knowledge of diagnostic and treatment modes and above 90% females were in favor of visiting a doctor if the ever felt a lump in their breast. Even though more than 50% participant knew the majority of risk factors only 28.3% practiced breast self-examination [11].

The breast cancer awareness in developing states is not enough [9] as only a small number of females in these countries have sufficient information about the risks and screening methods. The unfamiliarity and irrational vision about breast cancer in women are accountable for the deleterious view toward treatment and screening of the disease in early stage [11]. So, it is essential to measure the level of awareness about breast cancer in our population. The general aim of this study was to determine awareness of breast cancer risk factors, initial threatening signs and screening practices among women of Lahore, Pakistan.

MATERIAL AND METHODS:

The study design was descriptive and cross-sectional. Duration of the study was three months (from June 2015 to August 2015). Lahore is the capital of Punjab, Pakistan with an approximate population of 9 million. The target population was women of age 18 years old or above. Women with any previous history of breast cancer were excluded from study along with those who refused to participate. From a list of all towns of Lahore, 2 towns were selected using simple random

sampling and then by the application of multi-stage sampling one block was selected from each town. In next phase two streets were selected randomly from each block and via random selection houses were selected to collect data. Any household that refused to participate was skipped and next household was selected. Taking breast cancer awareness percentage as 35% [12] with 5% margin of error, 1.96 and 95% C.I, data were collected from 112 respondents, 56 from each block and only one female who met inclusion criteria was included from one selected house. The data were collected with the help of interview-administered questionnaire.

Upon comprehensive literature review available on breast cancer's risk factors, warning signs and comment methods of early detection, a questionnaire was designed as a data collection tool for this study. It has five sections i.e. demographic variables, knowledge about breast cancer risk factors, knowledge of early warning signs, knowledge of screening methods, and knowledge of screening practices respectively. The responses for knowledge assessment sections were coded as No=0, Don't know=1 and Yes=2. Informed consent was taken along with explanation of all possible benefits of the research,

along with assurance of privacy and confidentiality. Pilot study was conducted on 10% of sample size that resulted in minor changes in questionnaire. Data were analyzed using SPSS version 19.0. Descriptive analysis was done with frequencies and percentages to analyze qualitative variables while mean, standard deviation and range was used to describe quantitative (continuous) variables. Inferential statistics was done with the help of chi square test of independence with p-value<0.05 taken as significant.

RESULTS:

Out of 112 respondents, women of age 41 to 50 constituted 38.4%, followed by 33.9% (N=38), ranging between ages from 31-40. Education was another important variable with 26% women having primary education and only 16.0% (N=18) women had degree of graduation. The proportion of married women accounted for 85.0% (N=95), previous history of breast cancer among family members were found in only 11.61% (N=13) of the respondents. Occupationally, it was found that majority of the respondents were housewives, i.e., 73.0%. Thirty four percent respondents had 21,000-30,000 Rs. as their family's monthly income.

Table 1 Demographic Profile of the Respondents

S.no	Variable	N (%)
1.	Age of Respondents	
	18-20	3(3)
	21-30	26(23.2)
	31-40	38(34)
	51-50	43(38)
	More than 50	2(1.8)
2.	Level of Education	
	Illiterate	26(23)
	Primary	29(26)
	Middle	6(5)
	Matriculation	33(30)
	Graduation and Above	18(16)
3.	Married	
	Yes	95(85)
	No	17(15)
4.	Previous Family History of Breast Cancer	
	Positive	13(12)
	Negative	99(88)
5.	Occupation	
	Housewives	82(73)
	Private Company Jobs	2(2)
	Doctors/Nurses	2(2)
	Teachers	10(9)
	Others	16(14)
6.	Family Monthly Income (Rs.)	

Less than 10,000	13(11.6)
10,000-20,000	23(20)
21,000-30,000	38(34)
31,000-40,000	19(17)
41,000 and above	19(17)

Awareness of Breast Cancer's Risk Factors:

Overall awareness of breast cancer risk factors was found to be 32%. Age was perceived as risk factor by only 34.8%(N=39) of the women, sedentary lifestyle as a risk factor was known to 9.8%(N=11) respondents, later stages of menopause by 6.3%(N=7) women. However positive history of breast cancer in the family was most known risk factor by

68.8%(N=76) women followed by no breastfeeding practices at 58.0%(N=65) and alcohol consumption at 54.5%(N=61) women. Race and ethnicity was perceived a risk factor by 48.2%(N=54) women and nuli-parity and menarche was known as risk factor for breast cancer by only 17.0%(N=19) and 9.8%(N=11) respondents respectively.

Table 2 Awareness of Breast Cancer's Risk Factors

Sr. No.	Variable	N(%)
1.	Increasing Age (years)	39(34.8)
	Yes	33(29.5)
	No	40(35.7)
	I don't know	
2.	Alcohol consumption	
	Yes	61(54.5)
	No	21(58.8)
3.	I don't know	30(26.8)
	Heredity/positive family history	
	Yes	76(67.9)
4.	No	07(6.3)
	I don't know	29(35.9)
	Race/Ethnicity	
5.	Yes	54(48.8)
	No	32(28.6)
	I don't know	26(23.2)
6.	Early onset of menarche	
	Yes	11(9.8)
	No	39(34.8)
7.	I don't know	62(55.4)
	Late menopause	
	Yes	7(6.3)
8.	No	43(38.4)
	I don't know	62(55.4)
	First child at late age	
9.	Yes	15(13.4)
	No	39(34.8)
	I don't know	58(51.8)
10.	Nuliparity	
	Yes	19(17.0)
	No	49(43.8)
11.	I don't know	44(39.3)
	No breast feeding	
	Yes	65(58.0)

	No	29(25.9)
	I don't know	18(16.1)
10.	Inactivity/sedentary life style	
	Yes	11(9.8)
	No	44(39.3)
	I don't know	57(50.9)
11.	High Fat diet	
	Yes	12(10.7)
	No	34(30.4)
	I don't know	66(58.9)
12.	Cigarette smoking	
	Yes	65(58.0)
	No	13(11.6)
	I don't know	34(30.4)

Overall awareness level of breast cancer risk factors = $\frac{\text{Total no. of correct answers}}{\text{Total no. of responses}} \times 100$

$$= \frac{435}{1344} \times 100 = 32\%$$

Awareness of Early Warning Signs:

The overall awareness of early warning signs of breast cancer was recorded at 45%. Lump in the breast was perceived as warning sign by 91.1%(N=102) of the women, variation in breast-size and shape by 43.8%(N=49) women. Discharge or blood from breast was reported as early warning sign of breast cancer by

40.0% (N=45) respondents and 55.4% women reported dimpling of the breast skin as early warning sign. Only 35.7%(N=40) women were aware of the weight loss as warning sign and same proportion of women believed inversion of nipple as an early warning sign of breast cancer.

Table 3 Awareness of Early Warning Signs

S.No.	Variable	N(%)
Painless breast lump/thickening	Yes	102(91.1)
	No	10(8.9)
	I don't know	0(0)
Change in the breast size and shape	Yes	49(44)
	No	37(33)
	I don't know	26(23)
Discharge or blood from the nipple	Yes	45(40.2)
	No	35(31.3)
	I don't know	32(28.6)
Inversion/pulling in of the skin	Yes	40(35.7)
	No	38(33.9)
	I don't know	34(30.4)
Redness or flaky skin in nipple region	Yes	19(17)
	No	54(48.2)
	I don't know	39(34.8)

Weight loss	Yes	40(35.7)
	No	39(34.8)
	I don't know	33(29.5)

Overall awareness level of breast cancer warning signs = $357/784 \times 100 = 45\%$

Awareness of Screening Methods :

Awareness about different methods of breast cancer screening was recorded. It was found that 35.7%(N=40) of the women did not know about any screening method and only 20%(N=22) women were aware of all the screening methods. Regarding breast self-examination (BSE) 25.4%(N=28) were aware of

it, 77.7%(N=87) women never performed BSE and 86.6%(N=97) women did not know the correct technique of performing BSE. While mammogram was perceived as screening method by only 9.8%(N=11) women. The study results also found that only 34%(N=38) women were aware of clinical breast examination (CBE).

Table 4 Awareness of Screening Methods

Method	N(%)
Heard about BSE?	
Yes	28(25.4)
No	84(74.6)
Heard about Mammogram	
Yes	11(9.8)
No	101(90.2)
Have heard about Ultrasound as screening method?	
Yes	20(17.9)
No	92(82.1)
Had knowledge about CBE and that it should be done by a health professional	
Yes	38(34.0)
No	74(66.0)

Practices of Breast Self-Examination:

The research results found that approximately 78% women never performed breast self-examination and 98% never performed CBE. Eighty nine percent women did not know the correct technique of performing BSE. Sixty four percent respondents said that they didn't perform BSE because they don't know

how to perform (Table 5). Respondents when asked about reasons for not practicing BSE, 71% said that they don't know how to perform followed by 22% who said that they are careless towards this and remaining reported that they don't have this problem so why would they do this.

Table 5: Practices of screening methods

Variable	Percentage (%)
BSE	
Have you ever performed BSE?	
Yes	25 (22.3)
No	87 (77.7)
Did you know the correct technique of performing BSE?	
Yes	15 (13.4)
No	97 (86.6)
How often do you perform BSE?	
Monthly	17 (15.2)
Every six month	11 (9.8)
Never	84 (75)
CBE and mammogram	
Have you ever had CBE and mammogram performed on you?	
Yes	
No	2 (1.8)
	110 (98.2)

Inferential Results:

The chi-square test and Fisher's exact test (where the cell count of BSE practice was less than 5) was used to find the association between the BSE practice and different demographic variables. This study found that women of age 18-30 years were the most to perform BSE i.e., 55.2% (N=16). This age group showed statistically significant association with BSE performance [$\chi^2=29.1$, $df=2$, $p<0.001$].

Women with graduation or above education were performing the most BSEs. i.e., 60% (N=21), this claim was found to be statistically significant as well [$\chi^2=42.3$, $df=2$, $p<0.001$]. Teachers and health professionals were performing the most BSEs in occupational variable class which accounted to 66.7% (N=8) [$\chi^2=16.7$, $df=2$, $p<0.001$].

Variables		Performed BSE		Chi-Square (DF)	P-value
		Yes	No		
Age	18-30 Years	16 (55.2)	13 (44.8)	29.11(2)	<0.001
	31-40 Years	0(0)	38 (100)		
	More than 40 Years	9 (20)	36 (80.0)		
Education	Illiterate	0 (0)	27(100)	42.33(2)	<0.001
	Up-toMatric	4 (8)	46(92)		
	Graduation and Above	21(60)	14(40)		
Occupation	House wife	12(16.6)	7(85.4)	16.71(2)	<0.001
	Teachers and health Professionals	8(66.7)	5(38.4)		
	Private company jobs and others	5(29.4)	12(70.5)		
Income	Less than 30,000	4(5.4)	70(94.6)	35.99(1)	<0.001
	>31,000	21(55.3)	17(44.7)		
*Family History of Breast Cancer	Positive	2(15.4)	11(84.6)	0.41(1)	p=0.523
	Negative	23(23.2)	76(76.8)		
*Marital Status	Single	2(11.8)	15(88.2)	1.29 (1)	p=0.256
	Married	23(24.2)	75(75.8)		

*Fisher's exact test reported

DISCUSSION:

For effective execution of interventions for controlling breast cancer, evaluation of public awareness about breast cancer is of fundamental importance [13]. Early detection of breast cancer is a necessity since there are no recognizable methods of avoiding it. Promoting consciousness about early detection is the chief objective of breast cancer awareness plans in developing countries [13]. The purpose of this study was to evaluate the awareness level of breast cancer's risk factor, early warning signs, knowledge about screening methods and testing of BSE in correspondence with various demographic variables among women of Lahore, Pakistan.

Total awareness of breast cancer risk factors was recorded to be 32%. These findings were further reinforced by the study of Maqsood and his companions which shows awareness level among women admitted in tertiary care hospitals of Lahore 35% of the women were aware of only two major risk factors [12]. From the findings the least known warning sign of breast cancer was redness or flaky skin in nipple region followed by inversion/pulling in of the skin. Grunfeld et al. (2002) also found same results that only few women were aware of non-lump symptoms of breast cancer such as dimpling of the breast skin, inversion/pulling in of the nipple, and scaling/dry skin in the nipple region. Overall awareness of early warning signs was recorded as 45% in this study, this finding was supported by a study about awareness of early warning signs²but are contrasted by finding of another study which revealed awareness about early warning signs to be 70% [14]. In our study we found that 35.7% of the women were not aware of any screening practices. The awareness level of mammography as screening method in our study (10%) was at disparity with a study [15] where participants showed relatively higher awareness level about mammography as screening modality.

The knowledge about BSE as a screening method was also lower than the study done by Okobia et. al¹⁶ where 87.2% women were aware of the BSE as screening method. In our study it was found that even though 27.6% women had heard of BSE only 22.3% women had practiced it. These findings are supported by a study [15] which reported that 37% of the population practicing BSE. Education levels, age, occupation and family monthly income were found to be significantly associated with the practices of BSE however previous positive family history of breast cancer and marital status were not linked to BSE performance. These findings are partially supported by a study [16] in which education and occupation were significantly associated with BSE practice.

The study is unique because it encompassed almost all aspect of awareness regarding breast cancer. The study also included information about practices of breast screening methods. The limitation is the financial and time constraints that resulted in small sample size.

CONCLUSION:

This study revealed poor awareness of breast cancer risk factors, early warning signs as well as screening methods among study women which substantiates the fact that it is crucial to educate the woman about the prevention techniques. Knowledge of the causal factors of breast cancer is essential which will lead to early detection, timely treatment and good prognosis. Awareness should be disseminated through print and visual media to provide awareness in general female population. All women specifically those with positive family history should be stimulated via effective communication and awareness campaigns to visit doctors for a breast checkup or mammogram to rule out the disease. It is also equally important to improve awareness about detection methods of breast cancer.

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