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The adequate breast cancer knowledge assessment: A cross-sectional study done among nonmedical women of Karachi

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Abstract:

BACKGROUND: Breast cancer is the most frequently diagnosed cancer and the leading cause of cancer death in females' worldwide. Pakistan has higher incidence of the disease than the neighboring countries and one in every nine Pakistani women suffers from breast cancer which is one of the highest incidence rate in Asia. Numerous risk factors such as nulliparity, family history, genetic mutations, increasing age, early menarche, and late menopause are associated with the development of breast cancer. Lack of awareness and the preexisting myths regarding this disease have led to the detection of breast cancer at a later stage.

OBJECTIVE: The main objective of this study is to determine the frequency of adequate breast cancer knowledge and its level among nonmedical women of Karachi coming to attend general surgery outpatient clinics.

METHODS: A cross-sectional Study was conducted in Outpatient Clinics, Department of General Surgery, Civil Hospital, Karachi. The sample of 250 females with nonmedical background was gathered from December 27, 2016 to June 26, 2017. Adequate breast cancer knowledge was divided into three criteria such as poor, fair, and good knowledge. Chi-square test was applied. $P \leq 0.05$ was considered as statistically significant.

RESULTS: The mean age was 35.63 ± 9.56 years. Mean knowledge score was 5.24 ± 2.92 . Overall, 42% of participants were found with adequate breast cancer knowledge whereas 58% of the participants had inadequate knowledge. Based on the study questionnaire, 38% had poor knowledge, 40.4% had fair knowledge, and 21.6% had good knowledge. Significant association was observed with age, monthly family income, education status, and occupation.

CONCLUSION: The results showed lack of adequate knowledge. A high proportion (58%) of nonmedical females had inadequate knowledge about breast cancer.

Keywords:

Breast cancer, knowledge level, nonmedical women

Introduction

Cancer is the leading cause of death in economically developed countries and the second leading cause of death in developing countries.^[1] Among females, breast cancer is the most frequently

diagnosed cancer and the leading cause of cancer death in females' worldwide.^[2] Although breast cancer is the most prevalent cancers in the world, it has a better survival rate than others.^[3] The incidence of breast cancer is on the rise worldwide and Pakistani women are no exception to it. In fact, Pakistan has a higher incidence of the disease than the neighboring countries^[4]

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and one in every nine Pakistani women suffers from breast cancer which is one of the highest incidence rates in Asia.^[5] According to the data by GLOBOCON 2012, breast cancer accounts for 25.1% of all cancers in females worldwide with slightly higher prevalence in the less developed countries.^[6] In Asia-Pacific, breast factor accounts for about 18% of all the diagnosed female cancers.^[7] The Karachi Cancer Registry reported breast cancer as the most common cancer in the region accounting for 34.6% of all the female cancers in Pakistan.^[5,8]

In Pakistan, lack of knowledge exists in our population regarding breast cancer which leads to a delay in diagnosis, especially among urban females. Moreover, there is no clear data available regarding knowledge of breast cancer among nonmedical women. In our country, many studies have taken place to determine knowledge of breast cancer among women who are related to the medical profession, but very limited surveys exist on knowledge of women not related to the medical or health field.

This study has been done to assess the level of knowledge among female population from nonmedical background. Therefore, understanding knowledge among women from nonmedical fields is essential as it would help us to plan an educational intervention or campaign to increase breast cancer knowledge and awareness. This will lead to reduction in morbidity and mortality by early detection.

Methods

A cross-sectional study was done using nonprobability consecutive sampling and conducted at Outpatient Clinics of the Department of General Surgery of Civil Hospital, Karachi for 6-month duration, from December 27, 2016 to June 26, 2017. A sample size of 250 was calculated using the WHO calculator. Female attendants of patients came to attend general surgery outpatient clinics with a nonmedical background, between the ages of 24 and 60 years and were included in this study. Women <24 years of age or those who were more than 60 years of age were excluded. Women having medical background and family history of breast cancer were also excluded. Data were collected on questionnaire after obtaining consent from participants.

Statistical analysis

Data were entered and analyzed using SPSS version 21, IBM, New York, USA . Mean \pm standard deviation (SD) was computed for age and knowledge score. Frequency and percentage were calculated for marital status, educational status, occupation, and breast cancer knowledge and its levels. The mean \pm SD of continuous variables (age and monthly income) with relation to

breast cancer knowledge was defined. Adequate cancer knowledge defined according to the score, >5 was considered as adequate knowledge women and levels of knowledge was divided into three criteria as, poor knowledge scores between 0 and 4, fair knowledge scores between 5 and 7, and good knowledge scores between 8 and 10.^[9,10] Stratification was done with respect to age, marital status, educational status, occupation, and family income level. Poststratification, Chi-square test was applied. $P < 0.05$ at 95% confidence interval was considered statistically significant.

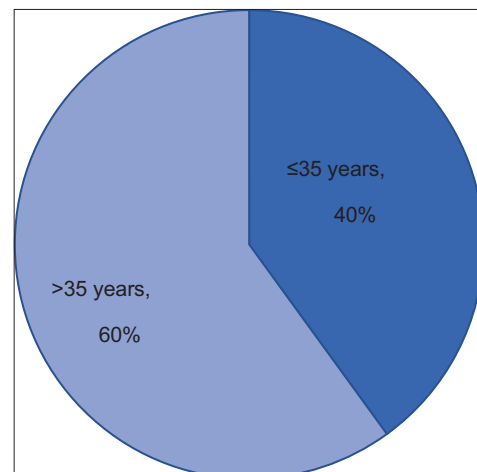
Results

Demographic characteristics of nonmedical female participants

Out of 250 female participants aging between 24 and 60 years were interviewed and average age of the participants was 35.63 ± 9.56 years in which the high frequency ($n = 149$, 60%) was found to be >35 years of age [Table 1 and Graph 1]. The average monthly family income of the participants was found to be $31,776.00 \pm 21,119.61$ Pakistani Rupees and near half of the participants ($n = 102$, 41%) were earning between 21,000 and 35,000 PKR [Table 1]. Most of the female participants 161 (64.4%) were married. In education status, 36 (14.4%) were uneducated, 30 (12%) had Madrasah education, 59 (23.6%) had primary education, 71 (28.4%) had education till matric and remaining 54 (21.6%) had education till inter or above. Among the total study participants, most of the females 156 (62.4%) were homemakers [Table 2].

Breast cancer knowledge status of nonmedical female participants

The overall average breast cancer knowledge score of the study participants was 5.24 ± 2.92 [Table 1]. Only 105 (42%) females were found to have adequate breast cancer knowledge and more than half 145 (58%) females



Graph 1: Percentage of female participant according to age groups ($n = 250$)

Table 1: Demographic characteristics and breast cancer knowledge score of nonmedical females (n=250)

Characteristics	n	Mean±SD	95% CI	Median (IQR)
Age (years)	250	35.63±9.56	34.44-36.82	32.00 (14)
≤35	149	28.96±3.06	28.47-29.46	28.00 (5)
>35	101	45.47±7.06	44.08-46.86	45.00 (14)
Income (PKR)	250	31,776.00±21,119.61	291,45.24-34,406.75	30,000.00 (21,250)
≤20,000	86	13,081.39±3,959.24	12,232.53-13,930.26	13,500.00 (5,000)
21,000-35,000	102	30,284.31±3,216.22	29,652.58-30,916.04	30,000.00 (0.00)
>35,000	62	60,161.29±21,595.53	54,677.05-65,645.52	50,000.00 (25,000.00)
BCK score	250	5.24±2.92	4.88-5.61	5.00 (4)

SD=Standard deviation, PKR=Pakistan rupee rates, BCK score=Breast cancer knowledge score, IQR=Interquartile range, CI=Confidence interval

Table 2: Demographic characteristics with breast cancer knowledge status of nonmedical females (n=250)

Characteristics	n (%)
Marital status	
Single	51 (20.4)
Married	161 (64.4)
Widow	19 (7.6)
Divorced	19 (7.6)
Education status	
Uneducated	36 (14.4)
Madrasah	30 (12)
Primary	59 (23.6)
Matriculation	71 (28.4)
Intermediate or above	54 (21.6)
Occupation	
Homemaker	156 (62.4)
Working women	94 (37.6)
BCK	
Yes	105 (42)
No	145 (58)
Level of BCK	
Poor	95 (38)
Fair	101 (40.4)
Good	54 (21.6)

BCK=Breast cancer knowledge score

did not have adequate knowledge. As far as the level of breast cancer knowledge is concerned, 95 (38%) had poor knowledge, 101 (40.4%) had fair knowledge, and 54 (21.6%) had good knowledge of breast cancer [Table 2].

Relationship of demographic characteristics with breast cancer knowledge

The results showed that there was significant association of adequate breast cancer knowledge with age ($P = 0.028$), monthly family income ($P = 0.001$), education status ($P = 0.000$), and occupation ($P = 0.000$), while no significant association was found with marital status ($P = 0.153$). Most of the female participants with <35 years of age ($n = 71$) and having monthly family income between 21,000 and 35,000 PKR ($n = 55$) had breast cancer knowledge. High prevalence of knowledge was calculated in the female participants of matriculation ($n = 52$) and intermediate or

above ($n = 51$). However, almost 1:1 ratio of knowledge was evaluated among homemakers ($n = 50$) and working women ($n = 55$) [Table 3].

Discussion

Considering the study about the awareness of breast cancer in females, this study delineated considerable risk of breast cancer in old females who had below secondary education and in those who had low monthly family income status. From univariable analyses, we found that marital status was not the significant predictor for breast cancer knowledge in females.

A notable finding of our study was that 58% of females did not have an adequate knowledge about breast cancer. Although 38% were found to have poor knowledge regarding the breast cancer, 40.4% had fair knowledge while 21.6% had good knowledge about the breast cancer. Our finding complements previous studies conducted in Iran^[11] with similar social and cultural background to Pakistan, reported that the percentage of women with good knowledge of breast cancer increased from 0.9% among the illiterate to 33.3% among women with education up to the level of a diploma.

In a locally conducted study for the assessment of the knowledge and the attitude of the urban women regarding breast cancer, the level of education was that 1.1% of the women had just received primary education, 1.6% had received secondary education, 9.7% had matriculated, and 30.3% had finished their Intermediate education while 57.4% were graduates.^[5] In comparison, our study included participants of which 14.4% were uneducated, 12% had received the education from a Madrasah, 23.6% had received primary education, and 28.4% had matriculated while 21.6% had received an Intermediate or a higher education. The plausible reason was the negative sociocultural perception of breast cancer and strong belief in traditional medicine in developing countries was the main reason for the delay in presentation.^[12,13] This was made worse by poverty and the unavailability of health-care services, especially in rural areas. Improved communication, health education,

Table 3: Relationship of demographic characteristics with breast cancer knowledge of nonmedical females

Characteristics	Breast cancer knowledge		P
	Yes (n)	No (n)	
Age (years) [†]	33.79±9.46	36.97±9.44	
≤35	71	78	0.028**‡
>35	34	67	
Income (PKR) [†]	35,200.00±21,773.92	29,296.55±20,350.10	
≤20,000	23	63	0.001**‡
21,000-35,000	55	47	
>35,000	27	35	
Marital status			
Single	19	32	0.153***‡
Married	72	89	
Widow	4	15	
Divorced	10	9	
Education status			
Uneducated	1	35	0.000**‡
Madrasah	0	30	
Primary	1	58	
Matriculation	52	19	
Intermediate or above	51	3	
Occupation			
Homemaker	50	106	0.000**‡
Working women	55	39	

[†]Chi-square test was applied. [†]Mean±SD. *P≤0.05, **P>0.05. PKR=Pakistan rupee rates, SD=Standard deviation

and breast awareness campaigns would be a step toward earlier detection of breast cancer in developing countries.

Studies regarding breast cancer awareness and the breast self-examination (BSE) have been conducted in different populations. Our study described that young, educated, and earning women were more aware about breast cancer. Similar findings of a Pakistani study conducted to assess the knowledge, attitude and practices among urban women regarding breast cancer^[5] and other investigators have reported that demographic characteristics such as higher levels of education and income were significant determinants of knowledge of breast cancer risk factors and adherence to BSE practice. Among Nigerian women, a study found that women with higher level of education were significantly more knowledgeable about breast cancer and were 3.6 times more likely to practice BSE.^[14]

In our study, 38% were found to have poor knowledge regarding the breast cancer, 40.4% had fair knowledge, while 21.6% had good knowledge about the breast cancer. In a study conducted in Rawalpindi, only 73% of illiterate women had heard of breast cancer compared to 87.8% of the educated women, while 45.6% of the illiterate and 58.6% of the educated correctly identified lump as a symptom of breast cancer.^[8]

According to our study, the level of awareness about breast cancer was statistically significant and associated with age, level of education, >20,000 PKR monthly

income, and occupation. Correspondingly, the level of awareness regarding breast cancer screening showed a statistically significant association in the local study with four parameters; age over 40 years, level of education, household income, and employment status.^[5] These findings were reflected in studies conducted across various countries. A study conducted in Dammam, Saudi Arabia, demonstrated that education level was statistically associated with awareness, whereas age showed no association.^[15] Another study conducted in Jeddah, Saudi Arabia, showed that higher age was associated with a greater level of awareness.^[16] Similarly, in Sri Lanka, a study examined the level of awareness of patients presenting with breast problems and observed a lower level of education to be associated with the least informed patients.^[16] In a study conducted in Malaysia, age, education level, and lower perceived socioeconomic class were all indicators of poor knowledge of breast cancer and infrequent attendance of screening programs as well as decreased frequency of performing BSE.^[16]

Knowledge without its application was useless. In the local study, 48% of the population had heard about BSE, and nearly 38% of the total study population knew how to perform a BSE.^[5] However, the percentage of women regularly performing BSE was found to be 25.9%. The results showed that those women who had clinical breast examination (CBE) once in their life were more likely to be aware of the term "BSE" and know how to perform it. The association of CBE with knowledge regarding the BSE was found to be very significant.

Studies conducted in selected populations of the developed countries yielded figures comparable with this local study.^[5] A study carried out on Vietnamese women in Texas, US, showed that 55% of the respondents regularly performed a BSE and 45% of patients received a CBE.^[17] Another study focusing on Chinese immigrant women in the US showed that 80.9% of the participants had heard about BSE, but only 53.9% practiced it. Regular BSE was also associated with higher income and a younger age.^[17] When considering the developing world, conflicting reports have been presented. A study conducted on female undergraduate students in Nigeria found that 87.7% of the respondents had heard of BSE. However, only 19% of them were performing this examination monthly. The study also quoted CBE prevalence of around 9.1% in the preceding year.^[18] However, another study from Nigeria carried out in a community setting showed that 43.2% of women were performing a BSE. However, only 9.1% had undergone a CBE.^[14] In a study done in a tertiary care hospital in Lahore, Pakistan, 36.9% of the participants regularly performed the BSE. The major reason for not performing a BSE identified by the participants was a lack of knowledge regarding the BSE.^[19] In the same study, only 6.9% of participants had a CBE which was very low compared to the 28% of other local study.^[5] There is no nationwide, population-based, breast screening mammography program in Pakistan. The main problem in implementing such a program is a lack of funding and resources, coupled with poor education, which would lead to the failure of such a program. Hence, a breast awareness campaign with emphasis on BSE is important. However, the effectiveness of such a program remains to be elucidated. The delay in the presentation of breast cancer in Pakistan can be attributed to the social and cultural perception of the disease. The woman's role as a wife and mother in Asian society, and indeed her very femininity, is threatened by the presence of the disease. There is also a fear that after mastectomy, she will be abandoned by her husband. These women resort to alternative treatment, hence, much time is wasted on ineffective treatment before she presents again with advanced disease. Although this may occur more predominantly in less educated patients, educated patients also seek alternative therapy due to fear and denial. Education and breast awareness must be emphasized. Unless women are aware of the dangers of alternative therapy, and understand the nature of the disease, the incidence of advanced breast cancer in Pakistan will remain the same if not increase. Poverty is another reason accounting for the delay in presentation. The cause of the delay in presentation is multifactorial, and further research into the health-seeking behavior of women with breast complaints is required. It is erroneous to believe that the sociocultural perception of breast cancer is geographically and culturally

interchangeable between nations. The main limitations of the present study include a single-center experience and nonrandomized study design. It was conducted with small sample size, therefore, the results might not be generalizable to larger populations.

Conclusion

Majority of nonmedical females did not have an adequate knowledge about breast cancer. Although level of breast cancer knowledge was just above than poor, young, educated, and working women were more aware about breast cancer.

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Conflicts of interest

There are no conflicts of interest from any author or department of surgery.

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