**Original Article**

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# Knowledge of Women from Basrah about Breast Cancer: Its Risk and Preventive Factors

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## ABSTRACT

**Background:** Breast cancer is very common in Basrah, Iraq and at global level. To assist in the control measures of breast cancer, good knowledge of women about certain aspects of the disease is essential and needs enhancement.
**Objective:** To explore the extent to which women have knowledge of breast self-examination (BSE), mammography, risk factors, and preventive measures for breast cancer.
**Methods:** A cross-sectional study involving 300 women in Basrah was conducted. The data collection form was used to interview participants from attendants of breast cancer early detection clinic, primary health care centers, and a private clinic. The data covered demographic characteristics of the women, their knowledge of BSE, mammography, risk factors, and preventive factors. The data were fed into the Statistical Package for Social Science (SPSS-Version 26). The results were expressed as frequency and cross tabulation. The Chi-squared test (or Fisher Exact Test) was used to examine the association between the groups, and a p-value of $\leq 0.05$ was considered as statistically significant.
**Results:** Of the 300 participating women, 61.7% were married, 41.7% had secondary and higher level of education, and 75.6% were of the age of 30 and above. Family history as a risk factor for breast cancer was reported by 16.7% of the participants. About 90.3% of the participants had knowledge of BSE; however, only 42% knew about mammography. Only 38.3% and 11.3% of the participants had performed self-examination and mammography screening, respectively. In general, this study's results revealed a moderate level of knowledge and practice.
**Conclusion:** A tangible gap in knowledge is evident and demands effective an health-education program to support breast cancer control efforts.

**Keywords:** Breast cancer, Breast self-examination, Risk factor KAP study.

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## INTRODUCTION

Breast cancer is the most incident, prevailing, and death-causing cancer in most world countries.[1] At the global level, it is the most common form of cancer among females and represents up to 25% of female malignant diseases, in 2018, approximately 2.1 million new cases were reported.[1]Breast cancer affects females of all ages except children and, although the bulk of the cases occurs in the 5th and 6th decades of age, the incidence rate generally increases with advancing age.[2,3]In Iraq, breast cancer occupies the first rank among the common malignancies in the entire population. It represents almost one in three of registered female malignancies with an age-standardized incidence rate of 34.9 per 1,00,000 females.[3,4]

The risk of breast cancer in recent decades and the availability of more knowledge about it has motivated a higher proportion of women to seek medical advice relatively earlier with minimal breast symptoms. However, the proportion of women who are aware of the proper methods of conducting breast self-examination(BSE) or of the importance of radiological screening for breast cancer is still small. [5-7]

Apart from genetic contribution to the development of breast cancer, the etiology of the disease is related to a complex set of factors within the demographic characteristics, reproductive factors, lifestyle behavior, and other environmental features. Increased risk has been associated with advanced age, positive family history, socioeconomic status, diet, endogenous or exogenous hormones, atypical breast diseases, benign tumors, oncogenic viruses, and carcinogenic exposures.[8] Evidence from previous studies supports the fact that knowledge of women about breast cancer risk factors, preventive factors, and practices required to help in the early detection of the disease is not adequate[9] Deficient knowledge and practices continue to be seen among women even though BSE is considered a simple, inexpensive, non-invasive, and non-hazardous. It is socially acceptable, cost-effective, and appropriate. It helps women to detect any changes in their breasts as early as possible.[10,11]Practicing BSE as a screening method has been believed to have helped in the early detection of breast cancer; therefore, increasing women's awareness about the importance of BSE is required as a part of the efforts to control breast cancer.[12]

This study attempts to assess the knowledge of a sample of women from Basrah regarding specific aspects of breast cancer, namely, symptoms and warning signals, in addition to their knowledge of risk factors and factors that could contribute to the prevention of the disease. It also explores their knowledge of BSE and mammography. The practice of BSE and mammography were sought as indicators of self-motivation and provider-driven practices as a means of early detection of breast cancer. The practice of mammography is particularly related to the role of healthcare providers in disseminating information among targeted women.

## PATIENTS AND METHODS

This study was a cross-sectional study conducted on a sample of 300 adult women regardless of their age or educational level. They were recruited on the basis of whether they were aged 20 years and above. No other criteria were used in the process of selection.

The participants were women attending the breast cancer early detection clinic, two primary healthcare centers, and a private clinic of one of the investigators. A questionnaire was constructed and used to gather information from the participants. The questionnaire covered demographic characteristics of the women (age, job, level of education, and marital status). It also included questions about the changes that occur in relation to breast cancer, which could be recognized by women as warning signals of cancer. Further, the participants were asked to report factors that predisposed women to breast cancer, protective factors against breast cancer, and the sources of knowledge they would use to build on their knowledge. In addition, the participants were asked if they had practiced BSE and/or sought mammography as an early means to detect the disease.

Ethical approval was obtained from the Central Research Committee in Basrah General Directorate for Health Services (Meeting dated 7/6/2020/Notification letter No.299, dated 21/6/2020).

For statistical analysis of the data, the Statistical Package for Social Sciences (SPSS version 26) was used. The results were presented as frequency descriptive tables and cross-tabulation to explore associations. A p-value of ≤0.05 was considered significant.

## RESULTS

### Demographic characteristics

This study covered 300 women; Table 1 shows that 75.6% of the participants were of the age of 30 and above, 61.7% were married, 58.3% were either illiterate or had attained primary education, and 16.7% reported a family history of breast cancer.

### Knowledge of breast cancer

BSE was known to 271 (90.3%) of the participants but practiced by 115 (38.3%). Mammography was known to 126 (42.0%) but practiced by only 34 (11.3%). The knowledge was mainly derived from sources such as health workers (43.3%), mass media, (30.0%), and relatives and friends (18.3%). Regarding the knowledge of symptoms of breast cancer, less than half of the studied women reported their knowledge about any of these symptoms: 40% knew about mass in or near the breast, 45% knew about bloody nipple discharge, and only 27% knew about nipple retraction. The details have been presented in Table 2.

### Knowledge of risk factors and protective factors

The women were distributed according to their knowledge of risk factors that could increase susceptibility to breast cancer and of protective factors that could ameliorate the risk of the disease. In general, risk factors were mentioned more frequently than protective factors. More than 50% of the participants mentioned risk factors such as the use of contraceptives (58.3%), exposure to radiation (53.3%), advanced age (52.3%), family history (67.0%), and obesity (63.7%). However, protective factors were mentioned by a much lower frequency, as detailed in Table 3.

### Knowledge and practice of BSE and mammographic screening

Knowledge of women about BSE was found to be very good. Only 9.7% did not seem to know about BSE. However, the practice of BSE was low: only 38.3% practiced BSE. The

associations of knowledge and practice of BSE are shown in (Table 4). In general, a better level of knowledge is significantly associated with advancing age, women being ever married, with better education, and a positive family history of breast cancer. The practice of BSE was significantly associated with the age group of 30–39, better education, and a positive family history of breast cancer. No association was found between the practice of BSE and marital status.

Regarding mammography (Table 5) as a screening examination for breast cancer, it seems unfamiliar to the studied women, as only 42% had heard of it and only 11.3% had used the examination in screening for breast cancer. The age group of 30–39 showed significantly better knowledge of mammography compared to other age groups. Similarly, knowledge was significantly associated with better education and a positive family history of breast cancer. The practice of mammography was related to the age group of 30-39, ex-married women, higher education, and a positive family history of breast cancer.

**Table 1:** Distribution of the studied women by selected sociodemographic characteristics

| Characteristic | No. | % |
|---|---|---|
| **Age** | | |
| **20–29** | 73 | 24.3 |
| **30–39** | 127 | 42.3 |
| **40 and above** | 100 | 33.3 |
| **Marital Status** | | |
| **Single** | 90 | 30.0 |
| **Married** | 185 | 61.7 |
| **Divorced and Widows** | 25 | 8.3 |
| **Education** | | |
| **Illiterate** | 66 | 22.0 |
| **Primary Education** | 109 | 36.3 |
| **Secondary Education** | 81 | 27.0 |
| **Higher Education** | 44 | 14.7 |
| **Family History of Breast Cancer** | | |
| **Present** | 50 | 16.7 |
| **Absent** | 250 | 83.3 |
| **Total** | **300** | **100.0** |

**Table2:** Knowledge of selected aspects of breast cancer

| | No. | %Out of 300 |
|---|---|---|
| **Heard of BSE** | | |
| Yes | 271 | **90.3** |
| No | 29 | **9.7** |
| **Practiced BSE** | | |
| Yes | 115 | **38.3** |
| No | 185 | **61.7** |
| **Heard of Mammography** | | |
| Yes | 126 | **42.0** |
| No | 174 | **58 .0** |
| **Practiced Mammography** | | |
| Yes | 34 | **11.3** |
| No | 266 | **88.7** |
| **Source of Knowledge** | | |
| Health workers | 130 | **43.3** |
| Mass media | 90 | **30,0** |
| Friends and relative | 55 | **18.3** |
| Other sources | 25 | **8.3** |
| **Knowledge of Breast Cancer Symptom*** | | |
| Palpable mass in or near the breast | 121 | **40.3** |
| Heaviness in the underarm area | 119 | **39.7** |
| Change in shape or size of the breast | 102 | **34.0** |
| Nipple retraction | 82 | **27.3.** |
| Bloody nipple discharge | 135 | **45.0** |
| Skin thickening of the breast (peau'dorange) | 95 | **31.7** |

*Multiple answers are possible

**Table3:** Knowledge of women about risk factors and protective factor of breast cancer

| | Count | % |
|---|---|---|
| **Risk Factors*** | | |
| Recent contraceptive pill use | 175 | 58.3 |
| HRT | 95 | 31.7 |
| Exposure to excess radiation | 160 | 53.3 |
| Aging | 157 | 52.3 |
| Smocking | 134 | 44.7 |
| Family history | 201 | 67.0 |
| Obesity | 191 | 63.7 |
| Lack of physical activity | 97 | 32.3 |
| Skin thickening | 95 | 31.7 |
| Late menopause more than 55 years | 97 | 32.3 |
| Early menarche less than 12 years | 76 | 25.3 |
| **Protective Factors*** | | |
| Breastfeeding | 103 | 34.3 |
| Nutrition | 79 | 26.3 |
| Physical exercise | 28 | 9.3 |
| Regularity on the menstrual cycle | 80 | 26.7 |
| Pregnancy earlier than 40 years | 19 | 6.3 |

* Multiple answers are possible

**Table 4:** Knowledge of the studied women about BSE and practice by selected variable *

| Variable | Heard of BSE | | | Practiced BSE | | |
|---|---|---|---|---|---|---|
| | Yes | No | Total | Yes | No | Total |
| **Age** | | | | | | |
| 20–29 | 60(82.2) | 13(17.8) | 73 (100.0) | 21 (28.8) | 52(71.2) | **73 (100.0)** |
| 30–39 | 124(97.6) | 3 (2.4) | 127(100.0 | 69(54.3) | 58(45.7) | **127 100.0)** |
| 40 and above | 87(87.0) | 13 (13.0) | 100(100.0) | 25(25.0) | 75(75.0) | **100 (100.0)** |
| **Marital Status** | | | | | | |
| Single | 71 (78.9) | 19 (21.1) | 90 (100.0) | 34(37.8) | 56 (62.2) | **90 (100.0)** |
| Married | 175(94.6) | 10 (5.4) | 185 (100.0) | 71(38.4) | 114 (61.6) | **185(100.0)** |
| Others | 25(100.0) | 0 (0.0) | 25 (100.0 | 10 (40.0) | 15 (60.0 | **25 (100.0** |
| **Education** | | | | | | |
| Illiterate | 49(74.2) | 17 (25.8) | 66 (100.0 | 19 (28.8) | 47 (71.2) | **66 (100.0)** |
| Primary | 104(95.4) | 5 (4.6) | 109 (100.0) | 30 (27.5) | 79 (72.5 | **109 (100.0)** |
| Secondary | 76(93.8) | 5 (6.2) | 81 (100.0) | 30 (37.0) | 51 (63.0) | **81 (100.0)** |
| HigherEducation | 42(95.5) | 2 (4.5) | 44 (100.0 | 36 (81.8) | 8 (18.2) | **44 (100.0)** |
| **Family History of Breast Cancer** | | | | | | |
| Present | 49 (98.0) | 1 (2.0) | 50(100.0 | 42 (84.0) | 8 (16.0) | **50 (100.0)** |
| Absent | 222 (88.8) | 28(11.2) | 250 (100.0) | 73 (29.2) | 177(70.8). | **250 (100.0)** |
| **Total** | **271(90.3)** | **29(9.7)** | **300 (100.0)** | **115 (38.3** | **185 (61.7)** | **300 (100.0)** |

***** All associations are statistically significant (P<0.05) except marital status and practice of BSE (P>0.05)

**Table 5:** Knowledge of the studied women about mammography examination and practice by selected variables*

| Variable | Heard of Mammography | | | Practiced Mammography | | |
|---|---|---|---|---|---|---|
| | Yes No. (%) | No No. (%) | Total No. (%) | Yes No. (%) | No No. (%) | **Total No. (%)** |
| **Age** | | | | | | |
| 20–29 | 21 (28.8) | 52 (71.2) | 73 (100.0) | 0 (0.0) | 73 (100.0) | **73 (100.0)** |
| 30–39 | 67 (52.8) | 60(47.2) | 127(100.0 | 15 (11.8) | 112 (88.2) | **127 100.0)** |
| 40 and above | 38 (38.0) | 62 (62.0) | 100(100.0) | 19 (19.0) | 81 (81.0 | **100 (100.0)** |
| **Marital Status** | | | | | | |
| Single | 28 (31.1) | 62 (68.9) | 90 (100.0) | 1 (1.3) | 89 (98.9) | **90 (100.0)** |
| Married | 87 (47.0) | 98 (53.0) | 185 (100.0) | 18 (9.7) | 167 (90.3) | **185(100.0)** |
| Others | 11 (44.0) | 14 (56.0 | 25 (100.0 | 15 (60.0) | 10 (40.0) | **25 (100.0** |
| **Education** | | | | | | |
| Illiterate | 7 (10.6) | 59 (89.4) | 66 (100.0 | 9 (11.6) | 57 (88.4) | **66 (100.0)** |
| Primary | 22 (20.2) | 87 (79.8) | 109 (100.0) | 0 (0.0) | 109 (100.0) | **109 (100.0)** |
| Secondary | 64 (79.0) | 17 (21.0) | 81 (100.0) | 7 (8.9) | 74 (91.4) | **81 (100.0)** |
| HigherEducation | 33 (75.0) | 11 (25.0) | 44 (100.0 | 18 (59.1) | 26 (59.1) | **44 (100.0)** |
| **Family history of Breast cancer** | | | | | | |
| Present | 38 (76.0) | 12 (24.0) | 50 (100.0) | 22 (44.0) | 28 (56.0) | **50 (100.0)** |
| Absent | 88 (35.2) | 162 (64.8) | 250 (100.0) | 12 (4.8) | 238 (95.2) | **250 (100.0)** |
| **Total** | **126 (42.0)** | **174 (58.0)** | **300 (100.0)** | **34(11.3)** | **266 (88.7)** | **300 (100.0)** |

*****All associations are statistically significant (P<0.05)

## DISCUSSION

The changing lifestyle of the population in developing countries is considered one of the major contributors to the increasing incidence of breast cancer.[13]The increasing incidence of the disease among women in developing countries may be related to the higher predisposition to risk factors among the increasing proportion of women. The risk factors are related to advancing age, reproductive factors, environmental factors, and lifestyle behavior, in addition to exogenous hormone intake, postmenopausal obesity, and alcohol.[1,13-15]In Eastern Mediterranean countries, it is believed that the transition in demographic characteristics and socioeconomic changes led to an increased risk of cancer in general, including breast cancer.[14,15]Encouraging positive changes in lifestyle, early detection of breast cancer, and screening programs are important components of the strategy to control cancer.[16-18]

Our results showed that the knowledge of BSE was high when compared with the knowledge of mammography. Although high rates of BSE were found among women with better education and those with positive family history, the overall practice was low. Regarding knowledge about mammography, the level was very modest along with the practice. Higher education and family history of breast cancer were associated with better results. The results in the present study are favorable compared to the studies conducted in Baghdad by AL-Alwan et al.[6,9]These findings were also better than the result of a study involving secondary-school female students in Jeddah, Saudi Arabia, which showed that only 14.4% and 7.1%, respectively, knew the correct frequency and timing of BSE[19] However, our results were closer to the results reported in Erbil city.[5.]

Regarding the knowledge of risk factors, the most widely known risk factors mentioned by the women were family history of breast cancer, obesity, the use of contraceptives, exposure to radiation, and aging. This increased awareness of these factors may be attributed to extensive coverage of these risk factors by Iraqi mass media and health education programs launched by health authorities. However, knowledge of the role of lifestyle risk factors was inadequate. Such inadequate knowledge will make it difficult to launch health education activities deemed necessary to enhance breast cancer control.

The studied women had some knowledge of the signals of breast cancer, such as heaviness in the underarm area, palpable mass in or near the breast, and nipple retraction, among others. This knowledge was not very much different compared to the results of a study conducted in Saudi Arabia, where 73% of the nursing students' participants were aware that palpable nodules are signals of the possibility of breast cancer, and 64% did not know that a deviated nipple is one of the presentations of breast cancer.[11]

The main source of knowledge about breast cancer and BSE in our study was the health workers, which is a good indication of the role of the healthcare system in enhancing knowledge. The media was the main source in other findings, as reported in the studies carried out in Yemen20 and Nigeria.[21]

In this study, it was evident that women with low education were more likely to have inadequate knowledge and poor practice of BSE while women with higher education were much better in terms of their level of knowledge and probability of practicing BSE.

## CONCLUSIONS

The studied women seemed relatively familiar with the basic knowledge of BSE; however, their practice was limited. On the other hand, women in this study were less familiar with mammography. The use of mammography is not just related to the knowledge and decision of women; it is rather a combined outcome of both women's knowledge and desire to use mammography guided by a care provider's advice. It is highly recommended that health educational activities through all means are activated to support the early detection program in Basrah. One possible opportunity for young women is to make use of pre-marital examination and introduce a component of health education on the issues of breast cancer.

**Limitation:** The results strictly represent the women studied. The generalization to the general women population in Basrah should be made with reservation.

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