

Research Article



Awareness of Breast Cancer Risk Factors and Practice of Breast Cancer Screening Among Karbala Women 2016

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KEY WORDS:

Breast cancer
Middle eastern countries is increasing
Late menopause

Abstract:

Breast cancer is one of the most common cancers among females worldwide. Global statistics show the annual incidence of breast cancer is increasing and this is occurring more rapidly in countries with a low incidence rate of breast cancer. The incidence rate of breast cancer in the Middle Eastern countries is increasing. Arab women are diagnosed with breast cancer at younger ages., furthermore, the diagnosed cancer is achieved at more developed stages. Early detection of breast cancer plays a leading role in reducing mortality rates and improving the patient's prognosis. The recommended screening methods for early detection of this fatal disease are mammography, clinical breast examination and breast self-examination. Breast cancer risk factors and risk reduction techniques must be well understood by women to prevent breast cancer in the first place. The following are known risk factors for breast cancer: women with a family history, age at menarche, gender, late menopause, not breast feeding, hormone replacement therapy with oral contraceptives, obesity, smoking and alcohol consumption. Some lifestyle choices, like breast feeding, controlling weight, exercising and abstaining from smoking, are considered protective. To find out how well-informed Karbala city women are about risk factors for breast cancer and to look at their understanding and use of the BCS screening procedure. A cross-sectional study. It was conducted in Al Hussein Teaching Hospital and two primary health care centers in Karbala city. The study samples include 400 women aged 20 years old and above. Females were randomly selected., clinical data were collected using specific questionnaire through direct interview with the participants who attending the selected premises between 25th February to 2nd of August 2016. Excluding criteria were: the critically ill patients, women who had a history of BC and female below 20 years old. Socio-demographic characteristics of the participant: the mean age was 35.3±9.8 The highest proportion of participants (36%) were between age (30-39) years old, age ranged from 20 at the minimum to 72 at the maximum. A great majority of participants (99.3%) heard about breast cancer three quarter think that the disease is prevalent in Iraq, (87%) of them considered it an early detectable disease. One-quarter of participants had sources of information from (TV and Radio) while only (11.6%) of participant got information from physicians or nursing staff. Regarding breast self-examination (70.8%) heard about BSE and early detection programs and (86.5%) of them said that BSE is necessary, but only (35.3%) practiced BSE while (50%) did not. Less than two-thirds of participant women heard about mammography, but only (12%) know its recommended age so the overall awareness of the screening program and breast self-examination among participants was fair. In general, the assessment of knowledge of breast cancer risk factors was fair. Women who practiced breast self-examination were (35.3), the barrier was poor knowledge about the procedure, difficulty and time-consuming, embarrassment, fear of finding a breast mass and examining my breasts is not necessary. I did not have any problem. Awareness about mammograms is fair, but the participant's knowledge about the right age for doing screening mammograms is weak. The most common risk factor of BC known by the participants is the presence of breast lumps. The majority of participants believe that breast trauma is a risk factor for breast cancer, although this is untrue.

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INTRODUCTION

Breast cancer (BC) is the leading cause of cancer among women in both developed and developing nations. Global statistics show the annual incidence of BC is increasing and this is occurring more rapidly in countries with a low incidence rate of BC^[1]. One in 8 women in USA will develop BC in her lifetime^[2]. In the United States, there were approximately 230,480 new instances of invasive breast cancer and an estimated 39,970 fatalities associated with it in 2011^[3]. Globally, almost 458,400 fatalities were ascribed to BC^[4]. In low-and middle-income countries, the infrastructure and resources for routine screening mammography are often unavailable. In such lower resource settings, BC are commonly diagnosed at late stages and women may receive inadequate treatment, pain relief, or palliative care^[5]. According to the 2010 Iraqi malignancy Registry, BC is the most frequent malignancy in the entire population and accounts for around one-third of all female cancers registered. It also had a recent trend of affecting younger women^[6].

In addition to being the commonest female cancer^[7,8], there are other features that justify increasing efforts for BC control in Iraq and other developing countries. These include the obvious rise in the incidence rates, the higher proportions of younger ages and advanced stages at the time of presentation and the likely prevalence of more aggressive tumor nature resulting in a greater fatality rates^[6,8,9]. The health of women is greatly impacted by breast cancer. There were variations in the incidence of BC between nations, it was lowest in Asia and highest in the USA and South America. In addition, the incidence is rising in Asian nations, primarily due to the growing popularity of Western lifestyles^[10] the foundation of the national early detection program for BC in Iraq, which was started in 2001 with the goal of reducing the downstage of the disease at the time of presentation. Since then, prominent hospitals in every province have set up dedicated clinics and facilities for the early diagnosis of breast cancer^[11]. Early diagnosis improves the prognosis, also it also prevents complications and impairment. Additionally, it prolongs survival and improves life quality^[12,13]. The key to lowering death rates and enhancing patient prognosis is early identification of BC^[5,14].

The Objective: To find out how well-informed Karbala city women are about risk factors for breast cancer and to look at their understanding and use of the BCS screening procedure.

Study Design: Observational cross-sectional study that was carried out at two basic health care centers and Al-Hussein Teaching Hospital in Karbala. Four hundred females were collected. Data collection for the study took place between February 25 and August 2, 2016.

Patients: One in three patients who attended the out clinic were randomly assigned to be the participant women, who were systematically chosen from among the patients who attended the consultant clinic and were at least 20 years old. The days of working were about 3-4 days per week. The critically ill patients, the women who had a history of BC were excluded from this study.

Data Collection: The patients or their relatives who accompanied them to the clinic were directly interviewed to complete a questionnaire created specifically for this study. The calculated sample size was 384 and approximated to 400 participant women.

Participants were asked to provide sociodemographic information about themselves, such as their age, perceived economic level, education, history of chronic illness or drug use, menarche age, menstrual regularity, if they had heard of BSE, information about BC and BSE and source of information about BC. Four multiple-choice questions measuring knowledge of BSE were used to gauge participants' understanding of the following topics: at any age start BSE, how frequently BSE occurs, when to start BSE during the month and how to use the BSE practice form. The participants were asked whether they performed BSE and if they answered "yes", they were asked how they performed BSE and why they performed it. Also, the reasons for not doing BSE were assessed with one question. Knowledge of risk factors for BC was assessed with 14 questions. The answers were "Yes", "NO" and "Don't know".

Ethical Approval: The study received ethical approval from the Karbala Health Directorate and the Iraqi Ministry of Health Department of the Arab Board for Health Specialization. Before the interview, a brief explanation of the study's goals was given to each patient and their verbal agreement was obtained.

Statistical Analysis: Version 23 of the Statistical Package for Social Sciences (SPSS) software for Windows was used to enter and evaluate the data of the 400 participating women. The mean, standard deviation (SD), frequencies and proportions are examples of descriptive statistics. Participants' responses were split into three categories: correct, incorrect and don't know. Each participant's

mean score was then determined for each question and group of questions collected in domains. The participant's awareness was then assessed as good if the mean score was greater than 2.34, fair (mean score: 1.67-2.33) and poor awareness if the mean score was <1.67. The weighted mean of all the questionnaire questions was used to determine the overall awareness score, which was then assessed similarly for each domain. The relationship between the overall awareness score categories and other variables was evaluated using cross-tabulation. The significance of the association was evaluated using the chi-square test and Fisher's exact test was employed as a backup in cases where chi-square could not be used. The significance of variations in women's mean awareness scores across information sources (ANOVA) test. The mean awareness scores of the participant women's subgroups were compared many times across the information sources using the post hoc, least square difference test. The results and findings were finally displayed in tables and figures with an explanation paragraph for each, using Microsoft Office Word program version 2010., a significance level of <0.05 was considered to indicate a significant difference or association. post hoc, least square difference, test was used for multiple comparison of mean awareness score of the subgroups of participant women across the source of information. Level of significance of ≤ 0.05 considered significant difference or association, finally results and findings were presented in tables and figures with an explanatory paragraph for each using the Microsoft Office Word software version 2010.

RESULTS AND DISCUSSIONS

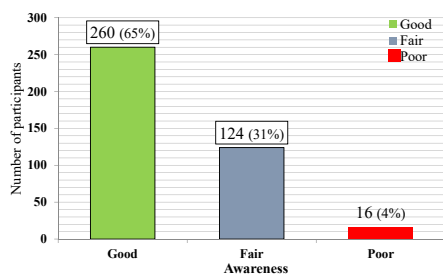


Fig. 1: Distribution of Overall Awareness to General Information on Breast Cancer Among Participant Women

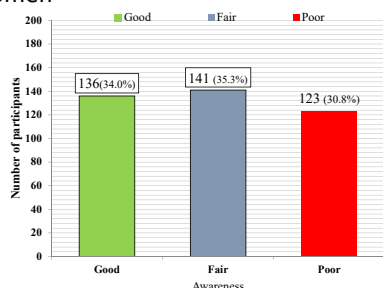


Fig. 2: Distribution of Overall Awareness to Screening and Self-Examination of Breast Among Participant Women (N=400)

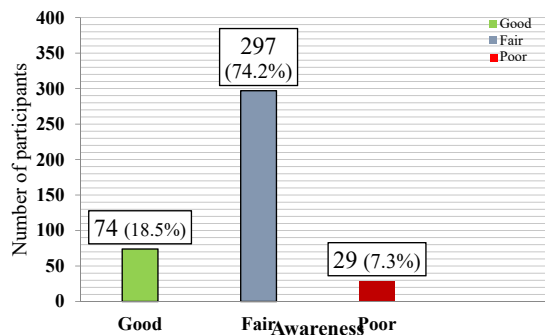


Fig. 3: Evaluation of the Overall Awareness of Participant Women to Breast Cancer Questionnaire

Relationship Between Overall Awareness and Other Variables:

The cross-tabulation of overall awareness categories among different socio-demographic characteristics of the participants, it had been found that good awareness was significantly associated with older age, urban residence, housewife occupation, owned hoses and low crowding index, (table 10). The ANOVA test results that compare the mean overall awareness score across the sources of information showed significantly found that women who obtained their information about BC from physician or nursing staff had the highest mean awareness score, (0.61±0.11), than women who obtained their information from friends and relatives (P<0.001) and family (P=0.003), while no significant differences in the mean score in multiple comparison across other sources of information, the ANOVA post hoc test (LSD) results are summarized in (table 12), additional, graphical comparison is shown in (Fig. 4).

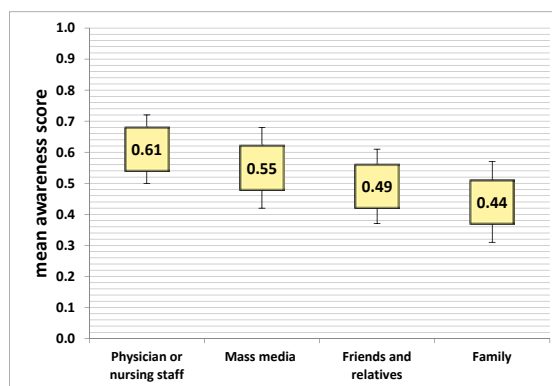


Fig. 4: Comparison of the Mean Awareness Score of Participant According to Source of Information

Breast cancer is a potentially fatal illness that may affect a woman's sexuality and sense of self^[15]. The mean age seen in research conducted in Iran^[16] was the same of our study, However, a study conducted in Basra found

Table (1): The Characteristics of Sociodemographic of Participant Women (N=400) in Karbala in 2016

Variable		No.	%
Age (year)	20-29	118	29.5
	30-39	144	36.0
	40-49	125	31.3
	≥50	13	3.3
	Mean±SD	35.3±9.8	
Residence	Range	20-72	
	Urban	336	84.0
Marital status	Rural	64	16.0
	Married	295	73.8
Level of educational	Single	67	16.8
	Divorced	15	3.8
	Widow	23	5.8
	Illiterate	57	14.3
Occupation	Read and write	60	15.0
	Primary	102	25.5
	Secondary	65	16.3
	University	116	29.0
	Housewife	310	77.5
Economic status	Employed	63	15.8
	Other	27	6.8
	Poor	106	26.5
Home ownership	Middle	262	65.5
	Good	32	8.0
	Owned	292	73.0
Crowding index	Rented	79	19.8
	Other	29	7.3
	Low	157	39.3
	Intermediate	146	36.5
	High	97	24.3

Table (2): The Distribution of Age at Menarche and Regularity of Menstrual Cycle of Participant Women

Variable		No.	%
Age at menarche (year)	≤10	15	3.8
	11-12	155	38.8
	13-14	174	43.5
	≥15	56	14.0
	Mean±SD*	12.9±1.5	-
Regularity of menstrual cycle	Range	9-18	-
	Regular	308	77.0
	Irregular	92	23.0

* SD: standard deviation of the mean

Table (3): The Distribution of Medical and Treatment History of Participant Women (N=400) in Karbala

History	No.	%
Diseases		
Hypertension	59	14.8
Diabetes mellitus	41	10.3
Others	29	7.3
Medications		
Oral contraceptive pills	74	18.5
Anti-Diabetic	22	5.5
Anti-hypertension	18	4.5
Anti-asthma	7	1.8
Anti-Tuberculosis	4	1.0
Other	28	7.0

Table (4): The Distribution of Source of Information About BC Among Participant Women

Source of information*	No.	%
Mass media	218	54.5
Friends and relatives	111	27.8
Family	69	17.3
Physician or nursing staff	54	13.5

* Some women get information from more than one source

Responses of Participant Women to Awareness Questions on BC:**Table (5): The Number and Percentage of Women (N=400) in Karbala that Responded Aware Questions on General Information About BC in 2016**

Questionnaire item	Response				mean score	Evaluation
	Correct		Incorrect			
	No.	%	No.	%		
Heard about breast cancer	397	99.25	3	0.75	0.99±0.09	Good
Prevalent in Iraq	298	74.50	102	25.50	0.75 0.±0.44	Good
Considered as early detected disease	348	87.00	52	13.00	0.87±0.34	Good
Overall mean score for this domain					0.87±0.19	Good
Awareness rate for this domain=87%						

Table (6): The Distribution of the Level of Awareness Questions on Screening and Self-Examination of Breast Among Participant Women (N=400).

Questionnaire item	Response				mean score for item	Evaluation
	Correct		Incorrect			
	No.	%	No.	%		
Heard about self-examination of breast and early detection program	283	70.8	117	29.2	0.71 ± 0.46	Good
The self-examination of breast is necessary (for those heard about)	265	93.6	18	6.4	0.94 ± 0.24	Good
At what age should women begin doing breast self-examination	252	63	148	37.0	0.63 ± 0.48	Fair
Practicing self-examination of breast	141	35.3	259	64.7	0.35 ± 0.14	Fair
The procedure of self-examination of breast	98	24.5	302	75.5	0.25 ± 0.11	Poor
Timing of self-examination of breast	201	50.3	199	49.7	0.50 ± 0.26	Fair
Heard about mammography	233	58.3	167	41.7	0.58 ± 0.49	Fair
At what age the mammography is recommended	48	12	352	88.0	0.12 ± 0.07	Poor
Early detection of breast cancer can be significantly assisted by mammography.	251	62.8	149	37.2	0.63 ± 0.48	Fair
Overall mean score for this domain					0.52 ± 0.21	Fair
Awareness rate for this domain=52%						

Table (7): Number and Percentage of Responses to Awareness Questions on Risk Factors of BC Among Participant Women (N=400)

Questionnaire item	Response				mean score	Evaluation
	Correct		Incorrect			
	No.	%	No.	%		
Breast cancer is hereditary	141	35.3	259	64.7	0.35 ± 0.17	Fair
Breast cancer incidence increase with the advancing age	109	27.3	291	72.7	0.27 ± 0.11	Poor
Breast feeding reduce the risk of having breast cancer	220	54.9	180	45.1	0.55 ± 0.37	Fair
Obesity is a risk factor of breast cancer	91	22.8	309	77.2	0.23 ± 0.12	Poor
Lower practicing of sport exercises is a risk factor of breast cancer	206	51.5	194	48.5	0.52 ± 0.32	Fair
Knowledge about the food that increase the risk of breast cancer	78	19.5	322	80.5	0.20 ± 0.10	Poor
Presence of breast lump necessate visiting the breast examination unit	397	99.3	3	0.7	0.99 ± 0.09	Good
Presence of abnormal discharge from the breast is risk factor of breast cancer	338	84.5	62	15.5	0.85 ± 0.36	Good
Marriage and parity have a role in reducing the risk of breast cancer	117	29.3	283	70.7	0.29 ± 0.23	Poor
Delayed onset of menopause symptoms is risk factor of breast cancer	140	35	260	65	0.35 ± 0.24	Fair
Late age at menarche is risk factor of breast cancer	145	36.3	255	63.7	0.36 ± 0.24	Fair
Using contraceptive pills and hormonal therapy is risk factor of breast cancer	197	49.3	203	50.7	0.49 ± 0.21	Fair
Cigarette smoking and alcohol consumption increase breast cancer risk	306	76.5	94	23.5	0.77 ± 0.42	Good
A blow on the breast is a risk factor of chest cancer	43	10.8	357	89.2	0.11 ± 0.10	Poor
Overall mean score for this domain					0.43 ± 0.17	Fair
Awareness rate for this domain=43%						

Table (8): The Responses of Participant About Surgical Treatment and Chemotherapy are Important to Cure BC in Karbala in 2016

Response	No.	%
Correct	325	81.3
Incorrect	75	18.7
Total	400	100.0
Mean score for this item : 0.81±0.38, Good		
Awareness rate for this item=81.3 percentage		

Table (9): The Distribution of Overall Awareness of Participant to Risk Factors and Screening for BC (N=400)

Response	No.	%
Good	74	18.5
Fair	297	74.2
Poor	29	7.3
Total	400	100.0
Overall awareness score weighted mean=52.4±0.13, evaluation: Fair		
Overall awareness rate for this item=52.4%		

Table (10): The Relationship Between a Participant's Sociodemographic Traits and their General Awareness

Variable	Category	Overall awareness						Statistical test	P-value
		Good (n=74)		Fair (n=297)		Poor (n=29)			
		No.	%	No.	%	No.	%		
Age (year)	20-29	24	20.3	86	72.9	8	6.8	X ² =13.0 df=6	0.043 sig
	30-39	21	14.6	112	77.8	11	7.6		
	40-49	22	17.6	93	74.4	10	8.0		
	≥50	7	53.8	6	46.2	0	0.0		
Residence	Urban	64	19.0	253	75.3	19	5.7	X ² =8.0 df=2	0.018 sig
	Rural	10	15.6	44	68.8	10	15.6		
Marital status	Married	53	18.0	217	73.6	25	8.5	Fisher's Exact Test 5.94	0.39ns
	Single	14	20.9	52	77.6	1	1.5		
	Divorced	2	13.3	11	73.3	2	13.3		
	Widow	5	21.7	17	73.9	1	4.3		
Level of education	Illiterate	8	14.0	42	73.7	7	12.3	X ² =24.1 df=8	0.002sig
	Read and write	4	6.7	51	85.0	5	8.3		
	Primary	15	14.7	77	75.5	10	9.8		
	Secondary	11	16.9	51	78.5	3	4.6		
Occupation	Institute or higher	36	31.0	76	65.5	4	3.4	Fisher's Exact Test 11.0	0.021 sig
	Housewife	47	15.2	239	77.1	24	7.7		
	Employed	21	33.3	38	60.3	4	6.3		
	Other	6	22.2	20	74.1	1	3.7		
Economic Status	Poor	16	15.1	82	77.4	8	7.5	X ² =15.1 df=4	0.005 sig
	Middle	44	16.8	198	75.6	20	7.6		
	Good	14	43.8	17	53.1	1	3.1		
Home ownership	Owned	60	20.5	213	72.9	19	6.5	X ² =5.9 df=4	0.21
	Rented	11	13.9	59	74.7	9	11.4		
	Other	3	10.3	25	86.2	1	3.4		
Crowding index	Low	37	23.6	111	70.7	9	5.7	X ² =15.2 df=4	0.004 sig
	Moderate	29	19.9	110	75.3	7	4.8		
	Overcrowding	8	8.2	76	78.4	13	13.4		

Table (11): Comparison of Mean Overall Awareness Score to BC Question of Participant According to Source of Information

	N	Mean	SD
Physician or nursing staff	54	0.61	0.11
Mass media	218	0.55	0.13
Friends and relatives	111	0.49	0.12
Family	69	0.44	0.13

ANOVA test, F=5.26, P. value <0.001

Table (12): Results of ANOVA Post Hoc Test (LSD) for Multiple Comparison of the Participant's Mean Awareness Score Across Information Sources

Multiple comparison	P. value
Physician or nursing staff vs. Friends and relatives	<0.001
vs. Family	0.003
vs. mass media	0.335
mass media vs. Friends and relatives	0.228
mass media vs. Family	0.215
Family vs. Friends and relatives	0.789

that participants' ages ranged from 17-24 years old, with a mean age of 20, which was likely typical for high school seniors, but a study in Basra where the participants age ranged from 17-24 years with mean age of 20 years which was not surprising among students in the final years of high schools^[11]. Our study's sociodemographic data was comparable to that of a study conducted on Saudi women., over half of the participants (51.8%) were married and exactly half (50%) were employed. Of these, around two-thirds (64.2%) were university graduates, while 13.8% had no formal schooling^[17]. Regarding the medical and treatment history of the women who participated, 18.5% of them had taken oral contraceptives. This data is comparable to a study conducted in Kuwait, with the exception that all of the participants in that study were married because 46% of the women in the sample were using contraception and attending primary care for maternity and child care^[18]. Two-thirds of the survey group in Mosul had heard of BSE and television programs were the primary source of information^[19]. This is similar to study done in Turkey where also the mass media obtained the highest score^[20], but it is opposite to study done in Bangladesh major source of information on BC study was the newspaper^[21]. I can say the mass media is more effective in our country than newspaper. While a survey conducted among Yemeni university students revealed that the majority of them had little knowledge of BC (58.6%), the overall awareness of general information about BC among the participating women in this study was good^[22]. Only 56% of respondents to a research conducted in New Delhi, India, knew that breast cancer was a disease. This could be because, at the time of the study, there was no national screening program for the condition in the nation^[23]. Developing proper health habits in adolescence should lead to maintenance of good health in adulthood^[24]. Some participants in this study told me that BSE is time-consuming and difficult, while others told me that it causes shame and that one person was terrified.

Sixty-eight percent of the participants were unaware of the proper BSE process. A descriptive research conducted in Tehran found that the BSE rates of Iranian women are much lower than those of their Western counterparts. The study found that women's knowledge of the importance of BSE and proper technique is the factor that determines whether or not they execute it^[25]. Due to the lack of systematic screening programs for early detection of BC in Iran^[26]. Regarding BSE scheduling, women in the survey (50.3%) were aware of the ideal time to perform BSE, whereas respondents in Nigeria (71.8%) who were performing BSE did so once a month^[27]. Similar to a study conducted in Malaysia, >half of participants had heard about mammography, but only 12% were aware of the best age. While half of the respondents knew about mammography, the majority of them (53.2%) stated that the age of 25 was the ideal time to begin mammogram screening^[13]. This contrasts with a research conducted in Iran that found that only 9% of people were aware of mammography^[16]. This is because there is no population-based mammography screening for breast cancer in Iran, whereas BSE and CBE have been the cornerstones of the program^[28]. The greatest way to reduce BC-related morbidity is through primary prevention, which requires a thorough understanding of risk factors^[29]. According to the participant's awareness of the risk factors for breast cancer, the respondent was well-informed about three of these risk factors: breast lumps, abnormal discharge from the breast and cigarette smoking. As a result, the most commonly recognized symptoms of breast cancer were breast lump occurrence, with 99.3% of respondents stating that the presence of a breast lump necessitates visiting the breast examination unit. The Saudi study also found that the most commonly recognized symptoms of breast cancer were breast lump occurrence (86.2%) and breast pain (93.7%)^[30]. About 54.9% of participants know that breast feeding lowers the risk of breast cancer. This finding was comparable to that of Jeddah, Saudi Arabia,

where 51.9% of the women who took part agreed^[31]. About half of the participants concur that engaging in fewer sports activities is a risk factor for BC, but only 22.8% of study participants said that obesity is a risk factor for BC, while 50.3% said it is not. This is comparable to a study conducted in Jordan where only 29.8% of nurses were aware that being overweight may increase the risk of BC in some women^[16]. Regarding the diet effect, 65.5% of participants were unaware that diet influences the risk of acquiring BC and Shiraz had also poor knowledge about risk of high fat diet on BC^[29]. Participants in the current study have a high level of awareness regarding the effects of alcohol and tobacco use. A survey conducted in Basra found that 67.1% of respondents believed that alcohol and tobacco use are risk factors^[11]. As a risk factor for BC, they lacked enough awareness of menarche before the age of 12 and menopause after the age of 50., Shiraz also found same result^[29] and many respondents told me that it is difficult question. >One half of the participant state that BC is not hereditary disease, they have thoughts that it occurs due to stress. In Jeddah (80%) of the student failed to recognized extra risk imposed on a women if she has a close relative with BC^[31]. <One half of participant agreed that using contraceptive pills and hormonal therapy is risk factor of BC, In Basra study the percentage of this category is similar to our result^[11]. A blow on the breast isn't risk factor of BC, but (84. 8%) of the participant said it is a risk factor, this high percentage also obtained from a study in India^[23]. The responses of participant about their thought about surgical treatment and chemotherapy importance in BC was: (81.3%) trust the medicine, while (13.8%) did not., In comparison to study in India^[32] (95%) of their participant believe that alternative healthcare modalities like yoga, Ayurveda, herbal medicine and others have been proven to cure BC, women who participate in the Indian study thought that surgery for BC meant removal of entire breast. May be it is this fear of treatment that led nearly (95%) women to believe that alternative healthcare modalities have a cure for BC.

Limitation of the Study: During the period of data collection, the number of patient and relatives was lower than usual, this is because the decision of Ministry of Health of charge payment.

CONCLUSIONS

- Fifty percent of women practiced breast augmentation surgery (BSE), the reasons for this were lack of understanding about the process, the fact that it was time-consuming and difficult, shame,

fear of discovering breast mass and the belief that there was no point in examining my breasts when I had no problems.

- Awareness about mammogram is fair, but the participant knowledge about the right age for doing screening mammogram is poor.
- Breast lumps were the most often reported risk factor for BC and the majority of participants stated that having a breast lump required going to the breast examination unit. The existence of abnormal breast discharge was the second most frequently reported factor.
- The majority of participants believe that breast trauma is a risk factor for breast cancer, although this is untrue.

Recommendations:

- Maintaining healthy lifestyle choices throughout a person's lifetime is essential for lowering the risk of BC.
- Women's awareness of what is and is not usual on other days can be enhanced by monthly BSE.
- Self-management education, such as BSE, is an inexpensive approach that should be implemented in breast clinics and primary care settings to increase women's self-efficacy and support the cancer control agenda in low-resource nations.
- In order to educate women, raise their awareness of breast cancer risk factors and change their behavior, health care providers and the media can be very helpful.
- The survival rates of women with BC have significantly improved with greater awareness and better treatment, so it is crucial to focus on school teachers and students as a source of campaigns on cancer symptoms, risk factors, attitude toward BSE, mammography and common misconceptions.
- To break the ethical barrier between female patients and doctors, we would prefer to add a female surgeon to the breast clinic, even though most Iraqi hospitals and health clinics provide treatments for female patients by female medical experts.

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