

## Knowledge and Awareness Regarding Breast Cancer among a Sample of the Educated Women in Karbala Provenance

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### ABSTRACT

**Background:** Breast cancer is the most frequent cancer among women, its impacting 2.1 million new cases each year, contributing about 11.6% of the total cancer incidence burden worldwide.

**Methodology:** A descriptive cross-sectional study was carried out among a sample of 582 educated women from Karbala Technical Institute to assess their Knowledge and Awareness regarding breast cancer (B.C.). A self-administered questionnaire was used to achieve the aim of the study, which contained two parts: the first part was demographic characteristics, and the other part was used to assess Knowledge and awareness; the researchers designed this questionnaire form according to WHO criteria. The sample was classified into three categories: student 349 (60%), teaching staff 92 (15.8%) and administrative staff 141 (24.2%).

**Results:** 77.7 % of the participants believed that the best way to prevent breast cancer was "Early detection". Regarding signs and symptoms, most of the participant's answers (71.5%) agree with the "appearance of a Painless lump in the breast or the underarm". On the other hand, (57.2 %) of represented believe that the most risk factor was "Family history of breast cancer". As an overall assessment, 50.2% had a good and acceptable knowledge of B.C.

**Conclusion:** This study revealed unsatisfactory Knowledge of breast cancer among educated women in Karbala Provenance.

**Keywords:** Knowledge; awareness; Breast Cancer; educated women; Risk Factors.

### INTRODUCTION

Breast Cancer; is the most frequent cancer among women, impacting 2.1 million new cases each year, contributing about 11.6% of the total cancer incidence burden worldwide. In 2018, it was estimated that 627,000 women died from breast cancer, which is

approximately 15% of all cancer deaths among women (Sung et al., 2021). In Iraq, it stands as the second cause of cancer mortality (12.01%) and the commonest cancer among Iraqi women (34.27%), with 4922 newly diagnosed cases in 2016; of them, 828 (16.8%) women were below 40 years of age.

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In Baghdad, the capital city of Iraq, breast cancer incidence reaches 41.65 per 100,000 women (Lafta, 2021). Breast cancer is the most frequently life-threatening malignancy and the most common cause of worldwide morbidity and mortality in women. In both sexes combined, breast cancer was ranked second in the top 10 cancers worldwide in 2018, following lung cancer. Female breast cancer has surpassed lung cancer as the most commonly diagnosed cancer, with an estimated 2.3 million new cases (11.7%) (Sung et al., 2021). It accounts for 24.2% of all newly occurring cancers in women and represents 15% of women's deaths caused by cancer (Sung et al., 2021; Lafta, 2021 & Joni, 2018).

According to recent information by the world health organization, the largest increase in breast cancer incidence over the next 15 years will be in Middle Eastern countries; the mortality rate from all types of breast cancer in the Middle East is currently 70% compared to 40- 55% in western countries (World Health Organization. Regional Office for the Eastern Mediterranean, 2009). Breast cancer is the most common type of female cancer; women's Knowledge and views toward breast cancer and its treatment may contribute considerably to medical help-seeking behaviours (World Health Organization, 2019). The first symptoms of breast cancer are a lump that feels different from the rest of the breast tissue, the breast becoming larger or lower, a nipple changing position or shape or becoming inverted (Hadi, 2000). Most types of breast cancer are easy to diagnose by analysis of samples or biopsy; the physical examination of breast tissue and mammography are the two most commonly used screening methods (Handbooks & Prevention, 2020). This study was aimed to determine the Knowledge and awareness of educated women regarding breast cancer.

## MATERIALS AND METHODS

**Study design:** A descriptive cross-sectional study was conducted between June to December 2021 using a pre-validated

questionnaire-based survey with direct interviews after verbal consent was taken from each teacher prior to the interview, with a response rate of 94.3%.

**Sample size and sampling technique:** A simple random sampling technique described by the World Health Organization (WHO) was applied to choose 582 educated women aged between (18-55) years from the Technical Institute of Karbala - Iraq to be involved in this study.

**Study variables:** Knowledge and awareness level were the outcome variables of interest. While Sociodemographic variables of the participant's related characteristics were the independent variables that could influence the outcome variables.

**Ethical consideration:** All the required permissions were obtained from the Ministry of higher education, and ethical approval was obtained from the Research Ethics Committee Directorate of the Technical Institute of Karbala.

**Study instruments:** The interview was based on a well-structured questionnaire form that was pre-tested on a pilot study with subsequently updated by the literature review to ensure provide reliable information according to WHO criteria; comparability with these surveys and the accuracy of the method are important factors in determining the behaviour of this Serious illness, questionnaire form consisting of two parts: first part contain some demographics characteristic and the second part consists of the Knowledge and awareness towards Breasts Cancer.

**Statistical analysis:** The data were analyzed performed SPSS software version 24; data were presented as numbers (N) and percentages (%), and Chi-Sq did the inferential statistical test. ( $\chi^2$ ) tests were used to examine the relationship between demographic information and participants' Knowledge after being coded. P-values <0.05 were considered statistically significant.

The knowledge domain was assessed with 27 questions, rating and scaling score determined based on the number of questions answered by the skill score graded as

insufficient or adequate, each correct answer assigned (1) point, while wrong or uncertain responses assigned (0) points then, the sum of the responses for each patient was calculated for Knowledge and awareness levels (Jasim et al., 2020).

Non-educated women, women with a personal history of breast cancer and incomplete questionnaires were excluded.

## RESULTS AND DISCUSSION

**Table 1:** Showed the distribution of the study sample according to demographic characteristics. Ages mean  $\pm$  S.D. of the

participants were ( $23.87 \pm 6.78$ ) years, the age range at the time of the study was between (18-55) years, the Highest percentage (76.8%) was in the age group ( $\leq 30$ ) years, and the lowest percentage (4.8%) were in the age group (age  $> 50$ ) years. The participants were classified into three groups: student (n = 349; 60.0%), teaching staff (n = 92; 15.8%) and administrative staff (n = 141; 24.2%). Regarding the educational level, 78.0% had secondary school. Meanwhile, 55.3% of the study sample were unmarried, and 76.6% were from urban areas.

**Table 1: The demographic characteristics of the participants**

Demographic characteristics		No.	%
Age groups	$\leq 30$	447	76.8
	30-40	66	11.4
	40-50	41	7
	$> 50$	28	4.8
Calcification of sample	Students	349	60
	Administrative Staff	141	24.2
	Teaching staff	92	15.8
Residence	Rural	136	23.4
	Urban	446	76.6
Education level	Secondary stage	454	78
	Diploma	74	12.7
	Graduate	29	5
	Postgraduate	25	4.3
Marital Status	Unmarried	322	55.3
	Married	224	38.5
	Divorced	14	2.4
	Widow	22	3.8
<b>Total</b>		<b>582</b>	<b>100</b>

**Table 2:** The results in this table indicate a variety of answers; for general information, the most correct answer formed 64.4% for "Growing older increases the probability of developing breast cancer in women". On the other hand, in the Prevention measures domain, 77.7% of participants considered Early detection the best approach to breast

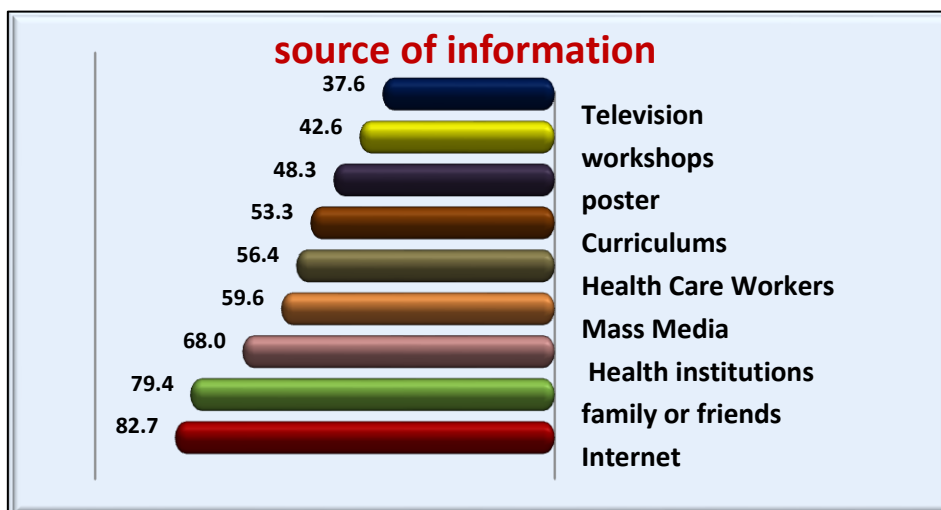
cancer prevention. Meanwhile, 71.5% of females believed that a Painless lump in the breast or the underarm is the most sign and symptom of breast cancer. Finally, within the risk factor domain, 75.8% of the study sample believed that Exposure to radiation increases the development of developing breast cancer.

**Table 2: The Knowledge and Awareness of breast cancer**

Variables	Yes		Don't Know		No	
	No.	%	No.	%	No.	%
<b>Knowledge ( general information )</b>						
Breast cancer is the first Cancer among women in Iraq	395	67.9	103	17.7	84	14.4
Growing older increases the probability of developing breast cancer in women.	375	64.4	69	11.9	138	23.7
Late menopause (over 55 years) increases the probability of developing breast cancer	366	62.9	63	10.8	153	26.3
Early menarche (under 11 years) increases the probability of developing breast cancer.	352	60.5	114	19.6	116	19.9
It's the commonest cancer among women worldwide.	311	53.4	89	15.3	182	31.3
Oophorectomy decreases the risk of breast cancer	311	53.4	55	9.5	216	37.1
Smoking increases the breast cancer	309	53.1	117	20.1	26.8	26.8
Oral contraceptive pills increase breast cancer.	298	51.2	132	22.7	152	26.1
<b>Prevention measures</b>						
Early detection is the best approach to prevention	452	77.7	32	5.5	98	16.8
Seeking medical advice for apparent breast lumps	390	67.0	82	14.1	110	18.9
Avoiding a fat-rich diet	350	60.1	59	10.1	173	29.7
A healthy diet and body weight	321	55.2	166	28.5	95	16.3
Promoting physical activity	295	50.7	161	27.7	126	21.6
Breastfeeding	260	44.7	230	39.5	92	15.8
Early pregnancy	260	44.7	168	28.9	154	26.5
Avoidance of unprescribed hormonal therapy	248	42.6	202	34.7	132	22.7
Performing periodic regular breast examinations.	173	29.7	105	18.0	304	52.2
<b>Singes and symptoms</b>						
Painless lump in the breast or the underarm	416	71.5	100	17.2	66	11.3
Axillary lymph nodes	391	67.2	126	21.6	65	11.2
Suddenly discharge from the nipple.	354	60.8	81	13.9	147	25.3
Skin puckering.	341	58.6	136	23.4	105	18.0
Nipple pulling.	300	51.5	189	32.5	93	16.0
<b>Risk factors</b>						
Exposure to radiation at an increase of developing B.C.	441	75.8	49	8.4	92	15.8
Family history of breast cancer	333	57.2	143	24.6	106	18.2
Getting older >50 years	301	51.7	191	32.8	90	15.5
Obesity	293	50.3	228	39.2	61	10.5
Genetic factor	282	48.5	132	22.7	168	28.9

**Figure 1:** The Internet was the main source of information for the study sample. Its formed 82.7%, followed by Family or friends 79.4 %,

while the T.V. source had the lowest respondent 37.6%.



**Figure 1: Source of information**

The findings of this study showed that the highest (37.1%) of women had Good and acceptable Knowledge scores in age groups

(<=30). The association was found to be statistically significant (P =0.001), while the Students were (23.0) regarding the Job of

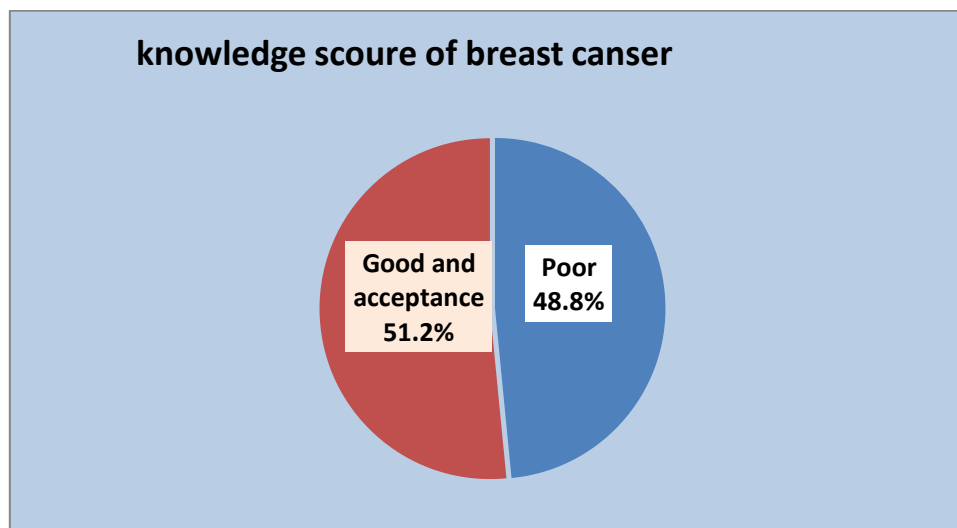
females and the association was found to be statistically significant (P =0.000). In contrast, regarding residence ( 40.9%) of urban and, the association was found to be statistically not significant (P =0.108), the Educational level of more than third studied sample (37.6 %) of

secondary stage and the association was found to be statistically significant (P =0.002). In comparison, about marital status (25.9%) of unmarried and the association was found to be statistically significant (P =0.021) Table (3).

**Table 3: The relationship between knowledge score and demographic characteristics**

Variables	Knowledge score				P.value	
	Poor		Good			
	No.	%	No.	%		
<b>Age groups</b>	<=30	231	39.7	216	37.1	<b>0.001</b>
	30-40	26	4.5	40	6.9	
	40-50	19	3.3	22	3.8	
	>50	8	1.4	20	3.4	
<b>Calcification of sample</b>	Students	215	36.9	134	23.0	<b>0.0001</b>
	Administrative S.	45	7.7	96	16.5	
	Teaching staff	24	4.1	68	11.7	
<b>Residence</b>	Rural	76	13.1	60	10.3	<b>0.108</b>
	Urban	208	35.7	238	40.9	
<b>Education level</b>	Secondary stage	235	40.4	219	37.6	<b>0.002</b>
	Diploma	32	5.5	42	7.2	
	Graduate	9	1.5	20	3.4	
	Postgraduate	8	1.4	17	2.9	
<b>Marital Status</b>	Unmarried	171	29.4	151	25.9	<b>0.021</b>
	Married	99	17	125	21.5	
	Divorced	3	0.5	11	1.9	
	Widow	11	1.9	11	1.9	

Figure (2) showed the knowledge score of breast cancer among educated women was (51.2 %).



**Figure 2: The knowledge scores of breast cancer among educated women**

## DISCUSSION

This study confirms previous studies unsatisfactory overall Knowledge about B.C. risk factors (Renganathan et al., 2014) and agreement with observations that have previously been made in developing and developed countries, with participants showing mild understanding of major BC risk factors (10-12). Because the majority of educated women involved in the current study had only moderate to poor Knowledge of B.C., an educational program is recommended to enhance awareness of B.C. knowledge.

In our manuscript, the distribution of the study sample demographic characteristics has revealed that all were females, and the participants were categorized into 3 groups according to their occupation: student (n = 349; 60.0%), teaching staff (n = 92; 15.8%) and administrative staff (n = 141; 24.2%), While (76.8%) of them were of ( $\geq$  30) years old. All answers to the first part about general information of breast cancer fluctuated between acceptable to good in the eight questions such as question "Growing older increases the probability of developing breast cancer in women" the answers of educated women were good and that agreement with study conducted in Malaysia (Hadi et al., 2010) and British (Grinfeld et al., 2002), While in the second part, which included nine questions about ways to prevent breast cancer, the information of women participating in the research fluctuated between good to poor, as shown in Table (2), While the answers were good to acceptable in the third part, which included five questions about the signs and symptoms of breast cancer, The information of the participants in the manuscript about the risk factors for breast cancer was unsatisfactory, as it was acceptable to weak, which was consisted of four questions The most reported risk factor was Exposure to high dose of radiation (75.8%) same result finding in study conducted in Oman at 2020 (Al-Ismaili et al., 2020), followed by a family history (57.2%) and personal history of BC (68.8%). Smoking and environmental pollution were reported by 67.4% and 62.3%

of the participants, respectively, as risk factors for B.C. Some participants reported hormonal factors as a risk factor, including recent use of HRT (48.5%), late menopause (36.6%) and the use of COC (32.2%). Not breastfeeding (5.6%) was the least identified risk factor in Table (2). The sources of information about B.C. in the current study included the Internet, Family and friends, and health institutions were the main source of participants' information about breast cancer; this is in agreement with results done by (Ibrahim & Odusanya, 2009) as shown in Figure (1). These results were in agreement with studies conducted in Egypt (Boulos & Ghali, 2014), Saudi Arabia (Dandash & Al-Mohaimed, 2007) and the United Arab Emirates (Rahman et al., 2019), which found that radio and T.V. were the main sources of information about Breast Cancer. This may be due to the rapid development in the field of computers and the World Wide Web in recent years and their frequent use by people to obtain information and Knowledge in various fields of sciences, including the available information about breast cancer.

Therefore, the study confirmed that the Internet is the main source for obtaining Knowledge and information in various fields of Knowledge, and it can be relied upon to disseminate it to ensure that it reaches the largest possible segment and thus can enhance the community's awareness of breast cancer through it.

As an overall assessment, In this study, women educated in the Institute have divergent Knowledge between mild to moderate breast cancer. This result is similar to the study done in our country (Joni, 2018) and Arabic country in Oman (Al-Ismaili et al., 2020) a study conducted among university students of Saudi Arabia, which found that the awareness and Knowledge of breast cancer, with regard to early warning signs, and risk factors, was inadequate (Rahman et al., 2019). In Iran, 1402 women were interviewed; only 61% of respondents knew about BSE (14). and Asian countries in Korea ( Bae & Kim, 2015).

## CONCLUSION

There is a high percentage of incorrect responses regarding the Knowledge of students about the risk factor diagnosis, and prognosis of breast cancer; the results of this study suggest that female institute students have mild to moderate Knowledge of breast cancer; there is a need to enhance Knowledge of females regarding issues related to breast cancer.

### Declarations:

- **Declaration of conflicting interests:** The Authors declare that there is no conflict of interest.
- **Ethical Approval and Consent to participate:** The Research Ethics Committee of Karbala Technical Institute granted all necessary approvals and ethical approvals.
- **Consent for publication:** Not applicable
- **Availability of data:** After obtaining the fundamental approvals from the Institute's administration and personal approvals from the respondents. The data was obtained by direct interview with the study sample of women at Karbala Technical Institute
- **Conflict of interest:** The authors declare that they have no competing interests.
- **Funding:** self-funding by the authors.
- **Authors' contributions:** A.N.H. Al-Aaragi Contributed to the completion of the abstract and the practical part as well as the discussion section. Contributed by writing the introduction section and writing a discussion of the research. Contributed to the completion of the statistical analysis of the data as well as writing the research methods and References.

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