Assessment of Knowledge of Iraqi Women toward Early Detection of Breast Cancer and Risk Factors in Diyala Province-Iraq

Ahmed Khalid Abdullah[1], Atheer Shehab Ahmed[2], Sara Fawzi Sahm[3]

[1]Department of Physiology, College of Medicine, University of Diyala, Baqubah32001, Iraq, Baqubah32001, Iraq
[2]The General Directorate for Education of Diyala, Baqubah32001,
[3]Continuous education center, Middle Technical University, Iraq.
Corresponding Author: Name: Ahmed Khalid Abdullah
Senior lecturer in Medical Physics College of Medicine, University of Diyala, Baqubah 32001, Iraq E-mail address: abdullah@uodiyala.edu.iq

Abstract

Background: Breast cancer is one of the most frequently reported cancers in Iraq, accounting for about 30% of all reported cases in the Iraqi population and is the leading reason of death among females. Objectives: This study assessed participants' knowledge of breast cancer based on risk factors, outcomes, and age for breast cancer by educational attainment. Methods: Data were collected from 366 women in Diyala utilising a questionnaire that included questions about demographics and risk factors for breast cancer. The categorized data were analysed using Chi-square and Fisher exact (for small number categorized data) tests. The differences between proportions were analysed by using the difference between proportions or percentages test. A p-value of ≤ 0.05 is a cut-off significant level. Results: The outcomes of this questionnaire demonstrated that the characteristics of the participants. Participants are approximately equal in the age distribution. The majority of the participants were highly educated at the university level, which accounted for 64.9%, and those with postgraduate studies accounted for 25%. According to occupation, 65.2% of the participants were employees, while the percentage of students in this survey accounted for 14.6%. Married women constituted 65.1% of the participants, while widowed and separated women accounted for 4.2%, and 3.9%, respectively. Conclusion: Knowledge about breast cancer is deficient despite a higher percentage of educated participants. A large percent of Iraqi breast cancer patients still locally advanced disease at the time of diagnosis, justifying the need for community education campaigns to strengthen our national early detection program. Health services failed to send messages about breast cancer in society. Therefore, media played an important role in sending messages about breast cancer, but it seems misleading as the participants had no idea about the epidemiology and risk factors of breast cancer.

1. Introduction

Cancer is considered one of the major threats known in human history that threatens human life. One of the most prominent types of cancer that affect women is breast cancer, which represents about 30% of other types of cancer. Most of the incidence ranges from 30 to 60 years old [1, 2]. It was also noted that the death rate in developing countries is usually greater compared to developed countries (60%). Many records belonging to the countries of the Middle East have recorded high rates of incidents and deaths due to breast cancer compared to developed countries [3].

In Iraq, breast cancer represents about (30%) of the cancer cases recorded according to the Iraqi Cancer Registry. Breast cancer is categorized first in relation to the rest of the types of cancer that Iraqi women suffer from. Local studies have shown that the incidence of breast cancer is steadily increasing, and the mortality rate is high, and this is due to late diagnosis, which reduces the chances of recovery. Studies indicate that young women are more susceptible to infection in Middle East countries in general and in Iraq in particular, in contrast to what is happening in Western societies [4] Many experimental shreds of evidence indicate that early detection and early treatment of breast diseases contribute to improving survival rates and rates. Statistics of the World Health Organization

(WHO) and global and local studies also indicate that the importance of periodic breast examination, such as clinical examination and radiology for women aged 40 and over, contributes to early detection and timely treatment that reduces the mortality rate [5, 6] (6-8). Despite the development of modern methods in the survey and investigation of breast cancer, more than 90% of women are still discovered by them [5, 6]. The aim of conducting this cross-sectional study is to emphasize the awareness of women, especially the educated groups, about risk factors and methods of early recovery by following the education curriculum and urging educated women to teach other women the mechanism of breast self-examination and to spread a culture of awareness among the community of the importance of early detection of this disease. The data of the present study represent the first attempt to assess the participant's knowledge about breast cancer according to the education levels of the Iraqi women in the Diyala province.

2. Methods

Ethical approval: This study was approved by the ethical and scientific committees in the College of Medicine at the University of Diyala in Baqubah-Iraq.
Setting and design: This cross-sectional survey study was performed in the Department of Physiology, College of

Medicine, the University of Diyala from February 2020 to April 2021. The questionnaire consists of items covering demographics and risk factors for breast cancer. The participants were asked to answer each question by themselves. A total number of 366 women were involved in this survey. The questionnaire was divided into three parts; Parts one: Socio-demographic data including age, gender, education level, marital status, and occupation. Part two: About the sources of information (Educational institutions, self-search, media family and friends, internet, television, medical staff, books, and medical centers). Part three was including questions about breast cancer-related risk factors such as family history, lifestyle, contraceptive pills, smoking, radiation exposure, and the effect of obesity.

3. Statistical Analysis

The results are expressed as numbers and percentages. The categorized data were analysed using Chi-square and Fisher exact (for small number categorized data) tests.

The differences between proportions were analysed by using the difference between proportions or percentages test. A p-value of ≤ 0.05 is a cut-off significant level. The software Excel-10 program was used in the statistical analyses.

4. Results

Characteristics of the participants

Table 1 shows the characteristics of the participants. Participants were approximately equal in age distribution. The majority of the participants were educated at the university level, which accounted for 64.9%, and those with postgraduate studies accounted for 25%. According to occupation, 65.2% of the participants were employees, while the percentage of students in this survey accounted for 14.6%. Married women constituted 65.1% of the participants, while widowed and separated women accounted for 4.2% and 3.9%, respectively.

Table 1: Characteristics of the participants	
Variables	**No. (%)**
Age (year) 18-30 30-40 >40	118(35.1) 108(32.1) 110(32.7)
Education Primary and Secondary University Higher Education	34(10.1) 218(64.9) 84(25.0)
Occupation Student Housewife Employee	49(14.6) 68(20.2) 219(65.2)
Marital status Single Married Widow Divorced/Separated	90(26.8) 219(65.1) 14(4.2) 13(3.9)

The results are expressed as a number (%).

Assessment of the knowledge about the breast cancer
The survey assessed the participant's knowledge about breast cancer taking into consideration the risk factors, the outcome, and the age of breast cancer according to education levels.

Table 2 shows that there is a non-significant difference between different education levels about the ages of women that are commonly subjected to breast cancer. Most of the participants (55.1%) had knowledge that breast cancer is a disease of women aged 40-50 years old.

Table 2: Distribution of participant knowledge about the age of breast cancer					
Education levels		**Age class (year)**			**Total**
		30-40	**40-50**	**>50**	
Education	Primary and secondary	4	20	10	34
	University	27	125	66	218
	Postgraduate	14	40	30	84
Total		45	185	106	336
$\chi^2=2.666$, df=4, p=0.615, Exact Fisher=2.714, df=4, p=0.619					

Table 3 shows that there is a non-significant difference between different education levels about the risk factor for breast cancer. Most of the participants (55.7%) thought that hereditary is the risk factor for breast cancer, while 30.7% of the participants had an idea that breast cancer has resulted from multifactorial conditions.

Table 3: Distribution of participant knowledge about the risk factor of breast cancer								
Education levels	**Suspected risk factors**							**Total**
	Multifactorial	**Early pregnancy**	**Contraceptive Pills**	**Hereditary**	**Premature puberty**	**Smoking**	**Infertility and sterility**	
Primary and secondary	13	1	2	15	0	3	0	34
University	62	2	16	130	1	5	2	218
Postgraduate	28	2	5	42	0	3	4	84
	103	5	23	187	1	11	6	336
$\chi^2=14.826$, df=8, p=0.251, Exact Fisher=14.820, df=8, p=0.326								

Table 4 shows that there is a non-significant difference between different education levels about the outcome events of breast cancer. Most of the participants (50.0%) thought that the outcome event of breast cancer was mastectomy, while 10.7% of the participants thought that breast cancer can lead to familial conflicts.

Table 4: Distribution of participant knowledge about the outcome events of breast cancer						
Education levels	**Outcome events**					**Total**
	Cure	**Chemotherapy**	**Death**	**Mastectomy**	**Familial conflicts**	
Primary and secondary	6	3	5	16	4	34
University	26	38	14	118	22	218
Postgraduate	16	16	8	34	10	84
Total	48	57	27	168	36	336

χ2=9.394, df=8, p=0.310, Exact Fisher=9.868, df=8, p=0.384

Perception towards the breast cancer

Table 5 shows that there is a non-significant difference between different education levels about the knowledge sources of breast cancer. Sources belonging to the medical centers; hospitals, and public clinics accounted for only11.3%, while self-search and media shared in the distribution of the knowledge by 44.6% and 44.0%, respectively. The difference reached a significant level (p<0.001).

Table 5: Distribution of participant perception to the sources of information about breast cancer				
Education levels	Source of knowledge			Total
	Self-search	Medics and Paramedics institutions	Media	
Primary and secondary	16	3	15	34
University	97	27	94	218
Postgraduate	37	8	39	84
Total	150	38	148	336
χ2=849, df=4, p=0.931, Exact Fisher=0.711, df=4, p=0.956				

87.2 % of the participants (293 out of 336) believed that the provided information about breast cancer in Iraq was so deficient, which is significantly higher than the percentage of the participants who believe the information is sufficient (43 out of 336)(p<0.001). 98.2% (330 out of 336) of the participants believed that early detection of breast cancer is an important tool that is shared in the improvement of the management of breast cancer. Also, 94.6% (318 out of 336) believed that social education is an important measure that encourages women to follow the programs of early detection of breast cancer, and 87.2% of the participants (293 out of 336) were willing to indulge in those programs.

The attitude of the participants with a history related to the breast lesions

Table 6 shows that 152 out of 336 participants (45.2%) expert breast cancer from their surrounding people in the society and this is reflected in the higher percentage of the participants (89.3%) who like to do regular investigations that lead to early detection of the breast cancer. Only 12.2% of the participants believed that genetic investigation can detect breast cancer early which is significantly lower than the corresponding value (87.8%) of the participants who believed that genetic investigations are of no value (p<0.001).

Table 6 Evidence of breast lesions/cancer in the participants or their surrounding people and their attitudes	
Variables	No.(%)
Evidence of breast lesion in the participants	60(17.9)
Evidence of breast cancer in the members related to the participants	152 (45.2)
Evidence of breast cancer in the familial-relatives	35(10.4)
Participants who had history of breast biopsy	28 (8.3)
The attitude of the participants to do: Regular investigations Genetic investigations	300 (89.3) 41(12.2)

5. Discussion

The level of knowledge is important and necessary in addressing cancer, especially breast cancer, through the individual's awareness of the risk factors to avoid them, and knowledge of prevention factors and their application as much as possible. Knowing the symptoms and types of the disease in order to speed up early detection and stop the disease by controlling it with treatment before it spreads to the rest of the body.

The results extracted from this study showed that there is no relationship between the level of knowledge and each of the knowledge levels, marital and occupational status (Table 1). The results of this research agree with the results of previous studies, such as a study conducted on a group of Iraqi women from the educated groups who belong to some Iraqi universities [7]. The results also agree with a study conducted on female secondary school students in Saudi Arabia, where about 40% of the respondents in the study had knowledge of the method of breast self-examination and its importance in the early diagnosis of breast cancer.

The frequencies and percentages of correct answers to the cognitive tests that pertain to the cognitive factors of disease symptoms as well as the risk factors as shown in Table (3) indicate the probability of infection with age by about 53%, and previous studies confirm that the possibility of developing breast cancer increases with age [8]. Some studies have indicated that there is a marked difference between the ages of breast cancer patients in Western countries compared to Middle Eastern countries. It is worth noting that Iraqi women residing in some countries are exposed to breast cancer 4 years earlier than their Swedish counterparts and Turkish women 5 years, and the reason for this is due to periodic examination programs in developed countries, such as screening mammography [9, 10].

As for the reproductive factors of women in general and Iraqi women in particular, the risk of developing breast cancer increases for women who have not given birth. With regard to the importance of early detection of breast cancer, it was indicated that the percentage of participants in the study (58%) agreed on the importance of self-examination and clinical examination on a regular basis, which is important and helps in early diagnosis. Ultrasound and mammography examinations also contribute to rapid diagnosis and treatment to limit its spread [11, 12].

The results of the questionnaire showed that about 39% of the participants had women's knowledge of the factors that help reduce the incidence of breast cancer or the prevention factors such as conducting periodic breast examinations, seeing a doctor, exercising, and early pregnancy [13-15]. When asked about prevention methods, 60% agreed that maintaining weight through proper nutrition and increasing physical activity. It was noted that the percentage of the correct answers to the question that early detection helps to comply with recovery was about 72% [16-18].

We conclude from this study that the level of knowledge about breast cancer in the sample of participating women from Diyala was not at the level of ambition, despite a large percentage of those who got a good level of education. Knowledge about breast cancer is so deficient despite a higher percentage of educated participants, and health services have failed to send messages about breast cancer in society. Moreover, the media played an important role in sending messages about breast cancer, but it seems misleading as the participants had no idea about the epidemiology and risk factors of breast cancer.

Acknowledgement

References

1.Organization WH. Strategy for cancer prevention and control in the Eastern Mediterranean Region 2009-2013. 2010. Available from: https://apps.who.int/iris/bitstream/handle/116672/EMRPUB_2010_1278.pdf

2.Organization WH. World health statistics 2017: monitoring health for the SDGs. sustainable development goals. 2017;7.

3.Bevers TB, Helvie M, Bonaccio E, Calhoun KE, Daly MB, Farrar WB, Garber JE, Gray R, Greenberg CC, Greenup R. Breast cancer screening and diagnosis, version 3.2018, NCCN clinical practice guidelines in oncology. Journal of the National Comprehensive Cancer Network. 2018;16(11):1362-89. https://doi.org/10.6004/jnccn.2018.0083

4.Alwan N. Breast cancer: demographic characteristics and clinico-pathological presentation of patients in Iraq. EMHJ-Eastern Mediterranean Health Journal, 16 (11), 1159-1164, 2010. 2010. Available from: https://apps.who.int/iris/handle/10665/118047

5.Srivastava K, Jethani S, Kalthe B, Khilnani PS, Bhawalkar J, Vyas S. Awareness of breast cancer risk factors and practice of breast self-examination among nurses of tertiary care hospital. Ind J For Comm Med. 2016;3:75-8.

6.Millat W. Knowledge of secondary-school female students on breast cancer and breast self-examination in Jeddah, Saudi Arabia. EMHJ-Eastern Mediterranean Health Journal, 6 (2-3), 338-344, 2000. 2000. Available from: https://apps.who.int/iris/handle/10665/118874

7.Alwan N, Al Attar W, Eliessa R, Madfaic Z, Tawfeeq F. Knowledge, attitude and practice regarding breast cancer and breast self-examination among a sample of the educated population in Iraq. EMHJ-Eastern Mediterranean Health Journal, 18 (4), 337-345, 2012. 2012. Available from: https://apps.who.int/iris/handle/10665/118320

8.Mousavi SM, Zheng T, Dastgiri S, Miller AB. Age distribution of breast cancer in the middle East, implications for screening. The breast journal. 2009;15(6):677-9. https://doi.org/10.1111/j.1524-4741.2009.00843.x

9.Hemminki K, Försti A, Khyatti M, Anwar WA, Mousavi M. Cancer in immigrants as a pointer to the causes of cancer. The European Journal of Public Health. 2014;24(suppl_1):64-71. https://doi.org/10.1093/eurpub/cku102

10.Hemminki K, Mousavi SM, Sundquist J, Brandt A. Does the breast cancer age at diagnosis differ by ethnicity? A study on immigrants to Sweden. The Oncologist. 2011;16(2):146-54. https://doi.org/10.1634/theoncologist.2010-0104

11.Velie EM, Nechuta S, Osuch JR. Lifetime reproductive and anthropometric risk factors for breast cancer in postmenopausal women. Breast disease. 2006;24(1):17-35. https://doi.org/10.3233/BD-2006-24103

12.Demirkiran F, Balkaya NA, Memis S, Turk G, Ozvurmaz S, Tuncyurek P. How do nurses and teachers perform breast self-examination: are they reliable sources of information? BMC Public health. 2007;7(1):1-8. https://doi.org/10.1186/1471-2458-7-96

13.Baig S, Ali TS. Evaluation of efficacy of self breast examination for breast cancer prevention: a cost effective screening tool. Asian Pacific Journal of Cancer Prevention. 2006;7:154. Available from: https://ecommons.aku.edu/pakistan_fhs_son/173

14.Mualla FH, Al-Alwan NA. Promoting clinical breast examination as a screening tool for breast cancer in Iraq. Iraqi National Journal of Nursing Specialties. 2014;27(1). Available from: https://www.iasj.net/iasj/article/91480

15.SAA J, YT S, MAM A-S, MA A-T, BN A-A, AK S, BT Y, RA A-R. impact of displacement on the social, economic and health situation on a sample of internally displaced families in Anbar Province. Iraq Journal of Ideas in Health. 2019;2(1):56-9.

16.Al Asadi KMN. Women's Knowledge and Concern about Breast Cancer. kufa Journal for Nursing sciences. 2014;4(1). Available from: https://www.iasj.net/iasj?aId=88981&func=fulltext

17.Ebrahim S. Knowledge of students toward breast cancer and breast self-examination practice at high school nursing in Basra city. Rev J Kufa for Nurs Sci. 2014;4(1):0-. Available from: https://faculty.uobasrah.edu.iq/uploads/publications/1619943844.pdf

18.Alwan NA, Al-Diwan JK, Wafa'M A-A, Eliessa RA. Knowledge, attitude & practice towards breast cancer & breast self examination in Kirkuk University, Iraq. Asian Pacific Journal of Reproduction. 2012;1(4):308-11. https://doi.org/10.1016/S2305-0500(13)60098-6