Journal of Nursing Research, Patient Safety and Practice
Vol: 03, No. 02, July-Dec 2023
ISSN: 2799-1210, DOI: 10.55529/jnrpsp.16.26

Research Paper

Investigating women's risk factors for breast cancer and their knowledge and attitudes towards early diagnosis in Nasiriyah city/Iraq

Abbas Naser Al-Abboodi[1*], Figen Erol Ursavas[2], Amer Mohamed Altaie[3]
[1*]Msc, RN Primary Health Care Department At Al Hussein Teaching Hospital, Nasiriyah, Iraq.
[2]PhD, RN Department of Surgical Nursing, Faculty of Health Science, Cankırı Karatekin University, Cankırı, Turkey.
[3]PhD, RN Department of Medical Surgical Nursing, College of Nursing, AL-Safwa University College, Karbala, Iraq.

Article Info

Article History:
Received: 20May 2023
Revised: 03 August2023
Accepted: 09 August2023
Published: 27 September 2023

Keywords:
Breast Cancer
Risk Factors
Early Detection
Breast Self-Examination
Mammography
Women's Health

ABSTRACT

Background: The risk of breast cancer developing in women over 40 years of age is related to a combination of reproductive, lifestyle and clinical history factors and early detection through screening practices (e.g. breast self-examination (BSE), clinical breast examination (CBE), mammography) is a critical factor in prognosis. There is limited data available on prevalence of risk factors and risk factor screening awareness among Iraqi women.
Objective: To identify risk factors for breast cancer among female population aged 40 years or older in Nasiriyah city, Iraq and their knowledge and attitude towards early diagnosis.
Methods: A descriptive, cross-sectional study was carried out on 120 women older than 40 years old who visited two primary health care centers in Iraq from February to March 2020.
Results: The proportion of women with personal history of breast cancer was 6.66%, family history of breast cancer was 21.70%, and benign breast disease was 24.20% of the study participants. A small percentage (0.80%) experienced menarche at or before age 11 and 6.66% had previously had chest radiotherapy. Most (83.30%) had a BMI of 25 or greater, 72.50% did not exercise and 50% were 30 or older when they gave birth to their first child.
Conclusion: Lifestyle-related breast cancer risk factors were prevalent in women from this Iraqi population with overweight/obesity and physical inactivity being the most prevalent, suggesting need for targeted education on these modifiable factors. Furthermore, knowledge and attitudes toward BSE, CBE, and mammography were also poor and interventions are needed to support the awareness and adoption of early detection among female population in this region.

Corresponding Author:
Abbas Naser Al-Abboodi
Msc, RN Primary Health Care Department At Al Hussein Teaching Hospital, Nasiriyah, Iraq.
Email: abbasnaser1990@gmail.com

Journal of Nursing Research, Patient Safety and Practice (JNRPSP)

Copyright © 2023 The Author(s). This is an open access article distributed under the Creative Commons Attribution License, (http://creativecommons.org/licenses/by/4.0/) which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

1. INTRODUCTION

Among female cancers, breast cancer has the highest incidence rate. Breast cancer has a global incidence rate of 46,3 per 100,000 people and a death rate of 13,0. With an annual incidence rate of 38.4 per 100,000 and a fatality rate of 13.6 per 100,000, it is the leading cause of cancer death among Iraqi women [1], [2]. Low and middle-income nations have greater death and incidence rates for breast cancer than high-income countries, even though the disease is curable if caught early [3], [4]. In Iraq, breast cancer has the highest fatality rate of any tumor. Inadequate diagnosis policies and a lack of suitable treatment centers have contributed to a much lower five-year survival rate compared to high-income nations. Environmental, behavioral, and lifestyle-related risk factors explain why breast cancer rates vary among nations. Knowing the risk variables in various nations is crucial in this regard [5], [6].

There was a statistically significant difference between the case and control groups in terms of risk factors such as increasing age, widowed / divorced status, menopausal status, age of menarche, use of oral contraceptives for a year or longer, age of first delivery, and family history of breast cancer in retrospective case-control studies conducted in Iraq [7], [8], [9]. Breast cancer is attributed to a wide range of possible causes. Therefore, early detection of at-risk women is crucial for lowering mortality rates and increasing the likelihood of a full and healthy life span. Educating women is a priority for nurses, both in the hospital and in the wider community [2], [10], [11], [12], [13].

Besides, their responsibilities include determining the risk factors of women for cancer, providing genetic counseling, and referring them to suitable places, when necessary [14], [15], [16], [17], [18], [19]. Training on health for lifestyle-related risk factors, which is among the primary prevention measures against breast cancer, as well as breast self-examination (BSE), clinical breast examination (CBE), and mammography, which are among the secondary prevention measures, are all provided by nurses.

Most breast cancer cases in Iraq are diagnosed at stages 2 and 3 [20], [21] according to research done in the country. As a result, in 2000, the Iraqi Ministry of Health implemented a nationwide program for breast cancer diagnosis at an early stage. CBE, BSE, mammography, and ultrasonography are all used for early diagnosis of breast cancer in Iraq, a poor and middle-income country. It is recommended to start CBE at the age of 20 and to have it every 2-3 years until the age of 30, and to have it every year after the age of 30. Also, women are recommended to perform BSE every month starting at the age of 20 and to maintain it throughout their lives.

Mammography, on the other hand, is recommended annually starting at the age of 40, while high-risk women are advised to start having it at the age of 30 and have it throughout their lives. In addition, ultrasonography is recommended in addition to mammography screening after the age of 40, especially in young and premenopausal patients with suspicious lesions. In studies conducted in Iraq, the knowledge level and attitudes of healthy women towards BSE, CBE, and mammography have been found low. Although there are studies conducted in different cities in Iraq on women's breast cancer risk factors, knowledge and attitudes towards early diagnosis [1], [14], There were no studies located that surveyed women in Nasiriyah city to determine their awareness or beliefs about breast cancer risk factors or the importance of getting checked regularly.

This research aimed to survey women in Nasiriyah city over the age of 40 about their awareness of breast cancer risk factors and their thoughts on getting an early diagnosis. The study's findings will help nurses in Nasiriyah City better assess the counseling and training needs of their female patients [22].

2. METHODOLOGY

2.1 Participants

The research method for this study was cross-sectional and descriptive. Alshaheed Ali Naghamish Healthcare Center and Al-Zahraa Healthcare Center were used to collect data for the study, both located in the Nasiriyah Governorate of Iraq. Women who presented to any of these clinics in the months of February and March of 2020 made up the study's population. Participants were selected using a convenience sampling method. However, women (n = 120) who fulfilled the sampling requirements were included in the sample. Power analysis was performed using the G power package application. The power analysis determined that when the effect size, p, and sample size were 3.0, 0.05, and 120, respectively, the power was 0.95.

2.2 Inclusion criteria

- agreeing to participate in the study,
- being a woman, and
- being aged 40 or over Exclusion criteria
- having a hearing problem, and
- having a disorder, such as psychiatric disease, Alzheimer , or dementia that can affect cognitive perception

2.3 Data Collection Tools

A socioeconomic characteristics sheet, a breast cancer risk factors survey, and a breast cancer early diagnostic knowledge and attitudes survey were used to compile the study's results. Researchers created questionnaires based on the review of existing research, and information was gathered through in-person interviews.

- **The Sociodemographic Characteristics Form:** This form consists of 5 items to collect data about patients' age, marital status, profession, education, and income.
- **The Breast Cancer Risk Factors Questionnaire:** The American Cancer Society's (ACS) data served as the basis for this form's layout. Six questions on the patient's or their family's history with breast cancer, benign breast disorders, height, age of menarche, and past chest radiation therapy make up the inalterable risk factors. Eight questions address lifestyle-related risks, such as alcohol consumption, body mass index (BMI), regular exercise, having one's first child after age 30, breastfeeding for a year or longer, birth control method, menopausal status, and the use of hormone replacement therapy by postmenopausal women. Contrarily, the three questions that make up the unclear impacts risk factors include eating a diet high in fruits and vegetables, smoking, and working night shifts [23].
- **The Breast Cancer Early Diagnosis Knowledge and Attitudes Questionnaire:** This questionnaire consists of nine questions on knowledge about BSE, performing BSE, frequency of performing BSE, previous CBE, having mammography and the frequency of having it, signs of breast cancer, detecting a problem in the breast, and consulting a doctor due to the problem detected in the breast [24].

2.4 Ethical Approval

At the outset, written permission of the two different primary healthcare centers located in Nasiriyah city of Iraq, where the study was conducted, was obtained. Besides, the ethical approval of the ethics committee of a university located in central Anatolia in Turkey was obtained (Approval number: 170/2020-170). All study participants were informed of the study's goals, and those who gave their agreement did so either orally or in writing.

2.5 Statistical Analysis

Statistical analysis was performed using SPSS 22.0 (IBM Corp., Armonk, NY, USA) for the social science data. The analysis of the data involved the use of numerical values, percentages, and measures of central tendency and dispersion.

3. RESULTS AND DISCUSSION

The mean age of the women in the study was 49,89 ± 8,45, 91,70% of them were married, and 63,30% were housewives. Also, 35,80% were illiterate, and 69,20% had income less than their expenses Table 1.

Table 1. Sociodemographic Characteristics of the Women (N=120)

Sociodemographic Characteristics	X ± SD	Range n (%)
Age	49,89 ± 8,45	40 -73
Marital status		
Married		110 (91,70)
Single		10 (8,30)
Occupation		
Housewife		76 (63,30)
Worker		2 (1,70)
Officer		40 (33,30)
Self-employed		2 (1,70)
Education		
Illiterate		43 (35,80)
Primary school graduate		25 (20,80)
Secondary school graduate		13 (10,80)
High school graduate		4 (3,30)
University graduate		35 (29,20)
Income		
Income more than expenses		5 (4,20)
Equal income and expenses		32 (26,70)
Income less than expenses		83 (69,20)

Analysis of women's breast cancer risk factors based on fixed factors revealed that 21.7 percent had a family history of the disease, 6.6 percent had a history of breast cancer themselves, 8.1 percent were 168 centimeters or taller, 24.2 percent had a history of benign breast disease, 0.8 percent had menarche at 11 or younger, and 6.6 percent had received radiation therapy to the chest in the past. As for lifestyle-related risk factors, it was determined that 0,80% of the participants drank alcohol, 83,30% had a BMI value of 25 or above, 72,50% did not do any physical activity, 50,00% delivered their first child at the age of 30 or above, 69,20% breastfed their babies for one year or longer, 28,30% used birth control pills, and that 20,80% used hormone replacement therapy during menopause. Regarding unclear effects of risk factors, it was found that 93,30% of the women mainly had a diet rich in fruit and vegetables, 83,30% did not smoke, and that 95,80% did not work night shifts Table 2.

Table 2. Women's Breast Cancer Risk Factors (N=120)

Breast Cancer Risk Factors You Cannot Change	n (%)
Having a family history of breast cancer	
Yes	26 (21,70)
No	94 (78,30)

Having a personal history of breast cancer	
Yes	8 (6,66)
No	112 (93,34)
Height <168	110 (91,70)
Height ≥168	10 (8,30)
Benign breast diseases	
Yes	29 (24,20)
No	91 (75,80)
Age of menarche	
11 or below	1 (0,80)
12 or above	119 (99,20)
Have you received radiotherapy to the chest area	
before?	
Yes	8 (6,66)
No	112 (93,34)
Lifestyle-related risk factors	
Drinking alcohol	
Yes	1(0,80)
No	119 (99,20)
Overweight or obese	
19<BMI<24.9	20 (16,70)
BMI≥25	100 (83,30)
Physical activity	
Yes	33 (27,50)
No	87 (72,50)
The first child after age 30	
Yes	60 (50,00)
No	60 (50,00)
Breastfeeding for one year or longer	
Yes	83 (69,20)
No	37 (30,80)
Use of birth control pills	
Yes	34 (28,30)
No	86 (71,70)
Menopausal status	
Yes	65 (54,20)
No	55 (45,80)
Use of hormone therapy after menopause	
Yes	25 (20,80)
No	95 (79,20)
Unclear effects factors	
A diet rich in fruit and vegetables	
Yes	112(93,30)
No	8 (6,70)
Smoking	
Yes	20 (16,70)
No	100 (83,30)
Night shift work	

Yes	5 (4,20)
No	115 (95,80)

Regarding the knowledge and attitudes of women towards breast cancer, it was found that 86,70% had heard of BSE before, 69,20% performed BSE, 21,70% performed it once a month, 70,80% had not had clinical breast examination before, 88,30% had not had mammography before, and that 5,80% had mammography every year. Also, 47,50% of the women had evaluated a mass in their breasts as a sign of breast cancer during BSE, 24,20% detected a problem in their breast, and 93,10% of them went to a specialist for the problem Table 3.

Table 3. Women's Knowledge and Attitudes towards Early Diagnosis of Breast Cancer (N=120)

Knowledge and Attitudes towards Early Diagnosis	**n (%)**
Have you heard of BSE?	
Yes	104 (86,70)
No	16 (13,30)
Do you perform BSE?	
Yes	83 (69,20)
No	37 (30,80)
How often do you perform BSE?	
Never	32 (26,70)
Once a month	26 (21,70)
Irregularly	62 (51,60)
Have you had a clinical breast examination before?	
Yes	35 (29,20)
No	85 (70,80)
Have you had mammography before?	
Yes	14 (11,70)
No	106 (88,30)
How often do you have mammography?	
Never	106 (88,30)
Every year	7 (5,80)
Every 2 years	5 (4,20)
Every 5 years	2 (1,70)
What Signs of breast cancer evaluated during BSE?	
Mass	57 (47,40)
Retraction of the nipple	6 (5,00)
Pits in the breast	28 (23,30)
Bleeding from the nipple	18 (15,00)
Wound in the breast	4 (3,30)
Orange peel skin	7 (5,80)
Have you detected any problems on breast?	
Yes	29 (24,20)
No	91 (75,80)
If your answer is yes, have you gone to the physician for this problem?	
Yes	27 (93,10)
No	2 (6,90)

Female gender, advanced age, gene mutation, family history of breast cancer, personal history of breast cancer, race/ethnicity, height, breast density, benign breast disease, menarche/menopause age, and chest radiation therapy are all fixed risk factors for breast cancer, as reported by the American Cancer

Society (ACS, 2020). The study found that among the women who participated, 2.17 percent had a personal history of breast cancer, 6.66 percent had a personal history of breast cancer, 8.30 percent were 168 centimeters or taller, 2.42 percent had a benign breast disease, 0.80 percent had their first menstrual period at age 11 or younger, 6.66 percent had received radiotherapy to the chest area, and the women who participated had low levels of unchangeable risk factors. While there was no significant difference between the groups in terms of family history of breast cancer or age at menopause in a case-control study of healthy women and women with breast cancer in Iraq [1], there was a significant difference found regarding age at menarche. Eighty-one percent of the 1172 women with breast cancer in Iraq in retrospective research reported no history of breast cancer in their families.

Risk variables, such as a family history of breast cancer and the age of menarche and menopause, were shown to differ significantly between the case and control groups in previous case-control studies [5]. There was no study in the literature comparing the risk factors, such as receiving radiotherapy to the chest area and height. In this context, it is thought that this study will guide future studies about the evaluation of receiving radiotherapy to the chest area and height risk factors. Nurses can raise awareness of women about lifestyle-related risk factors and reduce the risks by highlighting them in their education. These factors have an important place in the educational role of the nurse [17]. According to the ACS, the risk factors associated with lifestyle include drinking alcohol, being overweight or obese, lack of physical exercise, no breastfeeding, not having children, birth control methods, and hormone replacement therapy (ACS, 2020). Eighty-three percent of the women in the study were found to have a body mass index (BMI) of 25 or more; seventy-two percent did not engage in any form of physical activity; and fifty percent had their first child after the age of thirty. We believe it is important to teach people about the dangers of their current way of life. Exercise, age at first delivery, and body mass index were all evaluated as risk factors for breast cancer in a study of 338 cases and 338 controls in Iraq [5] and the results showed a statistically significant difference between the groups. Overweight or obesity was found to have a statistically significant link with female gender, poor education level, and lack of physical activity in a prevalence study conducted in Iraq [22]. The risk of developing breast cancer was found to be lower in women of normal or overweight weight compared to those of obese weight in a meta-analysis of 18 cohort and 11 case-control studies [18].

Nurses are in a unique position to educate patients and the general public on preventative measures for breast cancer, as they provide treatment in both the community and hospitals. The ACS classifies unclear effects risk factors in breast cancer as diet and vitamins, chemicals in the environment, smoking, and working night shifts (ACS, 2020). It was determined that 93,30% of the women in our study ate mainly fruits and vegetables, 83,30% did not smoke, 95,80% did not work night shifts, and that uncertain risk factors were low. In a case-control study conducted in Iraq, consuming boiled beef once a week, fish once a week or more, more than one fruit a day, one or more vegetables a day, and more than 3 glasses of black tea daily was found to have a preventive effect on breast cancer [5]. Examination of women's knowledge and perspectives revealed that 88.30% had never had mammography, 78.80% had never undergone CBE, and 51.60% completed BSE on an ad hoc basis. Women were found to have negative opinions toward receiving an early diagnosis. Research undertaken in low and middle-income countries, such as Iraq [8], [6] found that women's awareness and attitudes towards BSE, CBE, mammography, and early diagnosis of breast cancer were low. The majority of Iraqi women (49.70%) engage in BSE monthly, according to a recent survey. Regular BSE was found to be associated with variables such women's education, work, and breastfeeding experience [23]. Only 26% of the women in [4] study reported ever having undergone a mammogram. Several variables have been identified as impediments to mammography screening, including women's knowledge, attitudes, and misunderstandings regarding breast cancer; certain cultural, societal, and religious beliefs; and access to medical care [25].

4. CONCLUSION

In conclusion, our research shows that women in Iraq would benefit from instruction on lifestyle-related risk factors like weight management and exercise. As a result, there is a need to raise awareness

and alter women's perspectives on BSE, CBE, and mammography. We suggest that nurses in both the clinic and the field develop educational programs to change women's perspectives on breast cancer risk and early detection.

Acknowledgments

The authors have no specific acknowledgments to make for this research.

Funding Information

This research received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors.

Author Contributions Statement

Name of Author	C	M	So	Va	Fo	I	R	D	O	E	Vi	Su	P	Fu
Abbas Naser Al-Abboodi	✓	✓	✓	✓		✓		✓	✓	✓	✓	✓		✓
Figen Erol Ursavas	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Amer Mohamed Altaie	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

C : **C**onceptualization
M : **M**ethodology
So : **So**ftware
Va : **Va**lidation
Fo : **Fo**rmal analysis
I : **I**nvestigation
R : **R**esources
D : **D**ata Curation
O : Writing - **O**riginal Draft
E : Writing - Review & **E**diting
Vi : **Vi**sualization
Su : **Su**pervision
P : **P**roject administration
Fu : **Fu**nding acquisition

Conflict of Interest Statement

The authors declare that there are no conflicts of interest regarding the publication of this paper.

Informed Consent

All participants were informed about the purpose of the study and their voluntary consent was obtained prior to data collection.

Ethical Approval

Not Applicable.

Data Availability

The data that support the findings of this study are available from the corresponding author upon reasonable request.

REFERENCES

[1] S. K. Abedalrahman, B. M. Ali, I. Al-Khalidy, and A.-H. As, 'Risk factors of breast cancer among Iraqi women', J Contemp Med Sci, vol. 5, no. 3, pp. 149-153, 2019. doi.org/10.22317/jcms.v5i3.609

[2] F. Ahmed, S. Mahmud, J. Hatcher, and S. M. Khan, 'Breast cancer risk factor knowledge among nurses in teaching hospitals of Karachi, Pakistan: a cross-sectional study', BMC Nursing, vol. 5, no. 6, pp. 1-7, 2006. doi.org/10.1186/1472-6955-5-6

[3] A. Alwan, 'Establishing national guıdelines for early detection of breast cancer in Iraq: Clinical Implications and Perspectives', IJAR, vol. 3, no. 12, pp. 539-555, 2015.

[4] W. Al-Attar, S. A. Sattar, A. Mallah, and N. Wardia, 'Factors influencing mammography participation in Iraqi women', IOSR-JNHS, vol. 5, no. 5, pp. 43-49, 2016.

[5] A. Ghalib, H. H. Ali, M. Karim, M. Gubari, M. I. Mohammed, and S. A. Marif, 'Risk Factors Assessment of Breast Cancer Among Iraqi Kurdish Women: Case-control Study', J Family Med Prim Care, vol. 8, no. 12, pp. 3990-3997, Dec. 2019. doi.org/10.4103/jfmpc.jfmpc_528_19

[6] S. Aljohani, I. Saib, and M. Noorelahi, 'Women's Performance of Breast Cancer Screening (Breast Self-Examination, Clinical Breast Exam and Mammography)', Advances in Breast Cancer Research, vol. 6, no. 1, pp. 16-27, 2017. doi.org/10.4236/abcr.2017.61002

[7] S. Al-Mukhtar, 'Risk factors for breast cancer among women in the Mosul City/ Iraq: A case-control study', Pakistan Journal of Medical and Health Sciences, vol. 13, no. 1, pp. 250-253, 2019.

[8] F. Al-Mulhim, R. Bakr, D. Almedallah, N. Alkaltham, and A. Alotaibi, 'Screening mammography and breast self-examination: Attitudes and practices of women in the Eastern Province of Saudi Arabia', Saudi J Health Sci, vol. 7, pp. 89-100, 2018. doi.org/10.4103/sjhs.sjhs_4_18

[9] N. Alwan, F. N. Tawfeeq, and N. Mallah, 'Demographic and clinical profiles of female patients diagnosed with breast cancer in Iraq', J Contemp Med Sci, vol. 5, no. 1, pp. 14-19, 2019. doi.org/10.22317/jcms.v5i1.544

[10] American Cancer Society (ACS) In Breast Cancer. Available from: URL: https://www.cancer.org/cancer/breast-cancer.html Accessed December 8, 2020.

[11] Batool T, SarwarH, AfzalM, GilaniSA. Knowledge, attitude and practices of women towards breast self-examination in rural area of Lahore, Pakistan. APMC 2018; 12(2):158-61.

[12] Çelikkanat Ş, Güngörmüş Z. Meme kanseri risk faktörlerinin değerlendirilmesi ve riskli kadına hemşirelik yaklaşımı. JSHSR 2019; 6(46): 4023-4031.

[13] C. E. Desantis, F. Bray, J. Ferlay, J. Lortet-Tieulent, B. O. Anderson, and A. Jemal, 'International Variation in Female Breast Cancer Incidence and Mortality Rates', Cancer Epidemiol Biomarkers Prev, vol. 24, no. 10, pp. 1495-1506, Oct. 2015. doi.org/10.1158/1055-9965.EPI-15-0535

[14] F. Z. Francis, R. Hull, R. Khanyile, and Z. Dlamini, 'Breast cancer in low-middle income countries: abnormality in splicing and lack of targeted treatment options', Am J Cancer Res, vol. 10, no. 5, pp. 1568-1591, 2020.

[15] T. N. Hasan, S. A. Shah, H. F. Ghazi, and M. R. Hassan, 'Women's attitude towards breast cancer in Baghdad city', Iraq. IJCMPH, vol. 4, no. 6, pp. 1800-1804, 2017. doi.org/10.18203/2394-6040.ijcmph20172136

[16] T. N. Hasan, S. A. Shah, M. R. Hassan, N. Safian, Z. I. Azhar, and A. Rahim, 'Poor knowledge and practice towards breast cancer among women in Baghdad city', Iraq. Asian Pac J Cancer Prev, vol. 16, no. 15, pp. 6669-6672, 2015. doi.org/10.7314/APJCP.2015.16.15.6669

[17] C. Kabacaoğlu and A. Karaca, 'Meme kanserinde birincil ve ikincil korunma önlemlerine ilişkin ebe ve hemşirenin rolü', JAREN, vol. 6, no. 1, pp. 179-186, 2020.

[18] S. E. Neil-Sztramko, T. Boyle, E. Milosevic, S. F. Nugent, C. C. Gotay, and K. L. Campbell, 'Does obesity modify the relationship between physical activity and breast cancer risk?', Breast Cancer Res Treat, vol. 166, no. 2, pp. 367-381, 2017. doi.org/10.1007/s10549-017-4449-4

[19] Ş. İ. Paşalak and M. Seven, 'Onkolojide genetik gelişmeler ve hemşirenin rollerine etkisi', vol. 14, pp. 212-217, 2017

[20] K. Runnak, 'Challenges to the early diagnosis and treatment of breast cancer in developing countries', World J Clin Oncol, vol. 5, no. 3, pp. 465-477, 2014. doi.org/10.5306/wjco.v5.i3.465

[21] M. A. Runnak, M. A. Hazha, H. A. Hemin, A. A. Wasan, R. M. Rekawt, and H. D. Michael, 'A population-based study of Kurdish breast cancer in northern Iraq: hormone receptor and HER2 status. A comparison with Arabic women and United States SEER data', BMC Womens Health, vol. 12, 2012. doi.org/10.1186/1472-6874-12-16

[22] S. A. Shabu, 'Prevalence of overweight/obesity and associated factors in adults in Erbil, Iraq: A household survey', Zanco J Med Sci, vol. 23, no. 1, pp. 128-134, 2019. doi.org/10.15218/zjms.2019.017

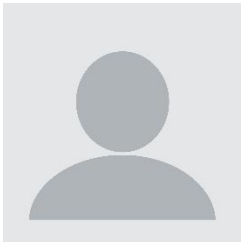
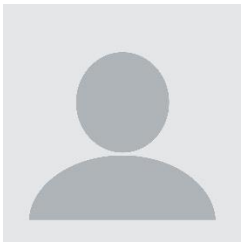
[23] K. J. Shakor, A. K. Mohammed, and D. Karotia, 'Determinants of breast self-examination practice amongst Iraqi/ Sulaimani women using Champion Health Belief Model and Breast CAM', Int J Med Res Health Sci, vol. 8, no. 9, pp. 51-59, 2019.

[24] F. E. Ursavaş and D. K. Şenol, 'Investigation of the knowledge and behaviors of breast cancer early diagnosis methods and risk factors in pregnant women', Clin Exp Health Sci, vol. 10, no. 3, pp. 217-222, 2020.

[25] World Health Organisation Globacan 2018. Available from: URL: https://gco.iarc.fr/today/fact-sheets-populations. Accessed December 8, 2020.

How to Cite: Abbas Naser Al-Abboodi, Figen Erol Ursavas, Amer Mohamed Altaie. (2023). Investigating women's risk factors for breast cancer and their knowledge and attitudes towards early diagnosis in Nasiriyah city/Iraq. Journal of Nursing Research, Patient Safety and Practice (JNRPSP), 3(2), 61-70. https://doi.org/10.55529/jnrpsp.16.26

BIOGRAPHIES OF AUTHORS

	**Abbas Naser Al-Abboodi,** holds an MSc and works as a Registered Nurse in the Primary Health Care Department at Al Hussein Teaching Hospital in Nasiriyah, Iraq. He focuses on primary care, community nursing, and health promotion. He also works on ways to prevent disease and support women's health. In his studies, he looks at how to raise awareness of health risks. He also studies early signs of illness and how to keep preventive services active in local communities. Email: abbasnaser1990@gmail.com
	**Figen Erol Ursavas** **,** has a PhD and is a Registered Nurse in the Department of Surgical Nursing at the Faculty of Health Sciences, Çankırı Karatekin University, Çankırı, Turkey. Her work centers on surgical nursing and patient support. She also studies nursing education. Another key area for her is evidence-based nursing practice. She takes part in research and teaching with the goal of making patient care safer and more reliable. She also aims to strengthen day to day professional nursing work. Email: figenerolll@gmail.com
	**Amer Mohamed Altaie,** is a PhD-qualified Registered Nurse. He is linked to the Department of Medical-Surgical Nursing at the College of Nursing, Al-Safwa University College in Karbala, Iraq. His academic interests include medical-surgical nursing and clinical nursing practice. He also focuses on patient care and nursing education. He pays attention to healthcare quality as well. His research supports evidence-based nursing work and helps improve healthcare results. Email: amergebish@yahoo.com