

Woman's Knowledge about Breast Cancer in Al-Ramadi City, Iraq

Badeaa Thamer Yahyaa^{1*}

¹Department of Family and Community Medicine, Faculty of Medicine, Anbar University, Anbar, Iraq.
Corresponding Email: drbth63@gmail.com

ABSTRACT

Breast cancer is the most common leading cause of cancer death in females after lung cancer. This study aims to assess the women's knowledge about breast cancer in Al-Ramadi City, Iraq. A cross-sectional study was carried out in Al-Ramadi City at the Teaching Hospital of Maternity and Childhood in Al-Anbar Governorate during January 2020. A semi-structured questionnaire was designed to interview women with closed-ended questions related to knowledge of women about breast cancer. Statistical analysis was carried out by SPSS Version 16. The mean age of study sample was 34 (± 11.9) years and 61.2% of them in age range of 20-39 years. Most of the respondents were housewives (72.0%), married (68.4%) and low educated (58.8%). More than half of the participants (51.2%) showed an overall acceptable level of knowledge (66.67%) on the various aspects of breast cancer-related risk factors. There was a significant association between marital status and knowledge of women ($P=0.008$). The main source of information was friends and family among 75.6% of respondents compared to 25.2% who had received knowledge of breast cancer from healthcare providers. Despite the acceptable level of knowledge, the study revealed a significant deficiency in health awareness campaigns about the breast cancer.

Keywords

Breast Cancer; Knowledge; Risk Factors; Women; Iraq

Introduction

Breast cancer is the most common malignancy among women and the most common cause of cancer death in females after lung cancer. Therefore, studying women's knowledge of breast cancer is important to identify the relationship between knowledge of women and the prevalence rate¹. Age is among the risk factors associated with breast cancer. Age has a very interesting correlation that can be observed with neoplastic tumors. The diagnosis of breast cancer is less frequent below the age of 45 years, but the incidence of breast cancer increases in the postmenopausal period. Women after menopause being more liable to overexpressing of estrogen receptors and growing of cancer cell in response to estrogen hormone. This phenomenon explains the increased percentage of tumor diagnosis in a woman after menopause, however in some cases, increased age was a risk factor without overexpression of estrogen receptors^{2,3}. Menstrual disorders (early menarche and delayed menopause) in early ages contribute to the development of breast cancer in adulthood. Previous studies reported that women who had a menstrual cycle under the age of 12 years had a higher expression of estrogen per menstrual cycle than those who had a period after 13 years. Interestingly, every two-years delay in the menstrual cycle reduces the risk of breast cancer by ten percent^{4,5}. Recent studies have identified genes whose functional disorders are linked to a higher risk of breast cancer. Families exposed to this type of tumor contribute to its increased incidence and therefore it is recommended to employ the genetic causes when dealing with patients with bilateral breast cancer^{6,7}.

Literature Review

The relationship between oral contraceptive pills (OC) and the risk of breast cancer is controversial until yet. Intensive studies show increased risk of breast cancer by 24% in a woman with long-term use of oral hormonal contraceptive compared to a woman who had never used

them². There is an observed role for high estrogen and androgens level in the body, which participate in etiology of premenopausal breast cancer^{8,9}. Early pregnancy and delivery are associated with low risk of breast cancer. Moreover, there is a protective value that women can get by breastfeeding in both the pre and postmenopausal periods. Breastfeeding reduces the woman's lifetime exposure to hormones like estrogen. The estrogen hormone can promote cancer cell growth. The epidemiological observations showed that the risk of neoplastic disease reduces by 4.3% by breast feeding¹⁰. Unhealthy dietary habits and eating products rich in fats lead to excess weight gain and obesity. Different studies reported that having more fat tissue can increase the chance of getting breast cancer by raising estrogen levels, especially among societies of developed countries. Furthermore, consumption of food containing a range of chemical substances used to preserve food or enhance flavour may be a factor helping for neoplastic transformation in breast tissue^{11,12}. Regardless of quantity, alcoholic drinks influence the cell's DNA and cause an increase in the level of estrogen and other hormones¹³. Several studies found an association between cigarette smoking and breast cancer¹⁴⁻²⁰. tobacco smoking causes several diseases, and the carcinogenic potential is unarguable. Moreover, the risk to develop breast cancer among the smokers increase with a positive family history. This study aimed to assess the knowledge toward breast cancer among sample of Iraq women attending the Teaching Hospital of Maternity and Childhood in Al-Ramadi City, Iraq.

Methods

Study Design

A cross-sectional descriptive study conducted during January 2020 among women attending the outpatient clinic of the Teaching Hospital of Maternity and Childhood in Al-Ramadi city (Anbar governorate), Iraq. All Iraqi women aged 18 years and above, willing to participated and available at time of study have included in the study. The Author conducted the research following the Declaration of Helsinki. The protocol of study was approved from the Ethic committee of the Faculty of Medicine, University of Anbar

Sample size

According to study of Al-Hashimi et al.¹¹ the prevalence of breast cancer among Iraqi women is 31.5% in 2009. The sample size calculator arrived at 288 participants, using a margin of error of $\pm 7.0\%$, a confidence level of 99%, a 31.5% response distribution, and more than one million estimated total population of Al-Anbar province.

Data Collection

A semi-structured questionnaire was developed to interview the participants. The questionnaire was divided into three parts:

Parts one: Socio-demographic data including age, sex, marital status, occupation, and level of education.

Part two: Questions to assess the knowledge of women about breast cancer-related risk factors such as effect of obesity, contraceptive pills, alcohol, smoking, and radiation exposure.

Part three: About the sources of information (family and friends, TV, internet, medical staff, books, and magazines).

Data Analysis

The data presented in the form of percentage, mean, and standard deviation. Chi-square test was used to evaluate the association between the study variables and the overall knowledge levels

(poor and acceptable levels). During the chi-square test, the knowledge levels were regrouped by merging the acceptable and good levels into a single category, including all women having a score of 7 or more to ensure the validity of the results. P-value of ≤ 0.05 was considered statistically significant. The statistical analysis was carried out by using SPSS 16...

Results

Socio-Demographic characteristics

Two hundred and fifty (response rate = 86.8%) completed questionnaires were undergone to the final analysis. Table 1 shows the socio-demographic characteristics of respondents. The mean age of them was 34 ± 11.9 (in range of 14-70 years). The highest proportion (31.2%) was in the age group of 40 years and above. More than two-third of respondents were married (68.4%), housewives (72%) and 27.6% of them have a university level of education.

Table 1: Distribution of socio – demographic Characteristics of the study sample (n=250)

Variables	No. (n=250)	%
Age of female (years):		
<i>Mean \pm SD</i>	34 ± 11.9	
<i>< 20</i>	19	7.6
<i>20 – 24</i>	48	19.2
<i>25 – 29</i>	39	15.6
<i>30 – 34</i>	29	11.6
<i>35 – 39</i>	37	14.8
<i>40 +</i>	78	31.2
Education of women		
<i>Illiterate</i>	34	13.6
<i>Reading & writing</i>	34	13.6
<i>Primary</i>	37	14.8
<i>Intermediate</i>	40	16.0
<i>Secondary</i>	36	14.4
<i>University</i>	69	27.6
Marital status		
<i>Single</i>	54	21.6
<i>Married</i>	171	68.4
<i>Widowed</i>	14	5.6
<i>Divorced</i>	11	4.4
Occupation of women		
<i>Housewife</i>	180	72
<i>Employed</i>	70	28

Knowledge of women about breast cancer

Table 2 shows that less than half (46.8%) of respondent women knew that the obese women are more likely to develop breast cancer than skinny women. About 45.2% agreed that using contraceptive pills is a risk of breast cancer. A third (35.6%) of the respondents came to the correct answer that early menstruation and late menopause will increase the risk of breast cancer.

There was an apparent lack of knowledge about long-term breastfeeding, only 18.8 % knew the prolonged breastfeeding poses a risk of developing breast cancer. Almost a quarter of the respondents agreed that having the first child at a later age enhances the chance of developing breast cancer compared to having the first child at a younger age. Moreover, the percentage was nearly close among women who accepted, did not accept, and those who did not know that infertility is a risk factor for breast cancer. However, more than half (52.4%) of the respondents indicated that breast cancer is more common among older women than their counterpart. Only (25.6%) had correct knowledge that the risk of breast cancer is double among the multiparous women. Almost 60.0% of respondent have correct knowledge that drinking alcohol and tobacco smoking are risk factors for breast cancer. Furthermore, the correct answer was 42.0% and 46.0% that that using estrogen pills and exposure to stress and anxiety increase the liability to have breast cancer. Additionally, two-thirds (68.4%) of respondents reported positive family history of breast cancer poses the risk of developing the breast cancer. Finally, the women who have knowledge about the exposure to chest radiation is a risk factor for breast cancer is 57.6%.

Table 2: Distribution of knowledge of women about risk factors of breast cancer (n=250)

Variables	Yes N(%)	No N(%)	Do not know N(%)
<i>Obese women are more likely to develop breast cancer than skinny</i>	117(46.8)	65(26.0)	68(27.2)
<i>Using contraceptive pills</i>	113(45.2)	64(25.6)	73(29.2)
<i>Prolonged breast feeding</i>	47(18.8)	138(55.2)	65(26.0)
<i>The early age of monarch and late menopause</i>	89(35.6)	70(28.0)	91(36.4)
<i>Late 1st pregnancy</i>	59(23.6)	96(38.4)	95(38.0)
<i>Fertility</i>	87(34.8)	76(30.4)	87(34.8)
<i>Breast cancer is more common among older women than young women</i>	131(52.4)	50(20.0)	69(27.6)
<i>Multipara's women</i>	64(25.6)	100(40.0)	86(34.4)
<i>Drinking alcohol</i>	152(60.8)	36(14.4)	62(24.8)
<i>Smoking</i>	153(61.2)	47(18.8)	50(20.0)
<i>Using estrogen pills</i>	105(42)	43(17.2)	102(40.8)
<i>Stress and anxiety</i>	115(56.0)	70(28.0)	65(26.0)
<i>Women have family history of breast cancer</i>	171(68.4)	32(12.8)	47(18.8)
<i>women's chest exposure to radiation</i>	144(57.6)	40(16.0)	66(26.4)

Sources of information about breast cancer

The main source of information about the breast cancer was the friend and family among 75.6% of surveyed women, however TV and other sources such as social media, brochures, and magazines constituted the second and third sources of information among 44.4% and 40.4% of respondents respectively (Table 3).

Table 3: The sources of information about risk factors of breast cancer (n=250)

Questions	Yes	No
------------------	------------	-----------

	N(%)	N(%)
<i>From friend and family</i>	189(75.6)	61(24.4)
<i>From TV</i>	111(44.4)	139(55.6)
<i>From educational subjects</i>	62(24.8)	188(75.2)
<i>From doctors and healthy staff</i>	63(25.2)	187(74.8)
<i>From books</i>	49(19.6)	201(80.4)
<i>Other (social media, brochures, and magazines)</i>	101(40.4)	149(59.6)

Distribution of the study group and association between level of knowledge and some women's characteristics

There was a significant association between women's knowledge about the risk factors of breast cancer and the marital status ($p < 0.05$) table 4.

Table 4: The association between Knowledge level and socio – demographic characteristics

Characteristics	Categorize	Poor knowledge (<7) N(%)	Acceptable and Good knowledge N(%)	P value
<i>Age (years)</i>	<20	9 (47.36)	10(52.64)	0.154
	20-24	21(43.75)	27(56.25)	
	25-29	18(46.15)	21(53.85)	
	30-34	13(44.83)	16(55.17)	
	35-39	14(37.84)	23(62.16)	
	≥ 40	47(60.25)	31(39.75)	
<i>Level of Education</i>	Illiterate	15(44.12)	19(55.88)	0.949
	Read & Write	22(64.70)	12(35.30)	
	Primary	15(40.54)	22(59.46)	
	Intermediate	18(45.0)	22(55.0)	
	Secondary	17(47.22)	19(52.78)	
	College & Higher	35(50.72)	34(49.28)	
<i>Marital status</i>	Single	21(38.88)	33(61.12)	0.008
	Married	84(49.12)	87(50.88)	
	Widowed	8(57.14)	6(42.86)	
	Divorced	9(81.82)	2(18.18)	
<i>Employment</i>	Unemployed	91(50.56)	89(49.44)	0.374
	Employed	31(44.28)	39(55.72)	

*Significant using Chi-square test at 0.05 level

Discussion

Socio-demographic characteristic of the study sample

This study shows that the majority of surveyed women are married and aged forty and more. The number of housewives is more than employed women, in spite of high percentage of graduated women with university education (27.6%) this may be due to decreased enhance for employment in our country²¹, and this disagree with the result appears in a study done by university of Basra²² where the married women are only (6.2%) and a low percentage of women who finished their university studies.

Knowledge of women about breast cancer

In this study, awareness about breast cancer among women was relatively good in comparison with a local study conducted by Al-Asadi²³ in Kufa University, Iraq and international study conducted in Eastern Turkey²⁴ and Eastern China²⁵, but it is lower than knowledge of women reported by High School Nursing in Basra city, Iraq²². Our findings suggest that the early menstrual cycle and late menopause is a risk factor for developing breast cancer among 35.6% of respondents. However, it is more than results reported by Gözümlü et al.²⁴ in Turkey (9.0%) and the findings of study in Eastern China (12.5%)²⁵. Results of previous study conducted in southern Iraq²³ confirmed that most of the participants (82.0%) did not support the idea of impact of aging on the development of breast cancer. However, more than half (52.4%) of our study participants from western Iraq acknowledged the effect of aging on breast cancer development. The diversity in opinion may be explained by the difference in the geographical, social, and educational level of the participants [26]. However, results of the current study are higher than reported in western Amazon, Brazil (28.6%)²⁷, and in the UK (13.0%)²⁸.

About 68.4% of the surveyed women perceived the risk of family history to increase the opportunity to have the breast cancer, which is higher than the results of study conducted among students at Jordan University, Amman (12.8%)²⁹, but lower than the results of respondent women in the Brazil (61.1%)²⁷ and UK (90%)²⁸, respectively. Several previous literatures³⁰⁻³⁴ indicated the correlation of personal behavior and socioeconomic status with improved health awareness. Families with a positive history of breast cancer have developed an incentive to follow a healthy lifestyle including the sufficient nutrition and the physical activity in an attempt to reduce exposure to risk factors for breast cancer. There is a consensus of opinion among the participants in a study from Basra²² in the far south of Iraq and those participating in our study on the effect of obesity, tobacco smoking and alcohol drinking on the emergence and development of breast cancer, which reinforces the hypothesis of good health awareness among the population of Iraq³⁵. Moreover, 45.2% of our respondents believed that taking oral contraceptive pills can cause breast cancer irrespective of the duration of intake. This percentage was encouraging when compared to results from Brazil²⁷, UK²⁸, and New Delhi, India³⁶. In UK and Brazil, few of women have knowledge about the breast cancer-related risk of the oral contraceptive use (35.0%, 35.7%), consuming excessive alcohol (8.0%, 44.6%), a high fat diet (22.0%, 47.7%), and increase body mass index (12.0%, 26.5%) respectively^{27,28}. Some factors may explain this trend; first, one third of respondents are highly educated; the religious and tribal nature of society in western Iraq. The religious and tribal commitment are dominated which in turn forbid consuming alcohol and smoking tobacco among females and calls for increased childbearing and the formation of large families. Drinking alcohol and smoking cigarettes is part of daily behaviors in many countries of the Western world, which makes many women to exclude them from being a liable risk factors that causing breast cancer³⁷.

The longer the period of breastfeeding, the less chance of breast cancer³⁵. More than half of the respondents (55.2%) showed correct knowledge when asked about the role of breastfeeding in breast cancer, regardless of period, yet 18.8% failed to know the correct answer. Unlike the result reported in the New Delhi³⁶, where only (2.6%) agreed that breastfeeding is a risk factor. The role of radiation on the chest as a risk factor inducing breast cancer was acknowledged by 57.5% of the participant indicating good knowledge. It is more than the percentage (18.33%) reported by a survey of women in Cameroon³⁸.

Source of information about breast cancer

Unsurprising that the vast majority of the participants (75.6%) received information about breast cancer from family and friends, which reflected the religious and tribal nature of the society^{30,35,37,39}. In these societies, the older women are the source of information for the younger ones, as well as the women in their feminine nature tends to consult her gender when it comes to venereal diseases.

Nevertheless, television and the social media, brochures, and magazines provided a good opportunity for forty percent of the surveyed housewives to receive information, as an entertainment means available in almost every home. Moreover, forty percent have obtained a good education, which enabled them to develop knowledge about gynecological diseases in general and breast and cervical cancer in particular. The percentage of those who received information about breast cancer from medical personnel was few due to many considerations, including the lack of female medical personnel, poor health services. Moreover, receiving information from family, friends, and even following social media, reduces the need for healthcare visits. Similarly, Yildirim and Ozaydin⁴⁰ found that 67.2% of Turkish women obtained information from T.V. and less of them (22.1%, 2.8%) from doctors and nurses, respectively. Television ranked second as the best source of information among 44.4% of our respondents. Similarly reported by the study of Suleiman AK et al among Jordanian female student²⁹, but higher than findings reported by Al-Asadi²³.

The association between knowledge and socio-demographic characteristics

There was a significant association between knowledge of women and marital status. Married women were more likely to be more aware of breast cancer risks, and it is important compared to unmarried women. Furthermore, the study reveals a poor association between knowledge and age, education, and women's occupation (p-value <0.05). similar findings have seen in many earlier studies, from different developing country such as Jordan²⁹, India³⁶, Cameroon³⁸, and Iraqi⁴¹.

Conclusion

In conclusion, the prevalence of knowledge about the risk factors of breast cancer 66.67% among the surveyed Iraqi women. There was significant relationship between social status and knowledge of women (P = 0.008). This study suggests more relevant studies, especially follow-up studies of the risk factor. Moreover, government intervention is inevitable to reduce risk factors for breast cancer through initiatives directed at public health education and the adoption of more strategies to increase women's knowledge of the risk factor for breast cancer.

Acknowledgement

None

References

- [1] Shoulla, R. Breast Cancer: Introduction, a breast cancer survivor, 2012. Cancer Facts and Figures 2010. American Cancer Society: 1- 3.
- [2] Ban KA, Godellas CV. Epidemiology of breast cancer. Surg Oncol Clin N Am 2014; 23: 409-422.
- [3] Thiébaud AC, Kipnis V, Chang SC, et al. Dietary fat and postmenopausal invasive breast cancer in the National Institutes of Health-AARP Diet and Health Study cohort. J Natl Cancer Inst 2007; 99: 451.
- [4] Bucholc M, Łepecka-Klusek C, Pilewska A, et al. Ryzyko zachorowania na raka piersi w opinii kobiet. Ginekol Pol 2001; 72: 1460-1456.
- [5] Apter D, Reinila M, Vihko R. Some endocrine characteristics of early menarche, a risk factor for breast cancer, are preserved into adulthood. Int J Cancer 1989; 44: 783-787.
- [6] Young SR, Pilarski RT, Donenberg T, et al. The prevalence of BRCA1 mutations among young women with triple-negative breast cancer. BMC Cancer 2009; 9: 86.
- [7] Hartmann LC, Sellers TA, Frost MH, et al. Benign breast disease and the risk of breast cancer. N Engl J Med 2005; 353: 229-237.
- [8] Eliassen AH, Missmer SA, Tworoger SS, et al. Endogenous steroid hormone concentrations and risk of breast cancer among premenopausal women. J Natl Cancer Inst 2006; 98: 1406-1415.
- [9] Kaaks R, Berrino F, Key T, et al. Serum sex steroids in premenopausal women and breast cancer risk within the European Prospective Investigation into Cancer and Nutrition (EPIC). J Natl Cancer Inst 2005; 97: 755-765.
- [10] Collaborative Group on Hormonal Factors in Breast Cancer. Breast cancer and breastfeeding: collaborative reanalysis of individual data from 47 epidemiological studies in 30 countries, including 50302 women with breast cancer and 96973 women without the disease. Lancet 2002; 360: 187-195.
- [11] Ibrahim N, Khalil N, Tawfeeq R. Assessment of malnutrition among the internally - displaced old age people in the Tikrit City, Iraq. Journal of Ideas in Health 2019 ;2(1):65-9.
- [12] Weiss JR, Moysich KB, Swede H. Epidemiology of male breast cancer. Cancer Epidemiol Biomarkers Prev 2005; 14: 20-26.
- [13] Bagnardi V, Rota M, Botteri E, et al. Light alcohol drinking and cancer: a meta-analysis. Ann Oncol 2013; 24: 301-308.
- [14] IARC Working Group on the Evaluation of Carcinogenic Risks to Humans. Personal habits and indoor combustions. Volume 100 E. A review of human carcinogens. IARC Monogr Eval Carcinog Risks Hum. 2012;100(Pt E):1-538.
- [15] National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health, US Department of Health and Human Services. The health consequences of smoking—50 years of progress: a report of the Surgeon General. Atlanta, GA: Centers for Disease Control and Prevention; 2014.
- [16] Morabia A. Smoking (active and passive) and breast cancer: epidemiologic evidence up to June 2001. Environ Mol Mutagen. 2002;39(2-3):89-95

- [17] Johnson KC, Miller AB, Collishaw NE, Palmer JR, Hammond SK, Salmon AG, Cantor KP, Miller MD, Boyd NF, Millar J, et al. Active smoking and secondhand smoke increase breast cancer risk: the report of the Canadian Expert Panel on Tobacco Smoke and Breast Cancer Risk (2009). *Tob Control*. 2011;20(1), e2.
- [18] Terry PD, Rohan TE. Cigarette smoking and the risk of breast cancer in women: a review of the literature. *Cancer Epidemiol Biomarkers Prev*. 2002;11(10 Pt 1):953–71.
- [19] IARC Working Group on the Evaluation of Carcinogenic Risks to Humans. Tobacco smoke and involuntary smoking. *IARC MonogrEvalCarcinog Risks Hum*. 2004;83:1–1438.
- [20] Hamajima N, Hirose K, Tajima K, Rohan T, Calle EE, Heath Jr CW, Coates RJ, Liff JM, Talamini R, Chantarakul N, et al. alcohol, tobacco and breast cancer – collaborative reanalysis of individual data from 53 epidemiological studies, including 58,515 women with breast cancer and 95,067 women without the disease. *Br J Cancer*. 2002;87(11):1234–45.
- [21] Ali Jadoo SA, Sarhan Y, Al-Samarrai M, Al-Taha M, AL- Any B, Soofi A, Yahyaa B, Al-Rawi R. The 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.
- [22] Ebrahim SM. Knowledge of students toward breast cancer and breast self-examination practice at high school nursing in Basra City. *Kufa Journal for Nursing Sciences* ., 4 (1):84-92, 2014.
- [23] Kafi Mohammed Nasir Al-Asadi. Women's Knowledge and Concern about Breast Cancer. *Kufa Journal for Nursing Sciences*., 4 (1):121-130, 2014.
- [24] Gözümlü, Sebahat PhD, RN; Karayurt, Özgül PhD et al .Effectiveness of Peer Education for Breast Cancer Screening and Health Beliefs in Eastern Turkey. *Cancer Nursing*.2010;33(3):213-220.
- [25] Li-Yuan Liu, Fei Wang, Zhi-Gang Yu, Li-Xiang Yu, Zhong-Bing Ma, Qiang Zhang, De-ZongGao, Yu-Yang Li, Zhong-Tang Zhao. Breast cancer awareness among women in Eastern China. *BMC Public Health* .,4(1) , 1004, 2014.
- [26] Ibrahim N, Khalil N, Tawfeeq R. Assessment of malnutrition among the internally - displaced old age people in the Tikrit City, Iraq. *Journal of Ideas in Health*;2(1):65-9.
- [27] Schilling MP, Silva IF, Opitz SP, Borges MF, Koifman S, Rosalina Jorge K. Breast Cancer Awareness among Women in Western Amazon: a Population Based Cross-Sectional Study. *Asian Pac J Cancer Prev*. 2017 Mar 1;18(3):847-856. doi: 10.22034/APJCP.2017.18.3.847. PMID: 28441797; PMCID: PMC5464509.
- [28] Forbes LJL, Atkins L, Thurnham A, et al. Breast cancer awareness and barriers to symptomatic presentation among women from different ethnic groups in East London. *Br J Cancer*. 2011;105:1474–79.
- [29] Suleiman AK. *J Basic Clin Pharm*. Awareness and attitudes regarding breast cancer and breast self-examination among female Jordanian students. *Journal of basic and clinical pharmacy*.2014 Jun;5(3):74-8.
- [30] Al-Samarrai MA, Ali Jadoo SA. Impact of training on practical skills of Iraqi health providers towards integrated management of neonate and child health - a multicentre cross-sectional study. *Journal of Ideas in Health* 2018;1(1):1-6.
- [31] Hertz-Picciotto, I., Adams-Campbell, L., Devine, P., et al., 2012. Breast cancer and the environment: a life course approach. National Acad Press, Washington, DC.

- [32] Spector D, Mishel M, Skinner CS, DeRoo LA, VanRiper M, Sandler DP. Breast cancer risk perception and lifestyle behaviors among white and black women with a family history. *Cancer Nurs.*2009; 32 (4) :299.
- [33] Uzun A, Öztürk G, Bozkurt Z, Çavuşoğlu M. Investigating of fear of COVID-19 after pregnancy and association with breastfeeding. *Journal of Ideas in Health.*2021;4(1):327-33.
- [34] Khushalani JS, Qin J, Ekwueme DU, White A. Awareness of breast cancer risk related to a positive family history and alcohol consumption among women aged 15-44 years in United States. *Prev Med Rep.* 2019 Dec 9;17:101029.
- [35] Al-Samarrai M, Al-Rawi R, Yaseen S, Ali Jadoo S. Knowledge, attitude, and practice of mothers about complementary feeding for infants aged 6-12 months in Anbar Province, Iraq. *Journal of Ideas in Health* 2020;3(1):125-9.
- [36] Somdatta P, Baridalyne N. Awareness of breast cancer in women of an urban resettlement colony. *Indian J Cancer.* 2008 Oct-Dec;45(4):149-53. doi: 10.4103/0019-509x.44662.
- [37] Yahyaa BT, Al-Samarrai MAM, Ali Jadoo SA. Prevalence and perception of women about consanguineous marriage in Al-Ramadi City. *Indian Journal of Public Health Research and Development* 2019;10(4): 567-573.
- [38] Mary Atanga Bi Suh, Julius Atashili. Breast self-examination and breast cancer awareness in women in developing countries: a survey of women in Buea, Cameroon. *BMC Res Notes.*2012; 5: 627.
- [39] Ali Jadoo SA, Alhusseiny A, Yaseen S, Al-Samarrai M, Al-Rawi R, Al-Delaimy A, Abed M, Hassooni H. Knowledge, attitude, and practice toward COVID-19 among Iraqi people: a web-based cross-sectional study. *Journal of Ideas in Health.*2020;3(Special2):258-65.
- [40] DemirYıldırım A, Özaydın AN. Sources of Breast Cancer Knowledge of Women Living in Moda / Istanbul and Their Attendance to Breast Cancer Screening. *Eur J Breast Health* 2014; 10:47-56. 10.5152/tjbh.2014.1762
- [41] Salman AA, Abass BR. Breast Cancer: Knowledge,Attitudes and Practices of Female Secondary Schoolteachers and Students in Samarra City. *Iraqi Journal of Cancer and Medical Genetics.* 2015; 8(1) :52 -59.