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ÇANKIRI KARATEKİN UNIVERSITY  
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PUBLIC HEALTH NURSING MASTER PROGRAM**

**INVESTIGATING WOMEN'S RISK FACTORS FOR BREAST  
CANCER AND THEIR KNOWLEDGE AND ATTITUDES  
TOWARDS EARLY DIAGNOSIS IN NASIRIYAH CITY**

**Master Thesis**

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AND THEIR KNOWLEDGE AND ATTITUDES TOWARDS EARLY  
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## KABUL VE ONAY

ÇAKÜ, Sağlık Bilimleri Enstitüsü'nün 198205302 numaralı Yüksek Lisans öğrencisi Abbas Naser Hussein AL-ABBOODI, ilgili yönetmeliklerin belirlediği gerekli tüm şartları yerine getirdikten sonra hazırladığı “Investigating women's risk factors for breast cancer and their knowledge and attitudes towards early diagnosis in Nasiriyah city” başlıklı tezini aşağıda imzaları olan jüri önünde başarı ile sunmuştur.

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## **ETİK BEYANNAMESİ**

Yüksek Lisans olarak hazırlayıp sunduğum “Investigating Women's Risk Factors for Breast Cancer and Their Knowledge and Attitudes Towards Early Diagnosis in Nasiriyah City” başlıklı tez; bilimsel ahlak ve değerlere uygun olarak tarafımdan yazılmıştır. Tezimin fikir/hipotezi tümüyle tez danışmanım ve bana aittir. Tezde yer alan araştırma tarafımdan yapılmış olup, tüm cümleler, yorumlar bana aittir.

Yukarıda belirtilen hususların doğruluğunu beyan ederim.

**İmza**  
**18 Şubat 2021**  
**Abbas Naser Hussein A-Abboodi**

## ÖN SÖZ

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## CONTENTS

|                                                                        | <u>Page</u> |
|------------------------------------------------------------------------|-------------|
| <b>KABUL VE ONAY .....</b>                                             | <b>iii</b>  |
| <b>ETİK BEYANNAMESİ.....</b>                                           | <b>iv</b>   |
| <b>ÖN SÖZ.....</b>                                                     | <b>v</b>    |
| <b>CONTENTS.....</b>                                                   | <b>vi</b>   |
| <b>ABBREVIATIONS AND SYMBOLS.....</b>                                  | <b>vii</b>  |
| <b>LIST OF TABLES .....</b>                                            | <b>ix</b>   |
| <b>LIST OF FIGURES .....</b>                                           | <b>x</b>    |
| <b>ÖZET.....</b>                                                       | <b>xi</b>   |
| <b>SUMMARY .....</b>                                                   | <b>xii</b>  |
| <b>1. INTRODUCTION.....</b>                                            | <b>1</b>    |
| 1.1 Objective of the Study.....                                        | 4           |
| 1.2 Research Questions .....                                           | 4           |
| <b>2. GENERAL INFORMATION .....</b>                                    | <b>5</b>    |
| 2.1 Anatomy of Breasts.....                                            | 5           |
| 2.2 Breast Cancer Epidemiology.....                                    | 6           |
| 2.3 Risk Factors for Breast Cancer .....                               | 7           |
| 2.3.1 Risk factors of breast cancer you cannot change .....            | 7           |
| 2.3.2 Breast cancer risk factors related to lifestyle .....            | 9           |
| 2.3.3 Breast cancer risk factors that have uncertain consequences..... | 12          |
| 2.3.4 Risk factors for disproved or questioned breast cancer .....     | 12          |
| 2.4 Breast Cancer Stages.....                                          | 13          |
| 2.5 Breast Cancer Signs and Symptoms .....                             | 14          |
| 2.6 Early Diagnosis of Breast Cancer .....                             | 16          |
| 2.6.1 Breast self-examination (BSE).....                               | 16          |
| 2.6.2 Clinical breast examination (CBE) .....                          | 18          |
| 2.6.3 Mammography .....                                                | 19          |
| 2.6.4 Ultrasonography (US) .....                                       | 20          |
| 2.6.5 MRI Imaging (Magnetic Resonance Imaging) .....                   | 21          |
| <b>3. MATERIAL AND METHOD.....</b>                                     | <b>24</b>   |
| 3.1 Design of the study .....                                          | 24          |
| 3.2 Setting of the Study.....                                          | 24          |
| 3.3 Data Collection.....                                               | 24          |
| 3.4 Ethics Committee Approval.....                                     | 25          |
| 3.5 Data analysis .....                                                | 26          |
| <b>4. RESULTS .....</b>                                                | <b>27</b>   |
| <b>5. DISCUSSION .....</b>                                             | <b>32</b>   |
| <b>6. CONCLUSION AND RECOMMENDATIONS .....</b>                         | <b>35</b>   |
| <b>REFERENCE .....</b>                                                 | <b>36</b>   |
| <b>APPENDICES .....</b>                                                | <b>43</b>   |
| <b>EK 4. CURRICULUM VITAE .....</b>                                    | <b>45</b>   |

## **ABBREVIATIONS AND SYMBOLS**

|               |                                                 |
|---------------|-------------------------------------------------|
| <b>ACR</b>    | : The American College of Radiology             |
| <b>ACS</b>    | : American Cancer Society                       |
| <b>ADH</b>    | : Atypical ductal hyperplasia                   |
| <b>ALH</b>    | : Atypical lobular hyperplasia                  |
| <b>BC</b>     | : Breast cancers                                |
| <b>BHGI</b>   | : Breast Health Global Initiative               |
| <b>BMI</b>    | : Body mass index                               |
| <b>BSE</b>    | : Breast self-examination                       |
| <b>CBE</b>    | : Clinical breast examination                   |
| <b>DCIS</b>   | : Ductal carcinoma in situ                      |
| <b>FDA</b>    | : Food and Drug Administration                  |
| <b>HRT</b>    | : Hormone replacement therapy                   |
| <b>IARC</b>   | : International Agency for Research on Cancer   |
| <b>INBCRP</b> | : Iraqi National Breast Cancer Research Program |
| <b>IUDs</b>   | : Intrauterine devices                          |
| <b>LCIS</b>   | : Lobular carcinoma in situ                     |
| <b>M</b>      | : Mean                                          |

|                            |                                                        |
|----------------------------|--------------------------------------------------------|
| <b>MHT</b>                 | : Menopausal hormone therapy                           |
| <b>MOH</b>                 | : Ministry of Health                                   |
| <b>MOHESR</b>              | : Ministry of Higher Education and Scientific Research |
| <b>MRI</b>                 | : Magnetic Resonance Imaging                           |
| <b>PMHT</b>                | : Post-menopausal hormone therapy                      |
| <b>SD</b>                  | : Standard deviation                                   |
| <b>US</b>                  | : Ultrasonography                                      |
| <b>WHO</b>                 | : World Health Organization                            |
| <b>X<math>\pm</math>SD</b> | : Mean $\pm$ standard deviation                        |



## LIST OF TABLES

|                                                                                                  | <b><u>Page</u></b> |
|--------------------------------------------------------------------------------------------------|--------------------|
| <b>Table 2.1:</b> Recommended schedule for early breast cancer detection among Iraqi women ..... | <b>23</b>          |
| <b>Table 4.1:</b> Sociodemographic characteristics of women.....                                 | <b>27</b>          |
| <b>Table 4.2:</b> Breast cancer risk factors for women.....                                      | <b>28</b>          |
| <b>Table 4.3:</b> Women's knowledge and attitudes towards early diagnosis of breast cancer. .... | <b>30</b>          |

## LIST OF FIGURES

|                                                             | <u>Page</u> |
|-------------------------------------------------------------|-------------|
| <b>Figure 2.1:</b> Anatomy of the female breast. ....       | <b>6</b>    |
| <b>Figure 2.2:</b> Signs and symptoms of breast cancer..... | <b>15</b>   |
| <b>Figure 2.3:</b> Procedure of BSE. ....                   | <b>17</b>   |
| <b>Figure 2.4:</b> Mammography. ....                        | <b>20</b>   |
| <b>Figure 2.5:</b> The screening method in MRI.....         | <b>22</b>   |



## ÖZET

AL-ABBOODI, Abbas. Nasiriyah Şehrindeki Kadınların Meme Kanseri Risk Faktörlerinin ve Erken Tanıya Yönelik Bilgi ve Tutumlarının Değerlendirilmesi, (Yüksek Lisans Tezi), Çankırı, 2021.

**Giriş:** Ülkeler arasında meme kanseri insidansındaki farklılıklar çevresel, davranışsal ve yaşam tarzıyla ilgili risk faktörlerine bağlanabilir. Bu nedenle farklı toplumlardaki kadınların meme kanseri risk faktörlerine ve erken tanıya yönelik bilgi ve tutumlarını değerlendirmek önemlidir. **Amaç:** Bu çalışmanın amacı Irak, Nasiriyah'da yaşayan 40 yaş üstü kadınların göğüs kanseri risk faktörleri ve erken tanıya karşı bilgi ve tutumları belirlemektir. **Yöntemler:** Bu çalışmada, tanımlayıcı ve kesitsel bir tasarım kullanılmış olup Şubat ve Mart 2020 arasında Irak'ta iki farklı birinci basamak sağlık merkezine başvuran 40 yaş üstü 120 kadınla gerçekleştirilmiştir. **Bulgular:** Çalışmadaki kadınların %21,70'nin ailesinde meme kanseri öyküsü olduğu, %6,66'nın kendi meme kanseri öyküsü olduğu, %24,20'nin bening meme rahatsızlığı olduğu, %0,80'nin ilk menarş yaşının 11 yaş ve altı olduğu, %6,66'nın göğüs bölgesine radyoterapi aldığı saptanmıştır. Kadınların %83,30'nun BMI'nin 25 ve üzerinde olduğu, %72,50'nin egzersiz yapmadığı, %50'sinin ilk çocuğunu 30 yaş ve üzerinde doğurduğu belirlenmiştir. Kadınların meme kanseri erken tanısına yönelik bilgi ve tutumları incelendiğinde ise, %51,60'nın Kendi Kendine Meme Muayenesini (KKMM) düzensiz yaptığı, %78,80'nin daha önce Klinik Meme Muayenesi (KMM) yaptırmadığı ve %88,30'nun mammografi çektiirmediği belirlenmiştir. **Sonuç:** Nasiriyah kentindeki kadınların yaşam tarzı ile ilişkili risk faktörleri olan fazla kilolu ya da obez olma ve fiziksel aktivite konularında eğitime ihtiyaç duyduğunu belirlenmiştir. Kadınların KKMM, KMM ve Mammografi çekirme konusunda tutumlarının düşük olduğu, kadınların bu konularda farkındalıklarının ve tutumlarının geliştirilmesine ihtiyaç olduğu görülmüştür.

**Anahtar Kelimeler:** Erken tanı, Meme kanseri, Risk faktörü.

## SUMMARY

AL-ABBOODI, Abbas. Investigating Women's Risk Factors for Breast Cancer and their Knowledge and Attitudes Towards Early Diagnosis in Nasiriyah City, (Master Thesis), Çankırı, 2021.

**Background:** Differences in the incidence of breast cancer among countries can be attributed to environmental, behavioral, and lifestyle-related risk factors. Therefore, it is important to evaluate the knowledge and attitudes of women in different societies towards breast cancer risk factors and early diagnosis. **Objective:** This study was conducted to determine the risk factors of women over the age of 40 for breast cancer and their knowledge and attitudes towards early diagnosis in Nasiriyah city of Iraq. **Methods:** The study uses a descriptive and cross-sectional design, and it was carried out with 120 women aged over 40 who presented to two different primary health-care centers in Iraq between February and March 2020. **Results:** The study results indicate that 21.70% of the women in the study had a family history of breast cancer, 6.66% had a history of their own breast cancer, 24.20% had benign breast disease, and 0.80% had a first menarche age 11 years and below. and 6.66% received radiotherapy to the chest area. It was determined that 83,30% of the women had a BMI value of 25 or above, 72,50% did not exercise, and that 50% had given birth to their first child at the age of 30 or over. When the knowledge and attitudes of women towards early diagnosis of breast cancer were examined, it was found that 51,60% performed Breast Self-Examination (BSE) irregularly, 78,80% had not had a clinical breast examination (CBE) before, and that 88,30% had not had mammography. **Conclusion:** It was determined that women in Nasiriyah city needed training on overweight and obesity and physical activity, which are lifestyle-related risk factors. Also, it was found that women's attitudes towards BSE, CBE, and mammography were low and that their awareness and attitudes needed improving on these issues.

**Key Words:** Breast cancer, Early diagnosis, Risk factor.

## 1. INTRODUCTION

Breast cancer is the most common type of cancer among women both in Iraq and all over the world. In 2018, 2,088,849 women were diagnosed globally with new breast cancer, while 626,670 others died of breast cancer (Bray et al., 2018).

Breast cancer is one of Iraq's top 10 malignant neoplasms in the population, constituting 19.5% (4996 cases) of the total and 34.3% (4922 cases) of female cancers. In 2016, 897 women died from the disease, which is the first cause of cancer-related death among women in Iraq (23.6%) and 12.1% for women and men (23.6%) after bronchogenic cancer (ICR, 2018).

Preceding cross-sectoral studies have shown a substantial lack of understanding of breast cancer risk factors in Iraq even amongst the trained community of (Alwan, 2019).

The Iraqi National Population-based Cancer Registry collects Cancer Registry information from laboratories, private sector clinics, and various regions throughout the country sponsor by the World Health Organization (WHO) and the International Agency for Cancer Research (IARC). On December 9, 2019, Iraq's national cancer registry revealed that there were over 31,000 cancer cases in Iraq in 2017-2018, leading to 11% of total deaths. Most of these cases may be attributed to the fact that the two America-led wars in Iraq, between 1990 and 2003, had a cumulative impact on Iraq's climate, a matter which led several researchers to study environmental contamination in Iraq (Al-Shammari, 2016).

In the soil of some cities around Iraq, high levels of depleted uranium have been reported (Ahmed, 2020; Mohammed & Ahmed, 2017).

It is important to remember that the amount of uranium in the bodies of most Iraqi people has not been investigated. In 2001, early breast cancer detection was developed by the Iraqi Ministry of Health. Then, other ministries and the newly established National Cancer Research Program began to sponsor this effort. The latest study by the International Union Against Cancer has shown that Iraq has made a difference. Significant improvement in cancer health services by increasing the

Iraqi National Registry to a registry focused on communities, introducing public campaigns to facilitate early detection (Alwan, 2018). Promoting physical activity and smoking prevention efforts, providing greater access to cancer diagnosis. True new research on testing breast cancer screening program in Iraq is carried out now along with an expansion in the national cancer control program. Research conducted in 2018 found that Baghdad's Screening for breast cancer had a coverage range of 63% to 77% with the diagnosis capacity of from 1% to 10% (Alkhazrajy & Souza, 20018).

In developing countries, breast cancer is seen as a public safety concern and becomes the key problem in low- and mid-income communities, where incidence rates increase by 5% per year (Stewart & Kleihues, 2003; WHO, 2006). According to the World Health Organisation, due to the rise in life expectancy, the increasing growth in the western lifestyle, and the increased acceptance of it, the incidence rates in developing countries will increase (Organization, 2017).

The causes of the majority of breast cancers are not known exactly, yet, about 25% to 40% of them may be recognized as well-known risk factors (Smith et al., 2009). Breast cancer risk factors vary as follows geographic features and lifestyle-related habits of the. However, numerous common risk factors of the illness have been recognized (Wood, 2015; Khatib & Modjtabai, 2006).

In the following four categories, the American Cancer Society listed breast cancer risk factors " Risk factors that cannot be adjusted, lifestyle-related risk factors, uncertain risk factors and refutative or controversial risk factors for breast cancer ". Hence, we have risk factors one cannot change that include: being a woman, advanced age, gene mutation, family history, person's history of breast cancer, breast tissue density, benign breast diseases, early minaret, late menopause, and getting radiation into the chest; Lifestyle-related risk factors that include: Alcohol, obesity, having children, lack of physical activity, breastfeeding, methods of birth control, postmenopausal hormone therapy and breast implants. While the third group, subsuming uncertain risk factors, includes: diet, vitamin intake, surrounding chemicals, smoking, and night work. As for the fourth group, which involves disproven or controversial risk factors, it consists of antiperspirants, bra use, and abortion (ACS, 2019).

Breast cancer arises from a multifactorial process. More recently, the focus has been on genetic predisposition and its relationship to the Western style of living, including diet and alcohol drinking (McPherson et al., 2000). It has been shown that oral pills for contraception increase the risk factor of breast cancer, and this risk decreases when taking them is stopped (Bhupathiraju et al., 2016).

There are significantly restricted sources of knowledge on cancer risk factors in Iraq, with a huge difference in lifestyle types and cultural and geographical diets and behaviors. The reasons for variation in breast cancer prevalence in women which can be explained through reproductive and lifestyle-related factors such as, literacy, diet, age at menarche and menopause, first-birth age, abortion, and breast cancer family history, are not well understood (Meshram et al., 2009; Lodha et al., 2010),

The value of awareness of breast cancer risk factors lies in the fact that it helps to detect people in the risk group and then to use it in building screening programs for breast cancer and cancer prevention programs. The study of breast cancer risk factors for Iraqi women would be a significant step in the preparation of screening and prevention services, as the risk factors for each group are peculiar. This research seeks to evaluate the knowledge and attitudes of some of the different risk factors and early diagnosis methods for breast cancer among Iraqi women.

Early diagnosis of breast cancer is of great importance for the course of the disease and treatment process and increases the chances of the successful treatment of it (Somunoğlu, 2009). Early diagnosis methods of breast cancer include: self-breast examination, clinical breast examination, mammography, and magnetic resonant imaging (MRI) for high-risk women. Ultrasonography is also recommended if breast tissue density is high and MRI cannot be performed (Somunoğlu, 2009; Freimanis & Yacobozzi, 2014).

Clinical breast exam to identify breast tissue is recommended, to diagnose possible changes early, and to provide awareness. Clinical breast examination ensures that women participate in health care by undertaking responsibility for their health and increase their awareness and care of their bodies (Gölbaşı et al., 2010). In 2012, another study investigating breast cancer know about, attitudes, and practice among a group of educated women showed that about half of the participants had a low awareness score of less than 50%. The study showed that 90% of respondents learned of Breast Self-Examination (BSE), but only 43% applied the technology

(Alwan et al., 2012a). In a related study in northern Iraq, several logistic regressions showed that participants' age, early detection expertise, and variables that could reduce the illness' incidence have been closely linked to practice BSE (Alwan et al., 2012b).

The results of the studies expose substantial knowledge gaps about the relative significance of breast cancer in the population and show the potential of practical policy decisions designed to increase public awareness of early detection in Iraqi women (Von Karsa et al., 2014). Focus should be given to demonstrating the vital advantages of treating the risk factors and risks of breast cancer if ignored. Public education initiatives should be launched to reassure women that many breast cancers could be detected at their early phases if they comply with the early detection procedures; thus, the likelihood of cure from the illness is decreased. In this context, determining the risk factors, knowledge, and attitudes of women in Nasiriyah, Iraq, about breast cancer, is important to assess the current situation and guide future studies.

### **1.1 Objective of the Study**

The objective of this study is to examine the risk factors for breast cancer, knowledge, and attitudes towards early diagnosis of women above 40 living in Nasiriyah, Iraq.

### **1.2 Research Questions**

Question 1: What are the breast cancer risk factors for women living in Nasiriyah, Iraq?

Question 2: What are the knowledge and attitudes of the Iraqi women living in Nasiriyah city towards the early diagnosis of breast cancer?



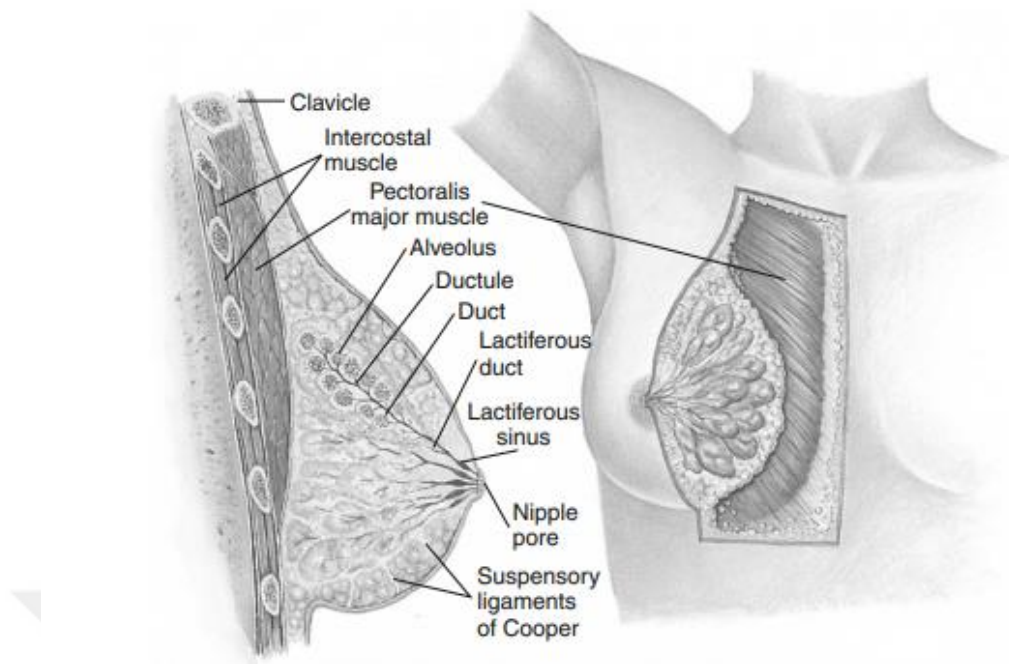
## **2. GENERAL INFORMATION**

### **2.1 Anatomy of Breasts**

An adult woman's breasts are mammalian tear-shaped glands (Figure 2.1). Technically speaking, they are sweat glands that are technologically modified with the potential for milk production. A subcutaneous tissue layer is covering the glands and spreading around the breast, forming between 80% and 85% of the average breast. The breasts are ligament-supported and attached to thorax pectoral muscles. Each breast comprises circular lobes that radiate around the nipple, from 12 to 25. Each lobe consists of several lobules, which include clusters in a lactating woman of alveolar glands producing milk. The alveolar glands convey the milk into the lactic pathways which drain its lobes. Each lactiferous canal is extended and then narrowed at the nipple openings until termination. The base of the nipple is surrounded by a set of smooth circular muscles, while smooth longitudinal muscle fibers are on the ring around the vacuous conduits that converge towards the nipples. The adipose tissue and lobe shapes decide the breast dimensions and shapes (Henry et al., 2020).

Areola is considered the dark pigmented region around the nipple. Its diameters and shades vary between 2 and 6 cm and between pale pink to deep brown depending on the age, equality, and pigmentation of the skin. The areola comprises frequent small oil-producing glands called Montgomery's tubercles, which serve to lubricate the areola and develop more marked during pregnancy (Fauci et al., 2008).

Arterial blood supply and vein reversal are available in breasts, together with the lymphatic drainage system, divided into two major categories: surface (including dermal) drying and deep parenchymatic drainage. The lymph system filters infection and helps protect the body from illness. The breast also has a nervous stage, The nipples are very entangled and are a very vulnerable, erogenous organ for many women (Gabriel & Maxwell, 2020).



**Figure 2.1:** Anatomy of the female breast (Fauci et al., 2008).

## 2.2 Breast Cancer Epidemiology

In 2018 it was reported that 2,1 million people were diagnosed with breast cancer and about one new case every 18 seconds and 626,689 females suffering from breast cancer died (Bray et al., 2018). In developing countries, people diagnosed with breast cancer are ~10 years younger than in developed countries. In developed countries, the proportion of young patients (< 35 years of age) ranges from ~10% up to 25% in developing Asian countries (Agarwal et al., 2007).

Breast cancer is the most common type of cancer in Iraq, and it is ranked 1<sup>st</sup> among the ten major cancers of both sexes. According to the Cancer Registry 2017, 5,951 new cancer cases were detected in Iraq for the year 2017 and 5,851 of these new cases were among women and 100 among men. The number of cases was 31.84 for women and 0.53 for men. It is also the second-largest cause of cancer death rate (Cancer Registry, 2017). Breast cancer is the first in Iraq with approximately 19% of all newly diagnosed cancers and 34.4% of all reported female cancers, with an incidence rate of approximately 23/100 000 women (Alwan, 2017).

## **2.3 Risk Factors for Breast Cancer**

### **2.3.1 Risk factors of breast cancer you cannot change**

#### **❖ Having a breast cancer family history**

- It's important to remember that there is no disease's family history for most people who get breast cancer. But there's a greater chance for Women with immediate relatives of blood who suffer from breast cancer.
- The risk for a woman is almost doubled with first-degree parenting breast cancer (mother, sister, or daughter). With 2 families in the first degree, their probability is almost 3 times higher.
- In women with a father or brother getting breast cancer, the risk of breast cancer is also higher. Overall, about 15% of women with breast cancer have a family member who has this disorder (ACS, 2019).

#### **❖ Having a personal breast cancer history**

A woman with cancer in one breast is more likely to develop a new cancer in the other or any other part of the same breast. While the average risk for younger women with breasts is low, it is even higher (Mobolaji & Micheal, 2020).

#### **❖ Having dense breast tissue**

Breasts consist of fatty tissue, fibrous tissue, and glands. On a mammogram, breasts look denser as have less fatty tissue and more fibrous tissue. The risk is approximately 1 1/2-2 times higher for women in mammograms with dense breasts than for females with normal breast densities. Dense breast tissue will sadly make it more difficult to see mammogram cancer. Breast density can be affected by a variety of factors, Age, menopause, certain treatments (including hormone menopause), pregnancy, and genetics (NCI, 2019).

#### **❖ Having benign states of the breast**

Women diagnosed with benign (non-cancer) breast conditions may have a higher risk of breast cancer. Some of these factors are related more closely than others to the risk of breast cancer. Doctors often divide benign breasts into three types, based on how they affect this risk (Willett et al., 2014).

- **Nonproliferative injuries:** The risk of breast cancer does not appear to affect this condition, or if it does, the risk increases very little. These include: simple cysts and/or fibrosis (sometimes called fibrocystic changes or disease), gentle hyperplasia with adenoses, tumor phyllodes (benign), a single papilloma, fat necrosis, ectasia duct, periductal fibrosis, squamous, and apocrine metaplasia, epithelial calcifications as well as additional tumor calcifications (lipoma, hamartoma, hemangioma, neurofibroma, adenomyoepithelioma). Mastitis is not a tumor and does not increase the risk of developing breast cancer (ACS, 2019).
- **Proliferative atypical lesions (cell abnormalities):** Under these conditions, excessive cell growth in ducts or lobular occurs but the cells do not appear to be quite abnormal. These conditions seem to significantly raise a female's risk of breast cancer. These include regular ductal hyperplasia (no atypia), fibroadenoma, sclerosing adenosis, multiple papilloma (so-called papillomatosis), and radial scar (ACS, 2019).
- **Proliferative atypia lesions:** Under such circumstances, cells are increasingly growing in ducts or in the breast tissue lobules, some of which no longer seem natural. These lesions are atypical duct hyperplasia (ADH) and atypical hyperplasia of the lobular system (ALH). The prevalence of breast cancer is about 4-5% higher than normal in women with these variants. When a woman has breast cancer in her family and hyperplasia or atypical hyperplasia, her risk for breast cancer is much greater (Jagsi et al., 2019).

#### ❖ **Starting menstrual periods early**

Women that have had more menstrual cycles have a marginally higher chance for breast cancer since they started to menses early (especially before age 12). The increase in risk could be caused by exposure for longer lifetimes with estrogens and progesterone hormones (NCI, 2019).

### ❖ **Chest radiation exposure**

Women who undergo chest radiation for another cancer (such as Hodgkin's or non- Hodgkin's) have a large rise in breast cancer risk while they are younger, and the degree of risk depends on their age when they take radiation. The risk is greater for women who have radiation as a child or as young adults as breasts continue to develop. The risk of breast cancer does not tend to increase with radiation therapy of older women (age between 40 to 45 years) (Ashford, 2014).

### **2.3.2 Breast cancer risk factors related to lifestyle**

Anything that raises the probability of a disease like breast cancer is a risk factor. However, there is a risk factor, or even a lot of it, does not mean that you are going to get the disease for sure (ACS, 2019).

Some risk factors contribute to personal activities, including diet and exercise, for breast cancer. Certain lifestyle risk factors include decisions regarding children and the use of hormonal medicines.

### ❖ **Alcohol drinking**

Drinking alcohol is an increased risk of breast cancer. If the amount of alcohol consumed increases, the risk increases. In contrast, women drinking once a day tend to be modestly (approximately 7% to 10%), while women drinking 2-3 times a day are 20% higher than non-drinkers. Alcohol also has an elevated risk for other forms of cancer (Bendinelli et al., 2020).

### ❖ **weight gain and obesity**

The risk of breast cancer rises after menopause, overweight or obese. Until menopause, ovaries contain most of the estrogens, only a small portion of the overall fat tissue. After menopause, most estrogen in a woman comes from fat tissue (when the ovaries stop producing estrogen). With more fat tissue after menopause, estrogen levels are increased and the risk of breast cancer is increased. Often, the blood insulin levels in obese women tend to be greater. Some cancers have been associated with higher insulin levels, like breast cancer; (Islami et al., 2018).

#### ❖ **Lack of physical activity**

Regular physical activity decreases the risk of breast cancer is increasingly apparent, particularly in women who have gone past menopause. How much activity is needed is the main question. Some studies have shown that it could be beneficial, perhaps to have as insignificant as a few times a week of exercise, while more seems to be better (Rock et al., 2020).

#### ❖ **Not having children**

Women who haven't had or had their first child after the age of 30 have a significantly higher risk of breast cancer in general. The risk of breast cancer decreases with several births at an early age and a pregnancy.

Nevertheless, the possibility of breast cancer is complicated due to pregnancy. In the first decade after a birth, for example, the risk of breast cancer is greater, Hormone-negative receptor breast cancer in particular (including the less common triple-negative breast cancer). Over time, the risk is reduced (Henry et al., 2020).

#### ❖ **No breastfeeding**

Most studies suggest that breastfeeding can slightly decrease the risk of breast cancer, especially if it lasts a year or longer. However, it has been hard to investigate, especially in nations like the United States, which have long been uncommon to breastfeed (CGHFBC, 2019).

This possible effect may be caused by a reduction in the number of menstrual cycles in the lives of a woman (the same as when the beginning of menstrual periods is at a later age or when going through early menopause) (Rock et al., 2020).

#### ❖ **Birth control**

Some birth control strategies use hormones that can increase the risk of breast cancer.

#### ❖ **Oral contraceptives**

Most studies have substantially higher chances of breast cancer among people using oral contraceptives (birth control pills) than women who have never used them. This risk seems to be back to normal within about 10 years if the pills are discontinued (CGHFBC, 2019).

### ❖ **Birth control shot**

Depo-Provera is a form of progesterone injection used for birth control once every 3 months. Some findings indicate that women who use birth control injections also are more likely to develop breast cancer, but other studies show no higher risk (ACS, 2019).

### ❖ **Birth control implants, intrauterine (IUD), patches on the skin, vaginal rings**

In principle, hormones that could drive the production of breast cancer are also used in these types of birth control devices. Some research found a correlation between the use of hormone release IUDs and breast cancer risks, but few studies examined implants, birth control patches and anchors, and the risk of breast cancer (Villarroya-Marquina et al., 2020).

### ❖ **During menopause, hormone replacement**

Hormone replacement therapy (HRT) is a form of hormone therapy used to treat women's menopause symptoms. It is known as Menopause hormone therapy (MHT) or postmenopause hormone therapy (PHT, PMHT). There may be hot flashes, atrophy, rapid skin aging, declining muscle mass, sexual dysfunction, and loss of bone. These are the most common symptoms of all. They are primarily linked to the decreased sex hormone levels during menopause (Stuenkel et al., 2015; Santen et al., 2010).

The major hormonal drugs that have been used in menopausal symptoms of HRT include estrogen and progestogens, among which, progesterone is the main natural female sex hormone (Stuenkel et al., 2015).

### **2.3.3 Breast cancer risk factors that have uncertain consequences**

There may be certain factors that may lead to breast cancer risk but research has not yet shown that it increases the risk of breast cancer.

#### **❖ Diet and vitamins**

Although obesity and lack of physical activity are correlated with the risk of breast cancer, the possible association between diet and the risk of breast cancer is less apparent. Some research findings showed that diet can have a role, while others did not find that diet affects breast cancer risk (Farvid et al., 2014).

#### **❖ Tobacco smoking**

Some studies have shown that heavy smoking can be associated over a long time with a slightly higher risk of breast cancer. In some study groups, including mothers, who started smoking before their first child, the risk was higher. The 2014 report by the US surgeon general concluded that the increased danger of breast cancer smoking is "suggestive but not adequate" (Kong & King, 2020).

#### **❖ Night shift work**

Some studies indicate that women working in the night can become more vulnerable to breast cancer, for example, nightly-shifting nurses. It is an active research area. Some scientists claim this is due to changes in melatonin, a hormone that is affected by body light exposure. (ACS, 2019).

### **2.3.4 Risk factors for disproved or questioned breast cancer**

#### **❖ Antiperspirants**

Internet and email rumors have shown that pollutants, including those found in the underarms and absorbed by the skin, interact with lymph circulation and cause breast toxins, which may cause breast cancers (Darbre & Harvey, 2008).

There is little or no reason to believe that antiperspirants increase the risk of breast cancer, based on the available data, including what we know about how the body functions (ACS, 2019).



## ❖ **Bras**

Internet and email rumors, along with at least one book, showed that bras triggers breast cancer by blocking lymph flow. There is no good scientific or clinical justification for this claim and a 2014 analysis on a group of over 1500 women showed no association between wearing a bra and breast cancer risk (Chen et al., 2014).

## ❖ **Abortion induced**

Several studies have been active evidence on the overall impact of induced abortions and spontaneous abortions (miscarriages) on breast cancer risk and showed that neither of them has any impact. For more detailed knowledge see, (Chen, 2019).

## **2.4 Breast Cancer Stages**

The invasive effects of cancer depend on the size of the tumor, whether or not this affects the lymph nodes, and whether or not the cancer has spread to the breast (Breast Stages, 2010).

The staging method helps to coordinate the multiple cancer causes and characteristics to better understand the prognosis of a patient, to get the best care choices available, and to be understood by physicians and nurses around the world as well. The stages are determined by analyzing the tissues in the breast and also the size of the tumor (Breast Stages, 2010).

It also takes into consideration how big the cancer is and how far it has spread. Doctors, then, assign a number referring to the particular stage of the progress of the disease. The stages of breast cancer from 0 to IV are shown below:

### **Stage 0**

Step 0 identifies non-invasive breast cancers, including ductal carcinoma in situ (DCIS) and lobular carcinoma in situ (LCIS) (Stages of Breast, 2010).

There is no evidence at this point of any cancerous cells or irregular non-cancerous cells that may invade other normal tissue. Step I explains invasive breast cancer in which adjacent normal tissue is invaded by cancer cells. The tumor, which is the size of a shelled peanut at this stage, is no more than 2cm in diameter. In this

phase, cancer has not yet spread to or beyond the lymph nodes (Stages of Breast, 2010).

### **Stage I**

At this point, it is described as offensive breast carcinoma and a microscopic invasion. It consists of two classes: Phase 1A and Phase 1B. Group 1A describes the tumor, which can be up to 2 cm in size, which has yet to reach any of the lymph nodes. Phase 1B defines a small group of cancer cells largest than 0.2 mm that originate from lymph nodes (Segal et al., 2001).

### **Stage II**

It consists of two 2A and 2B groups. Stage 2A defines tumor in axillary lymph nodes or sentinel lymph nodes, but the breast does not have a tumor. Stage 2A The tumor may be less than 2 cm or greater, but not more than 5 cm. However, stage 2B suggests that the axillary lymph nodes may be bigger than 5 cm but have not (Moran et al., 2014).

### **Stage III**

Invasive breast cancer, which is divided into three subcategories, IIIA, IIIB, and IIIC Breast Stages, (2010), is identified in stage III. The tumors are now broader or have spread to adjacent tissues, or various nearby lymphatic nodes (the skin over the breast or underlying muscle) (Knaj & Georgeos, 2020).

### **Stage IV**

This is the advanced and metastatic stage of cancer and describes the expansion into other bodies (lungs, liver brain, bones, etc.) (Neuman et al., 2010).

## **2.5 Breast Cancer Signs and Symptoms**

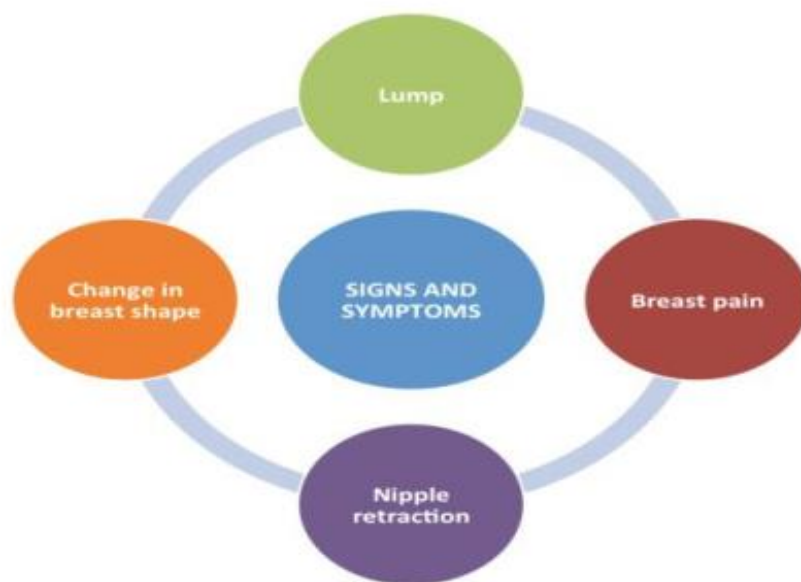
Breast cancer study has helped to lower the risk of death of the disease. Susceptible women and men may examine themselves before seeing a physician, however, physicians have to conduct different tests to decide whether the breast tumor is malignant or benign. Popular breast cancer symptoms include: change in the look or feel of the breast nipple, and nipple discharge so examining the breast regularly helps detect these symptoms immediately to prevent the development of the

illness. Redness or pitting of the nipple or breast skin or release are symptoms too (Rondanina et al., 2017).

(Figure 2.2) below shows the main signs and symptoms of breast cancer.

### **Signs of breast cancer**

- Breast lump
- Nipple retraction
- Change in breast shape
- Breast or nipple pain and other
- Redness or pitting of the skin
- Swelling
- Lymph node changes
- Dimpling
- Nipple discharge
- Changes to skin texture



**Figure 2.2:** Signs and symptoms of breast cancer (Ikhuoria, 2018)

## **2.6 Early Diagnosis of Breast Cancer**

### **2.6.1 Breast self-examination (BSE)**

The purpose of BSE is to help women to examine the topography of their breasts to identify future changes. BSE must be used in combination with mammography and CBE, and not as a substitute for either process. According to the National Breast Cancer Foundation, USA, up to 70% of breast cancers are found by women performing their BSE, although there is no evidence-based data to support BSE efficiency as a screening tool (Khatib, 2007; ACS, 2013; Miller, 2008; Susan & Komen, 2013; Al Alwan, 2015).

However, it is internationally decided that all women should be advised to learn how their breasts normally appear and how their texture look like to report any changes precisely to their health care provider (Khatib, 2007; ACS, 2013; Anderson et al., 2008; Miller, 2008; Susan & Komen, 2013). It is designated that BSE is a good option for females initially in their twenties. Our Iraqi data exposed that about 90% of patients with breast cancer finally discover the disease by themselves regrettably at progressive stages, outside of a structured BSE (Alwan, 2010).

Based on a sample representing the educated female population in Iraq, the INBCRC indicated that less than 50% of women who heard about BSE practiced the technique. The most common cause stated by those who did not was the lack of information on how to perform BSE correctly (Alwan, 2013; INCRRC, 2014).

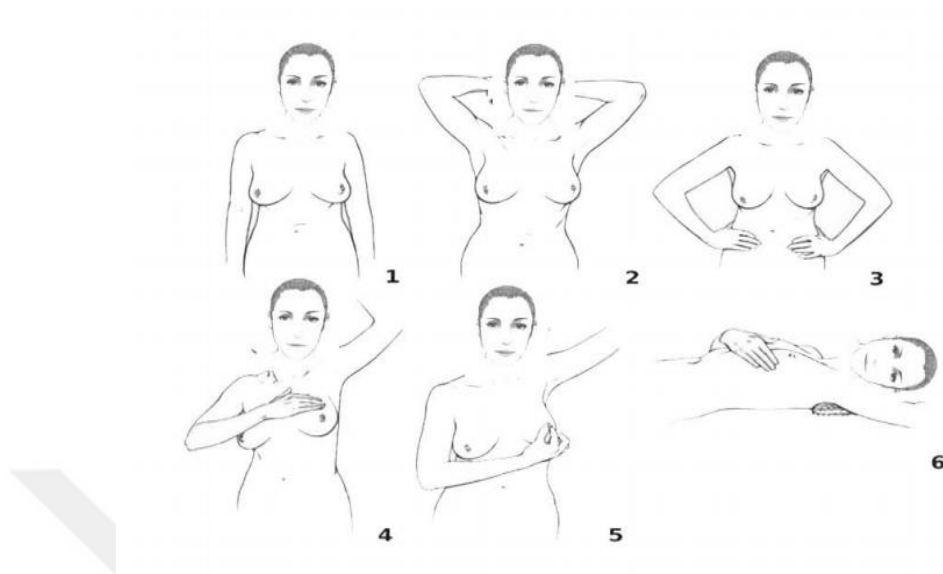
The best time to perform BSE is after the end of menstruation; in the case of breasts less wet, tender, and engorged, the menses are more precise 7 to 10 days after the menstrual cycle start. For expectant and postmenopausal women, it is suggested to localize a sure day in all months. If the female is lactating, BSE should be carried out after emptying the milk (Al Alwan, 2015).

❖ **Procedure of BSE** (Khatib, 2007; ACS, 2013):

**Inspection:** Recommended Steps (Figure 2.3)

- Look carefully at both breasts in front of a mirror with shoulders up straight and arms on the hips to figure out any abnormal signs as described above,
- Raise your arms or bring your hands behind your head to see the same changes.

- Place your hands on the center of your abdomen and pull your shoulders downwards to look at the outline of the breast.



**Figure 2.3:** Procedure of BSE (Al Alwan, 2015)

❖ **Palpation:** Recommended Steps

- Using the hand palm, systemically feel all breast distinctly; searching for any abnormal thickening, irregularities, or lumps. Fingers should move in concentric; vertical or radial designs towards the tail of the breast and the armpit (axilla). Use a solution of powder or soap since fingers can glance smoothly over the skin.
- The nipples should be squeezed gently to check for any abnormal release.
- Sit down and raise the right arm behind the head with a cushion under the right shoulder and search the entire breast and axis with left-hand paddles of the fingers and vice-versa.

### ❖ **Role of nurses in breast self-examination**

The distribution by the masses of knowledge related to public health is an essential resource for health professionals, educational institutions, or mass media. In education for women, nursing workers can be critical through designed health-care training programs and through public service approaches that are suitable for social and national settings (Nichols, 2012). Nurses with fair knowledge of breast cancer have been reported to be able to help early breast cancer diagnosis (Lee et al., 2010; Dunn & Tan, 2011). It became known that caregivers production a significant role in educating and influencing women in the community, in particular those employed in rural health care (Tasci & Usta, 2010).

### **2.6.2 Clinical breast examination (CBE)**

Clinical breast examination is a clear early diagnosis method for breast cancer detection. It can be a health care provider who might be a doctor or a nurse can perform it. It is aimed at detecting breast abnormalities at the earliest step of the show. The effectiveness of CBE depends on a range of variables the patient's correct positioning, examination thoroughness, exact member movement, and test time for each breast of at least 5 minutes (ACS, 2013).

CBE was recommended by the Breast Health Global Initiative (BHGI) as an outstanding testing measure in countries with insufficient funding for early breast cancer screening, where breast cancer is often diagnosed at progressive phases during performance (Anderson et al., 2008). However, in practice, without the details given by diagnostic mammography and tissue biopsy, the results of CBE can not be used alone to provide a definitive diagnosis of malignancy (Al Alwan, 2015).

### ❖ **Promoting CBE as a screening instrument for breast cancer in Iraq**

In countries where breast cancer is typically diagnosed in advanced stages when presented, CBE may be of particular importance and when sufficient resources to apply mammography screening are unavailable (WHO/EMRO, 2010; Anderson, 2008; WHO, 2007). These comments provide cause to consider the potential value of CBE concerning Iraq.

In Iraq, which is a middle-income country, resources are restricted in terms of at least adequate detection equipment, i.e. mammogram and ultrasound machines, to

build a completely fully equipped nationwide early detection system for the target population in danger. Other challenges include inadequate numbers of professional radiologists and x-rays and poorly organized quality control procedures.

It is therefore rational to find other successful and cost-effective screening measures. CBE is suggested in the present circumstances as a realistic approach to detecting breast lumps in particular for females premenopausal; where the top breast cancer incidence is seen and mammograms are less sensitive and may not display maximum efficacy (Iraqi Cancer Board, 2010; Alwan, 2010; Dhen, 2013).

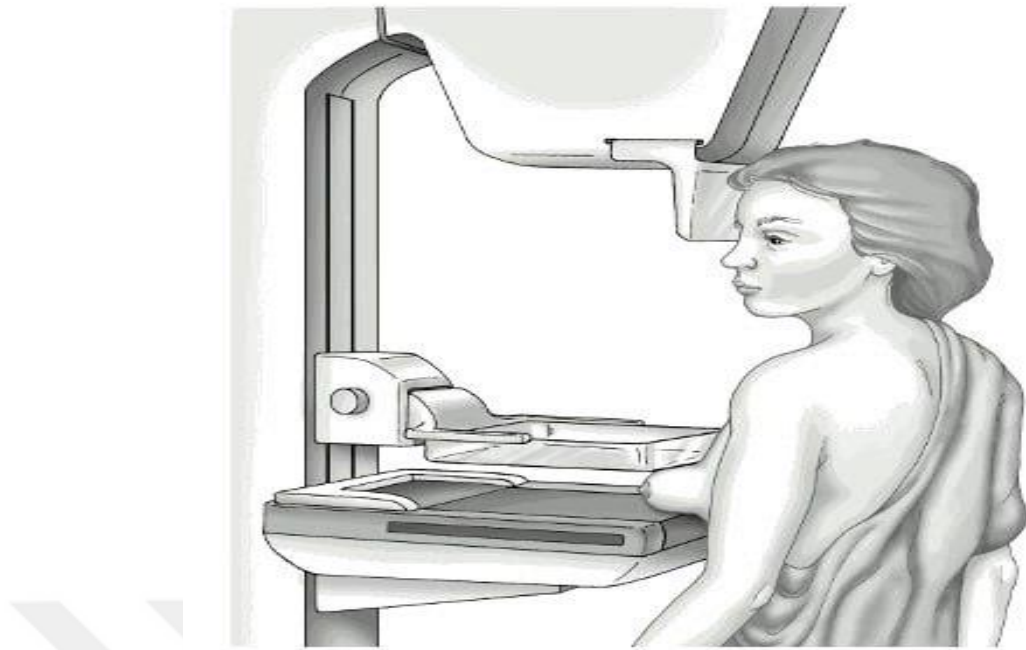
CBE performed by women every 2-3 years from 20 years old, in the process of regular tests, cumulative from 30 years and older, once a year, should be instructed by families and those in primary health centers in Iraq. When an abnormality is observed, mammography and other corresponding diagnostic studies should be referenced (Mualla & Al-Alwan, 2014).

### **2.6.3 Mammography**

Mammography is a low-dose radiographic procedure that enables the inner build-up of the breast to be imaged. There are three main types of mammography: screen film, digital, and digital breast tomosynthesis. Mammography uses x-ray imaging devices. Most of the film mammography has been replaced by digital mammography, which uses more sophisticated computerized equipment to capture a digital brief image and generate a lower amount of radiation. Studies have shown that optical mammograms are much more reliable for women under the age of 50 (Pisano et al., 2008; Souza et al., 2013).

Digital breast tomosynthesis or 3-dimensional (3-D) mammography was approved by the Food and Drug Administration (FDA) in 2011 and combined with a 2D digital mammography image that produces a 3D braid image with several high-resolution x-rays. The advantages and limits of tomosynthetic synthesis are still being tested in public practice. Recent studies have shown that the addition of breast tomosynthesis in digital mammograms alone may reduce false-positive results and enhance cancer detection in certain instances (Friedewald et al., 2014).

(Figure 2.4) Explains the Mammography method



**Figure 2.4:** Mammography (Hendrick, 2010)

The American Cancer Society recommends that those aged 40-44 can start an annual mammography for females with a regular breast cancer risk. Annual mammograms should be performed for those aged 45-54. As for women aged 55 or older, They will turn to mammograms for the biennial or continue getting mammograms annually. If the overall health is good and they live 10 years or older, women should continue screening (Conant et al., 2016).

The nurses have to educate women and women at high-risk, in particular, on the screening rules so that they can make educated screening decisions. The combination of mammography screening, physical examinations, and BSE lowered the overall mortality rate of women from 40 to 69 years of age by 63 percent (Tabar et al., 2001).

#### **2.6.4 Ultrasonography (US)**

Using sound waves, breast ultrasound equipment produces a view of the interior of the breast on a screen. It may clarify a variety of breast changes that cannot be seen on mammograms, such as fluid-filled cysts (Wood, 2015).Ultrasound devices help in demonstrating some changes in the breast, For example, lumps or changes in dense breast tissues among women (in particular those that can be sensed



but cannot be noticed in a mammogram). It can also be used to view a suspect area already seen in a mammograph (Orr & KELLEY, 2016).

Ultrasound is perfect, like cysts of fluid (very unlikely to be cancerous) Difficult masses (which require additional tests to ensure that this is not cancer) will vary (Shaikh et al., 2021). Ultrasound can also be used to direct a biopsy needle across a region to isolate and test cancer cells. It can be like that achieved under the arm in the case of swollen lymph nodes. Ultrasound is easily accessible, easy-to-use, and does not radiate a person. This is also less expensive than many others (Sedgwick, 2014).

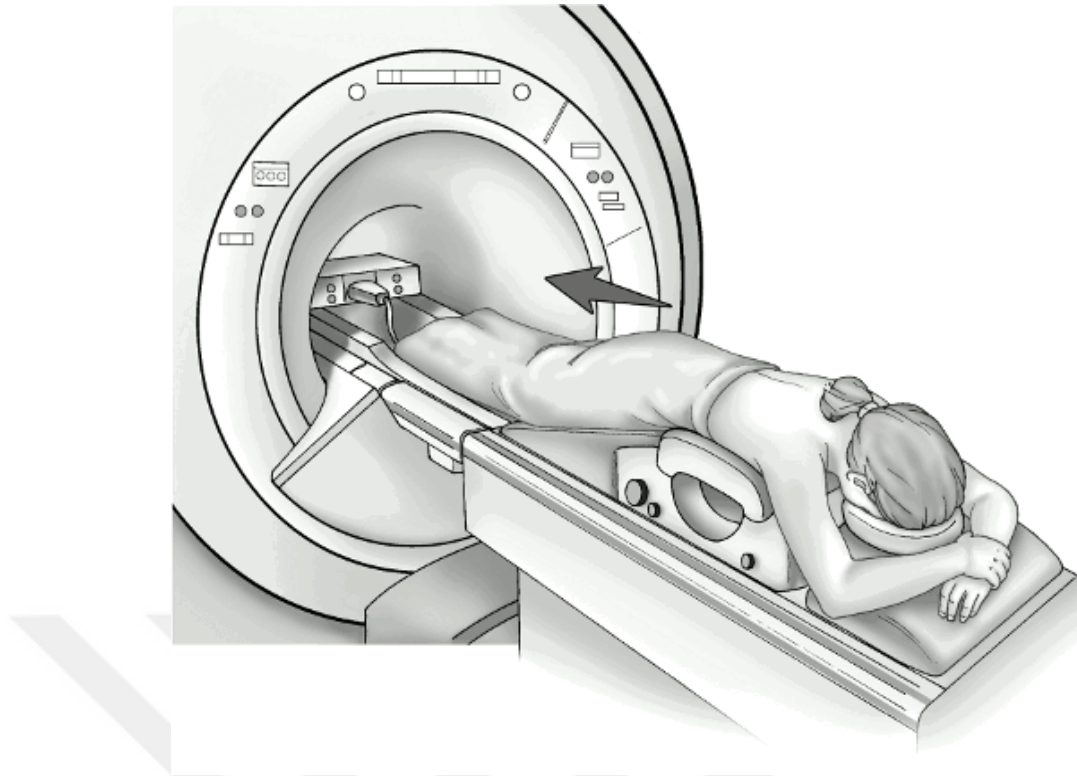
At advanced early detection breast cancer centers and clinics in Iraq, the US is extensively practiced to identify suspected lesions at all age ranges, especially in young and premenopausal patients. It is also used in females after the age of 40, as an alternative to mammography screening (Esserman & Joe, 2019).

#### **2.6.5 MRI Imaging (Magnetic Resonance Imaging)**

Instead of x-rays, the MRI uses magnetic fields to create highly precise cross-sectional body images. MRI's sensitivity as a breast cancer screening device is over 95 percent but its specificity is small, with a range of 53 percent-70 percent; the higher false-positive rate leads to further callbacks and biopsies. Though of low specificity and costly, the MRI has been widely used in routine screening to rule out malignancy in patients with non-tangible lesions and to prevent local recurrence in the screening of high-risk individuals (Maniero et al., 2012; Antier et al., 2012).

The American College of Radiology (ACR) suggests Mammography screening and MRI screening to prevent cancer in women who have a known or probable hereditary predisposition to breast cancer (Maniero et al., 2012).

(Figure 2.5 ) shows the screening method in MRI



**Figure 2.5:** The screening method in MRI (Slanetz, 2019)

Encouraging simple early diagnostic breast cancer control policies in Iraq must be followed by launching wide-ranging public health awareness programs focused on suggestions. Massive national efforts are needed to increase the understanding of women about breast cancer signs and symptoms, its risk factors, and the suggested strategies for disease prevention and early diagnosis. The Ministry of Higher Education and Science Research (MOHESR) and the Ministry of Health (MOH) have already launched active initiatives to facilitate early diagnosis and awareness of health promotion among Iraqi women in this context (Mualla & Al-Alwan, 2014).

This recommended timeline (Table 2.1) shows early detection of breast cancer among Iraqi women.

| A. Women at Low Risk  |                                           |                      |              |              |
|-----------------------|-------------------------------------------|----------------------|--------------|--------------|
| Test                  | Age (in years)                            |                      |              |              |
|                       | 20 – 29                                   | 30 -39               | 40 – 49      | ≥ 50         |
|                       | Once a month                              | Once a month         | Once a month | Once a month |
| <b>BSE</b>            | Once a month                              | Once a month         | Once a month | Once a month |
| <b>CBE</b>            | Every two or three years                  | Every year           | Every year   | Every year   |
| <b>Mammogram</b>      | -----                                     | -----                | Every year   | Every year   |
| B. Women at High Risk |                                           |                      |              |              |
| Test                  | Age (in years)                            |                      |              |              |
|                       | 20 – 29                                   | 30 -39               | 40 – 49      | ≥ 50         |
|                       | Once a month                              | Once a month         | Once a month | Once a month |
| <b>BSE</b>            | Once a month                              | Once a month         | Once a month | Once a month |
| <b>CBE</b>            | Every year                                | Every year           | Every year   | Every year   |
| <b>Mammogram</b>      | (Every year US starting at the age of 25) | Every year (with US) | Every year   | Every year   |

**Table 2.1:** Recommended schedule for early breast cancer detection among Iraqi women (Al Alwan, 2015).

### **3. MATERIAL AND METHOD**

#### **3.1 Design of the study**

It is a descriptive and cross-sectional study.

#### **3.2 Setting of the Study**

##### **❖ Place and sample:**

The research data were from the Alshaheed Ali Naghamish health care center and Al\_Zahraa health care center in AL\_ Nasiriyah, Iraq. The universe of the study was composed of women who applied to two different primary health care centers between February and March 2020. The sample consisted of women who fulfilled the sampling criteria ( $n = 120$ ). G power package program was used in power analysis. As a result of the power analysis, it was found that the power was 0.95 when the effect size,  $p$  and sample size was 3.0, 0.05 and 120.

##### **❖ criteria of sample inclusion**

- Agreeing to participate in the study
- Being a women
- 40 years old and above

##### **❖ Criteria of Sample Exclusion**

- Having hearing problems.
- Having a disease such as psychiatric diseases, Alzheimer's, dementia which can affect cognitive perception

#### **3.3 Data Collection**

Research data, sociodemographic characteristics form, risk factors of breast cancer form, and knowledge and attitude form for early diagnosis of breast cancer. The forms were created by the researchers through a literature survey. The data collected were by face to face interview method.

#### ❖ **Sociodemographic characteristics form**

This form consists of 5 questions including the age, marital status, occupation, education, and income status of women.

#### ❖ **Breast cancer risk factors form**

The form was prepared according to information from the American Cancer Society, Risk factors that cannot be changed; It consists of five questions about breast cancer family history, personal breast cancer history, benign breast disease, menarche age, and previous radiotherapy in the chest area. And lifestyle-related risk factors include: alcohol drinking, being overweight or obese, physical activity, the first child after the age of 30, breastfeeding for 1 year or more, use of birth control pills, menopausal status. As well as the use of hormone replacement therapy in menopausal women which consists of eight questions. In addition to uncertain risk factors consisting of three questions about fruits and vegetables diet, smoking, and night shift work (ACS, 2020).

#### ❖ **Knowledge and attitudes towards early diagnosis of breast cancer;**

It consists of the following nine questions: Have you heard of BSE?, Have you done BSE?, How often do you do BSE? , Have you had a clinical breast examination before?, Have you had a mammography?, How often do you take it? What are breast cancer signs?, Have you detected any problems on the breast? Have you gone to the physician for this problem? (Ursavaş & Kaya, 2020).

### **3.4 Ethics Committee Approval**

The research was performed at the Thi-Qar Health Office of Training and Human Development. 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. Ethical approval of the ethics committee of a university located in central Anatolia was obtained (Approval number:170/2020-170). The individuals included in the study were informed about the purpose of the study, and the verbal and written consent of those who agreed to participate in the study was obtained.

### **3.5 Data analysis**

Analysis of data obtained from the research was conducted using the statistical package for Social Science (SPSS; IBM Corp., Armonk, N.Y., USA) 22.0 version in a computer environment. Data were analyzed by number, percentage, mean and standard deviation.



#### 4. RESULTS

**Table 4.1 :** Sociodemographic characteristics of women.

| <b>Sociodemographic characteristics of women (n=120)</b> |               |              |
|----------------------------------------------------------|---------------|--------------|
| <b>Sociodemographic features</b>                         | <b>X ± SD</b> | <b>Range</b> |
| <b>Age</b>                                               | 49.89 ± 8.45  | 40 -73       |
|                                                          |               | <b>n (%)</b> |
| <b>Marital Status</b>                                    |               |              |
| Married                                                  |               | 110 (91.70)  |
| Single                                                   |               | 10 (8.30)    |
| <b>Occupation</b>                                        |               |              |
| Housewife                                                |               | 76 (63.30)   |
| Worker                                                   |               | 2 (1.70)     |
| Officer                                                  |               | 40 (33.30)   |
| Free profession                                          |               | 2 (1.70)     |
| <b>Education Status</b>                                  |               |              |
| 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)   |
| <b>Income status</b>                                     |               |              |
| More than expenses                                       |               | 5 (4.20)     |
| Income equal to expenses                                 |               | 32 (26.70)   |
| Less than expenses                                       |               | 83 (69.20)   |

The mean age of the women in the study was  $49.89 \pm 8.45$ , 91.70% of them were married, and 63.30% were housewives. Also, 35.80% were illiterate, and 69.20% had less income than their expenses (Table 4.1).

**Table 4.2 :**Breast cancer risk factors for women.

| <b>Breast cancer risk factors for women (n=120)</b>      |              |
|----------------------------------------------------------|--------------|
| <b>Breast Cancer Risk Factors You Cannot Change</b>      | <b>n (%)</b> |
| Having a breast cancer family history                    |              |
| Yes                                                      | 26 (21.70)   |
| No                                                       | 94 (78.30)   |
| A personal breast cancer history                         |              |
| Yes                                                      | 8 (6.66)     |
| No                                                       | 112 (93.34)  |
| Height <168                                              | 110 (91.70)  |
| Height ≥168                                              | 10 (8.30)    |
| Benign breast disease                                    |              |
| Yes                                                      | 29 (24.20)   |
| No                                                       | 91 (75.80)   |
| Age of menarche                                          |              |
| 11 years and under                                       | 1 (0.80)     |
| 12 years and above                                       | 119 (99.20)  |
| Have you received radiotherapy to the chest area before? |              |
| Yes                                                      | 8 (6.66)     |
| No                                                       | 112 (93.34)  |
| <b>Lifestyle-related risk factors</b>                    |              |
| Drinking alcohol                                         |              |
| Yes                                                      | 1(0.80)      |
| No                                                       | 119 (99.20)  |
| Being 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)   |
| <b>Uncertain factors</b>                                 |              |
| A diet rich in fruits 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) |

BMI: Body mass index

When the breast cancer risk factors of women relating to unchangeable risk factors were evaluated, it was found that 21.70% of them had a breast cancer family history, 6.66% had a previous breast cancer history, 8.30% was 168 cm tall or taller, 24.20% had a benign breast disease, 0.80% had a menarche age of 11 or below, and that 6.66% had previously received radiotherapy to the chest area. As for lifestyle-related risk factors, it was determined that 0.80% of the participants used 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 uncertain 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 4.2).

**Table 4.3 :**Women's knowledge and attitudes towards early diagnosis of breast cancer

| <b>Women's knowledge and attitudes towards early diagnosis of breast cancer (n=120)</b> |              |
|-----------------------------------------------------------------------------------------|--------------|
| <b>Knowledge and attitudes towards early diagnosis</b>                                  | <b>n (%)</b> |
| 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?                                                           |              |
| I don't                                                                                 | 32 (26.70)   |
| Once a month                                                                            | 26 (21.70)   |
| Once in 3 months                                                                        | 20 (16.70)   |
| Irregularly                                                                             | 42 (35.00)   |
| Have you had a clinical breast examination before?                                      |              |
| Yes                                                                                     | 35 (29.20)   |
| No                                                                                      | 85 (70.80)   |
| Have you had a mammography?                                                             |              |
| 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 do you evaluate for breast cancer during BSE?                                |              |
| Mass                                                                                    | 57 (47.40)   |
| Nipple collapse                                                                         | 6 (5.00)     |
| Pits in the breast                                                                      | 28 (23.30)   |
| Bleeding from the nipple                                                                | 18 (15.00)   |
| Wounds on 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, Did you see a physician for this problem?                        |              |
| Yes                                                                                     | 27 (93.10)   |
| No                                                                                      | 2 (6.90)     |

BSE: Breast self-examination

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 physician for the problem (Table 4.3).



## 5. DISCUSSION

According to the information published by the American Cancer Society (ACS), unchangeable risk factors for breast cancer include female gender, advanced age, gene mutation, breast cancer family history, individual's breast cancer history, race and ethnicity, being tall, dense breast structure, benign breast disease, age of menarche and menopause, and receiving radiotherapy to the chest area (ACS, 2020). It was determined that 21.70% of the women in the study had a breast cancer family history, 6.66% themselves had a history of breast cancer, 8.30% were 168 cm tall or taller, 24.20% had a benign breast disease, and the first menarche age of 0.80% was 11 or below, 6.66% had received radiotherapy to the chest area, and that the unchangeable risk factors of the women included in the study were low.

In a case-control study conducted with healthy women and women with breast cancer in Iraq, while there was no statistically significant difference between the groups in terms of breast cancer family history and menopausal age, a significant difference was found regarding the age of menarche (Abedalrahman et al., 2019). In a retrospective study conducted with 1172 women with breast cancer in Iraq, it was found that 81.30% of women with breast cancer had no breast cancer family history (Alwan et al., 2019). In other case-control studies, a statistically significant difference was found in risk factors between the case and control groups, such as a breast cancer family history and the age of menarche and menopause (Ali Ghalib et al., 2019; Al-Mukhtar, 2019). 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 evaluating 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 (Kabacaoğlu & Karaca, 2020). According to the ACS, the risk factors associated with lifestyle include Usage of overweight or obese alcohol, lack of physical activity, breastfeeding, lack of infants,

methods of birth control, and therapy for hormones (ACS, 2020). It was determined that 83.30% of the women in the study had a BMI value of 25 and above, 72.50% did not exercise, and 50% had delivered their first child at the age of 30 or over. We think education on lifestyle-related risk factors is necessary. In a study conducted with 338 cases and 338 controls in Iraq, a statistically significant difference was found between the groups in terms of lifestyle-related risk factors, such as exercise, age of the first delivery, and BMI, and these were evaluated as a risk factor for breast cancer (Ali Ghalib et al., 2019). In a prevalence study conducted in Iraq, the prevalence of overweight or obesity was found to be 74.3%, and it was found to have a statistically significant relationship with female gender, low education level, and not doing physical activity (Shabu, 2019). In a meta-analysis of 18 cohorts and 11 case-control studies, physical exercise has been shown to reduce the risk of breasts in average, overweight women compared with obese women (Neil-Sztramko et al., 2017). It is thought that nurses can raise awareness of women about lifestyle-related risk factors for breast cancer by addressing subjects, such as nutrition and physical activity, in both community education programs and hospital nursing care.

The ACS categorizes unknown breast cancer risk factors 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 (Ali Ghalib et al., 2019).

When the knowledge and attitudes of women towards early diagnosis of breast cancer were examined, it was determined that 51.60% performed BSE sporadically, 78.80% had not had CBE before, and that 88.30% had not had mammography. According to the results, the attitudes of women towards early diagnosis were low. In the literature, studies conducted in low and middle-income countries like Iraq showed that women's knowledge and attitudes towards BSE, CBE, mammography, and early diagnosis of breast cancer were low (Al-Mulhim et al., 2018; Batool et al., 2018; Aljohani et al., 2016). In a study conducted in Iraq, it was found that 49.70% of women performed BSE every month. Factors, such as

women's education level, employment status, and breastfeeding history, were found to affect the status of performing BSE regularly (Shakor et al., 2019). Al-Attar et al. (2016) found that only 26% of the women participating in their study had had mammography at least once before. It was reported that factors, such as women's knowledge, attitudes and misunderstandings about breast cancer, some cultural, social, and religious values, and access to medical services were obstacles to mammography screening.



## 6. CONCLUSION AND RECOMMENDATIONS

### ❖ Conclusion

It was determined here that women in the city of Nasiriyah city need training and education on lifestyle-related risk factors such as being overweight or obese and physical activity. Women have low attitudes towards BSE, CBE, and Mammography, It has been observed that women's knowledge and attitudes on these issues need to be improved.

### ❖ Recommendations

According to the results of the study the researcher suggests:

- Educational interference should be undertaken to raise awareness of breast cancer, its risk factors as safe as breast diagnosis, movement of health consciousness at primary levels of health, and this should include community-level home-based counseling to disseminate data within populations.
- Information on breast cancer should be made accessible to anyone through a prominent display of posters, information pamphlets, and videos on medical training and recorded health talks, in particular through health information centers, as clients await conversation at the reception desks.
- Teaching women about healthy lifestyles and healthy behaviors and encouraging them to improve physical activity, diet habits, and daily activities.
- Educating women about clinical breast examination and encouraging them to regularly visit physicians for clinical breast examinations.

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### EK3: Questionnaire

#### EK 1A: Sociodemographic and Risk factors for breast cancer

1. Age: \_\_\_\_\_ Marital Status: Married (....) Single (....)

2. Occupations: a) Housewife b) Worker

## EK 2: Task Facilitation

## EK 1A: Sociodemographic and Risk factors for breast cancer

- 43

- e) 25 months and above
11. Does anyone in your family have breast cancer? (mother, aunt etc....)
- a) Yes      b) No
12. Your height:
13. Your weight:
14. Do you have a previous history of breast cancer?    a) Yes (...)    b) No (...)
15. Have you entered menopause?      a) Yes (...)    b) No (...)
16. Do you use treatments during your Menopause ? a) Yes (...)    b) No (...)
17. Have you ever had radiotherapy on the chest area?      a) Yes (...)    b) No (...)
18. Do you exercise regularly?              a) Yes (...)    b) No (...)
19. Did you have your first child after the age of 30      a) Yes (...)    b) No (...)
20. Have you Breastfed your child for a year or more? a) Yes (...)    b) No (...)
21. Have you use birth control pills?      a) Yes (...)      b) No (...)
22. Have you eating vegetables and fruits mainly? a) Yes (...)      b) No (...)

#### **EK 1B: Early Diagnosis Methods:**

1. Did you heard about breast examination:      a)Yes (....)      b)No ( ....)
2. Have you do of BSE:                              a)Yes (....)      b)No ( ....)
3. How often do self-examination your breast?
- a) I don't              b) Every one month              c) Every three months
- d) Irregularly
4. Have you ever had a breast examination from a healthcare professional?
- a)Yes (....)      b)No ( ....)
5. Have you ever had a mammography?      a)Yes (....)      b)No ( ....)
- 6 .How often do mammography?
- a) Do not check      b) Every year      c) Every 2 years      d) Every 5 years
7. What signs do you evaluate for breast cancer when you perform a breast examination?
- a) Mass              b) Nipple retraction      c)Dimpling in the breast
- d)Bloody discharge from the nipples      e)Wounds on the breast
- f )Orange peel appearance
8. Have you any problems with the breast?      a) Yes (..)      b) No (..)
9. Have you go to the physician                      a) Yes (..)      b) No (..)
- If your answer is yes, what the problem is said to be .....



#### **EK 4. Curriculum Vitae**

| <b>Education</b> |                                                                                  |
|------------------|----------------------------------------------------------------------------------|
| School Name      | Al-basratin Secondary School for boys                                            |
| Address          | Iraq - thi qar – Nasiriyah                                                       |
| Period           | 2003-2009                                                                        |
| University Name  | University of Baghdad - Collage of Nursing                                       |
| Address          | Iraq-Baghdad                                                                     |
| Period           | 2010-2014                                                                        |
| University Name  | Çankiri Karatekin University - Health Sciences Institute - Public Health Nursing |
| Address          | Türkiye – Çankiri                                                                |
| Period           | 2019 - .....                                                                     |

#### **Research Skills and publications**

|                            |                                                      |
|----------------------------|------------------------------------------------------|
| Project/ Publication Title | Perception of nursing students toward climate change |
| Institution/Journal        | University of Baghdad                                |
| Period / Date              | 2014                                                 |
| Position                   | Student at collage                                   |

| <b>Work Experience</b>               |                                                                                                                        |
|--------------------------------------|------------------------------------------------------------------------------------------------------------------------|
| Name of company                      | Al Hussein teaching hospital                                                                                           |
| Address                              | Iraq –thi qar- Nasiriyah                                                                                               |
| Period                               | 2015-2016                                                                                                              |
| Position                             | Emergency department member                                                                                            |
| Responsibilities                     | Medical unite nursing manager                                                                                          |
| Name of company                      | Al shatra school of nursing                                                                                            |
| Address                              | Iraq-thi qar-shatra                                                                                                    |
| Period                               | 2016-2018                                                                                                              |
| Position                             | Teacher at school                                                                                                      |
| Responsibilities                     | Student education and training in medical surgical nursing skill                                                       |
| Name of company and Responsibilities | Experience in administrative matters affairs in the management of nursing affairs of Al Hussein and shatrah hospital . |
| Name of company and Responsibilities | Lecturer of practical nursing students .                                                                               |
| Name of company and Responsibilities | Lecturer in midwifery school in nasiriyah .                                                                            |
| Name of company and Responsibilities | A course at the Baghdad nursing training center at yarmouk hosoitel on pollution Control .                             |
| Name of company and Responsibilities | A course in the training and development center of the ministry of health concerning Nursing documentation .           |
| Name of company and Responsibilities | A course in the ministry of health cancer council for the coding of cancer .                                           |
| Name of company and Responsibilities | Courses at al Hussein educational hospital no . 50 course as lecturer , participant And coordinator .                  |