



**ÇANKIRI KARATEKİN UNIVERSITY
HEALTH SCIENCES INSTITUTE
DEPARTMENT OF NURSING**

**NURSES BELIEFS ABOUT BREAST CANCER AND BREAST SELF
EXAMINATION AND THEIR BREAST SELF EXAMINATION
PERFORMANCE IN KIRKUK / IRAQ: A CROSS SECTIONAL
DESCRIPTIVE STUDY**

MASTER'S THESIS

ZAINAB MOHAMMED A. AL-YAQOUBI

Cankiri 2021

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**Health Sciences Institute
Department of Nursing
Public Health Nursing MD Program**

MASTER'S THESIS

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Cankiri 2021

ACCEPTANCE AND APPROVAL

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ETHICAL DECLARATION

I prepared and presented as a master thesis, titled “Nurses beliefs about breast cancer and breast self examination and their breast self examination performance in Kirkuk / Iraq: A cross sectional descriptive study” I wrote this article in line with scientific ethics and values. My thesis's idea/hypothesis is totally mine and my thesis advisor. I conducted the research for the thesis, and all of the phrases and remarks are mine.

I declare the accuracy of the above points.



Sign.

Date: 20.09.2021

ZAINAB MOHAMMED A. AL-YAQOUBI

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I present to you this simple research work.. with appreciation



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ABBREVIATIONS AND SYMBOLS

1. BSE	Breast self-examination
2. BC	Breast Cancer
3. ICR	Iraqi Cancer Registry
4. CBE	Clinical Breast Examination
5. OCPs	Oral Contraceptive Pills
6. SPSS	Statistical Package for Social Science
7. HBM	Health Belief Model
8. CHBMS	Champion's Health Belief Model Scale
9. DCIS	Ductal Carcinoma in Situ
10. OCPs	Oral Contraceptive Pills
11. PHT	Post-menopausal Hormone Therapy
12. HRT	Hormone Replacement Therapy
13. MHT	Menopausal Hormone Therapy
14. TPB	Theory of Planned Behavior
15. WHO	World Health Organization
16. MRI	Magnetic Resonance Imaging
17. KSA	Kingdom of Saudi Arabia
18. BRCA	BRCA gene

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ÖZET

AL-YAQOOBI , Zainab Mohammed Anwer. Irak'ın Kerkük şehrindeki hemşirelerin meme kanseri ve kendi kendine meme muayenesine ilişkin inançları ve uygulama durumu: Kesitsel tanımlayıcı çalışma , (Yüksek Lisans), Çankırı,2021

Giris: Meme kanseri son yıllarda görülme sıklığının yüksek olması nedeniyle kadınlar arasında önemli bir sağlık sorunu olarak kabul edilmektedir. Kendi Kendine Meme Muayenesi meme kanserinin erken teşhisi için en önemli yöntemlerden biridir. Tüm meme kanserlerinin %90'ından fazlası Kendi Kendine Meme Muayenesi ile erken evrede teşhis edilebilmektedir. **Amaç:** Irak'ın Kerkük şehrindeki hemşirelerin meme kanseri ve kendi kendine meme muayenesine ilişkin inançları ve uygulama durumunu belirleyebilmek amacıyla yapılmıştır. **Yöntemler:** Tanımlayıcı ve kesitsel bir desende yapılan çalışma, Irak'ta 27 Aralık 2020- 26 Şubat 2021 tarihleri arasında Kerkük'te bulunan onkoloji merkezi ve Jinekolojik, pediatri hastanesinde 165 kadın hemşire ile gerçekleştirildi. Verilerin toplanmasında sosyodemografik özellikler formu ve Şampiyon sağlık inanç modeli ölçeği kullanıldı. **Bulgular:** Araştırma sonuçları, hemşirelerin %36.4 her ay düzenli olarak kendi kendine meme muayenesi yaptığını, %63.6 Kendi Kendine Meme Muayenesi yapmadığını gösterdi. Kendi kendine meme muayenesine yapan hemşireler ile kendi kendine meme muayenesi yapmayan hemşirelerin sağlık inanç modeli ölçeğinin güven alt boyut puan ortalamaları arasında anlamlı bir farklılık vardı. Bununla birlikte, gruplar arasında ciddiye duyarlılığı, yararlar, engeller, sağlık motivasyonu alt boyutları arasında anlamlı bir fark yoktu. **Sonuç:** Irak'ın Kerkük şehrindeki hemşirelerin Kendi Kendine Meme Muayenesine konusundaki inanç ve tutumlarını geliştirmeleri gerektiği söylenebilir.

Anahtar Kelimeler: Sağlık inanç modeli, Meme Kanseri, Kendi Kendine Meme Muayenesi

SUMMARY

AL-YAQOOBI, Zainab Mohammed Anwer. Nurse's beliefs about breast cancer and breast self examination and their breast self examination performance in Kirkuk / Iraq: A cross sectional descriptive study, (Master Thesis), Çankırı,2021

Background: Because of its rising prevalence in recent years, breast cancer has been identified as a serious health issue among females. Breast self-examination is one of the most significant ways for detecting breast cancer early. Breast self-examination can detect more than 90% of all breast cancers in their early stages. **Objective:** the nurse's beliefs about breast cancer and breast self examination and their breast self examination performance in Kirkuk / Iraq. **Methods:** The study, which was conducted in a descriptive and cross-sectional design, was carried out with 165 female nurses in the (Kirkuk Oncology, Hematology Center and Gynecological, pediatric hospital) Kirkuk/ Iraq, between 27 December 2020 and 26 February 2021. Sociodemographic characteristics form and Champion health belief model scale were used to collect data. **Results:** The study results revealed that 36.4% of the nurses regularly perform breast self-examination every month, and 63.6% do not perform Breast self-examination. There was a significant difference between the mean scores of the confidence sub-dimension of the health belief model scale of the nurses who did breast self-examination and those who did not. However, there was no significant difference between the groups in seriousness, susceptibility, benefits, barriers, confidence, & health motivation sub-dimensions. **Conclusion:** It can be said that nurses in Kirkuk/ Iraq should develop their beliefs and attitudes about Breast self-examination.

Key Words : Health belief model, Breast Cancer, Breast Self Examination Performance.

1. INTRODUCTION

Around the world, breast cancer (BC) is widely recognized malignant diseases among females, including (23%) of tumors in women. It is likewise the main source of malignant diseases related to death in low economic status nations. In Iraq, breast cancer positions the first among the commonest malignancies among all the people and records for around 33% of the enrolled female tumors. Early diagnosis and evaluating offer the most prompt expect a decrease in related mortality (Alwan et al., 2012).

In Iraq, breast carcinoma is the most common sort of disease in females, it is concerning 1/3 of various malignancy assortments, in accordance with the measurement records of the ministry of health in 2010, there are around 7,000 instances of cancer since 2010 and furthermore the carcinoma framing concerning 30% of all disease (Gallery, Abdullah, and Majid, 2020). BC becomes a big health problem; its effect is ascending with the increment in population size. It is the main source of death among the Iraqi population following cardiovascular illnesses. The most recent Iraqi Cancer Registry (ICR) stated that 25,556 new instances of malignancy were enlisted among an expected 37,883,543 Iraqi population in 2016 (Al-Gburi and Alwan, 2019).

BSE, CBE and mammography are all used to identify breast cancer tumors earlier, and BSE is now advised for women in their twenties (Erbil and Bolukbas, 2014).

Inadequate knowledge and incorrect attitudes regarding female breast cancer prevention are too responsible for a poor opinion of the reparability of most early-detected diseases and the efficiency of screening investigations. Arabic females have poor information about observation of breast problems and inadequate practice for do BSE (Gallery, Abdullah, and Majid, 2020). The finding of a study in Basra revealed that about 90.3% of the participants had knowledge of BSE; however, only 42% knew about mammography. Only 38.3% and 11.3% of the participants had performed self-examination and mammography screening, respectively. In general,

this study's results revealed a moderate level of knowledge and practice (Habeeb et al., 2020).

In Kingdom of Saudi Arabia (KSA) despite free healthcare, usage of breast cancer screening techniques, including mammography, is relatively low, with one research showing that 89 percent of women 50 years or older did not have a clinical breast examination (CBE) and 92 percent of women did not get a mammogram in the previous year (Heena et al., 2019).

To reduce breast tumor mortality, nurses must have a high degree of knowledge and competence in doing BSE. In addition, the convictions of nurses regarding BSE practice can make effect in educate and train females about BSE, and also strength them to do it in regular time (Karadag, Iseri, and Etikan, 2014). Nurses have a great role in instructing females about the significance of self-assessment of the breast and understanding the risk factors of breast malignant diseases in Jordan (Amasha, 2013).

In modern nations the mortality of breast malignancy decreasing where the mammography screening is the essential for care. The low level of information and negative convictions about prevention of breast disease among females are dependable for a negative view of the early diagnosis and treatment of breast tumors as well as the screening tests efficacy (Salman and Abass , 2015). A semi-experimental study conducted in Erbil city, the results indicated that nurses had bad 28%, accepted 49% and sufficient 23% level of knowledge and bad 78%, accepted 6% and sufficient 16% of practice about Self-Examination of the Breast (Aziz and Maqsd, 2019).

The population had different degree of information, attitude, and practice toward detection techniques of breast cancer. The finding of study conducted at health centers in Tabriz in 2012 indicated that 18.8% of females perform BSE every month, 19.1% had perform clinical breast examination (CBE) yearly by referral of health care providers and 3.3% had mammograms. A finding of study conducted in KSA 20.8% of females performs BSE, 19.8% had CBE, and 13% had mammogram.

In Iraq, 39.8% of females had information about BSE and how to perform it in correct way, 35% of females practice BSE, 45.6% had information toward CBE, and only 4.4% know that mammography is a screening technique for BC (Al-Qazaz, Yahya and Ibrahim, 2020).

The findings of study carried out in Iraq were 75.2 % of females must know BSE, 49.7 % were aware that must perform every month. 31.7 % of nurses not once performed BSE, 51.8 % sometimes practiced BSE, and 18.0 % practiced BSE on a regular basis. Education, work experience, Personal history, previous mammary diseases, breastfeeding status, risk perception, health motivation, self-assurance, perceived advantages, and obstacles to BSE were all significantly associated to frequent BSE practice. It is advised that women's health motivation and awareness to the advantages of BSE be increased in order to enhance acceptance and practice of BSE. (Shakor et al., 2019).

The Health Belief models (HBM) is one model that may be used to examine cancer prevention actions. Hochbaum and Rosenstock developed HBM for health training experts in the 1950s, and it covers characteristics such as perceived susceptibility to the illness, perceived seriousness, perceived barriers, perceived benefits, self-efficacy, and indicate to action. (Masoudiyekta et al., 2015). Individuals must believe that the disease occurs even if no signs are present, according to this concept. When individuals feel they are at danger of contracting the disease (perceived susceptibility) and recognize that the condition has significant potential effects (perceived severity), they think that prevention will generate good outcomes (perceived benefits), that the barriers to that activity are less than the advantages obtained (perceived barriers), and that they have the capacity to interact in health behavior practices (self-efficacy), it is more likely that they will carry out this behavior. (Masoudiyekta et al., 2018).

In Iran, several researches on the use of the HBM in mammography screening behavior have been done. For example, Tavian et al. discovered that women who do breast self-examination had considerably greater perceived advantages and self-efficacy than women who do not practice breast self-examination. Furthermore, Taymoori and Habibie, as well as Noroozi et al., identified self-efficacy as the most important predictor of mammography. Darvishpour et al. discovered that perceived obstacles predicted mammography behavior. Kung Hur et al. discovered in South Korea, utilizing two behavioral change models, namely HBM and meta-theoretical model, that perceived advantages, perceived sensitivity, and perceived obstacles were important predictors of mammography screening (Khazir et al., 2019).

Health attitudes are essential in influencing people to engage in preventative health practices. As a result, the (HBM) is extensively utilized to create the theoretical foundation of BSE research. HBM is commonly used to investigate attitudes regarding breast cancer screening practices, such as BSE (Pirzadeh, 2018). There are many studies done in different countries using this model, but in Iraq there where very few studies done and we reached just two of them (Shakor, Mohammed and karota 2019),(Shakor et al., 2020).

Objectives of the study

To determine the beliefs and practice of nurses in Kirkuk / Iraq regarding breast cancer and breast self-examination.

2. LITERATURE REVIEW

2.1. Breast cancer

Cancer is a major public health problem in many regions of the world. Breast cancer is a kind of malignant tumor that begins in the cells of the breast. It happens generally in women; however men can likewise be affected (Getu et al., 2018). Breast cancer is the most prevalent malignancy among women in the United States. Women are expected to be diagnosed with 281,550 new cases of invasive breast cancer in 2021. 2,650 cases in males, and 49,290 instances of ductal carcinoma in situ (DCIS) in women. (The National Breast Cancer Coalition, 2021).

According to the World Health Organization (WHO), breast cancer affects 2.1 million women each year and is the main cause of cancer-related deaths among women. Breast cancer killed 627,000 women in 2018, accounting for roughly 15% of all cancer deaths among women. Although rates of breast malignant development are greater in more developed countries, they are on the rise in almost every country worldwide (Who, 2019).

Humanity has learned about breast cancer since old of time. It has been mentioned in almost every period of recorded history. Doctors have been recording lumps that progress to tumors from the beginning because of the obvious side effects, particularly at later stages. This is especially true because, unlike other internal cancers, breast lumps also appear as visible tumors. (De Cicco et al., 2019).

2.2. Risk Factors for Breast Cancer

Anything that raises the risk of breast cancer is referred to as a "risk factor". Most of famous significant breast cancer risk factors; Age, family background, and medical history are only a few examples, are out of control. However, certain risk factors, such as weight, physical activity, and alcohol intake, may be regulated (Becker, 2015).

Risk factors of breast cancer you cannot change

❖ Having a breast cancer family history

The classification of family background as a risk factor for BC has differed from the inclusion or exclusion of a relatives background to more particular characterizations of situations in the relatives such as the number, type, age at diagnosis (e.g., 45 or >45, or 50 or >50 years)(Brewer et al., 2017).

❖ Age

Over the age of 50, the risk of developing breast cancer seems to increase. Most women's major risks is their age. Breast cancer incidence grows significantly with age until the age of 45 to 50, when the rise becomes less steep. The incidence rates level out and then begin to fall between the ages of 75 and 80 (Kamińska et al., 2015).

❖ Having a personal breast cancer history

A woman with cancer in one breast is highly susceptible to have malignancy in another. or some other region of the breast. Although the overall risk for younger women with breasts is modest, it is significantly higher for older women with breasts (Feng et al., 2018)

❖ Inheriting certain gene changes

Approximately 5% to 10% of cases of this cancer are genetic, which means they are caused by genetic alterations handed down from a family. BRCA1 and BRCA2 mutations: The most common cause of genetic tumors is an inherited mutation in the BRCA1 or BRCA2 gene. In normal cells, these genes help in the synthesis of proteins that repair damaged DNA. Abnormity can caused by mutated versions of these genes (Feng et al., 2018).

❖ Having dense breast tissue

Women with dense breasts on mammograms have a 1.5–2 times higher risk of breast cancer than women with average breast density, despite the fact that a variety of factors, including age, menopausal status, use specific medications such as hormone treatment and gestation, All these factors contribute to breast thickness. Furthermore, women with thick breasts increase incidence of cancer, despite fact that

mammography has a lesser sensitivity. Handheld and automated screening ultrasonography are both effective in detecting mammographically occult malignancy in women with thick tissue (Thigpen et al., 2018).

❖ **Having benign states of the breast**

Certain non-productive lesions may have a little impact on breast cancer risk. Fibroid and/or simple cysts, moderate enlargement, adenosis, phyllodes tumor, single papilloma, duct ectasia, periodical fibrosis, squamous and apocrine metaplasia, epithelial-related calcifications, various tumors (lipoma, hamartoma, hemangioma, neurofibroma, adenomyoepithelioma) or other tumors (Feng et al., 2018)

❖ **Starting menstrual periods early**

Beginning menstruation at a young age is associated with a slight increase in breast cancer risk. Women who start their periods before the age of 11 have a 15-20% greater risk of breast cancer than those who start their periods at the age of 15 or older. The higher risk of breast cancer associated with a younger age at first period is most likely attributable, at least in part, to the quantity of estrogen present. A higher lifetime estrogen exposure has been related to higher incidence. The sooner a woman begins menstruating, the longer her breast tissue is exposed to the estrogens generated throughout the menstrual cycle. This implies that they will be exposed to more estrogen throughout their lives. (Olsson and Olsson, 2020)

❖ **Chest radiation exposure**

Radiation therapy to the chest region as a child or young adult with another cancer raises the risk of breast cancer significantly. If the exposure was administered whilst the breasts were already growing, the chance seemed to be the greatest (during the teen years) (Zhang et al., 2020).

❖ **Race and ethnicity**

The causes of racial and ethnic differences in breast cancer occurrence and mortality rates are uncertain, but potential causes include socioeconomic status, delayed stage of cancer at detection, immunologic and genetic differences in cancers, Cancer incidence has always been less in Black females than in White females. Despite this fact, Hispanic women had a lesser incidence of breast cancer than non-Hispanic white women. (Yedjou et al., 2019).

❖ **Reproductive risk factors**

Age at menarche, amount of births, the age at first delivery, the duration of breastfeed, the age of menstruation, and the use of menopausal hormone therapy are all reproductive possible causes related with breast cancer incidence. Moreover, study has shown that these factors are correlated with each subtype differently. Breastfeeding is highly relevant in cancer prevention since it is a controllable factors. Its not only reduce the mother's risk of cancer, but it have another advantages, such as a decreased risk of endometrium and ovarian cancers. (Anstey et al., 2017).

Breast cancer risk factors related to lifestyle

❖ **Alcohol drinking**

Alcohol intake is a known breast cancer risk factor, with each regular alcoholic drink drunk daily increasing BC risk by 7–10% (Zeinomar et al., 2019).

❖ **Weight gain and obesity**

Obesity and overweight are linked to an increased risks, especially in post - menopausal women. During menopause, as ovaries cease releasing estrogen, the body's primary supply of estrogen is fat tissue. Higher estrogen levels are associated with more fat tissue, which may raise the danger of BC (Klob and Zhang, 2020).

❖ **Lack of physical activity**

Physical exercise found to reduce serum estrogen levels in postmenopausal women, and lower estrogen amounts also reduced factors (Stranden, 2017).

❖ **Not having children**

Women who've never had or have their first kid later age of 30 are at a little higher overall risk of BC. Having numerous deliveries and/or being delivered at an early age, on the other hand, lowers the chance of breast cancer. Different kinds of breast cancer behave in different ways ,and pregnancy appears it increase the triple-negative BC (Feng et al., 2018).

❖ **No breastfeeding**

Breastfeeding is special relevance in the prevention of breast cancer since it is a modifiable risk factor. Its not only reduce the mother's risk of cancer, but it have another advantages, such as a decreased risk of endometrium and ovarian cancers.as well as a lower risk of chronic diseases that are also risk factors for cancer (Anstey et al., 2017).

❖ **Birth control**

Some birth control strategies use hormones that can increase the risk of breast cancer. The connection between the use of oral contraceptive pills (OCPs) and breast cancer is debatable and a major public health concern. Hormonal contraception is the most widely used form of contraception. OCPs are still used by two-thirds of American women. One of the theories on how contraceptive drugs affect breast cancer raises the issue of the pill's association with weight gain (Soroush et al., 2016).

❖ **During menopause, hormone replacement**

For many years, estrogen treatment (typically coupled with progesterone) was used to assist alleviate menopausal symptoms and osteoporosis prevention. This therapy is also known as (PHT), (HRT) and (MHT). Estrogens implicates in the causation of breast cancer. Increased levels of endogenous estrogens are closely linked to postmenopausal women, and studies have demonstrated that the anti-estrogens tamoxifen and raloxifene minimize breast cancer incidence. Furthermore, animal experiments have demonstrated that estrogens can stimulate mammary cancers, and that reducing estrogen intake, such as by an oophorectomy or the use of an anti-estrogenic drug, has the opposite effect (Eve et al., 2020).

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 rise the dangers of BC.

❖ Diet and vitamins

Obesity is mostly caused by a sedentary lifestyle and unhealthy eating patterns, which include an excessive ingestion of high-calorie foods (high in sugar and saturated fats) and a reduced consumption of nutritious foods (high in omega-3 fatty acids, natural antioxidants, and fiber). Any foods and nutrients (carbohydrates, saturated fat, red and refined meats, for example) are thought to be potential BC risk factors. Increased adipose tissue inflammation occurs as a result of this disease, providing a beneficial microenvironment for the growth and progression of BC (De Cicco et al., 2019).

❖ Tobacco smoking

The connection between cigarette smoking and the risk of BC has been less reliably observed, although the existing body of evidence suggests that there is a small link (Zeinomar et al., 2019).

❖ Night shift work

Working at night and being exposed to light at night disrupts circadian rhythms. Changes in the rhythms of secretion of numerous hormones, including prolactin, glucocorticoids, adrenocorticotrophic hormone, corticoliberin, serotonin, and melatonin, have been reported as a result of circadian rhythm abnormalities within the endocrine system. Melatonin (N-acetyl-5-methoxytryptamine) is a hormone secreted primarily by the pineal gland and is light dependent. Melatonin secretion is inhibited by light exposure. Changes in melatonin production and secretion may have an impact on the immune system, as well as the pituitary–thyroid and pituitary–gonadal axes, as well as the hypothalamic–pituitary–adrenal axis. A possible link between inadequate pineal gland melanin production and an increased risk of breast cancer (Szkiela et al., 2020).

2.3. Early detection of breast cancer

Breast cancer is often discovered when symptoms occur, although often people with the disease show no signs or symptoms. In the long run, breast cancer mortality rates may be greatly reduced if cancer were detected at an early stage. Detecting early-stage cancer cells is the most important step in determining the right prognosis (Wang, 2017).

2.4. Breast self-examination (BSE)

Breast self-examination (BSE) is one of the most straightforward procedures for detecting breast cancer early. There are many breast disorders in the world, including neoplasm, malignant neoplasm (breast cancer), mastitis, and so on.

Early diagnosis of breast cancer by breast self-examination will help to reduce the incidence of breast disease (Mekonnen and Asefa, 2019). There is proof that women who appropriately perform BSE monthly were most likely to find a mass. Early in its growth, and early detection has been linked to improved care and survival rates. While BSE is a useful and simplistic test (Tuyen et al., 2019).

Breast self-examination is a quick, low-cost, noninvasive procedure that requires no special materials or tools, and it is an easy breast cancer screening technique that takes just five minutes to do. As well as to assist them in detecting any differences in their breasts as early as possible (Fondjo, et al., 2018). As a result, it is advised that women under the age of 20 engage in BSE on a daily basis. Despite the advantages of BSE done on a daily basis being well explained, few women are involved in doing so (Ayrar, et al., 2017).

Female nurses, as particularly valuable role models in such cases, must provide reliable knowledge and optimistic attitudes towards BSE, as well as practice it on a daily basis. As a result, nursing must be well educated about BSE and be able to practice BSE properly while still in school in order to teach patients following graduation. In addition, nursing are responsible for instructing other women in primary health care facilities about how to perform BSE correctly (Ayad et al., 2015)

Breast self-examination, conducted once a month between the seventh and tenth day of the menstruation, mammography may aid in the detection of early breast

cancer. Early detection improves the prognosis and reduces the likelihood of injuries and injury. It further improves the quality of living and the chances of survival (Dagne, Ayele and Assefa, 2019).

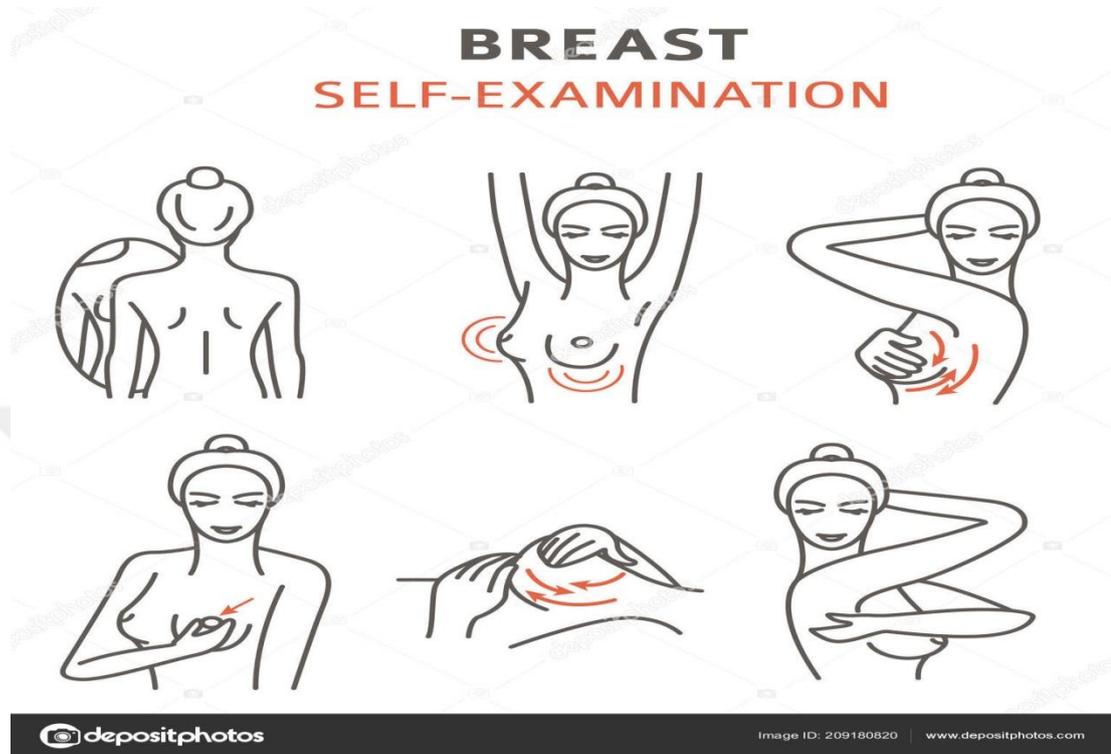


Figure 2.1 Breast self-examination

From the site: <https://depositphotos.com/209180820/stock-illustration-breast-cancer-medical-infographic-self.html>

2.5. Clinical breast examination (CBE)

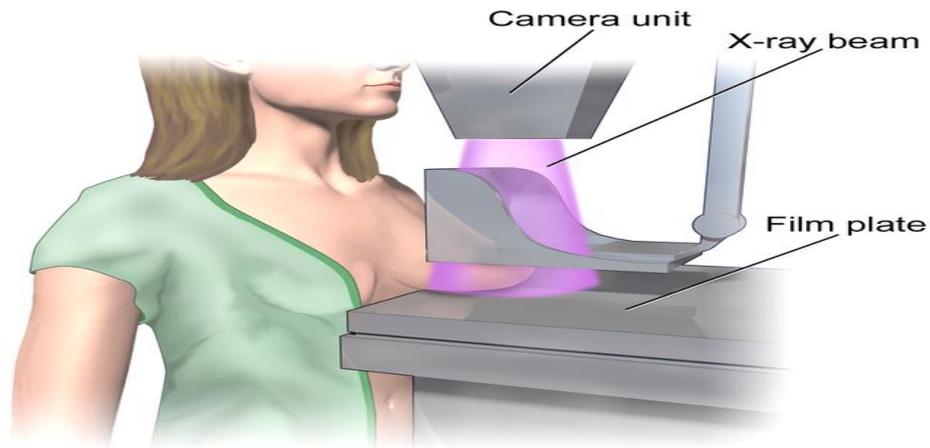
Is one of the three elements of the triple examination done during a patient's first visit to a health provider for a breast lump test. CBE's effectiveness has recently been questioned in the literature due to the superior diagnostic yield of other investigative instruments available, especially in the sense of breast cancer screening. (Zafar, 2014).

2.6. Mammography

Mammography its most successful screening technique for BC detection, but it is not often used in Iraq due to a lack of knowledge, high costs, high technology, and experience. In Iraq, where young females are more normal, the rate of negative result mammography is higher at a younger. (Ewaid, Shanjar and Mahdi, 2018).

Mammography as well as CBE and BSE, are the most effective technique for early diagnosis of BC. And it allows females turn into acquainted with their breasts' look and sound so that they can warn their health care provider if there is any improvement. Mammography aims to diagnosis breast cancer and breast self-examination allows women become comfortable with how their breasts looks so they can alert their healthcare workers if there is any difference. (Birhane et al., 2017).

A mammogram is a form of X-ray that is used to examine the breast. This X-rays provide a two-dimensional view of the breast. Each breast is squeezed between two plates during the examination. Each breast is photographed twice, once from the top and once from the foot. A mammogram can discover BC in people who have no warning signs. It can detect breast cancer that is too rare to detect through the eye. A diagnostic mammogram is what it's called. It's the most effective screening tool available today for detecting BC for women's. In addition, a mammogram can be used as a follow-up measure; a medical mammogram is what it's called (Bhidé, Harvard, & Stebbins, 2019). The National Comprehensive Cancer Network advises regular mammograms for women above the age of 40 (Al-Wassia, et al., 2017).



Mammogram

Figure 2.2 Mammography

From the site: <https://www.wikiwand.com/en/Mammography>

2.7. Magnetic Resonance Imaging (MRI)

Magnetic Resonance Imaging (MRI) offers the ability to identify breast cancer in its early stages, when it is still treatable. Because MRI is extremely sensitive for cancer detection, it is utilized as a screening technique for people who are at high risk of developing breast cancer. According to the 2012 American College of Radiology appropriateness guidelines, the use of MRI for patients who have a larger than 20% lifetime chance of developing breast cancer is acceptable, with an evidence grade of 9 on a 9-point scale. Furthermore, utilizing breast MRI for screening high-risk groups has been shown to be cost-effective; improvements in cost-effectiveness have been shown with higher lifetime risk. The utility of screening MRI for people with intermediate risk (15–20%) has also been studied (Schacht et al., 2014).



Figure 2.3 Breast MRI

From the site:

<https://www.mayoclinic.org/tests-procedures/breast-mri/about/pac-20384809>

2.8. Symptoms of breast cancer

Breast cancer signs include the following. (Rees and Garnett, 2015; Koo et al., 2017):

- A persistent lump in the breast or underarm. This is a common first sign of breast cancer
- Armpit or near-collarbone swelling. This may indicate the breast cancer has progressed to the lymph nodes nearby. Swelling can begin before a lump is felt
- Tenderness and pain, notwithstanding the fact that lumps are normally painless. Some may give you a prickly sensation
- A breast that is smooth or indented.
- Breast modifications, such as a reduction of breast size, contour, shape, or temperature
- Nipple changes, such as when it pulls inward, dimples, burns, itches, or develops sores
- Breast discharge that is unusual. It may be clear, muddy, or a different color altogether.
- A marble-like patch under the skin that is unlike any other part of either breast.

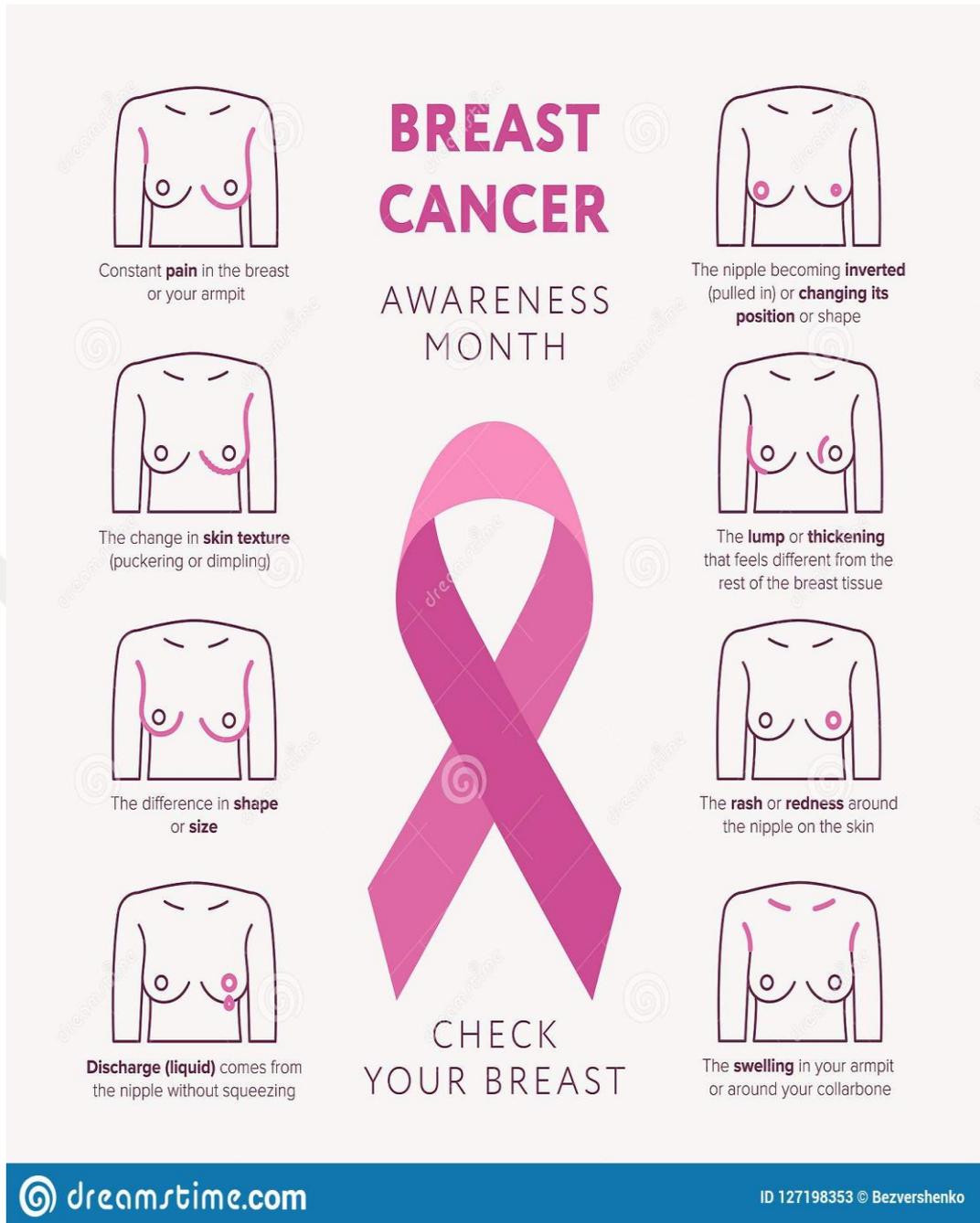


Figure 2.4 Symptoms of breast cancer

From the site : <https://www.dreamstime.com/>

2.9. Health belief model (HBM)

The Health Belief Model was created in the early 1950s by social psychologists Hoch Baum, Rosen stock, and others working at the United States Public Health Service to understand why individuals fail to accept disease preventive methods or screening technologies for early illness diagnosis. Later applications of HBM included patient reactions to symptoms and adherence to medical treatments. Patient responses to symptoms and adherence to medical therapies were included in HBM. According to the HBM, a human's belief in a personal risk of illness or disease, as well as confidence in the efficacy of the recommended healthy behaviours or activity, predicts the likelihood that person will accept the routine. The HBM is founded on psychology and behavioral theory, with the concept that the 2 components of safety activities are 1) the goal to minimize sickness, or opposite, to become well if already sick, and 2) the belief that a specific health practice helps avoid or treat diseases. Lastly, a person's route of action is typically decided by the individual's perceptions of the rewards and barriers. (Abraham and Sheeran, 2015; Zareipour et al., 2020).

The HBM is among the most commonly used behavior modification models, and it has been used to investigate assumptions in protective health practices like BSE, CBE, and mammography. It may be useful in determining the variables that influence women habits for Breast cancer examination. The HBM consists of 6 structure 1) Realize susceptibility reflects of an awareness of the threat of some disease; 2) Realize seriousness reflects a perception of a disease's symptoms; and 3) Beneficial effects reflect favorable health outcomes of participating in related activity. 4) Realize barriers represent an individual's understanding to value or barriers related activity to a health; 5) Wellness motivation refers to a person's values and attitudes toward an overall health problem; and 6) Self-efficacy refers to faith and confidence in capacity to follow a series lifestyle habits (Ahmadian et al., 2016; Mousavi et al., 2018).

In our nation, there are BSE-related health beliefs. Nurses who are educated with Community health philosophy is an important part in educating and encouraging BSE between women. It is important to understand nurses' health values about BSE in order to preserve and improve their own health. Nurses with positive attitudes and practices toward BSE may be able to deliver more reliable breast cancer care to patients. At the cultural level, understanding the wellness values, attitudes, and behaviors that influence BSE will steer nursing practices for early detection of breast cancer (Tastan et al., 2011; Dewi, 2018). According to this model, a woman could be more possible to engage in breast cancer-related screening activities if she believes she is vulnerable to a disease or believes the disease has progressed to a risky stage (Didarloo, Nabilou and Khalkhali, 2017).

According to a survey conducted in Indonesia, 44.4 % of Reactants said they had completed BSE. Furthermore, the HBM variables were found to be strongly correlated with BSE practice. Higher potential advantages, self-effectiveness, lower perceived obstacles and fewer prompts to effort were all found to be unique BSE correlations. The finding also showed that perceived severity and susceptibility were unrelated to BSE procedure (Dewi et al., 2019). In cross-sectional descriptive study was conducted in Turkey, it found that female academicians in Turkey exhibit positive attitudes towards breast self-examination, clinical breast examination and mammography as they have higher perceived sensitivity against breast cancer, self-efficacy and fewer barriers (Kirag and Kızılkaya, 2019).

In study carried out in Iraq, they found 75.2 % of females knew BSE, 49.7 % were aware it should perform every month, 31.7% of women never did this examination, 51.8 % seldom practiced BSE, 18.0 % performed on a regular basis. Education, job position, family history, previous breast diseases, knowledge, lactation status, seriousness, health motivation, confidence, advantages, and obstacles to BSE were all substantially related with BSE practice on a regular basis. It is advised that women's health motivation and benefits to increase this exercise in order to promote the adoption and practice of BSE (Shakor, 2019).

Simple experience and expertise about how to practice BSE should have been learned by nurses. They should take care of themselves and serve as role models for their patients. Educating nurses about early detection approaches for breast cancer would increase their knowledge of the disease and allow them to begin BSE at a younger age. Previous health habits can play a role in whether or not preventive health behaviors are continued in the future. Educators must also assess the quality of breast cancer education and reexamine the content of the instruction they have (Kissal and Kartal, 2019).

In the event of breast cancer, the female is more likely to go for breast screening if she believes the implications of being diagnosed with breast cancer are severe. Instead, if a woman believes that breast cancer is not a severe illness, she is unlikely to get breast screening (Chin and Mansori, 2019).

3. MATERIAL AND METHOD

3.1. Study design: A descriptive cross-sectional study

3.2. Setting and sample of the study

➤ **Place and Sample**

The research data were collected from (Kirkuk Oncology, Hematology Center and Gynecological, pediatric hospital) between the periods of December 27th 2020- February 26th 2021 in Kirkuk, Iraq. I excluded some hospitals because they are far from the center of Kirkuk, there is also a hospital that has been isolated for corona virus patients and patients infected with it, so I chose these two hospitals to collect samples one of them includes the oncological hospital that belongs to my subject and the other includes gynecological patients. The study sample is 165 female nurses out of the total number of nurses in the both hospitals which is (280) nurses. Sample chosen by using convenience sample. G power package program was used in power analysis. As a result of the power analysis, it was found that the power was 0.98 when the effect size, P and sample size was 3.0, 0.05 and 165

➤ **Inclusion criteria of sample**

- Female nurses
- Whom agree to participate in the study

➤ **Exclusion Criteria of Sample**

- Male nurses
- Nurses can't speak Arabic
- Women previously diagnosed with BC

3.3. Data Collection

Research data were collected by socio-demographic characteristics form and Champion Health Belief Model Scale.

Socio-demographic form: This part composed from (10) items related to socio-demographic information about the nurses, items include (nurses age, marital status, level of education, hospital work on, years of services, family history of breast cancer, breast disease other than cancer, have applied of BSE, receiving training in BC and BSE, where did they get breast cancer training) (Abolfotou et al., 2015; Karayurt et al., 2008).

Champion Health Belief Model Scale: The second parts include nurses' attitudes items of the health belief model; they collected information on women's perceptions of BSE using Champion Health Belief Model Scale (CHBMS). The scale first developed by Victoria Champion in 1984 and has 42 items related to six sub-dimensions of HBM. The scale developed to measure the 5 concepts: susceptibility, seriousness, benefits, barriers, and health motivation using a Likert summative score technique (Champion, 1984).

The converted Arabic tool was then properly back-translated into English by two bilingual persons using the standard process for translating research instruments. The two back translations were nearly similar and reflected the English version's original meaning. As a consequence of the back-translation, no phrase modifications were required. After completing the translation of the research tool, researchers should do psychometric testing on the tool. Translation and adaptation may change internal structure and require that validity and reliability be established for the revised tool. The reliability coefficient for each scale was calculated using Cronbach's alpha technique. All items met these criteria and the alpha coefficients of the scales ranged from .65 to .89 (Mikail and Petro-Nustas, 2001)

The tool was pilot tested by Abolfotou et al; after a few changes, the questionnaire was given as a self-administered questionnaire. Reported the study instrument comprises of 6 domains: potential seriousness of illness (8 items), potential susceptibility to illness (5 items), confidence in skills (9 items), potential benefits for suspected activity (6 items), potential barriers for supposed activity (7 items), and health motivation (6 items). All of the things have five answer options ranging from strong disagreement (1 point) to strong agreement (5 points). Unless for barriers which are negatively related, all scales are positively linked to screening performance (Abolfotou et al., 2015). Cronbach's alpha for the CHBMS ranged from 0.78 to 0.89 (Abolfotou et al., 2015). The subscales reliability of the instrument in the study of ranged from 0.78 to 0.89.

Table 3.1: Item numbers of the CHBMS

Domains	Number of items	Minimum	Maximum
Seriousness	8	8	40
Susceptibility	5	5	25
Confidence	9	9	45
Benefits	6	6	30
Barriers	7	7	35
Motivation factors	6	6	30

3.4. Ethics Committee approval

The researcher send e- mail to Profesor Dr. Mostafa Abolfotouh in 16 July 2020 to take his agrement and take the questionare version of health belief model.

The research was performed at the Kirkuk Health Department /Training and Human Development . At the outset, written permission of the two different hospitals (Kirkuk Oncology, Hematology Center and Gynecological, pediatric hospital) located in kirkuk / Iraq, where the study was conducted, was obtained. Ethical approval of the ethics committee of a Cankırı Karatekin University located in central Anatolia was obtained (Approval number: 2020/350). The individuals included in the study were notified of the study's intent, and the verbal consent of those who decided to take part in the research was obtained.

3.5. Data analysis

Data analysis by using Statistical Package for Social Science (SPSS) version (22.0), Socio-demographic and descriptive characteristics of the nurses were given as number, percentage, mean and standard deviation.

We evaluated whether the data was suitable for normal distribution with skewness and kurtosis results. Since the distribution was normal, the difference between the two averages was used to compare the score averages of the CHBMS between the group who did and did not do BSE.

4. RESULTS

Table 4.1: Distribution of nurses by their socio-demographic characteristics

Socio-demographic characteristics of nurses (n=165)		
Socio-demographic features	Mean and standard deviation	Range
Age (years)	(27.9±7.03)	(20-55)
		n (%)
Marital status	Single	65 (39.4)
	Married	94 (57.0)
	Widow/divorced	6 (3.6)
Education level	Post graduate (MSc, PhD) in nursing	5 (3.0)
	College of Nursing	23 (13.9)
	Medical institute	69 (41.8)
	Secondary nursing school	68 (41.2)
Hospital work in	-Gynaecological , paediatric hospital	120 (72.7)
	-Kirkuk Oncology & Haematology Centre	45 (27.3)
Working time as a nurse	Less than 5 years	92 (55.8)
	5 – 10	44 (26.7)
	11 – 19	17 (10.3)
	≥ 20	12 (7.3)
Family background of BC	No	109 (66.1)
	Close family (Mother/Sister/Daughter)	11 (6.7)
	Far relatives	45 (27.3)
Breast disease other than cancer	Yes	38 (23.0)
	No	127 (77.0)
Have you applied BSE once a month in the last year	Yes	60 (36.4)
	No	105 (63.6)
Have you received training in breast cancer and breast self-examination	Yes	69 (41.8)
	No	96 (58.2)
Where did you get breast cancer training	TV	19 (11.5)
	Radio	19 (11.5)
	Educational camping Public	53 (32.1)
	Internet	3 (1.8)
	Medical journal	35 (21.2)
	Primary health care	7 (4.2)
	Friends	29 (17.6)

Table 4.1 Shows that the mean and standard deviation of nurses age is (27.9±7.03) years old, (57%) of them were married, (41.8%) and (41.2%) of nurses level of education were medical institute and secondary nursing school respectively, (72.7%) of them working in obstetrics ,gynecology and pediatric hospital, (55.8%) of nurses working at time less than 5 years, (66.1%) of them not had family history of breast cancer, (77%) not had Breast disease other than cancer, (63.6%) not applied BSE once a month in the last year, (58.2%) not received training in breast cancer and breast self-examination, (32.1%) of nurses get breast cancer training by educational camping Public.

Table 4.2: Nurses health belief model toward breast cancer

Domains	N	M	SD	Minimum	Maximum
Seriousness	165	22.758	4.760	11	32
Susceptibility	165	11.709	3.40	5	20
Confidence	165	29.63	6.041	9	45
Benefits	165	22.964	4.225	6	30
Barriers	165	14.709	4.851	7	26
Motivation factors	165	23.13	4.718	6	30

N: Nurses, M: Mean, SD: Standard deviation

Table 4.2 Shows that the mean and standard deviation of the seriousness are (22.758±4.760) susceptibility (11.709±3.40) confidence (29.63±6.041) benefits (22.964±4.225) barriers (14.709±4.851) and motivation factors (23.13±4.718)

Table 4.3: Difference between the group have applied BSE once a month in the last year or not in all subscale of health belief model toward breast cancer

Domains	Have you applied BSE once a month in the last		T test	Significant
	Yes (n=60)	No (n=105)		
	Mean ± SD	Mean ±SD		
Seriousness	23.35±5.271	22.41±4.432	1.210	p>0.05
Susceptibility	12.35±2.880	11.34±3.626	1.844	p>0.05
Confidence	30.85±5.876	28.93±6.051	1.978	p<0.05
Benefits	22.78±4.797	23.06±3.881	0.413	p>0.05
Barriers	14.68±5.196	14.72±4.668	0.051	p>0.05
Motivation factors	22.7±4.677	23.38±4.746	0.891	p>0.05

Table 4.3 Shows that there is significantly difference between the nurses who have applied BSE once a month in the last year and whom not applied in the subscale of (confidence). While there is no significantly difference between the nurses who have applied BSE once a month in the last year and whom not applied in the other subscale (seriousness, susceptibility, benefits, barriers, motivation factors)

5. DISCUSSION

Concerning the findings relating to nurses health belief model toward breast cancer, the finding of the study concluded that the nurses have high level of health belief regarding breast self-examination in the domains (confidence, benefits, barriers and motivation factors). While, low level in the domains (seriousness and susceptibility). In studies similar to our study conducted to measure the health belief model regarding breast self-examination carried out in different countries.

In a descriptive study design carried out in KSA, the finding indicated that weak reported of; susceptibility, seriousness, confidence and barriers (44.8%, 55.6%, 56.5%, and 41.7% successively), and high reported benefits and motivation to do BSE (73% and 73.2% successively). (Abolfotouh et al., 2015). In a quasi-experimental study design conducted in Benha city, the finding indicated that the mean and standard deviation of perceived susceptibility (9.35 ± 2.32), perceived severity (15.00 ± 1.77), perceived barriers (16.38 ± 3.09), perceived benefits (12.15 ± 1.33), self-efficacy (11.53 ± 1.46) and cues to action/ motivation (4.63 ± 0.90) (Mahmoud et al., 2018).

In another study in Thailand, they found that (54.1%) of sample have high level of perceived susceptibility, (51.9%) high levels of perceived severity, (54.8%) high levels of perceived benefit, (77.3%) high level of levels of perceived barriers, (54.8) high levels of perceived self-efficacy, and (53.6%) high level of perceived health motivation (Koike et al., 2018). In semi-experimental intervention study single group, conducted in Turkey, the finding indicated that the men and standard deviation of susceptibility (7.96 ± 2.44), seriousness (20.96 ± 5.39), health motivation (20.90 ± 5.1), confidence/self-efficacy (37.46 ± 10.43), breast self-examination benefits (16.58 ± 3.86), and breast self-examination barriers (16.88 ± 7.53) (Kissal and Kartal, 2019). In another cross-sectional study conducted in Turkey, the finding revealed that the men and standard deviation of susceptibility (8.41 ± 2.26) seriousness (20.34 ± 5.01) health motivation (19.03 ± 3.85) breast self-examination benefits (14.17 ± 3.17) breast self-examination barriers (22.96 ± 7.46), breast self-examination

self-efficacy (30.33 ± 9.39) mammography benefits (18.21 ± 4.34) and mammography barriers (33.99 ± 10.66) (Selçuk et al., 2020). The present study finding related to few of nurses applied of BSE and few of them participated in training session related to BSE. This finding consisted to the present study finding

Concerning the finding relating to difference between the group have applied BSE once a month in the last year or not in all subscales of health belief model toward breast cancer, the finding indicated that there is significantly difference between the nurses who have applied BSE once a month in the last year and whom not applied in the subscale of (confidence). While, there is no significantly difference between the nurses who have applied BSE once a month in the last year and whom not applied in the other subscales (seriousness, susceptibility, benefits, barriers, motivation factors). The researcher think that this result related to low level of education of the nurses who participated in the study, also due to nurses have years of service less than 10 years

Also, in a cross-sectional study conducted in Iran, they found that there is significant difference between the sample whom do BSE and other whom do not do BSE in the domains benefit, barriers and self-efficacy at P-value (0.01). While, there is no significant difference in the domains perceived susceptibility, perceived seriousness, and perceived health motivation (Darvishpour et al., 2018).

6. CONCLUSION AND RECOMMENDATIONS

❖ Conclusion

The finding of the study concluded that the nurses have high level of health belief model regarding breast self-examination in the domains (confidence, benefits, barriers and motivation factors). While, low level in the domains (seriousness and susceptibility).

There is significantly difference between the nurses who performed BSE once a month in the last year and who not applied in the (confidence) subscale and no significantly difference in the other subscales (seriousness, susceptibility, benefits, barriers, motivation factors).

❖ Recommendation

1. Increase confidence of nurses to perform the breast self-examination.
2. Training session to improve nurses' knowledge about breast cancer diagnostic examination.
3. Improve nurses' awareness about importance of breast self-examination.
4. Work shop to training nurses how to perform the breast-self-examination.
5. Breast self-examination guideline accessible to everyone through using of health promotion and social media.
6. Encourage nurses for perform breast self-examination in regular period.

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APPENDIX 3: QUESTIONNAIRE

Table 1: Women's Socio-demographic characteristics

1- Age :
2- Marital status : <ul style="list-style-type: none"><input type="radio"/> Single<input type="radio"/> Married<input type="radio"/> Widow/Divorced
3- Education level : <ul style="list-style-type: none"><input type="radio"/> Post graduate (Msc, PhD) in nursing<input type="radio"/> College of Nursing<input type="radio"/> Medical institute<input type="radio"/> Secondary nursing school
4- Hospital work in : <ul style="list-style-type: none"><input type="radio"/> -Gynaecological , paediatric hospital<input type="radio"/> -Kirkuk Oncology & Haematology Center
5- Working time as a nurse : <ul style="list-style-type: none"><input type="radio"/> < 5 years<input type="radio"/> 5 - 10<input type="radio"/> 11 - 19<input type="radio"/> ≥ 20
6- Family history of BC : <ul style="list-style-type: none"><input type="radio"/> No<input type="radio"/> Near relatives (Mother/Sister/Daughter)<input type="radio"/> Far relatives
7- Breast disease other than cancer <ul style="list-style-type: none"><input type="radio"/> Yes<input type="radio"/> No
8- Have you applied BSE once a month in the last year? <ul style="list-style-type: none"><input type="radio"/> Yes<input type="radio"/> No
9- Have you received training in breast cancer and breast self-examination? <ul style="list-style-type: none"><input type="radio"/> Yes<input type="radio"/> No
10-Where did you get breast cancer training? <ul style="list-style-type: none"><input type="radio"/> TV<input type="radio"/> Radio<input type="radio"/> Educational camping Public<input type="radio"/> Internet<input type="radio"/> Medical journal<input type="radio"/> Primary health care<input type="radio"/> Friends<input type="radio"/> Other

Table 2: Women’s responses to the different attitude items of the HBM

S	Attitude	Disagree	Strongly disagree	Neutral	Agree	Strongly agree
A	Seriousness					
1	Breast cancer is a hopeless disease					
2	I think I will not live more than 5 ys. with BC					
3	When I think about BC my heart beat faster					
4	I am afraid even to think about BC					
5	If I got BC this will threaten my marital life					
6	All my life will be changed if I got BC					
7	I think the problem about BC will persist long					
8	The thought of BC scare me					
B	Susceptibility					
1	I am susceptible to breast cancer in the future					
2	I feel that I am susceptible to breast cancer					
3	I think I am susceptible to breast cancer more than anyone					
4	My personal chance of getting breast cancer is big					
5	I am highly susceptible to breast cancer next 10 years					
C	Confidence					
1	I know how to perform BSE					
2	I am confident in performing BSE correctly					
3	I am sure of the steps of BSE					
4	I can use the correct parts of my fingers when performing BSE					
5	I can discover breast tumour at size of small peas					
6	I am able to discover breast tumours alone through performing BSE					
7	I can discover breast tumour at size of small spot					
8	I am able to differentiate between normal and abnormal breast tissue through BSE					
9	When I look at mirror I can					

	identify abnormal changes in my breast					
D	Benefits					
1	Performing BSE monthly help in early detection of BC					
2	Performing BSE monthly help in detection of tumours before going to doctors					
3	Performing BSE monthly will decrease complications of BC if I got it					
4	Performing BSE decrease the chance of making operation if I got it					
5	When I performed BSE I became self-satisfied					
6	Performing BSE decrease the anxiety about BC					
E	Barriers					
1	Performing BSE is a trivial thing					
2	Performing BSE is unfavourable thing					
3	No private place at home to perform BSE					
4	Feeling of shame and embarrassment when performing BSE					
5	Performing BSE takes long time					
6	Performing BSE increase my anxiety about liability of having BC					
7	I think getting breast cancer is a destiny and BSE will not change it					
F	Motivation factors					
1	Keeping my good health is important to me					
2	I wish to discover health problems that occur early					
3	I always seek new information that improve my health					
4	My diet contains complete and balanced meals					
5	I practice exercise at least 3 times weekly					
6	I perform periodic medical check up					

APPENDIX 4. CV

Name and surname	ZAINAB MOHAMMED ANWER AL-YAQOABI
Gender	Female
Address	Iraq-Kirkuk

Education	
School Name	Al-Nasr High School for Girls
Period	2001-2006
university graduated (collage)	University of Kirkuk- Collage of Nursing
Period	2007-2010
University graduated (Master)	Çankiri Karatekin University - Health Sciences Institute - Public Health Nursing
Address	Türkiye – Çankiri
Period	2019 -2021

Work Experience	
1-Name of company	Azadi teaching Hospital
Period	2011-2012
Position	Resuscitation Unit (RCU)
-Same hospital	2012-2013
Position	Cardiac Care Unit (CCU)
2-Name of company	Kirkuk Oncology, Hematology Center
Period	2014-2015
Position	Deputy Administrator
Responsibilities	Organizing admission for patients
3-Name of company	Lilan Health Center
Period	2016-2018
Position	pediatric immunization unit
4-Name of company	Gynecological , pediatric hospital
Period	During 2019
Position	consulting unit