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UTILIZATION OF BREAST CANCER SCREENING METHODS AMONG WOMEN IN SULAIMANI CITY

A Dissertation

SUBMITTED TO THE FACULTY OF MEDICAL SCIENCE UINVERSITY OF SULAIMANI IN PARTIAL FULFUILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF DOCTORATE OF PHILOSOPHY IN COMMUNITY HEALTH NURSING

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بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

قَالُوا سُبْحَانَكَ لَا عِلْمَ لَنَا إِلَّا مَا عَلَّمْتَنَا

إِنَّكَ أَنْتَ الْعَلِيمُ الْحَكِيمُ ﴿٣٢﴾

صَدَقَ اللَّهُ العَظِيم

سورة البقرة / الآية ٣٢

CERTIFICATION

I certify that this dissertation (**Utilization Of Breast Cancer Screening Methods among Women in Sulaimani city**) was prepared under my supervision at the Faculty of Medical Science, University of Sulaimani in partial fulfillment of the requirements for the degree of Doctorate of philosophy in Nursing

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CERTIFICATION

We, the members of the examining committee certify that, after reading this dissertation **(Utilization of Breast Cancer Screening Methods among Women in Sulaimani city)** and examining the student **(Jamal K. Shakor)** in its contents, it is adequate in partial fulfillment for the award of the Degree of Doctorate of Philosophy in Nursing.

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Dedication

This dissertation is dedicated to:

- ***My family***
- ***People encouraged me to study PhD***
- ***My colleagues***
- ***All those people who always concern about science and developing education.***

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ABSTRACT

Background: Breast cancer (BC) is one of the major threat to women's health in Iraq. Women mostly suffered BC in early age, and BC is being diagnosed in advance stage. Early diagnosis and screening are two early detection programs of secondary prevention strategies for prevention of BC. The main objectives of this study are to assess the early detection program of BC in Sulaimani city. Utilizing of screening methods by women and their various barriers of utilization have been studied.

Method and subjects: It is a cross-sectional study conducted on 750 women from 20th November 2016 to 14th June 2017. A questionnaire was constructed for data collection about socio-demographic characteristics, screening awareness, and medical and health background variables. In addition to questionnaire two scales such as Breast Cancer Awareness Measure (BCAM) and Champion Health Belief Model (CHBM) were used to measure the women's' knowledge and belief towards the screening methods. Validity and reliability of the tools have been taken in 50 subjects during piloting. The data was managed and analyzed by using descriptive and inferential statistics by using SPSS program version 22.

Results: Almost half of women, 49.7% knew that BSE should be done monthly. While only 18.0% of participant practiced BSE regularly. Education, employment status, family history, past breast disorders, knowledge, lactation status, perceived seriousness, health motivation, confidence, perceived benefits and barriers for BSE were significantly associated with the regular practice of BSE. Regarding to CBE 78.9% of women were aware about utilization, while only 9.5% of women utilized it for screening. Due to prescription by physicians for diagnosis of BC, 23.6% of women had done mammography. The logistic regression analysis found that old age, family history of BC, good knowledge about BC, perceived susceptibility, lower rate of perceived barriers to mammography and CBE predicted participation in screening. The median of patient delay in the BC symptomatic women in this study was higher (30 days). There was a significant relationship of patient delay with women health condition, women's health motivation and perceived barrier to seeking medical care.

Conclusion: This study found that women mostly did not utilized screening methods efficiently. There is immense gap between awareness and screening practicing. The median of patient delay was high compared to developed countries and was less comparing to developing countries. Socio economic and women's health condition, knowledge about BC, women attitude and beliefs about BC have determined the utilizing the screening

methods to high extend. Health belief model could highly describe the screening behavior among Sulaimani women.

Recommendation: Enhancing knowledge about BC and screening, emphasizing the susceptibility to BC and the benefits of screening will help in better participation. From interventional point of view, importance should be given to illiterate and unemployed women. An increase in the women's health motivation and, and sensitization of women about the benefits of BSE is suggested to increase the adoption & practice of BSE regularly. A health promotion program should emphasize on the women's motivation about early diagnosis and seeking to early detection.

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List of Abbreviations

S/no	Subjects	
1	ANOVA	Analysis Of Variance
2	BC	Breast Cancer
3	BSE	Breast Self-Examination
4	BDTC	Breast Disease Treatment Center
5	CAMs	Cancer Awareness Measure
6	CBE	Clinical Breast Examination
7	CHBMS	Champion Health Belief Model Scale
8	CI	Confidence Interval
9	ER±	Estrogen Receptor And
10	FNA	Final Needle Aspiration
11	Her2±	Human Epidermal Receptor Factor
12	HICs	High Income Countries
13	HBM	Health Belief Model
14	IQR	Interquartile Range
15	LMICs	Low And Middle Income Countries
16	MOH	Ministry Of Health
17	MOHESR	Ministry Of High Education And Scientific Research
18	MIR	Mortality To Incidence Ratio
19	OR	Odd Ratio
20	SD	Standard Deviation
21	(PR±)	Progesterone Receptor
22	UAE	United Arab Emirates
23	UK	United Kingdom
24	US	United State
25	WHO	World Health Organization
26	X^2	Chi-Square

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1. INTRODUCATION

1.1. Breast Cancer

Breast Cancer (BC) is the main public health burden with high rate of morbidity and mortality worldwide, it causes high number of deaths among women. For instance each year, nearly 1.5 million women suffering from BC, and only in 2015, 570,000 women died from BC worldwide (WHO, 2017).

BC incidence rate is higher among women in more developed countries, but this rate since long period has remained stable. The BC incidences are high in (Denmark: 105, UK: 95, US: 92.9, France: 89.7, and Germany: 91.6 per 100000 women) (Eunji Choi et al, 2017). For instance, in 2017, the American Cancer Society estimates that there would be a 252,710 cases of invasive BC diagnosed in US women and 40,610 deaths (Smith et al, 2017). Meanwhile statistic has shown that during 2004–2013 the incidence was almost steady, and death rate decrease very slowly during 2006-2015 (Henley et al, 2017).

Meanwhile, the developing countries have high mortality and less morbidity. The age-standardized incidence was 29.7 per 100,000 in south Iraq (Al- Hashimi and Wang, 2014). Compared to the US, low age standardized and age specific BC incidences were found in Kurdish women. For Kurdish women, the age standardized incidence was 40.5/100,000 which can be estimates to less than half the rate of 116.0/100,000 which was seen in the US white women (Majid AR et al, 2012). High incidence is observed in high-income countries (HICs), while the highest mortality rate is observed in low- and middle-income countries (LMICs) (Unger-Saldaña, 2014), (WHO, 2017). The mortality to incidence ratio (MIR) in developed countries is low comparatively to developing countries, and this low ratio most significantly related to health system such launching of screening program in earlier time (Eunji Choi et al, 2017).

During the last decade in Iraq, incidence of BC was accounted the highest proportion compared to other cancers in women population age ≥ 15 years. During 2000 to 2009, 23792 new cases had registered, and BC included (33.81%) of all other cancer incidences. Trend of BC incidence had changed, but overall had increased approximately 1.14% in each year. The incidence in 2000 was 26.64 and in 2009 was 31.50 (Al- Hashimi and Wang, 2014). Meanwhile, in specific province in south Iraq, Basra, however BC incidence rate 16.2% account the first higher among all types of

registered cancer from 2005-2008, but the proportion was less as observed in entire country, Iraq (33.81%) (Habib et al, 2010).

Another burden of BC in this region is related to delay in diagnosis stage. According Sulaimani Directorate of Health, 539 women diagnosed with BC during 2006-2008 (Majid, 2009). In two different studies in Sulaimani have shown that most cases of breast cancer (26% and 34.1%) were diagnosed at stage 3 or 4, with only a few women (14.1% and 11.7%) diagnosed at stage 1 "localized tumors" (Majid et al, 2009) (Majid et al, 2012). The Iraqi war condition may have relation to delay in diagnosis stage, because same study has shown that diagnosis at clinical stage 2 and 3 was higher for immigrant Arab in Sulaimani, 74%. There is scarcity in data about the delay in diagnosis stages and the reason for this delay have not been studied in the region. Therefore, an early detection approach for BC prevention has become an indispensable for the health system in Iraq. In LMICs, the diagnosis in advanced stages and access barriers to medical care are thought to be a reason for higher BC mortality rates (Unger-Saldaña, 2014).

Demographic and epidemiological transitions in Iraq and in other developing countries have affected the trend of diseases and population at risk. The burden of BC may increase due to increasing population at risk in Iraq. Women population at risk for BC in Iraq has projected from about 6.8 million women in 2000 to about 8.8 million in 2009 compared to UK women at risk was 24.7 million in 2000 to about 26.0 million in 2009 (Al- Hashimi and Wang, 2014).

1.2. Early Detection Program Development

The term of early diagnosis and screening have become very predominant worldwide. Early diagnosis and screening are two early detection strategies for intervene BC (WHO, 2017). Based on principle of early detection, health system has developed many organized programs to intervene the new health problem and diseases, such as BC. BC early diagnosis program encompasses nurture the awareness about early sign and symptoms of BC in public eye, the trained of primary health professionals and organized referral system to assist adequate diagnosis and treatment of BC in early stages (Unger-Saldaña, 2014). While, BC screening can be defined as the testing of women to identify cancers before any symptoms appear, and, breast self-exam (BSE), clinical breast exam (CBE) and mammography are the main tools for screening. Concerning to early diagnosis, is the strategies focused on providing timely

access to cancer treatment by reducing barriers to care and/or improving access to effective diagnostic services. The goal is to increase the proportion of BCs identified at an early stage, allowing for more effective treatment to be used and reducing the risks of death from BC (WHO, 2017).

Screening and early diagnosis program are a performance of the principle of secondary intervention for control of diseases, early diagnosis and treatment. The developed countries, such as the US, went with these principles two decades earlier in 1983 (Moiel and Thompson, 2014), compared to the most of the developing countries which launched the program in last decades. Even, developed countries transformed from opportunistic screening program to organized population-based program (Majek O, et al, 2011). The majority of HICs adopted organized population-based mammography screening as the gold standard program (Unger-Saldaña, 2014). Developing countries are undergone this transition to such extant, for instance, both opportunistic and organized screening program are undergone in Malaysia (Teh et al., 2015). A new model organized screening have been more effective in Malaysia. Similarly in study UAE have recommended that opportunistic screening adopted by the national screening program does not completely fulfill the program objectives, therefore efforts need to be directed toward organized screening (Elobaid EY et al, 2014).

As LMIC, early detection approach was late in Iraq. In 2000, a National Program for Early Detection and Down Staging of Breast Cancer was initiated by Ministry Of Health MOH in collaboration with Ministry of High Education and Scientific Research MOHESR and WHO. According to this program, since 2000, screening centers and specialized clinics for early diagnosis of BC were established in the main hospital all over Iraqi governorates (Al-Alwan, and Mualla, 2014). In Sulaimani, BC screening center was launched for early diagnosis and screening. Women with minor breast disorder have been diagnosed and treated at this center. Treatment and care for progressing BC were being proceed for most of the women.

In Iraq, despite of that, there is not a clear screening model, but the goals of screening program has been defined by the National Program for Early Detection and Down Staging of Breast Cancer. The main objectives of the program included raising awareness of the general population to the common signs and symptoms of BC, promoting knowledge and research on the topics of cancer control, and upgrading the

skills of the health professionals on the techniques of early detection of cancer. The program goals include ensuring the provision of both high quality diagnostic and treatment services for participant women. Screening tool in this program which is practiced routinely, include the CBE, BSE, ultrasonography, mammography, fine needle aspiration and biopsy (Al-Alwan, and Mualla, 2014). In this program, both symptomatic and un-symptomatic women have been intervening in a general hospital. Therefore, in Iraq, there is not a pure screening model, Screening as early detection of secondary intervention is matched with early diagnosis of BC. Till now, a proportion of women have utilized the screening methods for screening or for early diagnosis and treatment have not studied.

1.3. Participation Rate

High participation of eligible women in screening are indispensably essential for the effectiveness of screening program and the disease prevention too, because high participation rate is associated with reducing mortality rate of BC in screened women (Schoor et al, 2011). Therefore, the participate rate, could be varies depend on screening model, target population and method of participation in the program, and all are stand based on cost-benefit strategy. For instance, in the UK, a study has estimated nearly 1610 women aged 45–55 need to be screened biannually for 10 years to avoid one death (Marmot et al, 2013). Participation rate is one indicator for assessing the performance of a screening program. According to European guidelines, 70% of participation level is acceptable and 75% is the desirable level as target of organized mammography screening (Perry et al, 2006). Participate rate is vary across countries; this may be affected by different screening model such as method of invitation, variation in target populations, and cultural and health system of those countries. By considering that, in France as European country, participation rate in organized mammography screening program was only 52.7% in 2012 (Moutel et al, 2014). Similarly, however, the target participation rate in the US is the 70% of women ages 40 and older, participation level for Asian American women who reported mammography use was only 54% (Wang et al, 2010). The proportion of participant women in utilizing the screening methods was not studied in Sulaimani and in Iraq, and many of women have utilized the screening methods (CBE, mammography) either for screening or for diagnosis.

1.4. Patient Delay in Diagnosis Of Breast Cancer

Women with minor breast disorder, also utilize the screening method for diagnosis; they present with minor sign and symptoms, and mostly they did not aware about the relation of their symptoms with the BC. Similarly, in this circumstance there is a distinct barrier which women with minor breast disorder to delay in participation.

The patient delay is defined as the extending of period from symptom finding to the first medical consultation (Unger-Saldaña, 2014). Generally, the prolonging of this period would be the causes of BC diagnosis delay. BC delay has also been defined as the duration between symptom discovery and the beginning of the cancer treatment, and usually this duration has defined to more than three months. In another word, diagnosis time was measured from the date of the first symptoms to the date of final BC diagnosis based on histopathological examination (including needle biopsy or excisional biopsy) (Unger-Saldaña, 2014) (Ermiah et al, 2012). Another condition of BC delay is due to provider delay which is defined as period from first medical consultation in the beginning of definitive treatment. Thus, from public health approach patient delay are taking a major role in the early diagnosis process (Lim et al, 2015)

A systematic review study has shown that in HICs, the median BC intervals have ranged from 30 to 48 days, while, in LMICs, are ranged between 5.5 to 8 months. And, in other word, the median patient interval in LMICs was between 1.4 and 12.9 times longer than that observed in HICs, for HICs observed to be between 7-16 days and for LMICs between 10 days-3 month. Same study has revealed that more than 60% of patients begin treatment less than 3 month after symptom discovery in HICs while in some LMICs fewer than 30% of patients start treatment in less than three months after abnormal screening or symptom discovery (Unger-Saldaña, 2014).

Women with minor breast disorders in our research area used to visit the center for diagnosis and treatment. Patient delay in Kurdistan has not been studied. Delay in utilizing the screening method may have related to different reason or barriers in this area. Initially, women may not be aware about their susceptibility and the risk of BC. From another side women perception to the seriousness and fatality of BC may relate to patient delay in utilizing breast method. Causes and reasons for patient delay in utilizing screening methods in this research has been studied.

1.5. Knowledge About Breast Cancer And Patient Delay

Women views and knowledge about BC are well studied worldwide. Women understanding about BC is crucial part of women's decision to participate in screening. Screening models use the different sources such as leaflet, post, and mass media to provide information to women. Women have to have basic information about recognizing of BC in term of sign and symptoms, risk factors, severity and fatalist, treatment and early diagnosis in order to take an action to be present early in treatment and participate in screening. Because this BC knowledge would lead to more screening participations, and awareness about BC has a key role in early presentation (Jones et al, 2015). On the other hand, lack of knowledge about BC is an important factor for delay (Ermiah et al, 2012). This relation have confirmed in logistic regression model which found odd 2.5 (Dandash and Al-Mohaimeed, 2007). In developed countries, Estonia, study confirmed on that, provide information about BC one year before first symptoms notice are essential for early presentation or decreasing the prolonged delay (Innos et al, 2013). Meanwhile, despite of sufficient level of knowledge about BC among Qatari women, only 23.3% reported to utilize the clinical breast examination (Bener A et al, 2009).

Women understanding in way how interpret and imagine the burden of disease would take role in women belief. Insufficient specific information about BC is considered as one of the reasons for delayed presentation (Khakbazan et al, 2014). Another qualitative study in Denmark has explored women's perception about the balance between screening benefits and potential harmful effects, and it has showed that information in the breast screening leaflet have little influence on women's decision making to participate in screening because of the phenomenon over-diagnosis as a potentially harmful effect (Henriksen et al, 2015). Similarly, negative information such as side effects and expected toxicity of chemotherapy led to refusal of therapy, some patients believed that the effects of chemotherapy were worse than BC itself (Ermiah, 2012).

Out of personal knowledge and perception, other factors in social level, such as influence of community and health system facilities will take a role in the decision-making process for participating in screening. For instance, the women's decision were most likely influenced by dominating attitudes in the circle of acquaintances. Some

women valued mammography screening as positive experiences because influenced by the attitudes of close relatives, peers and colleagues (Henriksen et al, 2015).

1.6. Barrier For Patient Delay And Participation In Screening

There are such barriers in utilization of screening methods. Both healthy women and women with minor disorders have distinct and interrelated barrier in utilizing screening methods. Healthy women may not be aware about screening programs, and women with minor disorder may not aware about BC symptoms or early diagnosis too. Healthy women may not utilize screening methods, even some women when they present with symptoms (minor disorder) still not utilized screening method. Many of the barriers may continuous with women when such symptoms of BC or minor disorders appear.

The barriers of healthy women in utilizing screening method lead to less participate rate in the screening programs, while the barriers of women with minor disorder in utilizing screening method caused more patient delay. High participate rate instantly would decrease patient delay because the participated women utilized screening method before the appearance of any kind of minor breast disorder.

Barriers of utilizing screening methods have been studied in many countries worldwide. In France study, barriers determined as the feeling of not being concerned, feeling of no having BC symptoms, the sense of fatalism of cancer and the belief of BC is not preventable; lack of time and other life constraints or priorities (Moutel, 2014). While, in LMIC, there is distinct reason for patient delay. Factors associated with patient delay are initially most related to the patients' help-seeking behavior and socioeconomic, and cultural factor (Unger-Saldaña, 2014). A qualitative study in Iran has classified patient delay into four main patterns, which are include patients' belief of symptoms is related a benign conditions and not knowledge about symptoms and risk factors, priorities in their lives, inhibiting of emotional expression such as fear about BC outcomes, and barriers to access health care system (Khakbazan et al, 2014). In a Thailand study reason of patient delay has been classified into patient behavior and beliefs, and the physical and financial accessibility of appropriate primary and secondary health care services (Poum et al, 2014). From another hand, the reasons of early presentation for medical attention in Singapore and Malaysia have been reported to be knowledge of BC and role of relatives (Lim et al, 2015).

In Sulaimani, utilization of screening methods would be varied accordingly. Screening program in this area have been introduced in early time, 2007. The proportion of women participated in screening, and early present women with minor disorder could be determined accordingly. In our study, socio economic, medical and health condition, women's knowledge about BC and screening methods, were taken as independent predictors for participation in screening and early presentation of women with minor breast disorders. From another side, the theory of health belief model has been used in studying the women's attitude and belief about the seriousness and the susceptibility of BC and women perceived barriers and benefits about utilizing of screening methods.

1.7. Important Of The Study

As mentioned above the burden of BC in Kurdistan is high in term of morbidity and mortality. Women mostly suffered BC in early age, as well as most BC diagnosis in advance stage, this is mainly due to patient delay and not participation in the screening programs. Screening program in Iraq and Kurdistan was launched in so early, in 2007. Early diagnosis and screening still were not prevailingly produced among the women population. There is not a distinct model for the screening program. Both secondary prevention early diagnosis and screening, third prevention are not distinct in the health system. Still, there is not a clear model for screening. There is a scarcity of data in this concerning. This is an original study for providing data assessing early diagnosis program in Kurdistan. This study will provide data about the screening participating rate in Sulaimani City, and the reason and barrier which are in place for women who not attending screening methods. From Interventional point of view, this will come out with new recommendations about which group of women is more prone to not participate in the screening.

1.8. Objective of the study:

Main objectives

The main objectives of this study are to assess the early detection program of BC. This study will explore a clear view about the most initial programs of early detection of BC in Sulaimani city. Utilizing of screening methods by women and the various barriers of utilization would be demonstrated in this study.

Specific objectives

1. To find out the rate of utilization of BC screening among women in Sulaimani City.
2. To identify the reasons for implementing mammography, clinical breast exams and breast self- examination.
3. To assess the barriers for breast self- examination, clinical breast exams, and mammography.
4. To find out the relationship between utilization of screening approach (breast self-examination, clinical breast exams, and mammography) among women and certain studied variables.
5. To predict factors which contributed in utilization of breast self- examination, clinical breast exams, and mammography.

2. LITERATURE REVIEW

2.1 Breast Cancer

BC is most prevalence cancer among women worldwide. About 12% of women in the US (or 1 in 8) will be diagnosed with BC in their lifetime (DeSantis et all, 2016). In a study in south Iraq BC accounts to 30.2 % of overall cancer among women (Habib et al, 2010). BC can be described from various level, and many different factors determine BC. Intrinsic factor such BRCA1 and BRCA2 gene which is assigned as family history or hereditary factor have account for 5-10 % of cases, many other risk factor such socioeconomic, medical and obstetric factor have taken a role in determining BC incidence (American Cancer Society, 2016).

From molecular level, BC can be determined by the positive or negative expression of estrogen receptor (ER±), progesterone receptor (PR±) and human epidermal receptor factor 2 (Her2±) (DeSantis et al, 2016) (Akinyemiju et al, 2016). The distribution of molecular bases of BC vary in different communities. In Sulaimani study has found that the percentage of ER+ tumors were 73.2%, PR+ tumors was 64.2%, and HER2+ was 20.6% among BC women. And by population group, 61% of tumors were ER+/PR+, 11.7% were ER+/PR- and ER+/HER2- were 64.9%, and this proportion was similar to USA (Majid et al, 2012). In regarding to that in US, hormonal ER+/PR+ and HER2- was more presented in the cases, 76% (DeSantis et al, 2016).

Despite of that, BC histologically can be presented nearly in 100 subtypes. Various types of BC have been identified based on their histologic characteristics and growth pattern of the tumor (Lewis et al, 2000). In Iran, during 10 years of screening period nearly 92 of histological cancer types were registered, the invasive ductal carcinoma among registered cancer comprised 77.7%, and lobular invasive carcinoma was detected in 5.3% of cases (Jazayeri et al, 2015). This proportion in Sulaimani was different, in a study have shown that, invasive ductal carcinoma compromise (92.8%), and invasive lobular carcinoma (3.9%), ductal carcinoma in-situ in 6 (3.9%) (Majid et al, 2012).

Clinically, BC manifested different sign and symptoms. Breast lump may be present in a preclinical stage such benign tumor, or non-palpable breast mass, and other clinical presentation such as pain, breast discharge, nipple insertion, skin change, thickening or swelling of part of the breast, irritation or dimpling of breast skin may be present (CDC, 2018). BC stages are determined depend on the disease progressive

level, which is described by the size of tumor, regional lymph nodes and distance of metastasis. For instance, stage fifth of BC is defined by tumor size greater than 5 cm which is extend to chest wall, metastasis to ipsilateral internal mammary node, and spread to supraclavicular nodes (kasper et al., 2005). BC is high preventable disease, if it is diagnosed from the stage 1 or 2 of disease. Screening and early diagnosis is most essential for combat this disease.

2.2 Socio-Demographic characteristic And Breast Cancer

Socio-demographic have taken a crucial role in trend of BC, susceptibility of women in and within societies and various social status are varied (Sranhope and Lancaster, 2010). A review literature study in Europe, confirmed that, women with higher socioeconomic status show significantly higher BC incidence and lower case fatality, and the reason for this disparities are mainly related to reproductive factors, mammography screening, hormone replacement therapy, treatment, comorbidity, and lifestyle factors (Lundqvist et al, 2016). Therefore, socio-economic and demographic variables such as occupation, age, place of residence, educational level have been considered as predictors of BC. From another side, same socio economic and demographic variables could take role delay diagnosis and treatment (Sranhope and Lancaster, 2010).

2.2.1 Age

Age is considered as a risk factor of BC. In the most developed countries BC are more common among aged population, women age more than 60 years old. The average age of BC patients in Sulaimani was 8 to 12 years younger than their US counterparts, and despite of that most patient diagnosed at an advanced stage of their disease (Majid et al, 2012). In a study in Estonia, mean age at the time of first symptom was 61 years (range 23–92 years) (Innos1 et al, 2013), and in US; mean age was 62 years (DeSantis et al, 2016). In some Asian countries such as Thailand, average age (SD) at diagnosis was 50 ± 11 years (range 25–83 years) (Poum et al, 2014). In Arabic countries, age at diagnosis were reported from 45 to 54.5 years old (Najjar and Easson, 2010). In Iraqi, the mean age at diagnosis was (52±13) years and ranges from 15 years old which is very rare to occur in this age to 70+ years. The highest percentage of cases were in the age group 40-49 years (32.28%), followed by 50-59 years (26.62%), 15-39 years (20.63%), 6.16% were in the age of 70+ years (Al- Hashimi and Wang, 2014).

For Kurdish women, the age specific incidence rate began to peak at 40–44 years of age and remained somewhat stable until age 60 when it started to decline (Majid et al, 2012). While in another study among Kurdish women, the incidence rate of BC reached peak of 168.9 per 100,000 at 55-59 years old. In some studies in Sulaimani, the average age of BC patients was 47.4 ± 11.0 (Majid et al, 2009) (Habib et al, 2010). Furthermore, in Erbil a study showed that the mean age ±SD was 32.71 ±10.64 years, and the most proportion of registered BC was age group 21 to 30 years old females that formed (36.6%) of the study sample (Ahmed et al, 2016).

2.2.2 Education:

Relation of higher education with a high BC incidence have been confirmed. A review study in Europe reveals on that, high education are significantly associated with high BC incidence (Lundqvist et al, 2016). While this relation in developing countries still not concluded. The demographic transition in developing countries might lead to high educated women to marry at a later age, do not more parity, and less lactate.

2.2.3 Marital state:

In a study in Erbil among diagnosed BC women 81.8 % was married (Ahmed et al, 2016). Married and pregnant during childbearing age could affect the incidence of BC. Women married in early ages are more prone to be pregnant and that would may lead to more protection from BC.

2.2.4 Occupation:

Occupation is one of the variable which is affected BC trend. A review study in Europe reveals on that, high income and managerial occupation are significantly associated with high BC incidence (Lundqvist et al, 2016). There is not study in the research area to confirm this result. Housewife women or unemployment was the highest proportion (84.7%) among women who are registered to diagnose BC in Erbil study (Ahmed et al, 2016).

2.2.5 Residency:

The urban women population are more susceptible to BC. Women urban residence almost are more associated with western lifestyle in term of parity, late pregnancy and lactation (Stamenić and Marija, 2011). While, women in rural may more prone to obesity, lack access of mammography screening, and high detected cancer rate. In Turkish study, however, knowledge about BC was high among district women

residence, women from rural were more likely participated in mammography screening (Dundar et al, 2012).

2.3 Signs And Symptoms Of Breast Cancer:

BC like other chronic diseases initiate with no clear onset. Signs and symptoms of the disease may have presented when the disease is in its second stage. Most BC presents with some common sign and symptoms in breast, but these signs and symptoms are mostly correlated with other diseases. Some minor breast disorders may be related with sign and symptoms of BC or related to hormonse, menstrual, or any other abnormalities such as inflammation. The most presented BC signs and symptoms are explained as follows. BC is chronic prolonged disease which is not having clear onset of a disease. Women often discovered these symptoms by chance while dressing or bathing. The number of patients with early-stage BC (Stages 1 and 2) almost equaled those diagnosed at advanced stages (Stages 3 and 4) (Lim et al, 2015).

2.3.1 Painless mass

Lumps are most presenting symptoms of BC. In Estonian study, the most frequent initial symptom was a painless lump in the breast (Kaire Innos et al, 2013). Painless mass is mostly observed by patient accidently or by mammography screening in the upper- outer quadrant of the breast (Lewis et al, 2000). In Libyans study, (68%) patients with breast carcinoma noted a lump or lumps as an accidental finding, while (2%) patients detected lumps during BSE (Ermiah et al, 2012). In a Malaysian a part of screening program, among women who attend clinic to their breast condition, the commonest symptom was a breast lump and the median duration of symptoms was 6 months (Teh et al, 2015). In a Thailand study (66%) of the patients initially presented with a lump (Poum et al, 2014). In a study on 137 Morocco women, breast or axillary lump was a first clinical presentation in (65.7 %) of patients, tumor size was greater than 5 cm (77.8 %) of patients (Maghous, 2016). The presence of a breast mass led to the diagnosis of cancer, breast mass may present in subclinical period, in this case, breast mass clinically is called non-palpable mass. In the UK, study shown that due to expansion mammographic screening from 1985 to 1989, the non-palpable presentation rate increased from 22% to 58%, because mammography could detect lump in preclinical stage before palpable by physicians or detect in BSE (Moiel, and Thompson, 2014). While in a study in Iraq, palpable lamp were the main presentation sign among BC diagnosed women 96.9%. This is mainly due to the absent of mammography screening in Iraq (Alwan et al, 2019).

2.3.2 Breast pain:

Breast pain (Mastalgia) is the most common breast related complain in women, it affects up to 70% of all women that may be related to menstrual cycle (Lewis et al, 2000). Pain is another clinical presentation of BC, while this symptom is mostly presented with lumps. In a study in Singapore and Malaysia, 75% of the participants discovered a painless lump, and 15% of women experienced pain accompanying with a lump. Some women (10%) had rare symptoms such as swelling or change in breast shape, rashes on the breast, inverted nipple, chest tightness, tingling pain in the breast, itchiness and a soft gel-like cyst on the nipple (Lim et al, 2015). In a study in 137 Morocco women (11.7%) has breast pain (Maghous et al, 2016). Clinically; breast pain may associated with hormonal changes, menses, or lobular or lactate duct inflammation.

2.3.3 Nipple discharge:

Clinical presentation of BC mostly stands on anatomical carcinoma of breast. Histologically, all breast tissues are predisposed to cancer. For instance, the main histological type of BC in Sulaimani city was invasive ductal carcinoma which compromise (92.8%), and invasive lobular carcinoma (3.9%), and ductal carcinoma in-situ (3.9%) (Majid et al, 2012). Nipple discharge could be a presentation of ductal carcinoma. Diseases associated with nipple discharge include malignancies, cystic disease, intra ductal papilloma, and ductal ectasia (Lewis et al, 2000). In Libyan study, symptoms of the BC such as skin changes, nipple discharge or bleeding were all reported less frequently (29%). Systemic involvements as the first symptom occurred in (3%) of patients (Teh, 2015). In a study on 137 Morocco women, skin changes was 21 (15.3%), nipple discharge (4.4%), (Maghous, 2016), and in Iraq, nipple discharge was presented in 7% of BC diagnosed women (Alwan et al, 2019).

2.4 Risk Factor Of Breast Cancer

Susceptibility of women for BC is almost determined by risk factors. BC as other chronic disease is defined as the accumulation of risk factor. The risk factors of BC have been determined and considerably have been measured in many studies.

2.4.1 Family history of breast cancer

Family history is predisposing risk factor for BC. Nearly 10% of all BC patient may have inherited or specific genetic abnormality that contributed to developing BD (Lewis et al, 2000). In a study in the research area (Sulaimani) has been shown that the incidence of BC among women with first degree family history, almost 5 times higher

in comparison to women do not have family history in the same age group (The odds ratio: 5.21, and 6.89). In case control study in Sulaimani city, significant relation between family history and BC was confirmed, among control, prevalence of positive family history of BC was 7.1% while among cases prevalence was 19.0% (Majid et al, 2009). And, the prevalence of first degree family history (mother or sister) was significantly high among patients 11.1% and compared to controls 2.1% (Majid et al, 2009). From another side, the prevalence of positive BC history varies within the communities. In a study on 376 female teachers aged 23-51 years in Saudi Arabic has been dictated that, 12.0 % of all teachers had a positive family history, and 6.6% had a history of a breast lump (Dandash et al, 2007). According to study in Libya, among 200 diagnosed BC women 9% had a family history of BC, 9.5% had a history of benign breast disease (Ermiah et al, 2012). In a study on 237 BC women in Morocco, (20.4 %) had a family history of BC (Maghous, 2016). While in Erbil study positive family BC among BC registered women was 12% (Ahmed et al., 2016).

2.4.2 Non breast feeding

Breast feeding is health behavior preventing BC. Women who are not breast feed for a long time are predisposed to BC. According to American Cancer Society, breast feeding for 1½ to 2 years will decrease the risk of BC (Amerian Cancer Society, 2016). Generally, as a result of a decreasing childbearing period in women of industrial countries, the lactation period was decreased for a short time or ever not lactate, and this was considered as the factor for increasing BC incidence. In a study in Erbil among women diagnosed with BC, 72 % was non breast feed (Ahmed et al., 2016).

2.4.3 Hormone treatment (Contraceptive uses)

BC is a hormone-dependent disease. Women without functioning ovaries and never receive estrogen replacement therapy don not develop breast cancer. Hormonal treatment could cause BC in genetic predisposing women (kasper et al., 2005). Many studies revealed on the hormone replacement therapy, especially prolong use of estrogen, is significant risk for developing BC (Blanch et al, 2014) (Lewis et al, 2000). Many studies suggest that, suffering women with BC in early age is mainly attributed to the use of contraceptive. In a study in Erbil among diagnosed BC women 25.8 % was used oral contraceptive pills (Ahmed et al., 2016). It has been mentioned that, the prolonged use of oral contraceptive in women younger than 35 years but would lead to slightly increased risk of BC (Dale; and Federman, 2003).

2.4.4 Gravida and Nulliparous

Risk of breast cancer increases with nulliparity and older age at first birth (Dale; and Federman, 2003). In Erbil study which was done on 549 BC registered women has found that nearly one third (35.2%) of the patients were nulliparous females and incidence decreased with increasing parity (Ahmed et al, 2016). Case control study in Sulaimani indicated that BC patients' age less than 50 years old had significantly fewer children than the same aged control subjects (Majid, 2009). Women who have a first full-term pregnancy by age 18 have a 30 to 40% lower risk of BC compared to nulliparous (kasper et al., 2005).

2.4.5 Obesity

Obesity and high fatty food were computed as risk factors for BC (Dale; and Federman, 2003) (Lewis et al, 2000), but still their association with BC were not illustrated (American Cancer Society, 2016). In this concerning, in case control study in Sulaimani, a significant difference in BMI was not found between BC patients and controls (Majid, 2009). While in a Palestine study, there was found high BMI (more than 30) more than 4 time increased the risk of BC (Kariri et al, 2017).

2.4.6 Age at menarche

Early menarche and premenopausal status are mostly associated with BC, this is mainly due to early expose to reproductive hormone, estrogen, and progesterone (American Cancer Society, 2016) (Blanch et al, 2014). Some studies have shown that BC was significantly associated with early menarche, less than 13 years aged of menarche increased the risk of BC (Kariri et al, 2017) (Wen YC et al, 2012). Women who experience menarche at age 16 have only 50 – 60% of the BC risk of a woman having menarche at age 12, and the lower risk persists throughout life (kasper et al., 2005).

2.4.7 Having a benign tumor

A Benign tumor is considered the stage zero of BC. From another side, breast benign tumor mostly is a risk factor for BC. Women who have had a biopsy with benign findings are at greater risk of developing BC than those who have not had a biopsy (kasper et al., 2005). In a study in Saudi Arabia, 6.6% of women had a history of a breast lump (Dandash et al, 2007). In Spanish study has indicated the breast benign as the risk factor for developing of BC (Blanch et al, 2014). Study in Singapore has shown

that present benign mass before age 50 years was significantly associated factor with BC (Wen YC et al, 2012).

2.5 Screening Program Of Breast Cancer

BC is chronic disease which do not have a clear onset. Therefore, screening always recommended to diagnose this disease in the preclinical stage. Screening will decrease the incidence rate, and regular mammography screening have decreased the BC death by 17% (Lewis et al, 2000). Screening is the ongoing process of early detection. Each screening program required to a guideline in order to have an efficient out-come. According to American Cancer Society, the screening program guideline describes and explores the identifiable target group or population, implementation measures and tool for guaranteed high coverage rate or participate rate, access to high-quality screening methods, an effective referral system, and measures in place to monitor a program (Cheng-Har Yip, 2008).

Various screening models are proceed under the program guideline. Target population, method and technique of the screening are set in each screening model. Target population in many screening program is being determined based on age, or other susceptibility to risk of BC such as family history and parity. For instance, in Malaysia, target population in opportunistic screening program included the women aged more than 40 years and above with average risk for developing BC, while; in the organized screening program, target population are women at higher risk for developing BC, such as family history, previous biopsy showing atypical ductal hyperplasia, or on hormone replacement therapy (Teh et al., 2015). In the same concerning, in France organized mammography screening launched in 2004, 9 million women aged 50–74 years are targeted to screening excluding those presenting with high risk of BC due to family history, genetic predisposition, personal history of thoracic irradiation or at-risk of benign tumors (Moutel et al, 2014). Regarding to screening tools, in France program, (CBE) and mammography is recommended in two years interval. As well as, this procedure will include the double reading of each negative mammogram, and when necessary, an ultrasound examination would be done. Similarly in Denmark, target population are women aged 50–69 and biannual mammography screening are proceed (Henriksen et al, 2015). In Iraq, CBE annually have been recommended to women aged 30 years and above, if deformity have been detected then women should be referred to mammography screening (Alkhazrjy and Souza, 2018).

Another aspect of screening model is the mechanism in which the women are attending the screening. Basically, women attend the screening either through referring system or direct invitation by using media or letter. In higher developed countries which screening program has been introduced long earlier, women mostly participate the program directly. A study in the US has shown, the percentage of self-referral to participate in the screening have increased during past 2 decades by 15.7% (Moiel, and Thompson, 2014). Developed countries follow different strategies for women to participate the program directly. In France model, the program prone the postal invitation for women to attend screening, and non-respond women would get follow letter (Moutel et al, 2014). While in Denmark, invitation includes letter, and a pre-booked time and date for the screening visits and provide leaflet for women for rise awareness about the purpose of screening, benefits of the procedure (Henriksen et al, 2015). A different screening model, have made difference awareness and participation rate. As mentioned above, in Iraqi model, raising awareness among general population to the common signs and symptoms of BC, and promoting knowledge about utilizing the screening methods have been undertaken as main objective of the program. In this program leaflet are used to enhance general awareness. (Look appendix A)

2.6 Knowledge And Awareness About Breast Cancer

Knowledge about BC almost determines as women's awareness about the nature of the disease, sign and symptoms, risk factors, early diagnosis, screening and treatment. In this concerning many validate and reliable tools have been developed for measuring the knowledge about BC. Generally, women's knowledge about BC in the developing countries is not sufficient. For instance, it was discovered in Saudi Arabic study; only 5% had a good general knowledge of BC and 14.6% had a very poor knowledge (Elobaid et al, 2014). Even in study among educated women in Saudi Arabic on 376 female teachers have been dictated that, only 12.0% had gained good knowledge, and 52.1% were categorized in the limited knowledge level about symptoms of BC (Dandash et al, 2007). Similarly in the United Arab Emirate, 43% of women believed that BC was the most common type of cancer in women and only 26% believed that breastfeeding is a protective against BC, and 22% of women stated that they were unsure either BC is contagious or not (Elobaid et al, 2014).

Same finding in another neighbor countries, Iran, have been confirmed, according to study mean of awareness about BC recognition such as a warning sign and

its risk factors among women was low (Ghodsi, and Hojjatoleslami, 2014). In contrast to all mentioned countries, survey on 1200 Qatari women aged 30 - 55 years has found women have adequate knowledge of BC in terms of awareness about sign and symptoms, risk factor, treatment, and 70.3% reported that BC is the most common cancer in women (Bener et al, 2009). In a study in Asian countries, Singapore and Malaysia, women were aware about only some of the symptoms, especially a breast lump, but they did not know about the causes and treatment, and few of women also talked about their fatalistic views of BC (Lim et al, 2015).

According to many theories and models, knowledge can affect beliefs and attitude toward changing behaviors and take a new action. Therefore, lower women participation in screening may be related to lower knowledge of women about BC (Wang et al, 2009), (Moodi et al, 2012).

2.6.1 Knowledge and socio-demographic

Knowledge about BC varies accordingly with socioeconomic or demographic variables. Women in different age groups, social status, and education levels would have different views and awareness regarding to BC, treatment and early diagnosis. More specifically, age differences and education level are main indicators of knowledge of BC. In a study on 376 female teachers in Saudi Arabic have been dictated that, age significantly related to higher knowledge level (Adj Odds ratio: 2.1) (Dandash et al, 2007). In contract to that, another study in same place has shown that younger women had better knowledge compared to older women (Elobaid, 2014). Although age of suffering BC varies worldwide, but in such countries, Singapore and Malaysia, study has found that the younger women thought that BC was a condition confined mainly to older women (Lim et al, 2015).

In concerning to education, many studies found that the level of education have a positive association with better knowledge about cancer (Elobaid et al, 2014). Similarly, Qatari women with higher education had better significant general knowledge about BC (Bener et al, 2009).

Despite good knowledge in higher educated women, women may obtain knowledge of their experiences with family history of BC, or other non-relative BC such as a friend or neighbor. For non-educated women mass media, relevant life event, experience, direct communication would be a source of information about BC. In a Saudi study, those having a non-relative case (friend and acquaintance) showed

significant better knowledge level than others who did not (Odds ratio: 2.1), while same study could not confirmed the significant association of positive family history and history of a lump with knowledge level (Dandash et al, 2007).

High family income have positive relation with knowledge about BC, this, may related with another indicators such as education. In Saudi study, high income women had a significant better knowledge level comparatively (Odds: 1.8) (Dandash et al, 2007).

2.6.2 Knowledge about sign and symptoms

Ability to recognized BC symptoms illustrates the women's knowledge about BC. Knowledge about sign and symptoms may help women to not delay in presentation. BC presentation is mostly confusing with other minor breast disorders such as infection or/and inflammation of the breast and benign experiment. Study in UK has demonstrated that many women clearly had lacked awareness about the more ambiguous presentations of BC such as nipple discharge, in-drawing, nipple inversion (Heisey et al, 2011). Another study in the UK has shown that the most women could recognize a lump in the breast as symptoms, while only 42 % of women were able to identify more than 4 non-lump symptoms (Linsel, 2009). More detail, white British women appeared to have greatest knowledge of BC symptoms and they determined quickly ‘any difference’ in their breasts in compared to Black Caribbean and Black African which were unaware of their non-lump symptoms (Jones et al, 2015).

In contrast to that, in developing countries, in Qatar, a good proportion of women knew that nipple retraction (81.2%) and discharge of blood (74.6%) are warning signs of BC, 70.6% of women knew breast lumps can turn into cancer, and 58.3% of women acknowledged BSE is good in finding small lumps in breasts (Bener et al, 2009).

2.6.3 Knowledge about risk factor

The different screening models are organized based on most probable risk factors. Age, family history and nulliparous are the main risk factor which is important to determine eligible target group for screening. Women need to be aware of that extent which they are at risk in order to participate in screening. Awareness of women about susceptibility to BC due to determined risk factor may help them to participate and action for early treatment. As mentioned above awareness of women and invitation them to screening again are more emphasized based on the risk factors. To women

teacher in Saudi Arabic, 52.7 % reported the non- breastfeeding as a risk factor, and 38.6 % reported the use of female sex hormones, 22.1 % reported a positive family history of BC, 17.8 % reported repeated exposure the breast to the radiation as a risk factor. Getting older and history of a breast lump were reported by less than 3.0 % of responses and none of the respondents linked age at menarche or menopause to be a risk a factors (Dandash et al, 2007).

2.6.4 Knowledge about BSE, CBE and Mammography

As it has been mentioned above, there is a various screening program model. Target population, procedure, and applying of program are different in those model worldwide. In such system, women are invited to mammogram by using the different media patterns such letter, phone call, and email. While, in some systems, there is only defining the target of mammogram screening population without organizing a screening population to invitation. Despite a different model, history of screening program has varied across countries. Women have a different view regarding to mammography. Therefore, women's awareness and believes about screening program could be fluctuated. Some of women do not aware about any screening methods. Almost in developed country early detection techniques have been more introduced. In the UK study has shown that a native British women mostly know about the importance of early diagnosis for cancer than others people living in that country (Jones et al, 2015). In this concerning awareness about screening method would be a significant indictor for screening participation and early diagnosis. Women's awareness about screening methods and the way women invited to screening participation could be essential to the success of screening performance.

2.6.4.1 Practice and awareness about breast self-examination

BSE as a screening method takes an important effect on early diagnosis. Data has shown women who practice BSE was more diagnosed early compared to not-practicing BSE women. In Libyan study, diagnosis delay tended to be significantly higher among women who did not report monthly BSE (Ermiah et al, 2012). More detail, univariate analysis in Morocco study have showed that non-reported BSE practice have 3.91 add of risk for delay diagnosis, nevertheless, BSE practiced women have mostly reported a medical reason to diagnosis delay instead personal reasons (Maghous et al, 2016).

BSE has being considered as a very preliminary screening method. It has recommended to women aged more than 20 years old to practice BSE monthly (Al-Alwan et al, 2012). Meanwhile, awareness about and practice of BSE among women varies in worldwide. For instance in developed world, UK study, almost half of women check their breast once a month regularly, and intervention for increasing knowledge about symptoms and risk factor of BC has increased this figure by 15% (Linsel et al, 2009).

In most developing countries, BSE has not introduced well among women, still many women do not aware about practicing of BSE as screening for BC. Even among women who aware about BSE as a screening method, they did not practice BSE or not performed regularly. For instance, in a survey on 247 women from UAE have shown that 34.1% of women had not previously heard about BSE, 48.6% women did not regularly perform BSE, and almost 28% expressed a willingness to perform BSE, almost 82 % of women who practice BSE are recommended by their health care provider (Elobaid et al, 2014). Similarly, in neighbor country, Arabic Saudi, study has done on 376 women teachers, concerning BSE, About two thirds (67.6%) of women had never tried BSE and 43.4 % of the women had identified BSE as a screening method, 32.4 % had the practice of BSE at one time, 15.4 % practiced it during the last month (Dandash et al, 2007). In another survey in Saudi Arabia on 1,001 women aged 50–74 years old, only 25% of the women reported knowing about BSE, among those, 57% of women performed a BSE (El Bcheraoui et al, 2015). In another neighbor country, Iran, 64.9% of women had not had preexisting knowledge about BSE and only 14.8% of women conduct BSE and in this number only 9.4% had done BSE monthly, and 1.6% could carried out BSE correctly, and the average age of BSE onset was 20.17 ± 7.6. (Ghodsi et al, 2014). In the same concerning, in a survey at 1200 Qatari women has shown that, only 30.3% of the women had heard about BSE and 18.7% practiced BSE. And despite of having a sufficient level of knowledge about BC among Qatari women, but only 24.9% identified BSE as a screening method (Bener et al, 2009)

2.6.4.2 Practice and knowledge about clinical breast examination

Clinical breast examination exists as a usual method in the most screening models. In Iraq and Kurdistan, CBE was recommended for women age more than 30 years biannually (Al-Alwan et al, 2014). Despite of that CBE is utilized in many private clinic and hospitals for any minor breast problem un-deliberately while women have

knowledge about the BC and the early detection method (screening and early diagnosis). For un-aware women, clinic and hospital have become a source for introducing screening center and referred them to the screening center. In another word, for any health problems; women's more contact with the health system (private clinic or hospitals) would contributed to refer them to screening and increase the participating rate. After clinical breast examination women intentional, by themselves, or unintentional, by referral system, they attend a mammography for early diagnosis or further management (Al-Alwan et al, 2014). Lack of knowledge about CBE as screening method will affect women to less utilizing the CBE. In UAE, a study found, 45% of reasons to not-screened women were related to lack of knowledge about CBE as screening techniques, and among those who screened 41% women were referred by health care providers, the main misunderstanding of non-screened women in UAE was about age of participation, because 41% of the women believe that they are not in target group for screening, they thought CBE was recommended only for older women (Elobaid et al, 2014). Similarly despite free screening BC in neighbor countries, Arabic Saudi, only 28.3 have identified CBE as screening method, and among Qatari women, only 23.3% have reported to have clinical breast examination (Bener et al, 2009) (Khadiga F. Dandash, 2007). In Saudi survey, in women aged 50–74 years, about 89% of the women reported that they did not have a clinical breast examination in the past year (El Bcheraoui et al, 2015). In contrast to that, having CBE in UAE study was higher than Saudi Arabic and Qatar, which was 49.4% (Elobaid et al, 2014). Noteworthy, in UAE screening program proceed the opportunistic screening model in contrast to organized screening model.

2.6.4.3 Practice and awareness about mammography

Mammography is gold standard screening method in worldwide programs. Mammography is recommended biannually for women aged more than 40 years old as screening method in most developed countries (Eun Hye Lee et al, 2016), (Teh et al, 2015), (Mittmann et al, 2015), (Ravesteyn et al, 2012). Mammography have been used for diagnosis in the clinic, and as screening for early detection. In screening, women considered to mammography prior to the disease episode exhibit. Generally, as mentioned above, there is two different mammography screening, opportunistic mammography and organized mammography screening. Opportunistic mammography screening is prone for any women who their age above 40 years old while organized mammography screening include eligible women depend on BC susceptibility such as

family history and age. Participation rate would vary accordingly in each kind of screening due to their distinct target populations. Despite of that, women's health behavior and accessibility of health care may take role in women's participation in each kind mammography screening.

Mammography screening rate in developing countries is quite low comparatively. Women do not aware about mammography screening and mostly require to refer them to screening center by health provider from hospital and private clinic. In Brazilian survey, 42.1% had never have mammography before subjected them to screening (Vieira et al, (2015)). Moreover in Iranian survey, 62.2 % of women had information about mammography and 25.84% of women had a history of mammogram, and 13% had done as per recommendation (Ghodsi et al, 2014). In another survey in UAE have shown that, the mammography screening uptake was 44.9% in the women, and 44% of women who not screened was presented with lack of knowledge about mammography as the very existence of screening techniques Elobaid et al, 2014). In a study in female teacher in Arabic Saudi, mammography was identified only by (9.3 %) of women(Dandash et al, 2007) and in another survey in Saudi Arabic women aged 50–74 years, 92% of old reported never having a mammogram (El Bcheraoui et al, 2015).

The relation between BC knowledge and practice mammography has not confirmed. Study on Qatari women has mentioned that despite a sufficient level of knowledge about BC but 22.5% of women underwent mammography (Bener et al, 2009). In a study on African-American women had shown that the associations between BC knowledge and mammographic schedules were significant for the younger group, but not significant for the older group (Sung et al, 1997).

In the USE study even among those who follow screening program, almost 82 % of the women who practice mammography was recommended by their health care provider. Furthermore, some women thought that mammography would be done for women who present with symptoms, 17% of women who done mammography, and 16% were not sure when to go for mammography (Elobaid et al, 2014).

2.6.4.4 Source of information about breast cancer

Different programs have been proceeding for awareness of women about the BC entire world. But generally, non-educated women have own source for information about BC. In the Saudi Arabia study was found that print media were the most

commonly reported source for BC information (83.2%). Television (68.2 %), family and friends (28.6%) and health care professionals (14.1%) was also reported as a source of information about BC (Dandash et al, 2007).

2.7 Reason For Patient Delay And Not Participation

Developing countries mostly have a longer patient delay. The lengthiest median patient intervals have been reported Libya (4 months), Iran (3 month), and Egypt (2.7 month) Malaysia (2 month) (Unger-Saldaña, 2014) (Ermiah et al, 2012). In a Thailand, median patient delay was 12 days (Amornsak Poum, 2014) and in Estonia was 16 days (Innos et al, 2013). In a qualitative study in Malaysia and Singapore, overall, 46% of patients were presented late more than 3 months, in this figure, 35% delay of Singaporean patient and 56% the Malaysian (Lim et al, 2015). In Libya, 44.5% of patients had a medical consultation within one month after detecting symptoms, while 15.5% had visited the doctor within 1–6 months after symptoms, 40% of patients had consultation later than 6 months after first symptoms (Ermiah et al, 2012). In Estonia, thirty three percent of the patients had a medical appointment within one week of initial symptom discovery, 31% within 8– 30 days, and 19% within 31–90 days; 17% experienced delay of >90 days (Innos et al, 2013).

There is many prospective to study the barriers and reasons of delay presentation or not participation in screening. The reasons and barrier which lead to women not utilizing the screening methods or delay in utilizing could be identified for intentional and unintentional factors.

Unintentional reasons include the extent to which women aware or have knowledge about BC (this was mentioned above). Intentional factors, which is related to women's belief and attitude concerned with the barriers to treatment and early detection. In a survey in UAE have shown that 38.3% of women claimed good knowledge of BSE procedures but did not perform them due to fear of finding something (Elobaid et al, 2014).

Intentional factors which is related to personal factors (women belief and psychological factors) include fear from the diagnosis consequences, fatality of cancer, treatment and long hospitalization, life priorities, mastectomy and death, lack of financial resources, placing family above their own needs (Cheng-Har Yip et al, 2008) (Khakbazan et al, 2014) (Lim et al, 2015). Other intentional factors related to physical and systemic factors such as accessibility of the health care system have been

mentioned as the barrier for utilizing of screening methods. The physically health care accessibility barriers are mainly define as the lack of a medical referral system, irregular presence of doctors, longer distance to hospital, and longer travel time to hospital (Khakbazan et al, 2014), (Poum et al, 2014). For instance, in a study in Morocco, fear of cancer diagnosis and/or treatment was indicated more than (11%) of a barrier for early presentation, (70.1 %) reported a personal reason to diagnosis delay such as financial constraints (6.8%), competing life priorities (6.8%), and the rest was related to health systemic reason (Maghous et al, 2016). In a survey on 1200 Qatari women has found that, fear and worries were the general potential barriers towards BC screening (46.5%), embarrassment for clinical breast examination (53.3%) and fear of mammography results (Bener et al, 2009).

Many factors and reasons contribute in patient delay. For instance, a study distributed the factors into the behavioral factor, socioeconomic factor, and cultural factors (Unger-Saldaña, 2014). Some cultural factors of patient delay such as misinformed by relatives, cultural stigma and marriage issues, and preference for traditional medicine as the first-line treatment were mentioned in Asian study (Lim et al, 2015). In such countries, fear and shame prevented the women to visit the doctor, these led to women utilize alternative treatment. And some patients believed that there were no effective treatments for BC, or that traditional medicines are more effective than modern drugs (Ermiah et al, 2012). In this section, socioeconomic, women perceive and belief about sign/symptoms and risk factors have studied. As well as cultural view, behavioral factors were studied in collaboration with utilizing screening methods.

2.7.1 Socio-demographic effect of not screening participation or delay

In Brazilian survey, the proportion of women who had not previously undergone a mammogram was higher among women of the lower of socioeconomic status compared to high socioeconomic status (Vieira et al, (2015)). In many studies, such socioeconomic were significantly indicated as the patient delay determinants, for instance, older age, lower level of education, current smoking, lower family income (Innos et al, 2013).

As mentioned above, in developing countries BC age at diagnosis is low comparatively, women suffer BC in early age. Thus, mammography mostly used for early diagnosis instead of screening. For instance in Iran, however age 40 years have

been recommended to mammography screening, but, age onset of mammography screening in Iran was less than 40 year, 36 ± 2.7. (Ghodsi et al, 2014).

Utilization of mammography for early diagnosis has made a different out-come about socioeconomic trends in those countries. For instance, in UAE, study found education level was negatively associated with participating in regular utilizing of mammography, among non-screened women in UAE, 38 % of women belief that they were not in target group for screening because mammography is recommended only for older women (Elobaid et al, 2014). In most developing countries, younger women were mostly educated therefore these may affect the result of practicing of mammography. In this section the relation of socioeconomic variables to utilizing screening methods was studied

2.7.1.1 Age

Age is one of basic indicators for patient delay and to participation in the screening methods. Several studies worldwide have revealed that older aged women were more likely to delay or not participating in screening. In Estonia study, older aged women increased the risk of patient delay (Innos et al, 2013). Similarly, Libyan study has shown that older women waited longer than younger women in presenting their symptoms to a physician (Ermiah et al, 2012).

Regarding to age in related to screening participation, due to the difference in the age of diagnosis and determining different ages for screening, studied has confirmed controversial outcomes. In a survey on 1200 Qatari women aged 30 - 55 years has found that, the three screening procedures were performed more often in young women (Bener et al, 2009). In contrast to that, in Brazilian survey, the higher proportion of women never undergone a mammogram were found in the youngest age group (40– 49 years), compared to older age (Vieira et al, (2015)). In the same concerning, a study on American Chines indicated that women aged 65 and older were less likely to ever had a mammogram or to have intentions to do a mammogram, as well as they were less likely received screening recommendations from their physicians (Wang et al, 2009).

Even regarding to BSE trend, studies in Libya and Morocco observed that women with monthly practice BSE were more in young in compared to older (Ermiah et al, 2012) (Maghous et al, 2016). While, in Saudi Arabia women aged more 40 or older were associated with practice BSE (Dandash, et al 2007).

2.7.1.2 Education:

Women with high education may have a general knowledge regarding to health, and this may turn to early presentation of their health problems or participating screening program. In a study on Arabic population in Australia has found that women with higher educational levels had significantly more knowledge about BC, high attitude to their general health (Kwok et al, 2016). In Brazilian survey, women with a low educational level (illiterate or <8 years of education) were less likely to have undergone a mammogram (Vieira et al, 2015). Similarly, in Qatari survey, high educated women were more participated in screening (Bener et al, 2009). In American-chines study, those who not screened or who not intention in future for screening were less educated (Wang et al, 2009). The effect of education in delay presentation, or not intention to participate in screening has been more studied. In general understanding, it can be concluded that, among socioeconomic factors, the education have been confirmed as the constant indictors for early presentation, and conversely illiterate significantly increase the risk of delay (Innos et al, 2013) (Ermiah et al, 2012).

2.7.1.3 Marital status:

A study found that unmarried women have significant association with practice BSE (Dandash et al, 2007). Fear of divorce or remarriage could lead some women to decide not to get their symptoms diagnosed if they suspected BC (Ermiah et al, 2012). For a large number of women, especially in male dominated societies, their greatest fear in diagnosing of BC is mostly related to their husbands that may neglect or abandon them (Cheng-Har Yip, 2008). Another reason for not utilizing screening methods in married women may be higher parity and high number of children in their family, these may involve women activities about their health behavior in term of participation of screening. Women who lactated for prolonged time always think they are more saving because breast feeding would protect them from BC. In contrast to that in Canada, a study found that women who were widowed, divorced, separated or never married were more likely to be not had mammography compared to married women (Shields and Wilkins, 2009).

2.7.1.4 Resident:

Women in difference living places have their distinct barrier and view for screening participation and delaying. American cancer society has determined the barrier for BC screening in developing countries, it has mentioned that, for women in rural areas; barrier would be lack of awareness and information regarding to BC; but for women

living in urban area, the fear of findings that their breast lump may be malignant results they deny the states and do non action (Cheng-Har Yip, 2008). Living in urban area was significant predictors for utilizing CBE and mammography (Bener et al, 2009). In cross sectional study in Morocco has found that, the diagnosis delay was significantly associated with rural residency. More in detail, the study found out that there was a significant risk for longer delay more than six months among rural women, women who live far away from specialized care center (Maghous et al, 2016). In a same concerning, in Thailand study, distance from, and time to, hospital were both significant association with patient delay (Poum et al, 2014).

2.7.2 Signs and symptoms related to delay

Women with minor breast disorders may not consider their condition as the presenting symptoms of BC. They may not look their symptoms as warning symptoms of BC. They may delay their diagnosis and treatment or receiving therapy out of health or screening center. Nature of BCs' sign and symptoms could be related to patient delay. In a Libyan study (27%) of women did not consider their symptoms as much serious, and alternative therapy was applied in 13.0% of the patients, most patients experienced the symptoms for long time, which eventually led to more advanced stage and delay (Ermiah et al, 2012). Patient mostly use their general understanding accordingly to interpret their symptoms. Generally, in some study, the main factors related to patient delay were determining as the symptoms not attributed to cancer, such as breastfeeding and benign breast diseases (Maghous et al, 2016)

2.7.2.1 Painless mass

Knowledge about BC and the presence of family history were positively associated with the correct interpretation of a breast lump among Saudi Arabia women, but nearly a third of the women perceived the lump is due to normal hormonal changes that affected women at menopausal age or during breastfeeding, (Elobaid et al, 2014) Similarly in study in Iranian women have determined that painless lump were related to a normal or trivial situation such as breastfeeding, hormonal changes, trauma, fatty mass, or menopausal changes, and these lead to delay in presentation, conversely lump accompanied with pain was attributed to a serious disease and need to follow up (Khakbazan et al, 2014).

In cross-sectional study in Morocco has shown that breast lump as the first warning symptom which was presented in the majority of patients (65.7 %), and the

discovery of a breast lump did not reduced the patient delay because women could not recognize breast lump as warning symptom (Maghous et al, 2016). In most developed countries, since mammography screening program has long history, women regularly were being screened biannually, breast lump have been detected before palpable stage by mammography. For instance in US, compared with the prescreening era, the most common BC presentation now in the clinic is non palpable mass. Between 1985 and 1989, the non-palpable presentation rate increased from 22% to 58% because of mammographic screening expansion (Moiel, and Thompson, 2014).

2.7.2.2 Breast enlargement

A study in Iran has demonstrated that symptoms such as edema of the arm, and breast swelling were attributing women to general diseases or adjacent organs. Therefore, this attributing symptoms to adjacent organs were associated with delayed presentation (Khakbazan, at el 2014). In Libyan study, significantly higher risk of delay was among patients with a history of fibrocystic disease in the breast (Ermiah et al, 2012). Women mostly think breast enlargement are related to some minor breast disorder instead of BC symptoms.

2.7.2.3 Other symptoms

In many studies, rare symptoms such as nipple inversion, skin change, and nipple discharge women are mainly did not consider them as warning signs. Therefore, the symptoms other than painless breast lump or breast pain were mostly associated with patient delay (Innos et al, 2013). Some study found that patients mostly misinterpreted these symptoms to be related to menstruation, breast feeding, and bumpy breast; and rare symptoms such as pimple and scar have been expected to be simple and not relevant to BC (Poum et al, 2014), (Lim et al, 2015). Similarly to Saudi Arabia, even among UK women same misinterpretation has been determined that women have expected the non-lump symptoms to be related to menopause, menstrual cycle, age, stress and breast injury and this would contributed to delay in help-seeking (Heisey et al, 2011).

2.7.3 Risk factors related to delay:

Women suffer from BC mostly as the result of more risk factors. Women who have more risk factor are more susceptible to suffer BC. Perceived susceptibility may help women to participate in screening or early diagnosis. While there is some risk factor adversely lead women to take an action to screening or early diagnosis. Apart of

risk factor, women general health condition and some health behaviors may have related with utilizing of screening methods and their barriers.

2.7.3.1 No breast feeding

Breast feeding affected screening behavior diversely. Some women's belief, breast feeding would protect them from BC, therefore they did not need to CBE or mammography, as well as, during breast feeding women could observe any change in their breast, therefore they do not need to BSE. From another side, among Saudi Arabia women, most of them perceived the lump is due to breast feeding, and women who breastfed their last child for more than 12 months were more likely to have a mammogram (El Bcheraoui et al, 2015).

2.7.3.2 Use of contraceptive and hormonal change

Contraceptive pill or other hormonal injection is associated with many adverse effect on women's health. Women who use contraceptive would consider any medical changes in their breasts. In this concerning women mostly may not care about other signs of BC. In Libyan study significantly higher risk of delay was among women who had used oral contraceptive pills longer than 5 years (Ermiah et al, 2012). Among Saudi Arabia women, most of the women perceived that the lump is due to normal hormonal replacement (El Bcheraoui et al, 2015).

2.7.3.3 Family history of breast cancer

In qualitative study on Iranian women has shown that family history of BC influenced women for utilizing the screening methods, and not history of BC in family or among friends and acquaintances also caused some participants thought they unlikely to get BC (Khakbazan et al, 2014). Despite good awareness, some UK women checked their breasts infrequently because they believe, they were not at risk of the BC because of had no family history of BC (Jones et al, 2015).

In Morocco study, paradoxically, a family history of BC was significantly higher among whom reported a fear of cancer diagnosis. Therefore there was a significant risk for longer delay more than six months among women without family history of BC (Maghous et al, 2016). In Qatari women, positive family history was significant predictor for utilizing CBE and mammography (Bener et al, 2009).

2.7.3.4 History of benign breast mass

Women with a history of benign breast mass is considered at risk of BC, while women negatively perceived this. For instance in Estonian study, previous benign breast problems were significantly associated with prolonged delay (Innos et al, 2013). Among the UK women, women with previous experience of benign breast symptoms were influenced to the decision which not to seek care sooner, this is mainly think benign may not turn to cancer (Heisey et al, 2011).

2.7.3.5 Health conditions

Screening behavior (BSE, CBE, and mammography) like other health behavior may have correlated with general health condition. In the qualitative study in the UK has found that many of the women did not participate in screening because they had other chronic health conditions. The women noted that the more of presenting health condition interfered with their ability to contribute to the breast symptoms and not care about early diagnosis, in another word, women who are dependent, participation in screening would not be in their priority (Heisey et al, 2011). In contrast to that a study revealed on that women diagnosed with hypertension was more likely to have a mammogram according to the schedule (El Bcheraoui et al, 2015). From other hand it can be explained that women who more contact with health system for another health condition would have opportunity for caring the screening or mammography.

Regarding to non-health behavior such as smoking, in a Thailand study, multiple regression analysis have shown that smoking remained significant indicator of patient delay (Poum et al, 2014). In Estonia study, current smokers were two times more likely to present with prolonged delay compared with non-smokers. Smoking may reflect women's overall attitudes towards health promoting behavior (Innos et al, 2013). In same concerning, in a big survey in Denmark has been indicated a higher probability of non-participation rate among underweight and obese women as compared to women with normal weight (Hellmann et al, 2015).

2.7.4 Cultural views regarding to barriers of utilizing of screening methods:

Utilizing of screening methods have been varied across countries. Despite of that screening model are different worldwide, women who not utilizing screening methods may relate to their cultural views regarding to those methods. Cultural barriers in each screened model have been studied in some studies. In American- Chines study has found that women with more Eastern views were more likely to perceive barriers

to obtaining mammograms and have low knowledge about BC and screening, and less perceived benefits of mammography (Wang et al, 2009). Same finding was confirmed in the Saudi and Arabic-Australian studies, the barriers for not attending BC screening were mainly been belonged to cultural context, women in Saudi Arabia are very conservative, they are more likely to shy away from doing CBE (El Bcheraoui et al, 2015), and among Arabic-Australian, barriers to mammographic screening were cultural, women say "I don't want to have a mammogram because I would need to take off my clothes and expose my breasts (Kwok et al, 2016).

In such cultures there are many misinterpretations about the BC, and this may involve screening method utilization. In a study in Singapore and Malaysia has been found that some women believe that only women with large breasts had a high risk of BC (Lim et al, 2015). As well as, the main misinterpretations in Arabic Saudi women were that the BC is attributing to God (27.9%), and there was some belief that hitting or bumping the breast, direct spraying of perfumes on the skin, tight clothes, and air pollution are the cause of BC (Dandash et al, 2007).

In general, the high rate of utilizing the screening methods in Western countries may relate to low cultural barriers. In American-Chines study have shown every half standard deviation increased in Eastern cultural views was associated with 22% decrease in the odds of having used mammography (Wang et al, 2009).

2.7.5 Belief and Attitude toward Utilizing Screening Methods.

As mentioned above, women personal belief and attitude toward BC and screening methods might affect the utilizing of screening methods. Women personal belief and attitude encompass the women perceived toward the seriousness of BC, and the barriers and benefits of utilizing those screening methods. Many of women believe that early detection leads to better treatment and saves lives but they afraid about the test result of screening methods (Henriksen et al, 2015). Women attitude regarding to screening methods has taken a role in decision about utilizing those methods. In a survey on 1200 Qatari women has found that, although a majority of women had a positive attitude towards BSE and CBE, but their attitude towards having a mammogram test was mostly negative (Bener et al, 2009).

According to the theory of planned behavior, attitude, subjective norms, and perceived behavioral control contribute in behaving of screening participation (Henriksen et al, 2015). This theory illustrates that, individual's perception regarding

to the effect of the health behavior, the combination of the expectation of other people's reaction towards the action, weighting between the presences or absence of barriers to action would have contributed women's decision making toward participating in the screening program. Sociocultural Health Behavior Model is another framework model to illustrate this healthy behavior, screening participation. The model includes the interdependence of predisposing, need, family/social support, environmental health system, and cultural factors which contribute to a particular health behavior or outcome (Grace X Ma1, 2013).

The main used model for study the barrier and reasons for women participation in screening program was health belief model (Young Eun et al, 2011). This model have explained many pathways which determine the women's decision to participate in screening program. The main concepts of model are perceive seriousness, benefit, susceptibility, barriers, health motivation, and confidence (Taymoori and Berry, 2009).

Health Belief Model (HBM) has been widely used in many studies as a theoretical circumference to study BC detection behaviors (Gürsoy et al, 2009) (Tsu-Yin Wu, 2006). The model could determine the factors which are related to women's belief and attitude about BC and BC screening behaviors (Noroozi et al, 2010) (Shiryazdi et al, 2014).

Health belief model is the most widely used models to elucidate the health behaviors such as screening. According to this model, women's perceived seriousness and susceptibility of diseases, perceived benefit and barriers of taken an action for prevent from the diseases, and women health motivation and confident about own health could determine women decision and action toward the healthy behaviors (Aflakseir and Abbasi, 2012).

The origin of this theory was belonged to the 1950s by social psychologists in the U.S. (Hochbaum, 1958; Rosenstock, 1960). When they explained the public health services which were failed to the widespread of people in recommending them to participate in programs to prevent and detect from the diseases (Glanz et al, 2008).

This model explain that if individuals care themselves as susceptible to a condition, they believe the condition would have potentially serious consequences for them, then they believe that a course of action available to them would be beneficial in reducing either their susceptibility to or severity of the condition, and believe the

anticipated benefits of taking action outweigh the barriers to (or costs of) action, they are likely to take action that they believe will reduce their risks.

2.8 Literature Review Conclusions

BC is most prevalent disease in the region. The disease could be detected in preclinical stages. The clinical stage would start with a warning sign and symptoms of BC, which were breast lump, pain, nipple discharge, nipple insertion, skin change, thickening or swelling of the breast, and dimpling of breast skin. The disease could be detected by the using screening methods in early stage. Women are supposed to use the screening methods as preventive health behavior in the preclinical stage, and as early diagnosis when women feel there is some of the warning signs. Utilizing of these screening methods (BSE, CBE, and mammography) were not introduced well. This section of the study illustrates that women in developing countries less frequently use the screening methods or they delay (in average 3 months) in the utilization when they feel the warning signs. According to studies in this review nearly 15- 57% of women practice BSE. In concerning to mammography, only 10-44% of women undergone the mammography in their life either for screening or for diagnosis. There was not ample data about the purpose of participating in a screening program.

The difference rate of utilizing of screening methods in the countries would be related to socioeconomic, and health systems. Initially socioeconomic, medical, and health condition of women would determine the utilization of screening methods. From another side the relation of these initial variables with screening utilization could be mediated by the women's knowledge about BC. Women in different socioeconomic and health conditions have difference opportunity to be aware about BC in term of risk factor, sign and symptoms, severity, and screening methods.

As well as knowledge about BC had related to utilizing of screening methods. Generally, women's knowledge about BC in the developing countries is not sufficient. As we mentioned earlier, in Saudi Arabic study; only 5% had a good general knowledge of BC and 14.6% had a very poor knowledge. Regarding to awareness and screening methods, many studies revealed on that, less women aware about the screening methods. This low knowledge could be determined as the barrier to lower rate of screening utilizations. Because women knowledge influence of women's belief regarding to the seriousness of the disease, enhance perceived susceptibility, and perceived benefit of screening methods and health motivation.

Other barriers of screening method may be related to personal factors (women's belief and psychological factors). Fear from the detecting BC, treatment and long hospitalization, fear of cancer, mastectomy and death, lack of financial resources, life priorities and placing family above their own needs were all perceived differently by the women. In this concerning, health belief model were the most widespread theory to investigate women perceived about BC and screening methods. *(Explained in figure 1)*.

From interventional point of view, health professional could have a distinct role to deal with this disease in term of prevention and treatment. Nurses are in an outstanding position to teach women on the importance of early detection of BC, this is because only a few of women actually respond the screening recommendations. Many studies argue the nursing role in the motivating and inhibiting factors that impact a woman's decision to participate screening (Crooks and Jones, 1989) (Kochanczyk, 1982). A study describes the nursing role in enhancing screening program in two aspects, first, teaching women about screening guidelines, the benefits and limitations of screening, and risk factors for BC, and second, helping women to reduce or eliminate barriers to screening (Houfek et al, 1997). Apart of that there are some studies that explain role of nursing in CBE. In a study, nurse clinicians can effective detect the suspect cases as is examined by surgeons, nurse could effectively detect 45% of cancer cases only by CBE (Moskowitz, 1979).

3. METHODS AND SUBJECTS

3.1. Method

This study was conducted in Sulaimani/Iraq as part of a PhD project, which was approved by University of Sulaimani. This study carries out under the tittle of (Utilization of Breast Cancer Screening Methods Among Women in Sulaimnai City). Nearly two million population lives in this area, mostly residing in the center of the city or suburban area; 15 districts. In 2008, nearly 365,993 women aged more than 20 years old lived in this area (Majid et al, 2009). The aims of this study were to find out the utilization rate of screening methods among women's in Sulaimani. The number of women who practice BSE, and visitors to the health center to utilizing the CBE or mammography. As well as, the study has been conducted to determinants of the utilization screening methods and their barriers. The Breast Disease Treatment Center (BDTC) as the only center for early detection and treatment of other minority breast disorders in the center of the city and another two health centers in Sulaimani and Darbandikhan; as the district, were selected for collecting data regarding the study objectives.

3.2. Study Setting

The BDTC has launched since 2007 in Sulaimani province. This center have proceed both programs, the early diagnosis and treatment program, and screening program. Women visitors of this center include healthy women who were screened participants and women with minor breast disorder who visit to early diagnosis and treatment. Healthy women, and women with minor breast disorders were recruited to this study. The center composed of the 4 doctor’s office, 1 nursing office, ultrasound and mammogram, lab for final needle aspiration FNA and core biopsy, with administrative staff. The visitor, women of this center were registered and had cased sheet file for follow up and treatment. A convenience sample from the BDTC and other two health center's from Urban and Suburban area were subjected to this study, Ali Kamal Counselling Health Center and Darbandikhan Health Center.

3.3. Screening Models Of The Program

Screening tools in this model are based on CBE, sonography and mammography, and confirming test such as FNA or core biopsy. Depend on model programs, healthy women aged equal or more than 40 years old would have been

recommended for annual or biannual mammography screening. As well as, healthy women aged 35- 40 year and presented with first family history of BC or nullipara similarly have been recommended for annual or biannual mammogram screening. Apart of those above, women with minor breast disorder such as lump, mass, skin dimpling, nipple discharge, would be examined by sonography, then positive sonography will recruit to mammography screening.

3.4. Background Of Screening Program In Kurdistan (BDTC)

During the screening period, from June 2007 to August 2016 there were in total 100,769 first and second visits, of which 40,491 were the first visits of eligible women, and the remaining were for the second screening round or for women who were not eligible for the screening [Appendix B]. From 2013 to August 2016, 53,121 women were screened either in the first round or second and/or more screening rounds. From 2008 to August 2016, 35,454 ultrasounds were performed while 18,083 mammograms were taken from 2009 to August 2016. From 2013 to August 2016, 967 core biopsies were done. A total of 793 women was diagnosed with BC.

The most minor breast disorders of visiting women in this center were breast pain, followed by feeling a lump and the presence of breast discharge. While, a less number of women visited the center only for routine screening. [Appendix C]. In this screening model most participants were young. The overall mean age of screened women at the time of participation was 38.46 ± 10.29 years. Most of the women were married and lived in the center of the city [Appendix D].

3.5. Research Design

This is a descriptive- analytical study, which was conducted on healthy women and women with minor disorder of the breast. A prepared questionnaire was used to interview the participants. Any women who visited selected health centers were eligible to participate in this study. The study was conducted by using cross- sectional design in Breast Disease Treatment Center, Ali Kamal Counselling Health Center and Darbandikhan Health Center.

3.6. Sampling Method Or Techniques

A convincing sampling method was used in this study, non-probability (purposive) sample of 750 women were recruited to the study. In order to we have sufficient number of women who use the CBE for screening or diagnosis, we select

BDTC, because in this center, we could interview high proportion of healthy women who visit the center for screening and visited the center for miner disorder of breasts. From another side, we selected two another health center to find out a good proportion of women who never visit the center or clinic.

Two hundred seventy three women were interviewed from the visited women to BDTC, and 477 women from other health centers, Ali Kamal counselling health center and the Darbandikhan health center recruit to the study. First, to achieve first study objective, we calculate the participation rate of each screening method among surveyed women, sample women group who recruited from the health centers (Ali Kamal health center and Darbandikhan health center). Participate rate was computed by the percentage of women who practice or utilizing screening methods in surveyed women. To achieve other study objectives regarding to reasons and barriers of utilizing screening method and we analyze data based on three sample groups, women who never visited screening center or clinic in their life, visited the center or clinic for diagnosis (minor breast disorder) and visited the center only for screening. Patient delay was measured for women with minor breast disorder, and find out its association with independent variables (e.g. Socioeconomic and medical and health condition). From other hand, to find out the barriers and reason of screening participation, comparison analysis for independent variable was made among women who participated in the screening and those who never visited the center

3.6.1. Variables

Variables related to study questions were taken to this study. Study questions in this research were regarded to the participation rate of utilizing screening methods among study population, the reason of utilizing screening methods, and the barriers of screening methods in healthy women and women with minor breast disorder. Research variables were arranged according to the pathways of research concept and their relations were found. More explained in the Figure 1.

3.6.1.1. Dependent variables

The utilizing of screening methods, patient delay, and barriers of utilizing screening methods were computed as dependent variables.

3.6.1.2. Independent variable

1. Socioeconomic, medical and health background characteristics were obtained as independent variables in relation to the utilizing screening methods, patient delay, knowledge, attitude toward BC, and barrier of utilizing screening methods. *More explained in the Figure 1*

2. Knowledge about BC , attitude toward BC and barriers of screening methods were computed as independent variables in relation to the utilizing of screening method and patient delay. *More explained in the Figure 1*.

3.7. Participants

Any woman who lives in the research area (Sulaimani province) were expected to be participated in this study, except immigrant women - other women from the middle and the south Province of Iraq and Syria) who live in the province. According to screening model in Kurdistan and Iraq women aged more than 20 recommended to practice BSE monthly. And women age more than 30 are recommended to participate in screening program, visit health center for CBE. As well as, any women who presented with minor breast disorders have been recommended to visit the center for early diagnosis.

Any women aged more than 20 year who visited our selected area during November 20, 2016 to June 14, 2017 was eligible to recruit to this study. Women who gave oral consent and meet inclusion criteria were eligible.

3.7.1. Data collection

Data was collected based one structured questionnaire, interview was made to data collection. Each interview was mainly last 20 -25 minutes. Each woman who visited select area had equal change to be recruited to the study.

3.7.1.1. Inclusion criteria

Healthy women and women with breast minor disorder aged more than 20 years who given oral consent were included to the study.

3.7.1.2. Exclusion criteria

Women who diagnosed as at any stage of BC, immigrant women, and women with mental disorder were excluded from this study.

3.8. Tools Of Data Instruments

The questionnaire form of this study encompassed of 129 questions, which consisted of three parts. (Appendix E)

Part one includes the questions regarding to socio-demographic, obstetric, and screening behavior data on participant. Furthermore, socio-demographic, reproductive, contraceptive use, family history of BC, a lifestyle, screening participation, describe of breast abnormality, reason for participating and a source of information about screening method were addressed in this section of the questionnaire.

Part two was concerned about knowledge of and awareness about screening methods. Awareness measure (Breast CAM version 2) was directly applied as a tool for this concerning. In this instrument, all information regarding to screening, sign and symptoms, and risk factor was directed in order to measure the knowledge of the participant.

Part three was concerned to barrier to utilizing the screening method, and participant attitude toward and its prevention therapy (screening). Champion's Health Belief Model Scale (CHBMS) was catered in this section of the questionnaire. This instrument questioned about participant's attitude regarding to perceive toward seriousness and susceptibility of, cue to action (motivation) and confidentiality of participant toward therapy (screening), and participant's belief about each screening method and their barriers.

3.8.1. (Breast CAM version 2)

It is contractual instrument, was used to measure knowledge of women about and screening test in many studies in the region (Mostafa A. Abolfotouh, 2015). Breast CAM version 2 of this study was consisted of a subscales screening test (5 items), nature of (5 items), warning signs of (7 items) and risk factors and health behavior (12 items). Breast CAM version 2 is 3 likert scoring systems. The answer of each item includes the (yes), (no), and (I don't know), only the true answer scored 1, I don't know considered false and scored zero score.

3.8.2. Champion's Health Belief Model Scale (CHBMS)

It is a standard wide used instrument in many difference culture, it is translated to many languages in the area (Abolfotouh et al, 2015),(Dundar et al, 2012). This

instrument in this study was consists of 10 concepts: perceived seriousness of illness (5 items), perceived susceptibility to illness (3 items), health motivation (5 items), confidence in one's ability (6 items), perceived benefits of BSE (4 items), perceived barriers of BSE (4 items), perceived benefits of mammography (5 items), perceived barriers of mammography (9 items), perceived benefits of CBE (3 items), perceived barriers of CBE (6 items). The first four concepts (subscales) measured the women's attitude regarding to BC. Similarly next 6 subscale measured women attitude toward benefit and the barriers of utilizing screening methods (BSE, CBE, and mammography)

3.9. Data Management And Analysis

The data was managed and analyzed by using descriptive and inferential statistics by using SPSS program version 22

The data were analyzed through the application of descriptive statistic, frequency and percentage, median and interquartile range (IQR), and mean and standard deviation (SD). Frequency and percentage of utilizing screening methods were computed across socioeconomic, medical and health variables. Median and IQR of patient delay has found out in socioeconomic, medical and health variables. The mean and SD of breast CAM score and the Champion HBM score was measured in socioeconomic, medical and health variables.

The application of inferential statistical procedures which include chi square test, Kruskal_Wallis Test, independent T-test, analysis of variance (ANOVA), Spearman's correlation coefficient, person correlation coefficient, and binary logistic regression. Statistical level of significant was computed based on, P-value ≤ 0.05.

Chi-square was used for the test of association of demographic and medical and health condition variables in relation with the utilizing of screening method (BSE, CBE, and mammography)

Kruskal_Wallis Test was utilized in testing the different median of patient delay across demographic and medical and health condition variables.

Independent T-test and analysis of variance (ANOVA) were used to test significant association of knowledge, women's attitude toward BC, and perceive of utilization the screening methods with socioeconomic, medical and health variables. The meaning

(breast CAM) and (Champion HBM) were tested across the socioeconomic, medical and health variables.

The Spearman's correlation coefficient was used to test the relation of patient delay with (breast CAM), and (Champion HBM).

Person correlation coefficient was used to test the relation of (breast CAM) with (Champion HBM)

Binary logistic regression was made to test the model for all independent variables (socio economic, medical and health background, knowledge about , attitude about and belief about utilizing screening methods) in relation with dependent variable utilizing screening methods (BSE, CBE, and mammography). As well as binary logistic regression to find out the indicators of more that 3 months patient delay.

3.10. Administration Arrangement

Research protocol was reviewed and approved by both scientific and ethical committees of college of medicine/University of Sulaimani. The official permission was given by Sulaimani Directorate of Health for collecting data from Breast Disease Treatment Center, and both health center Ali-Kamal Counselling Center and Darbandikhan Health Center (Appendix F1 and F2). In addition, oral permission or consent was taken from each woman as voluntary participation in the study.

Subject welfares:

Patient chart number, no names (confidential).

Data kept in a secure place, not access other than the researcher.

Data is grouped so no one can be individually identified in the results.

3.11. Pilot Study

A 158 questions were designed for pilot study. Both healthy women and women with minor disorder were included in piloting study. A Pilot sample of the study has been conducted

1 – To determine the time needed to collect data.

2 – To find the problems and barriers facing during data collection.

3 - To find wrong or missed questions that were important for our study and we missed.

Content validity and reliability of the questionnaire were determined through a pilot study. Validity was obtained through expertise's panel (Look Appendix A). And consistency reliability was based on a sample of 50 women during piloting and sample were computed to data analysis in this study.

3.11.1. Validation:

A questionnaire was sent to 13 expertise with different careers in the collaboration with the research topic and expertise in the field (Appendix G). Their comment and suggestions were taken in intention for correcting the questionnaire. Content validity of the questionnaire was taken based on their opinion and revision they had.

3.11.2. Reliability:

Reliability was obtained for subscale of (Breast CAM) and (CHBMs). (Breast CAM) was consisted of 4 subscales and 29 questions. And CHBMs was consisted of 10 subscale and 68 questions and we added 6 other questions to find consistency. A three questions were subtracted from risk factor subscale of (Breast CAM). On the other hand, 2 questions from seriousness, 2 questions from susceptibility, 2 questions form health motivation, 5 questions from confidence, 2 question from BSE benefits, 2 questions from BSE barrier, 2 questions from mammography barriers, 1 question from CBE benefits, 1 question from CBE barrier were removed, and two other questions were replaced by other questions.

We test a reliability test (Croanbach Alpha) as internal consistency for both scales. Alpha value for each subscales were (Seriousness: 84%), (Susceptibility: 83%), (Health motivation: 81%), (Confidence: 83.1%), (BSE benefits: 82%), (BSE barriers: 82.5%), (Mammography benefits: 73%), (Mammography Barrier: 79.7%), (CBE benefits76.7%), (CBE barriers: 80%). Alpha value for breast CAM was 78%. But breast CAM subscale distinctively was not having internal consistency (Alpha value was less than 75%) therefore we could not conduct the inference statistic for the difference the mean of that subscale differently.

3.12. Scoring And Measurement

Knowledge of breast cancer was based on breast CAM, this score was based 29 questions regarding to the screening, risk factor, sign and symptoms of BC. Any true answer was scored one, and total awareness was measured based on adding all

score. The highest total score on the scale (breast CAM) has shown more awareness about. As well as, each sub scale similarly was measured.

Patient delay as defined in the introduction was measured base one period of time from women's feel a warning sign of the time to visit doctor, health center or screening center. This was measured by day.

Champion HBM subscales were about women's attitude about and health motivation, and women's attitude about screening method. This scale is 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). The women's attitude was based on accumulation of each item scores in each subscale. The high score of each item shows a strong attitude of concepts (subscale) except barriers subscale which was scored inversely. A high score therefore meant that the women perceive greater susceptibility, perceived more seriousness, more health motivation and confidence, and perceived more benefits and higher barriers of BSE, CBE and mammography.

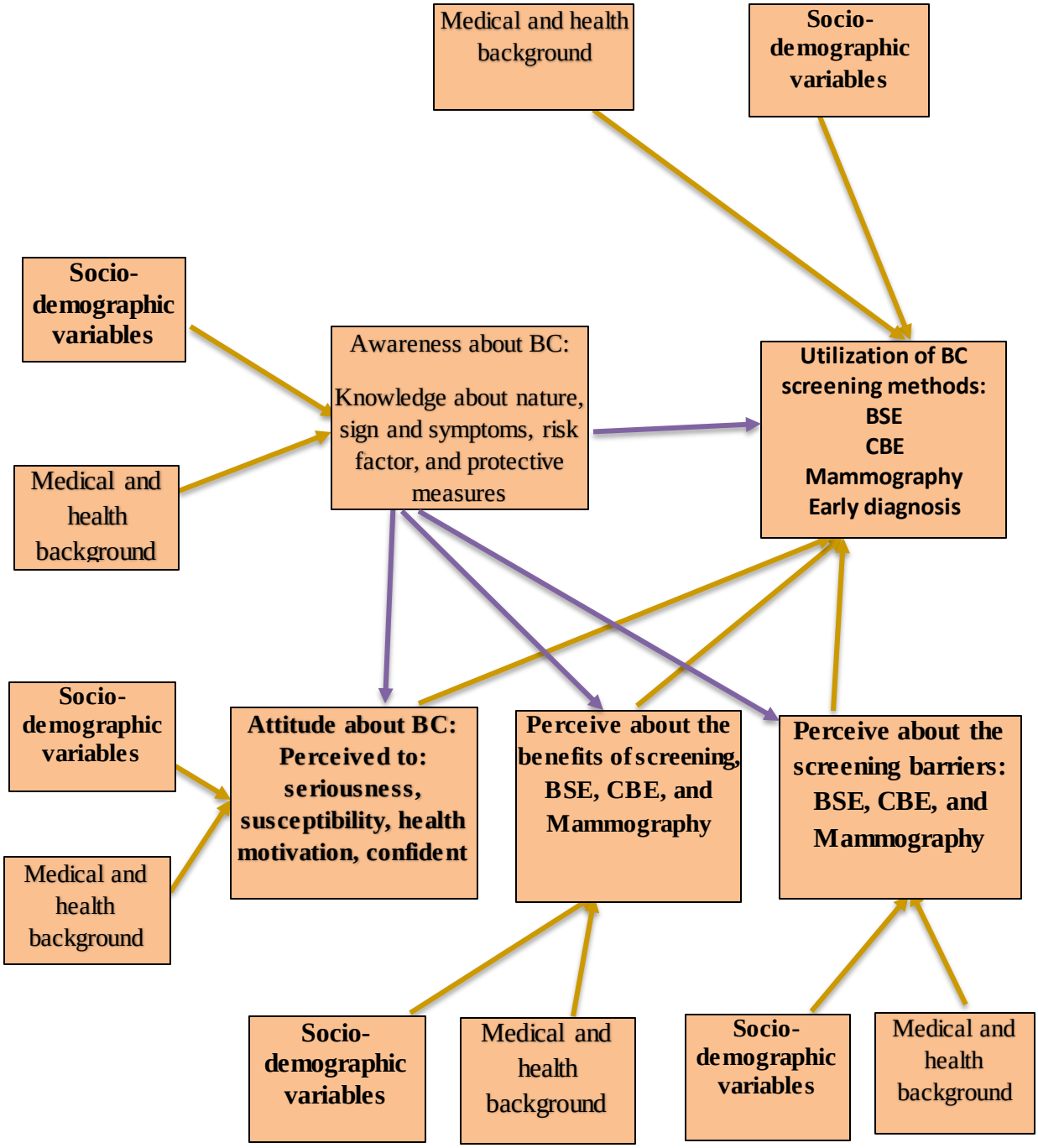
3.13. Limitation Of The Study

Most current literatures assess the mammography screening rate within two years' time interval, as well as CBE in one year time interval. While this study could not assess the utilization of these screening methods in regular time interval, instead we assessed whether women's utilized these screening methods in their life previously, and what are the purpose of utilization of these screening methods. Further, we examine the socio-demographic and health background differences among women utilizing mammography for any reasons and those who not use, and for CBE, the difference was tested among women who utilized CBE for screening in their life versus those who never use for any reasons.

Subjected bias might have occurred as a result of interviewing methods for data collection. Most women were feeling embarrassed when assess themselves in a low economic status, and some women were humiliated when they say ' I am not aware about screening method' and 'I do not do physical exercises'.

Since there was not previous studies or survey about the participation rate of screening methods in the research area, this study could not count sample size. Therefore, this study have used the convenience sampling method. As well as, in order to, we have a convince sample size, we have used the data from the screening center, the BDTC.

Figure 1: Flowchart of the concept of study questions



4. RESULTS

This chapter was based on the analysis of data which were collected from 750 women in urban and suburban area in the Sulaimani city. The data in this study were arranged in five sections. The first section was about the description of the study population and the definite reasons for utilizing of screening methods. The second section have elucidated the relation of socioeconomic and medical background of women with the utilizing of screening methods. The third section has determined the women's awareness and its relation with the utilizing of screening methods. The fourth section was about demographic and medical relation to the women's attitude about BC. Last section explains the women perceive about screening method and utilizing the screening methods.

4.1 Description Of Study Population

4.1.1 Socio economic description of study population

750 women were recruited from 2 difference places. Table 1 shows that 273 (36.4%) women was recruited to the study from screening center (BDTC) and 477 (63.6 %) of women was selected from the other two health centers.

Table (1): Distribution of the study sample according to the place of data collection

Place of data collection	Frequency (n)	Percentage (%)
Screening center	273	36.4
Primary health center	477	63.6
Total	750	100.0

Age distribution of study participant has been shown in Table 2. Mean age of study participant was 40.9± 9, and nearly more than half of the participants 426 (56.8%) was aged more than 40 years, 235 (31.3%) was in the age group 30-39 years old, and 89 (11.9%) was in the age group 20-29 years.

Most women in this study 493 (65.7%) were unemployed (housewife), and the rest 257 (34.3%) was employed or self-employed. Most women were in the primary level of education 218 (29.1%) and the secondary level 265 (35.3%). Uneducated was 89 (11.9%), and Bachelor and above degree was 70 (9.3%). Most husbands were in the primary level of education 186 (28.7 %) and secondary level 252 (38.8%). Uneducated was 64 (9.9 %), and bachelor and above degree was 64 (9.9 %). Participation in this study were mostly living in the center of urban (Sulaimani) 586 (78.1%). Most of the women were married 598 (79.7%), and few of the participants were being single 84 (11.2%).

Another variable of study research was economic. This study showed that most women perceive barely sufficient of their economic status 383 (51.1%), and perceived insufficient economic status was 181 (24.1%).

Table (2): Distribution of the study sample according to the socio-demographic characteristics

Age group	**Frequency (n)**	**Percentage (%)**
Age 20-29 years	89	11.9
Age 30-39 years	235	31.3
Age 40 and above	426	56.8
Total	750	100.0
Mean of age ± SD	40.9± 9	
Occupation status		
Employed	257	34.3
Unemployed	493	65.7
Total	750	100.0
Education levels		
Uneducated	89	11.9
Primary	218	29.1
Secondary	265	35.3
Diploma	108	14.4
Bachelor and above	70	9.3
Total	750	100.0
Education level of husband		
Uneducated	64	9.9
Primary	186	28.7
Secondary	252	38.8
Diploma	83	12.8
Bachelor and Above	64	9.9
Total	649	100.0
Place of residence		
Urban (Sulaimani)	586	78.1
Suburban (District)	163	21.7
Total	749	99.9
Marital Status		
Divorce	28	3.7
Married	598	79.7
Single	84	11.2
Widowed	39	5.2
Total	749	100.0
Self-perceived of economic status		
Barely Sufficient	383	51.2
Insufficient	181	24.1
Sufficient	184	24.5
Total	748	100.0

4.1.2 Medical and obstetric characteristic of study population

Medical background or health conditions of the study participants such as smoking, contraceptive use, lactation and family history of BC have been studied (Table 3). In average women's mean of gravida was 3.9± 2.3. Almost 233 (35.3%) of women gravida was 5 or more, and nulligravida was 36 (5.5%). Similarly, in average women's mean of para was 3.2 ±1.9, and almost 140 (21.2%) of women had 5 or more children and few of the women was nulliparous 43 (6.5%). Nearly half of women have not presented with abortion and death 363(48.4%). This study showed that almost 552 (73.6%) women were lactated women. As well as a mean of the lactation period among breast feeding women was 4.98 ± 4, and in average women breast feed the 3.23±1.8 children.

Table (3): Distribution of the study sample according to the reproductive history

Variables	Frequency (n)	Percentage (%)
Gravida groups		
Nullgravida	36	5.5
primigravida	37	5.6
2 Gravida	111	16.8
3 Gravida	122	18.5
4 Gravida	121	18.3
5 Gravida and More	233	35.3
Total	660	100.0
Parity		
Nulliparous	43	6.5
1 para	62	9.4
2 para	141	21.4
3 para	160	24.2
4 para	114	17.3
5 para and more	140	21.2
Total	660	100.0
Abortion and death baby		
Not eligible (single) or missed data	93	12.4
More than 2 abortions	98	13.1
More than 2 Death	13	1.7
More than one abortion and death	14	1.9
No Abortion and Death	363	48.4
One Abortion	133	17.7
One Death	36	4.8
Total	750	100.0
Lactated women		
Not eligible or missed data	91	12.1
No	107	14.3

Yes	552	73.6
Total	750	100.0
Mean of gravida ± SD	3.9± 2.3	
Mean of para ± SD	3.2 ±1.9	
Mean of lactation period± SD (years)	4.98 ± 4	
Mean of children lactated ± SD	3.23±1.8	

Table 4 demonstrated that most of the women 541 (72.1%) use contraceptive to prevent the pregnancy, mean of using the contraceptive in years was 3.2 ±1.9. From another side, mean of age at first delivery was 22.94 ±5.3 in women. In this study, women mostly use natural method 240 (32%), and contraceptive (barrier) 142 (18.9%). Almost 108 (14.4%) of women was present of family history of BC. Furthermore, the percentage of women presented with a first degree family history was 36 (4.8%), and second degree family history was 80 (10.7%). In our study, 46 (6.1%) women were smoker, but most women were passive smoker, 316 (42.1%).

Table (4): Distribution of the study sample according to health related behavior

Variables	**Frequency (n)**	**Percentage (%)**
Use of contraceptive		
Not eligible	93	12.4
No	116	15.5
Yes	541	72.1
Total	750	100.0
Contraceptive methods		
Not contraceptive use	203	27.1
Natural method	240	32.0
Barrier methods	142	18.9
Oral contraceptive pill	85	11.3
Barrier and oral contraceptive pill	80	10.7
Total	750	100.0
BC family history		
No Family history of BC	642	85.6
Family history of BC	108	14.4
Total	750	100.0
First degree family history	36	4.8
Second degree family history	80	10.7
Smoking		
Not smoker	385	52.5
Current smoker	46	6.1
Passive smoker	316	42.3
Total	747	100.0
Mean of use of contraceptive ±SD (years)	3.2 ±1.9	
Mean age at first delivery child ± SD	22.94 ±5.3	

4.2 Socioeconomic And Medical Description Of Utilizing Screening Methods

Socioeconomic and medical variables in this study were set up as basic determinants of utilizing the screening methods. Findings regarding to the relations of these variables with utilizing all screening methods (BSE, Participation in screening CBE, and mammography) were cross tabled in this section.

In Table 5 the frequency and percentage of women who practicing the screening methods in the general population have shown. Among 477 women who interviewed in two health centers 65 (13.6%) women practice BSE regularly, 228 (47.8%) practice BSE rarely and 184 (38.6%) never practice BSE. In regards to the utilizing CBE, among women age more than 30 years and above, 40 (9.5%) of women visited clinic or screening center in their life once or more for screening, 138(32.2%) of women visiting center for diagnosis their minor breast disorder and 246 (58.3%) never visiting any clinic or screening center. Regarding to mammography, 62 (23.6%) had a mammography in their life once or more.

Table (5): Screening participation (utilization) rate among study sample

Screening methods	Frequency	Percentage
Practice _BSE		
Never practice	184	38.6
Practice rarely	228	47.8
Practice regularly	65	13.6
Total	477	100
Screening participation (Utilization of CBE)		
Never participation	246	58.3
Participate for diagnosis	138	32.2
Participate in screening	40	9.5
Total	422	100
Have mammography		
Yes	62	23.6
No	201	76.4
Total	263	100

Description of frequency of practicing screening methods and age of practicing have shown in table 6. The median and (IQR) of the age of onset of practicing BSE was 38.0(14), and women mostly practice BSE 4 times in the last month. Regarding to CBE,

the median and (IQR) of participation was 38 (13), and median of frequency of participation in their long life was 2 (3). Similarly for mammography, women's median and (IQR) of age of participating was 43(14) and a median of frequency was 1 (1).

Table (6): Onset (age of practice) of screening method and quality of practicing (frequency of practice) among the study sample

Screening methods	Frequency (n)	Median and IQR
Frequency of BSE in six months	512	4.0 (4)
Age at practice BSE (years)	461	38.0(14)
Frequency of CBE in their life	462	2 (3)
Age at practice of CBE (years)	425	38 (13)
Frequency of Mammography in their life	167	1 (1)
Age at practice of Mammography (year)	167	43(14)

Among those practice BSE, there is different reasons or purposes for the practicing BSE. The frequency of the reasons of practicing of the BSE was shown in Table 7. Nearly half of women practice the BSE to know any change in their breast 229 (45.7%), and a quarter practiced BSE to know the change in the breast and have fear of BC. In this study, many women have utilized the CBE for diagnosis their minor breast disorder. More than half women presented with breast pain 204 (57.8), a mass 23(6.5), and pain with mass 61 (17.3). And other breast disorders which were reported were increased breast size, skin change, nipple discharge and insertion.

Table (7): Distribution of the study sample according to reason to practice of BSE

Variables	Frequency	Percentage
Reason to practice BSE		
To do BSE regularly and know changes in the breast	12	2.4
I have a family history of BC	27	5.4
Doctors advise	32	6.4
To know the change in breast and it is physian advise	37	7.4
To know the change in my breasts	229	45.7
To know the change in the breast and may affect BC	127	25.3
I have Pain	37	7.4
Total	501	100
Reason for utilizing CBE		
Pain	204	57.8
Pain with mass	23	6.5
Mass	61	17.3
Skin changes	13	3.7

Increase breast size	18	5.1
Nipple discharge	19	5.4
Nipple insertion	1	0.3
Abscess in breast	14	4.0
Total	353	100.0

4.2.1 Utilizing of BSE

Breast self- examination was one of screening methods. Women aged more 20 years were recommended to this screening behavior monthly. Utilizing this very beginning screening method was varied across women in different socioeconomic status and health condition.

4.2.1.1 Socioeconomic indicators of utilizing (BSE):

The practice of BSE has been determined per socioeconomic status in this study. Table 8 showed the BSE performance among women versus socioeconomic characteristic. In this study 238(31.7%) of women were never practicing BSE, and 377(50.3%), 135(18.0%) of women were rare or regularly practice BSE respectively. Among socioeconomic variables, secondary education and having a job (employed) were significantly associated with the regular performing of BSE, statistical analysis was (X^2 = 6.7, P-value= 0.04) and (X^2 = 6.29, P-value= 0.04) respectively. Never practice of BSE examination was higher among women aged less than 40 years 83(35.3%), urban residence 189(32.3%), single 32(38.1), sufficient self-perceived economic status 67(36.4%), but statistical differences were not observed.

Table (8): Relationship between practices of BSE with socioeconomic of characteristic of the study group

Variables	Practice _ BSE			Chi-Square	P – value
	Never n (%)	Rarely n (%)	Regularly n (%)		
Age group					
Age 20-29 years	31(34.8)	44(49.4)	14(15.7)	6.07	0.193
Age 30-39 years	83(35.3)	104(44.3)	48(20.4)		
Age 40 and above	124(29.1)	229(53.8)	73(17.1)		
Total	238(31.7)	377(50.3)	135(18.0)		
Education levels					
Uneducated	36(40.4)	48(53.9)	5(5.6)	16.12	0.041
Primary	64(29.4)	114(52.3)	40(18.3)		
Secondary	89(33.6)	119(44.9)	57(21.5)		
Diploma	31(28.7)	56(51.9)	21(19.4)		

Bachelor and above	18(25.7)	40(57.1)	12(17.1)		
Education levels of husband					
Uneducated	21(32.8)	37(57.8)	6(9.4)	10.31	0.24
Primary	51(27.4)	103(55.4)	32(17.2)		
Secondary	86(34.1)	120(47.6)	46(18.3)		
Diploma	22(26.5)	44(53.0)	17(20.5)		
Bachelor and above	19(29.7)	28(43.8)	17(26.6)		
Place of residence					
Urban (Sulaimani)	189(32.3)	297(50.7)	100(17.1)	1.28	0.526
Suburban (District)	49(30.1)	80(49.1)	34(20.9)		
Total	238(31.8)	377(50.3)	134(17.9)		
Marital Status					
Married	185(30.9)	303(50.7)	110(18.4)	2.87	0.82
Widowed	12(30.8)	20(51.3)	7(17.9)		
Single	32(38.1)	38(45.2)	14(16.7)		
Divorce	9(32.1)	16(57.1)	3(10.7)		
Occupation					
Employed	70(27.2)	130(50.6)	57(22.2)	6.29	0.043
Unemployed	168(34.1)	247(50.1)	78(15.8)		
Self perceived -economic status					
Insufficient	56(30.9)	95(52.5)	30(16.6)	4.3	0.36
Barely Sufficient	113(29.5)	201(52.5)	69(18.0)		
Sufficient	67(36.4)	81(44.0)	36(19.6)		

4.2.1.2 Medical and health conditions determining of utilizing (BSE):

Obstetric, medical, and health behaviors of women were taken as another initial indicator for practicing this screening behavior in this study. The relation of these variables with the utilizing of BSE was one of the study questions. Findings in Table 9 showed the association of obstetric, medical and health behaviors with the utilizing of BSE. In this study a significant association was found between the positive BC history (X^2 = 23.0, P-value= 0.00) especially second degree family history (X^2 = 21.5, P-value= 0.00), women lactation (X^2 = 6.4, P-value= 0.04), smoking (X^2 = 20.1, P-value= 0.00), utilizing CBE (X^2 = 85.6, P-value= 0.00), and having past minor disorder(X^2 = 34.3, P-value= 0.00) with the practice of BSE. Higher percentage of never practice BSE was found in women who not have a BC family history 221(34.4%), especially second degree family history 227(33.9%), not lactated women 77(38.9%), not smoker 230(32.8%), not utilizing CBE either for

screening or for treatment 142(49.3%), and not have had past minor breast disorder 173(40.0%). Similarly, the high regular BSE practice was found in women who have BC family history 9(25%), especially second degree family history 27(33.8%), lactated 102(18.5%), smoking 19(41.3%), utilizing CBE for screening 37(33.9%), have past minor breast disorders 74(23.3%).

Utilizing a regular BSE method were found in women who have 3 or 4 children 35(21.9%), not use contraceptive 38(18.2%), not done any breast surgery 128(18.2%), and not have any chronic diseases 107(19.1%). But these differences were not statistically significant.

On the other hand, never the practice of BSE was mostly found in women who nullipara 48(36.1%), not use contraceptive 76(36.4%), not done breast surgery 229 (32.5%), having chronic diseases 64(34.0%). While this association was statistically not significant.

Table (9): Relationship between practice of BSE and medical and health characteristic of the study sample

Variables	Practice _ BSE			Chi-Square	P – value
	Never n (%)	Rarely n (%)	Regularly n (%)		
Women parity					
Nulpara	48(36.1)	62(46.6)	23(17.3)	8.7	0.55
1 para	22(35.5)	29(46.8)	11(17.7)		
2 para	47(33.3)	73(51.8)	21(14.9)		
3 para	44(27.5)	81(50.6)	35(21.9)		
4 para	29(25.4)	60(52.6)	25(21.9)		
5 and more	48(34.3)	72(51.4)	20(14.3)		
Total	238(31.7)	377(50.3)	135(18.0)		
Contraceptive use					
Yes	162(29.9)	282(52.1)	97(17.9)	3.2	0.19
No	76(36.4)	95(45.5)	38(18.2)		
Family history of Breast Cancer					
Yes	17(15.7)	57(52.8)	34(31.5)	23.0	0.000
No	221(34.4)	320(49.8)	101(15.7)		
First degree Family history					
Yes	8(22.2)	19(52.8)	9(25.0)		

No	230(32.2)	358(50.1)	126(17.6)	2.15	0.34
Second degree Family history					
Yes	11(13.8)	42(52.5)	27(33.8)	21.5	0.00
No	227(33.9)	335(50.0)	108(16.1)		
Lactation					
Yes	161(29.2)	289(52.4)	102(18.5)	6.4	0.04
No	77(38.9)	88(44.4)	33(16.7)		
Smoker					
Yes	6(13.0)	21(45.7)	19(41.3)	20.1	0.00
No	230(32.8)	355(50.6)	116(16.5)		
Participating in Screening (Utilization of CBE)					
Not participate	142(49.3)	122(42.4)	24(8.3)	85.8	0.000
For screening	15(13.8)	57(52.3)	37(33.9)		
For diagnosis	81(22.9)	198(56.1)	74(21.0)		
Breast surgery					
Done	9(19.6)	30(65.2)	7(15.2)	4.6	.0960
Not done	229 (32.5)	347(49.3)	128(18.2)		
Have chronic diseases					
Yes	64(34.0)	97(51.6)	27(14.4)	2.23	0.328
No	174(31.0)	280(49.9)	107(19.1)		
Referring to screening					
Self-referred	55(19.0)	162(56.1)	72(24.9)	0.81	0.937
Health staff	21(20.0)	56(53.3)	28(26.7)		
Relative	4(23.5)	10(58.8)	3(17.6)		
Total	80(19.5)	228(55.5)	103(25.1)		
Minor disorder past history					
Yes	65(20.5)	178(56.2)	74(23.3)	34.3	0.000
No	173(40.0)	199(46.0)	61(14.1)		

4.2.2 Participation in screening (utilizing CBE)

CBE is the main method of screening methods. Utilization of CBE for screening purpose has defined as screening participation. According to the Kurdistan model (Sulaimani), women aged more 30 years have been recommended to participate in screening annually or utilizing the CBE for screening. In this study, among 661 women aged more than 30 years who participated in this study, 104 women had participated in the screening (utilizing CBE for screening purpose).

4.2.2.1 Socioeconomic determinants of participation in screening (CBE)

Table 10 showed the socioeconomic differences in the women participated in screening and never utilized CBE. The current study showed that there was a significant association between occupation (X^2 = 11.7, P-value= 0.00), education level (X^2 = 17.3, P-value= 0.002), and husband education level (X^2 = 25.5, P-value= 0.00), with participation in screening. Participation in the screening were mostly more among women who employed, 55(40.1%), and participation in the screening has gradually been increased with increasing education level and education of the husband. Among women educated level were bachelor or above, 15(51.7%) participated in screening, and among women, their husband education level was bachelor or above, 19(67.9%) have participated in screening.

Participation in screening was highest among women who aged more 40 years 67(31.0%), resident in urban (Sulaimani) 90(31.1%), widowed 10(43.5%), self-perceived sufficient economic status 67(31.0). Meanwhile none of these rates were significantly different.

Table (10): Relationship between screening participation (CBE) and socioeconomic characteristics of the study group

Variables	Participate in screening (CBE)		Chi-Square	P – value
	No	Yes		
Age group				
Age 30-39 years	97(72.4)	37(27.6)	0.46	0.49
Age 40 and above	149(69.0)	67(31.0)		
Total	246(70.3)	104(29.7)		
Occupation				
Employed	82(59.9)	55(40.1)	11.7	0.00
Unemployed	164(77.0)	49(23.0)		
Education level of women				
Uneducated	39(81.3)	9(18.8)	17.3	0.002
Primary	75(78.9)	20(21.1)		
Secondary	89(70.1)	38(29.9)		
Diploma	29(56.9)	22(43.1)		
Bachelor and above	14(48.3)	15(51.7)		
Husband Education level				
Uneducated	29(80.6)	7(19.4)	25.5	0.000
Primary	64(80.0)	16(20.0)		

Secondary	83(70.9)	34(29.1)		
Diploma	23(63.9)	13(36.1)		
Bachelor and above	9(32.1)	19(67.9)		
Total	208(70.0)	89(30.0)		
Place of Resident				
Urban (Sulaimani)	199(68. 9)	90(31.1)	2.1	0.14
Suburban (District)	47(78.3)	13(21.7)		
Marital Status				
Married	188(70.9)	77(29.1)	3.79	0.285
Widowed	13(56.5)	10(43.5)		
Single	33(68.8)	15(31.3)		
Divorce	12(85.7)	2(14.3)		
Perceived economic status				
Insufficient	63(76.8)	19(23.2)	2.4	0.30
Barely Sufficient	120(69.0)	54(31.0)		
Sufficient	62(66.7)	31(33.3)		

4.2.2.2 Medical and health determining of participation in screening (CBE)

Table 11 showed medical and health characteristics versus the screening participation. The current study showed that there was a significant association between BC family history and participation in screening. Participation in screening was significantly higher in women who present with a BC family history 29(60.4%), (X2 = 25.1, P-value= 0.00). This finding was same for the first degree family history and second degree. High participation in screening was found in women who have 2 or 3 children 23(36.5%), not lactated 35(33.0%), not have chronic diseases 80(31.9%), and not smoker 99(29.9%). But these rates was not statistically significant

Table (11): Relationship between screening participation (CBE) and women's health characteristic

Variables	**Participate in screening (CBE)**		**Chi-Square**	**P – value**
	No (%)	**Yes (%)**		
Women parity				
Nulparity	49(67.1)	24(32.9)	4.3	0.505
1 para	14(63.6)	8(36.4)		
2 paras	40(63.5)	23(36.5)		
3 paras	49(73.1)	18(26.9)		

4 paras	42(72.4)	16(27.6)		
5 paras	52(77.6)	15(22.4)		
Total	246(70.3)	104(29.7)		
Lactation				
Yes	175(71.7)	69(28.3)	0.79	0.373
No	71(67.0)	35(33.0)		
Smoking				
Yes	13(72.2)	5(27.8)	0.03	0.84
No	232(70.1)	99(29.9)		
Contraceptive use				
Yes	169(70.7)	70(29.3)	0.33	0.56
No	71(67.6)	34(32.4)		
BC family history				
No	227(75.2)	75(24.8)	25.1	0.000
Yes	19(39.6)	29(60.4)		
BC first family history				
No	242(73.6)	87(26.4)	28.0	0.000
Yes	4(19.0)	17(81.0)		
BC second family history				
No	231(72.4)	88(27.6)	7.8	0.005
Yes	15(48.4)	16(51.6)		
Have chronic diseases				
Yes	75(76.5)	23(23.5)	2.39	0.151
No	171(68.1)	80(31.9)		

4.2.3 Mammography Utilizing in women

Mammography is one of the screening methods which recommended for women aged more than 40 years in the Kurdistan screening model. From another side, mammography is indicated as a diagnostic test for women presented with minor breast disorders. In the current study, among 426 women aged 40 and above, 139 (28.8%) women had done mammography either for screening or for diagnosis. Despite of that, several mammography has done for women aged below 40 years who were at risk, women present with symptoms, and BC family history. In this study socioeconomic and medical difference of women who done mammography and not done have studied.

4.2.3.1 Socioeconomic indicators of mammography

However, mammography is mostly being done for visiting women depend on physician decision after CBE in the center of the screen, but socioeconomic status of women may have related to performing the mammography. Socioeconomic relation with mammography have shown in Table 12. This study found that mammography significantly have been done by the employed women 65(38.5%), (X2 = 4.33, P-value= 0.03) and women perceived barely sufficient economic 84(38.9%), (X2 = 8.39, P-value= 0.015). The study found the percentage of women who done mammography were increased with increasing education and education of their husband level but this relation was not statistically significant. Similarly; the percentage of women who have done mammography were higher in urban resident (Sulaimani) 121(34.1%), and widow 16(45.7%) or divorce 7(43.8%) women, but significant difference was not found.

Table (12): Relationship of practicing mammography and socioeconomic variables of the study group

Variables	Performing mammography		Chi-Square	P – value
	No (%)	Yes (%)		
Occupation				
Employed	104(61.5)	65(38.5)	4.33	0.037
Unemployed	183(71.2)	74(28.8)		
Total	287(67.4)	139(32.6)		
Education level				
Uneducated	49(75.4)	16(24.6)	8.49	0.075
Primary	90(68.7)	41(31.3)		
Secondary	99(69.7)	43(30.3)		
Diploma	34(58.6)	24(41.4)		
Bachelor and above	15(50.0)	15(50.0)		
Husband education level				
Uneducated	32(66.7)	16(33.3)	7.639	0.106
Primary	84(74.3)	29(25.7)		
Secondary	93(69.4)	41(30.6)		
Diploma	33(60.0)	22(40.0)		
Bachelor and Above	16(51.6)	15(48.4)		
Total	258(67.7)	123(32.3)		
Place of residence				
Urban (Sulaimani)	234(65.9)	121(34.1)	2.05	0.152

Suburban (District)	53(74.6)	18(25.4)		
Marital Status				
Married	236(69.2)	105(30.8)	4.1	0.246
Widowed	19(54.3)	16(45.7)		
Single	23(67.6)	11(32.4)		
Divorce	9(56.3)	7(43.8)		
Perceived to Economic status				
Insufficient	84(71.2)	34(28.8)	8.39	0.015
Barely Sufficient	132(61.1)	84(38.9)		
Sufficient	70(76.9)	21(23.1)		

4.2.3.2 Medical and health determinants of mammography

Table 13 showed the medical determinates of mammography. In this study mammography were mostly done in women who practiced BSE, especially in women regular practice BSE 37(50.7%), and this difference was statistically significant (X2 = 17.4, P-value= 0.00). Findings illustrated that mammography was mostly done in women who have 2 children 19(44.2%), not use contraceptive 40(33.6%), have BC family history 27(40.9%), not lactated 31(33.7), smoker 10(34.5%), have chronic disease 56(35.0%), and in women who first visit the center for screening purpose 36(53.7%) . But none of these rates statistically significantly.

Table (13): Relationship between practicing of mammography and medical variables of the study population

Variables	**Performing mammography**		**Chi-Square**	**P – value**
	No (%)	**Yes (%)**		
Women parity				
Nulparity	41(66.1)	21(33.9)	3.80	.570
1 paras	12(70.6)	5(29.4)		
2 paras	24(55.8)	19(44.2)		
3 paras	67(66.3)	34(33.7)		
4 paras	53(68.8)	24(31.2)		
5 paras	90(71.4)	36(28.6)		
Total	287(67.4)	139(32.6)		
Use of Contraceptive				
Yes	204(67.5)	98(32.5)	0.05	.8190
No	79(66.4)	40(33.6)		
Family History of BC				

No	248(68.9)	112(31.1)	2.43	0.119
Yes	39(59.1)	27(40.9)		
Lactation				
Yes	226(67.7)	108(32.3)	0.06	0.805
No	61(66.3)	31(33.7)		
Smoker				
Yes	19(65.5)	10(34.5)	0.04	.8250
No	266(67.5)	128(32.5)		
Have chronic diseases				
Yes	104(65.0)	56(35.0)	0.614	0.433
No	182(68.7)	83(31.3)		
Practice of BSE				
Not practice	97(78.2)	27(21.8)	17.4	0.000
Rarely	154(67.2)	75(32.8)		
Regularly	36(49.3)	37(50.7)		
Total	287(67.4)	139(32.6)		
Purpose of Participating in Screening				
For screening	31(46.3)	36(53.7)	0.44	0.55
For diagnosis	107(51.0)	103(49.0)		

4.2.4 Patient delay in using screening methods

In this study, a total of 333 women have minor breast disorder when first time visited the health center or clinic. Patient delay was measured by days, and the median days for each group variable was used for statistical method. A statistic relation of socioeconomic and medical variables was studied with patient delay in this section.

4.2.4.1 Socioeconomic determinants of patient delay

The overall median of patient delay was 30 days with 113 interquartile range (IQR). Table 14 showed the significant relation of marital status (p- value= 0.005), and perceived economic status (p- value= 0.047) with patient delay. The median patient delay was significantly higher among those who were widowed 140.0 (IQR= 317.5) and perceived barely sufficient economic status 35.0 (IQR=140). Similarly, the median patient delay was high in women who uneducated 36.5(IQR=120) or primary educated level 45.0(IQR=83), sub-urban (district) resident 45.0 (IQR=102). While none of this relation statistically was significant.

Table (14): Relationship of patient delay and socioeconomic variables of the study sample

Variables	Median (IQR)	Kruskal_Wallis Test (p- value)
Age group		
Less than 30 years	30.0(86)	0.48
30- 39 years old	30.0(83)	
40 years and above	30.0(110)	
Total	30 (113)	
Occupation		
Employed	30.0 (120)	0.55
Unemployed	30.0 (83)	
Education level		
Uneducated	36.5(120)	0.625
Primary	45.0(83)	
Secondary	30.0(96.5)	
Diploma	30.0(113)	
Bachelor and above	30.0(40)	
Education level of husband		
Uneducated	42.5(105)	0.927
Primary	30.0(76)	
Secondary	30.0(113)	
Diploma	30.0(135)	
Bachelor and Above	60.0(65)	
Place of residence		
Urban (Sulaimani)	30.0(98)	0.11
Suburban (District)	45.0(102)	
Marital status		
Married	30.0(80)	0.005
Widowed	140.0(317.5)	
Single	15.5(56.5)	
Divorce	7.0(80)	
Self – perceive economic status		
Insufficient	30.0(83)	0.047
Barely Sufficient	35.0(140)	
Sufficient	30.0(54.5)	

4.2.4.2 Medical and health conditions determinant of patient delay

Medical and health condition of women may have related to patient delay in using of screening methods, and this relation have shown in Table 15. This Table found the significant relation of having a chronic diseases and patient delay in using screening methods (p-value= 0.007). The median patient delay was found significantly higher in women who present with chronic diseases 45.0 (IQR=154.5). Similarly median patient delay was higher among women who have 4 children 35.0 (IQR=83), present with breast pain 36.5(IQR=93), or pain with lump 35.0(IQR=146), referred by doctors 39.0(IQR=110) or others 40.0(IQR=155), never practice BSE 40.0(IQR=110). But none of these relation were statistically significant.

Table (15): Relationship of patient delay and medical and obstetric variables study sample

Variables	Median (IQR)	Kruskal_Wallis Test (p- value)
Parity		
Nulparity	25.5(83)	0.783
1 paras	30.0(70)	
2 paras	30.0(110)	
3 paras	30.0(113)	
4 paras	35.0(83)	
5 paras and more	30.0(120)	
Total	30 (113)	
Use of Contraceptive		
Yes	30.0(80)	0.916
Not	32.5(128)	
Family History of BC		
No	30.0(83)	0.389
Yes	30.0(358)	
History of First Degree		
No	30.0(83)	0.166
Yes	61.5(355)	
History of Second Degree		
No	30.0(80)	0.949
Yes	30.0(358)	
Lactation		
Yes	30.0(113)	0.605

No	30.0(83)	
Smoking		
Yes	21.0(174)	0.474
No	30.0(95)	
First Breast Disorder at The Time of Participation		
Pain	36.5(93)	0.593
Pain with lump	35.0(146)	
Mass	30.0(83)	
Skin changes	10.0(57)	
Increase breast size	27.5(99)	
Nipple discharge	20.5(358)	
Abscess	30.0(50)	
Referred by		
Themselves referring	30.0(95)	0.535
Health professional	39.0(110)	
Other relatives	40.0(155)	
Practice of Breast Self-Examination		
Never practice	40.0(110)	0.961
Rarely practice	30.0(80)	
Regularly practice	30.0(173)	
Present with systemic chronic diseases		
Yes	45.0(154.5)	0.007
No	30.0(83)	
Mammography _practice		
No	30.0(81.5)	0.599
Yes	30.0(133)	

4.3 Knowledge About BC In Association With Utilizing Screening Methods

In this study, knowledge about BC was measured by using a breast CAM scale. This scale has scored the women's knowledge according to 29 questions which is divided into 4 subscales. The mean of overall knowledge (awareness) of this score was used in the inferential statistical analysis in this study, because the statistical internal consistency of each subscale of this tool could not proof distinctively. In this study, significant association between socioeconomic and medical variables with overall knowledge of BC, and knowledge with screening practice was tested.

4.3.1 Determinant of breast cancer awareness

The association of socioeconomic and medical variables with screening method was studied in the previous section. Therefore, the associations of BC awareness with basic variables, socioeconomic and medical, have been studied in this section as first relation.

4.3.1.1 Socioeconomic determinants of BC awareness

Mean of BC awareness across socioeconomic variables has been shown in Table 16. According to CAM score, mean of awareness of BC among women was 20.43± SD= 4.12. This study found a significant association between awareness about BC and age groups (F= 4.63, p=0.01), education level (F= 14.14, p=0.000), husband's education (F= 7.847, p=0.000), occupation (F= 6.328, p=0.000), self-perceived economic status (T= 5.404, p=0.000). A significant higher mean of breast CAM was found in women aged 40 and above (20.62±4.03), education level bachelor and above (22.14±3.81), and similarly for their husband (21.84±4.1). In same concerning, a significant high breast CAM was found in women who have job employed (21.72±3.86) and self- perceived barely sufficient (20.77±4.08) or sufficient of economic status (20.59±3.95). From another side; higher breast CAM was observed among those who are urban resident (Sulaimnai) (21.72±3.86), and single marital status (20.61±3.91). Meanwhile, this observation statistically was not significant, the association of the place of residence with BC awareness was nearly to be significant (T=1.83, p=0.06).

Table (16): The relationship between mean of (BCAM) with socioeconomic variables

Variables	Aware: screening	Aware: nature of BC	Aware: BC symptom's	Aware: risk factors& health behavior	Grand awareness: (BC knowledge)
Age groups					
Age 20 to 29 years	2.62±1.47	3.40±1.04	5.54±1.58	7.63±1.5	19.19±3.8
30-39 years	3.13±1.56	3.71±1.13	5.65±1.60	8.07±1.62	20.55±4.28
40 year and above	3.23±1.50	3.77±1.03	5.66±1.58	7.97±1.65	20.62±4.03
F	5.987	4.198	0.209	2.350	4.63
sig	0.003	0.015	0.812	0.096	0.01
Education grade					
Un educated	2.45±1.58	3.21±1.03	5.11±1.7	7.24±1.8	18.01±4.0

Primary	3.08±1.49	3.64±1.12	5.62±1.64	7.70±1.51	20.04±4.19
Secondary	3.20±1.52	3.70±1.04	5.69±1.55	8.09±1.5	20.68±3.85
Diploma	3.43±1.46	3.99±1.00	5.79±1.60	8.29±1.60	21.49±3.93
Bachelor and	3.37±1.40	4.10±0.93	5.97±1.20	8.70±1.68	22.14±3.81
F	6.224	9.592	3.572	11.380	14.140
Sig	0.000	0.000	0.007	0.000	0.000
Husband education					
Un educated	2.73±1.56	3.53±0.97	5.36±1.35	7.66±1.69	19.28±3.68
Primary	2.93±1.55	3.54±1.06	5.43±1.65	7.67±1.69	19.57±4.20
Secondary	3.13±1.47	3.62±1.14	5.69±1.65	8.02±1.55	20.47±4.06
Diploma	3.48±1.49	4.07±0.94	5.95±1.48	8.34±1.54	21.84±3.86
Bachelor and	3.70±1.41	4.05±1.06	5.94±1.40	8.16±1.83	21.84±4.1
F	5.388	5.978	2.755	3.389	7.857
Sig.	0.000	0.000	0.027	0.009	0.000
Occupation					
Employed	3.47±1.46	3.97±0.98	5.85±1.48	8.42±1.56	21.72±3.86
Un employed	2.94±1.53	3.57±1.09	5.53±1.63	7.72±1.62	19.76±4.09
Total	3.13±1.52	3.70±1.07	5.64±1.58	7.96±1.63	20.43±4.12
T	4.582	4.957	2.634	5.680	6.328
sig	0.000	0.000	0.009	0.000	0.000
Place of resident					
Urban (Sulaimani)	3.18±1.53	3.73±1.07	5.66±1.60	8.01±1.60	20.57±4.15
Suburban (District)	2.93±1.50	3.61±1.06	5.58±1.54	7.78±1.75	19.90±3.97
T	1.813	1.278	.515	1.585	1.835
Sig.	0.070	0.202	0.607	0.113	0.067
Marital Status					
Married	3.15±1.50	3.70±1.09	5.66±1.58	7.94±1.65	20.45±4.16
Widowed	2.92±1.81	3.36±1.11	5.79±1.39	8.23±1.63	20.31±4.11
Single	3.14±1.45	3.81±0.92	5.70±1.55	7.95±1.51	20.61±3.91
Divorce	2.79±1.79	4.00±0.77	5.04±1.87	7.96±1.59	19.79±3.96
F	.739	2.340	1.541	.377	.293
Sig.	.529	.072	.203	.770	.830
Perceived to Economic Status					
Insufficient	2.90±1.57	3.48±1.12	5.51±1.67	7.69±1.66	19.57±4.27
Barely Sufficient	3.21±1.47	3.81±1.04	5.68±1.64	8.07±1.65	20.77±4.08
Sufficient	3.20±1.55	3.72±1.04	5.67±1.36	8.01±1.54	20.59±3.95
F	2.921	5.955	.741	3.381	5.404
Sig.	0.054	0.003	0.477	0.035	0.005

4.3.1.2 Medical determinant of breast cancer awareness

Another basic determinant of BC awareness in this study was medical and health background of the women. The association of medical and health determinant with BC awareness have shown in Table 17. BC family history either first degree or second degree, and women who have past minor breast disorders were one of medical variables which was significantly associated with BC awareness (T= 2.956, P= 0.003), (T=8.41, p=0.000). High mean of breast CAM was found among those who present in BC family history (21.51±4.06) and past minor breast disorder (21.85±3.35). From another side mean breast CAM was higher among women have 4 children (21.13±3.67), use contraceptive (20.52±4.11), not lactated 20.52±4.22, smoking (20.78±4.20), not have chronic diseases (20.45±4.10), self-referred to the center (22.04±3.21). Meanwhile, this observation statistically was not significant.

Table (17): Relationship between BCAM and medical and health variables of study sample

Variables	Aware: screening	Aware: nature of BC	Aware: BC symptom's	Aware: risk factors& health behavior	Grand awareness: (BC knowledge)
Parities					
Nul para	3.14±1.45	3.73±.94	5.74±1.47	8.07±1.54	20.67±3.81
1 para	2.85±1.42	3.65±1.20	5.82±1.43	8.00±1.55	20.32±4.28
2 paras	3.16±1.56	3.70±1.10	5.50±1.72	8.08±1.75	20.44±4.33
3 paras	3.26±1.53	3.79±.99	5.63±1.71	7.89±1.62	20.57±4.24
4 paras	3.26±1.50	3.78±1.14	5.91±1.34	8.18±1.54	21.13±3.67
5 paras and above	2.94±1.60	3.55±1.12	5.41±1.62	7.62±1.68	19.51±4.20
F	1.261	0.939	1.774	1.930	2.197
Sig.	0.279	0.455	0.116	0.087	0.053
Use of Contraceptive					
Yes	3.19±1.51	3.71±1.10	5.63±1.60	7.98±1.63	20.52±4.11
No	2.99±1.57	3.69±.98	5.66±1.55	7.88±1.65	20.23±4.16
T	1.542	0.225	-0.222	0.724	0.831
Sig.	0.124	0.822	0.824	0.469	0.406
Family History of BC					
No	3.02±1.54	3.69±1.06	5.60±1.58	7.94±1.62	20.25±4.10
Yes	3.74±1.27	3.81±1.14	5.90±1.61	8.06±1.67	21.51±4.06
T	4.585	1.160	1.818	0.656	2.956
Sig.	0.000	0.246	0.069	.512	0.003

History of First Degree					
No	3.09±1.53	3.68±1.06	5.61±1.58	7.96±1.62	20.35±4.1
Yes	3.78±1.26	4.08±1.13	6.19±1.60	8.03±1.78	22.08±3.90
T	2.637	2.179	2.146	0.255	2.475
Sig.	0.009	0.030	0.032	0.799	0.014
History of Second Degree					
No	3.05±1.54	3.71±1.06	5.63±1.57	7.94±1.63	20.33±4.10
Yes	3.74±1.25	3.69±1.14	5.76±1.69	8.10±1.65	21.29±4.17
T	3.826	-0.145	0.721	0.810	1.972
Sig.	0.000	0.884	0.471	0.418	0.049
Lactation					
Yes	3.14±1.52	3.69±1.08	5.64±1.59	7.92±1.62	20.40±4.08
No	3.08±1.54	3.74±1.04	5.63±1.56	8.07±1.65	20.52±4.22
T	0.532	-0.510	0.103	-1.111	-0.336
Sig.	0.595	0.610	0.918	0.267	0.737
Smoking					
Yes	3.43±1.45	3.80±	5.48±1.64	8.07±1.54	20.78±4.20
No	3.10±1.53	3.70±1.06	5.65±1.58	7.95±1.64	20.41±4.11
T	1.434	0.644	-0.724	0.457	0.601
Sig.	0.152	0.520	0.469	0.648	0.548
Have chronic disease					
Yes	3.12±1.54	3.68±1.07	5.59±1.60	7.99±1.69	20.38±4.18
No	3.13±1.52	3.71±1.07	5.66±1.58	7.95±1.61	20.45±4.10
T	-0.074	-0.336	-0.516	0.311	-0.191
Sig.	0.941	0.737	0.606	0.756	0.849
Have past breast minor disorder					
Yes	3.73±1.19	3.90±0.9	6.12±1.27	8.11±1.56	21.85±3.35
No	2.69±1.59	3.56±1.1	5.29±1.70	7.85±1.67	19.39±4.32
T	9.76	4.23	7.24	2.11	8.41
P	0.000	0.000	0.000	0.035	0.000
Referred by					
Herself	3.88±1.15	3.91±.94	6.17±1.27	8.08±1.62	22.04±3.21
Health professional	3.59±1.34	3.83±.99	6.10±1.51	7.83±1.70	21.35±3.82
Other relative	3.59±1.17	3.65±1.27	6.29±1.53	7.94±1.24	21.47±3.4
F	2.463	0.810	0.184	0.899	1.70
Sig.	0.086	0.445	0.832	0.408	0.184

4.3.2 BC awareness relation to utilizing (practice) screening methods

Table 18 shows the means of breast CAM versus utilization of screening methods. This study found that there was a significant association between breast CAM means and the utilizing of screening methods, practice of the BSE (F=86.05, P=0.000), the utilizing the CBE (F=85.26, P=0.000), and mammography use (T=8.431, P=0.000). The breast

CAM mean was significantly higher among those women who practice BSE regularly (23.25±2.85) in respect to those practice BSE rarely (20.86±3.52) or never practice (18.15±4.39). Similarly, the breast CAM mean was significantly higher among those women who participate in screening to screening purpose (23.25±3.04) in respect to those who participate to diagnosis (21.53±3.49) or never participate (18.29±4.12). In same concerning breast CAM mean was significantly higher among those women who done a mammography (22.81±3.09) in respected to those who not done mammography (19.55±4.02).

Table (18): Relationship between BCAM and utilizing the screening methods

Variables	Aware screening	Aware BC	Aware BC symptom's	Aware- RF & health behavior	Total awareness of BC
Practice BSE					
Never	2.17±1.58	3.41±1.19	4.98±1.75	7.59±1.67	18.15±4.39
Rarely	3.30±1.28	3.73±.99	5.83±1.44	8.00±1.61	20.86±3.52
Regularly	4.33±.90	4.15±.89	6.28±1.23	8.50±1.47	23.25±2.85
Total	3.13±1.52	3.70±1.07	5.64±1.58	7.96±1.63	20.43±4.12
F	119.647	21.629	37.666	13.845	86.053
Sig	0.000	0.000	0.000	0.000	0.000
Participating or not participate (Utilization of CBE)					
Not participate	2.15±1.41	3.45±1.19	4.84±1.66	7.85±1.59	18.29±4.12
For screening	4.25±0.92	4.09±0.83	6.50±0.91	8.41±1.83	23.25±3.04
For diagnosis	3.67±1.27	3.86±0.98	6.02±1.42	7.99±1.58	21.53±3.49
Total	3.19±1.52	3.74± 1.07	5.66±1.58	8.00±1.64	20.60±4.12
F	138.250	17.576	65.722	4.325	85.263
Sig.	0.000	0.000	0.000	0.014	0.000
Mammography					
Yes	4.10±1.04	3.98±0.90	6.44±0.96	8.29±1.65	22.81±3.09
No	2.80±1.50	3.66±1.08	5.28±1.68	7.81±1.62	19.55±4.02
F	9.148	3.00	7.543	2.854	8.431
sig	0.000	0.003	0.000	0.005	0.000

4.3.3 Breast cancer awareness relation to patient delay

Another utilizing of screening method was for diagnosis. Women with minor breast disorder have been utilized screening methods for diagnosis their condition in the early diagnosis program. In this regarding; patient may delay in utilizing screening methods due

to lack of awareness about BC. Table 19 shown the relation of women awareness and delay in utilizing of screening methods. The study found that the relation of patient delay with patient awareness about BC was very weak and negative, and this correlation was not statistically significant (R= -.013, p-value= 0.817).

Table (19): Spearman's rho correlation of patient delay and breast CAM

Breast CAM	Patient delay	
	Correlation Coefficient	Sig. (2-tailed)
Aware screening	0.033	0.549
Aware BC	0.056	0.307
Aware BC symptom's	0.014	0.793
Aware- RF & health behavior	-0.068	0.214
Total awareness of BC	-0.013	0.817

4.3.4 Awareness of women about the CAM items

Awareness has been measured based on breast CAM in this study. Breast CAM has encompassed the four different components of understanding, screening, BC, warning sign of BC, and the risk factors and healthy behavior related to cancer. Table 20 shown the frequency of true answer about each component. Regarding to screening awareness the study found that, however, 564 (75.2%) of women knew how perform the BSE, half of women 373 (49.7%) knew that BSE should be done monthly. Similarly, the current study found that the 294 (39.3%) of women did hear about mammography screening, (done every 2 years after age 40 year). Regarding to BC awareness, most women 710 (94.7%) knew that BC has a high mortality (fatalist) without treatment, and 703 (93.7%) of women knew that BC is curable in early stage. Meanwhile; less than half of women 351 (46.8%) knew that BC is more common in obese women. Knowledge about common warning sign of BC was higher among women, most women aware about lump 720(96%), pain 699(93.2%) and abnormal changes in size 663 (88.5%), but some of the women knew about nipple retraction 378 (50.4%) is warning signs. Lastly, knowledge about risk factor and healthy behavior were prominently varies per each item. Most women knew that practicing lactation 726 (96.8%) and physical exercise 721 (96%) could decrease the risk of BC. While only a few of the women knew that late menopause 52 (6.9%) and delivery in late age (more than 30 years) 201 (26.8%) were risk factors for BC.

Table (20): Distribution of women's true answer about breast CAM questions

Knowledge about: screening, BC, sign and symptoms and risk factor - (Breast CAM) version 2): Did you know following statement about BC?	**True answer**	**Percentage of true answers (%)**
Screening		
Do you know how to perform BSE	564	75.2
Do you know about CBE, (Every year visit screening center after 30 years old)	592	78.9
Do you hear about mammogram (every 2 years visit screening center after 40 years old)	294	39.3
BSE should be done monthly	373	49.7
Did you know there is screening program in the Sulaimania before you visit this center	521	69.5
Breast Cancer		
BC is curable in early stages	703	93.7
BC is highly mortality without treatment	710	94.7
Painless in early stages	541	72.1
BC more common in women over age	473	63.1
BC more common in obese women	351	46.8
Warning signs (Is there any concerning of these disorders with breast cancer)		
pain	699	93.2
A lump is definitely cancer	720	96.0
Sudden and abnormal changes in size	663	88.5
Discharges from nipple	625	83.3
Changes in nipple shape, nipple rash	528	70.5
Redness of skin	618	82.4
Nipple retraction	378	50.4
Risk Factors and health behavior (what is the effect of the following factors for Breast cancer)		
Breast feeding practice	721	96.1
Practice physical exercise	726	96.8
Low fat intake	655	87.3
Smoking	725	96.9
Alcohol	711	94.8
Radiotherapy	446	59.5
Late menopause	52	6.9
Long oral contraceptive pills	484	64.6
Family history of breast cancer	599	80.2
Trauma to breast area	188	25.1
Nulliparity (infertility)	462	61.6
High age at first delivery (more than 30 years)	201	26.8

Women source of information regarding to the utilizing of screening methods was shown in Table 21. This study showed that the main sources of information regarding to screening methods were mass media 302 (61%), and women's relative 160 (26%).

Table (21): Distribution of source of information about screening methods

Source of information about screening methods	Frequency	Percentage
Mass media (TV, Radio and Internet)	302	61
Health care professional	138	23
Relative	160	26
Total	600	100

4.4 Determinant Of Women's Attitude Toward Breast Cancer

Women's attitude toward BC was taken as another determinant in utilizing the screening method or participate in screening. According to champion health believe model, women's perceived of seriousness and susceptibility, and motivation and confidence toward disease would have taken a role to participate in screening or utilizing the screening method. Negative women's attitude toward BC may become a barrier to utilizing screening methods or participating in screening. Socioeconomic and medical characteristic of women has been studied in relation with women's attitude toward BC.

4.4.1 Socioeconomic characteristics in determining the women's attitude about BC

Women's attitude toward BC such as perceived seriousness and susceptibility of BC, and motivation and confidence of women may vary in relation with socioeconomic characteristics of women. Perceived seriousness, susceptibility, motivation and confident were measured based on (CHBM- version 2). Table 22 shown the mean perceived of seriousness and susceptibility of BC, and motivation and confidence of women in relation of BC. The overall mean of the perceived seriousness of BC, susceptibility of BC, motivation and confident were (19.26±5.37), (8.12±1.78), (18.87±3.51), and (20.28±4.48) respectively. This study found that the mean of perceived BC seriousness was higher in women who aged 30-39 years old (19.46±4.85), employed (19.46±4.85), uneducated (19.55±6.72), urban (Sulaimani) resident (19.39±5.49), married, barely self-perceived economic status (19.34±5.25). While none of these differences were statistically significant.

Perceived susceptibility of BC was significantly lower in women age grouped 20-29 years (7.61±1.96) comparatively (F=4.237, p=0.015). Similarly, the mean of susceptibility of BC was higher in women who employed (8.17±1.72), urban resident (Sulaimani) (8.15±1.72), divorced (8.32±1.78), and low in un-educated women (7.99±1.72) and insufficient self-perceived economic status (7.97±1.60). But none of difference was statistically significant.

Mean of motivation was statistically higher in women who employed (19.81±3.11), urban resident (Sulaimani) (19.03±3.45,), and regularly it is increased with education level (bachelor degree) (20.26±3.31), and husband education level (bachelor) (20.09±3.06), and it is low in insufficient self-perceived economic status (18.09±3.46). The significant associations were found in employing (T=5.379, p=0.000), place of residence (T= 2.318, p= 0.021), education level (F=15.504, p=0.000), husband's education (F=8.062, p=0.000), self-perceived economic status (F=6.262. p=0.002). However mean of motivation was high in aged groups 30- 39 year (19.23±3.45) and single women (19.56±3.29), the difference statistically was not significant.

Mean of confidence (20.83±4.46) was statistically high in employed women (T=2.43, p= 0.015). In same concerning mean of confidence was low in the age group 20-29 years (19.28±4.52), un-educated (19.48±4.83), sub- urban resident (19.96±4.91), and widow (19.33±4.93), meanwhile none of this difference statistically was significant.

Table (22): Relationship of perceived seriousness and susceptibility, motivation and confident versus socioeconomic variables of study sample

Variables	Perceived Seriousness	Perceived Susceptible	Perceived Motivation	Perceived Confident
Age groups				
20 -29 year	19.06±4.59	7.61±1.96	18.93±3.41	19.28±4.52
30- 39 year	19.46±4.85	8.20±1.72	19.23±3.45	20.27±4.42
40 and more	19.19±5.79	8.18±1.76	18.66±3.56	20.50±4.49
Total	19.26±5.37	8.12±1.78	18.87±3.51	20.28±4.48
F	0.266	4.237	1.975	2.713
P	0.767	0.015	0.139	0.067
Occupation status				
Employed	19.46±4.85	8.17±1.72	19.81±3.11	20.83±4.46

Unemployed	19.19±5.37	8.09±1.81	18.38±3.61	19.99±4.47
T	0.527	0.568	5.379	2.439
P	0.599	0.570	0.000	0.015
Education level				
Uneducated	19.55±6.72	7.99±1.72	16.69±3.52	19.48±4.83
Primary	19.11±4.83	8.06±1.68	18.46±3.54	20.66±4.52
Secondary	19.35±5.58	8.15±1.88	19.23±3.37	20.3±14.50
Diploma	19.45±4.81	8.28±1.59	19.74±3.03	20.13±4.42
Bachelor and above	18.73±5.18	8.09±2.05	20.26±3.31	20.23±3.83
F	0.327	0.416	15.504	1.132
P	0.860	0.797	0.000	0.340
Husband Education level				
Uneducated	19.91±6.75	8.16±1.55	18.52±3.24	20.72±4.74
Primary	19.38±4.66	8.07±1.72	17.91±3.63	20.59±4.52
Secondary	18.82±5.17	8.23±1.82	18.85±3.56	19.94±4.42
Diploma	19.92±7.00	8.08±1.72	20.04±3.14	20.47±4.00
Bachelor and Above	19.56±4.69	8.16±2.11	20.09±3.06	20.42±5.27
F	1.009	0.235	8.062	0.776
P	0.402	0.919	0.000	0.541
Place of resident				
Urban (Sulaimani)	19.39±5.49	8.15±1.72	19.03±3.45	20.37±4.36
Suburban (District	18.79±4.93	8.01±1.97	18.31±3.70	19.96±4.91
T	1.262	0.934	2.318	1.025
P	0.207	0.351	0.021	0.306
Marital Status				
Married	19.36±5.47	8.13±1.80	18.79±3.53	20.33±4.49
Widowed	18.38±5.18	8.18±1.84	18.36±3.69	19.33±4.93
Single	18.95±4.92	7.92±1.60	19.56±3.29	20.20±4.22
Divorce	19.07±4.96	8.32±1.78	19.14±3.45	20.71±4.57
F	0.519	0.504	1.505	0.701
P	0.669	0.680	0.212	0.552
Perceive to Economic Status				
Insufficient	19.08±5.82	7.97±1.60	18.09±3.46	20.69±4.35
Barely Sufficient	19.34±5.25	8.17±1.87	19.04±3.57	20.02±4.57
Sufficient	19.26±5.23	8.15±1.76	19.29±3.37	20.50±4.34
F	0.136	0.804	6.262	1.638
P	0.872	0.448	0.002	0.195

4.4.2 Health condition determining of women's attitude about BC

Medical background and health condition of women have been studied in relation with women's attitude toward BC. Table 23 shows that the mean of the perceived seriousness of BC was high among one para (19.94±4.40), use contraceptive (19.25±5.59), especially oral pill (19.71±7.08), first degree of BC family history (20.08±4.01), lactated women (19.28±5.56), no smoking (19.29±5.39), not have a chronic disease (19.36±5.19), and referred by a doctor or health staff (19.42±6.27). While none of those difference was statistically significant.

Mean of perceived susceptibility of BC was significantly high among those who had a family history of BC (T=-4.373, p= 0.000), either first degree (T=-4.233, p= 0.000) or second degree (T=-2.693, p= 0.007) and women who had past minor breast disorders (T= 4.36, P=0.000). The means of perceived susceptibility of BC were (8.81±1.95), (9.33±1.89), (8.63±1.97) and (8.45±1.80) respectively. In same concerning, high mean of perceived susceptibility of BC was observed in women who had 3 paras (8.39±1.87), use contraceptive (8.16±1.84), lactated (8.15±1.82), not smoking (8.13±1.80), not have chronic diseases (8.14±1.80), referred by doctors or health staff (8.70±1.69). But a statistical difference was not observed in mean of these variables regarding to perceived susceptibility of BC.

Mean of motivation was significantly high among women who were one para (F=9.244, p= 0.000), use natural method as contraceptive(F=5.084, p= 0.000), had BC family history(T=-2.902, p= 0.004), either first degree(T=-2.365, p= 0.018) or second degree(T=-2.127, p= 0.034), not lactated (T=-2.649, p= 0.008), smoker(T=2.884, p= 0.004), not have chronic diseases (T=-3.372, p= 0.001) and those who had minor breast disorders (T=2.87, P=0.004). Similarly, high mean of motivation was observed in women who did not use contraceptive (19.23±3.35), and self-referred for screening center (19.68±2.93). But these differences statistically were not significant.

Mean of confident was significantly high among women who were use contraceptive and oral pill (F=3.693, p= 0.005), smoking (T=2.910, p= 0.004) and women who have minor breast disorders (T=3.13, P=0.004). Similarly, high mean of confident was observed in women who were 3 para (20.64±4.76), did not use contraceptive (20.47±4.40),

had a BC family history (20.83±4.32), not lactated (20.58±4.55), had chronic diseases (20.64±4.59), and self-referred to the screening center (20.53±4.42). But these differences were not statistically significant.

Table (23) Relationship of perceived seriousness and susceptibility, motivation and confident versus medical and health behavior

Variables	Perceived Seriousness	Perceived Susceptible	Perceived Motivation	Perceived Confident
Parities				
Nulparity	19.16±4.82	7.98±1.71	19.46±3.27	20.50±4.43
1 para	19.94±4.40	7.89±1.95	19.52±3.41	19.73±4.63
2 para	19.16±5.00	8.18±1.74	19.38±3.30	19.55±4.19
3 para	19.56±4.81	8.39±1.87	18.78±3.53	20.64±4.76
4 para	19.32±7.67	8.04±1.66	19.43±3.34	21.04±4.38
5 para	18.77±5.01	8.04±1.77	17.19±3.62	20.03±4.42
Total	19.26±5.37	8.12±1.78	18.87±3.51	20.28±4.48
F	0.550	1.245	9.244	1.949
P	0.739	0.286	0.000	0.084
Use of Contraceptive				
Yes	19.25±5.59	8.16±1.84	18.76±3.55	20.20±4.53
No	19.18±4.79	7.98±1.59	19.23±3.35	20.47±4.40
T	0.169	1.213	-1.617	-0.717
P	0.866	0.225	0.106	0.473
Contraceptive used methods				
Not use	19.18±4.81	8.00±1.61	19.14±3.42	20.49±4.37
Contraceptive barrier	18.58±4.95	8.03±1.80	18.70±3.44	20.02±3.85
Barrier and oral Contraceptive	19.40±6.86	8.20±1.73	18.51±3.44	21.74±4.79
Natural method	19.53±4.79	8.25±1.86	19.35±3.46	20.16±4.58
Oral pill	19.71±7.08	8.09±1.94	17.49±3.74	19.19±4.85
F	0.892	0.689	5.084	3.693
P	0.468	0.599	0.000	0.005
Family History of BC				
No	19.32±5.44	8.00±1.72	18.72±3.54	20.19±4.50
Yes	18.91±4.99	8.81±1.95	19.78±3.23	20.83±4.32
T	0.739	-4.373	-2.902	-1.384
P	0.460	0.000	0.004	0.167

History of First Degree				
No	19.22±5.43	8.06±1.75	18.81±3.51	20.26±4.48
Yes	20.08±4.01	9.33±1.89	20.22±3.27	20.61±4.48
T	-0.940	-4.233	-2.365	-0.452
P	.348	0.000	0.018	0.651
History of Second Degree				
No	19.38±5.39	8.06±1.75	18.78±3.54	20.22±4.51
Yes	18.30±5.19	8.63±1.97	19.66±3.19	20.78±4.17
T	1.694	-2.693	-2.127	-1.042
P	0.091	0.007	0.034	0.298
Lactation				
Yes	19.28±5.56	8.15±1.82	18.67±3.49	20.18±4.46
No	19.20±4.84	8.04±1.67	19.44±3.52	20.58±4.55
T	0.181	0.779	-2.649	-1.077
P	0.857	0.436	0.008	0.282
Smoking				
Yes	18.76±5.35	7.91±1.36	20.33±2.85	22.15±4.46
No	19.29±5.39	8.13±1.80	18.79±3.53	20.18±4.44
T	-0.645	-0.804	2.884	2.910
P	0.519	0.422	0.004	0.004
Have Chronic Disease				
Yes	18.97±5.90	8.06±1.71	18.13±3.75	20.64±4.59
No	19.36±5.19	8.14±1.80	19.12±3.40	20.16±4.44
T	-0.845	-0.524	-3.372	1.269
P	0.399	0.600	0.001	0.205
Have a past history of minor breast disorder				
Yes	19.42±4.92	8.45±1.80	19.30±3.22	20.83±4.31
No	18.96±4.94	7.88±1.73	18.56±3.69	19.81±4.46
T	1.27	4.36	2.87	3.13
P	0.20	0.000	0.004	0.002
Referred by				
Herself	18.88±5.57	8.27±1.86	19.68±2.93	20.53±4.42
Health professional	19.42±6.27	8.70±1.69	19.44±3.49	20.44±4.97
Other relative	18.94±3.86	8.47±2.34	18.53±3.22	18.35±5.12
F	0.343	2.032	1.242	1.801
P	0.710	0.132	0.290	0.166

4.4.3 Women's attitude toward BC in relation with utilizing of screening methods

According to health belief model women's attitude toward BC could be directly determined the women's screening behavior. In this study mean of women's attitude such as perceived seriousness, susceptibility of BC, motivation, and confidence in related screening method (BSE, CBE, and mammography) have shown in Table 24. Mean of perceived seriousness (18.22±5.11) was significantly lower in those women who regularly practice BSE (F=4.589, p= 0.010). Similarly, mean of perceived seriousness was low in women utilizing CBE for screening (participate in screening) (18.32±4.79), among those who do mammography (19.12±6.07), But statistically, the differences were not significant.

Mean of perceived susceptibility of BC (8.45±1.79) was significantly higher in women who utilizing CBE for screening purpose compared to those not participate or utilize CBE for diagnosis (F=10.194, p=0.000). Similarly; perceived susceptibility of BC was higher in women who regularly practice BSE (8.31±1.86) compare those who rarely practice or not practice, and high mean was observed in those who do mammography (8.39±1.91), meanwhile this difference statistically was not significant.

High mean of motivation was significantly observed in women who regularly practice BSE (20.95±2.46), utilizing CBE for screening (21.04±2.27), and do mammography (19.61±3.12). Significant values were (F=58.911, p=0.000), (F=39.899, p=0.000), (T=3.881, p=0.000) respectively.

High mean of confident (23.13±3.94) was significantly observed in women who regularly practice BSE (F=90.254, p=0.000). Similarly; high mean observed in women utilizing CBE for screening (21.18±4.35), not done mammography (20.53±4.50) but these statistic differences were not significant.

Table (24): Relationship of perceived seriousness and susceptibility, motivation and confident versus utilizing of screening method.

Variables	Perceive Seriousness	Perceive Susceptible	Perceive Motivation	Perceive Confident
Practice _BSE				
Never practice	19.02±5.71	7.92±1.66	17.22±3.38	17.63±4.16
Rarely practice	19.79±5.20	8.18±1.81	19.17±3.45	20.93±3.97
Regularly practice	18.22±5.11	8.31±1.86	20.95±2.46	23.13±3.94
Total	19.26±5.37	8.12±1.78	18.87±3.51	20.28±4.48

F	4.589	2.480	58.911	90.254
P	0.010	0.084	0.000	0.000
Purpose of Participating in Screening				
Not participate	19.40±4.98	7.80±1.61	17.62±3.85	20.09±4.33
For screening	18.32±4.79	8.45±1.79	21.04±2.27	21.18±4.35
For diagnosis	19.53±6.02	8.41±1.77	19.12±3.20	20.42±4.58
Total	19.29±5.47	8.19±1.74	18.87±3.53	20.42±4.46
F	1.985	10.194	39.899	2.199
P	0.138	0.000	0.000	0.112
Do Mammography				
Yes	19.12±6.07	8.39±1.91	19.61±3.12	20.42±4.47
No	19.23±5.66	8.08±1.67	18.20±3.67	20.53±4.50
Total	19.19±5.79	8.18±1.76	18.66±3.56	20.50±4.49
T	-0.177	1.744	3.881	-0.237
P	0.860	0.082	0.000	0.813

4.4.4 Patient delay in relation with women's attitude toward breast cancer

Women with minor breast disorders may delay in utilizing the screening methods due to negative or lack attitude toward BC. Table 25 shows the relation of women attitude and delay in utilizing of screening methods. Women tend to utilize the screening methods when they feel any minor disorders of their breast in the early diagnosis program. The patient delay in this study was measured by days. There was high significant relation between women's health motivation and patient delay (R= -0.166, P=0.009). Health motivation was negatively associated with patient delay. Women's perceived seriousness, perceive susceptibility, and confident were negative and weak associated with patient delay, while these relations were not statistically significant.

Table (25): Spearman's rho correlation of patient delay with women's attitude toward BC

Women's attitude toward breast cancer	**Patient delay**	
	Correlation Coefficient	**Sig. (2-tailed)**
Perceived seriousness	-0.048	0.453
Perceived susceptibility	-0.016	0.800
Health Motivation	-0.166**	0.009
Confident	-0.097	0.129

4.5 Women's Attitude Toward Utilizing The Screening Methods

Depend on health believe model, women's utilizing of screening methods are stand on women's perceived toward the benefits and barriers of these methods. The association of socioeconomic, medical background and health conditions versus women perceived toward benefit and the barriers of utilizing screening method have studied in this section.

4.5.1 Socioeconomic determining of women's perceived toward screening methods

Mean of perceived benefits and barriers for utilizing screening methods in relation with socioeconomic variables have shown in Table 26. In overall mean of perceived benefits of BSE was (15.40±2.39), barriers of BSE (8.48±2.36), benefits of mammography (21.13±2.06), barriers of mammography (21.71±4.92), the benefits of CBE (11.16±1.51), and barriers of CBE (14.23±3.09).

Current study pointed out that mean of benefits of BSE (15.68±2.48) was significantly higher in women who were employed (T= 2.331, p= 0.020). Similarly; the highest mean of perceived of benefits of BSE was observed in women aged 30-39 years old (15.50±2.45), bachelor education level (15.64±2.26), urban resident (15.47±2.29), widowed (14.85±2.59), insufficient perceived economic status (15.54±2.15). But statistically, the differences were not significant.

In a same concerning, a significantly high mean of women's perceived barriers of BSE was found in women who were un-educated (9.04±2.52), husband diploma education level (8.72±2.18) or un-educated (8.66±2.43). A significant value was (F=3.045. p=0.017), (F=3.204. p=0.013) respectively. Similarly; highest mean of barriers of BSE was observed in women who were aged 40 years old and above (8.64±2.37), unemployed (8.52±2.37), urban resident (8.51±2.28), divorce (8.86±2.59), insufficient self-perceived economic status (8.80±2.65). Meanwhile the significant difference was not observed.

Current study illuminated a significant higher mean of women's perceived benefits of mammography in women who were diploma education level (21.46±2.09), diploma husband's education (21.64±1.97), urban resident (21.21±2.10), and barely sufficient economic status (21.32±2.12). And significant values were (F=3.362, p=0.010), (F=2.964, p=0.019), (T=2.166,p=0.031),(F=3.677, p=0.026) respectively. Similarly, high mean of

women's perceived benefits of mammography was found in women who were aged 30- 39 years old (21.27±2.11), employed (21.30±2.38), widowed (21.38±1.46). But statistically, the differences were not significant.

A significantly higher mean of women's perceived barriers of mammography was found in women who were un-education level (23.21±4.75), uneducated husband's education (22.38±4.75), and insufficient economic status (23.06±4.73). A significant values were (F=3.180, p=0.013), (F=5.187, p=0.000), (F=9.327, p=0.000) respectively. Similarly, high mean of women's perceived barrier of mammography was observed in women who were aged 40 and over a year old (21.92±4.85), unemployed (21.79±4.63), sub-urban resident (21.99±4.63), divorce (22.36±5.49), but these differences were not statistically significant.

Current study pointed out that mean of women's perceived benefits of CBE was significantly high in women who were urban resident (11.23±1.52) (T=2.842, p=0.005). Similarly, high mean of women's perceived benefits of CBE was indicated in women who were aged 30- 39 year old (11.17±1.63), employed (11.25±1.68), bachelor and above education level (11.31±1.57), diploma husband's education (11.42±1.45), married (11.18±1.57), and sufficient economic status (11.24±1.57). But statistically, the differences were not significant.

A significantly higher mean of women's perceived barriers of CBE was shown in women who were un-education level (14.92±3.32), un-educated husband's education (14.50±3.06), and insufficient economic status (14.90±3.27). A significant values were (F=3.084, p=0.016), (F=6.151, p=0.000), (F=10.540, p=0.000) respectively. Similarly, high mean of women's perceived barriers of CBE was found in women who were aged 40 and over year old (14.23±3.09), unemployed (14.11±2.97), sub-urban resident (14.11±3.09), divorce (14.64±3.41), but these differences statistically were not significant.

Table (26): Relationship of perceived benefits and barriers of utilizing screening methods with socioeconomic variables of study sample

Variables	Perceive Benefit of BSE	Perceive Barrie of BSE	Perceive Benefit _Mammography	Perceive Barrier of Mammography	Perceive Benefit of CBE	Perceive Barrier of CBE
Age groups						
20 -29 year	14.90±2.7	8.45±2.5	20.87±1.9	21.57±4.4	10.98±1.5	13.55±2.9
30- 39 year	15.50±2.4	8.20±2.2	21.27±2.1	21.39±5.1	11.17±1.6	13.81±2.8
40 and more	15.44±2.2	8.64±2.3	21.10±2.0	21.92±4.8	11.16±1.5	14.23±3.0
Total	15.40±2.3	8.48±2.3	21.13±2.0	21.71±4.9	11.15±1.5	14.02±3.0
F	2.229	2.68	1.337	0.911	0.585	2.700
P	0.108	0.069	0.263	0.402	0.558	0.068
Occupation						
Employed	15.68±2.4	8.41±2.3	21.30±2.3	21.56±5.4	11.25±1.6	13.85±3.1
Un employed	15.25±2.3	8.52±2.3	21.03±1.8	21.79±4.6	11.09±1.4	14.11±2.9
T	2.331	-0.576	1.707	-0.614	1.362	-1.100
P	0.020	0.565	0.088	0.539	0.174	0.272
Education level						
Un educated	14.96±2.4	9.04±2.5	20.51±1.9	23.21±4.7	11.25±1.3	14.92±3.3
Primary	15.43±2.3	8.31±2.2	21.20±1.9	21.21±4.6	10.98±1.5	13.94±2.9
Secondary	15.37±2.4	8.55±2.3	21.22±2.1	21.91±5.3	11.17±1.5	14.07±3.0
Diploma	15.60±2.3	8.60±2.3	21.46±2.0	21.42±4.7	11.23±1.6	13.74±2.8
Bachelor and above	15.64±2.2	7.83±2.1	20.81±2.0	21.07±4.4	11.31±1.5	13.39±2.9
F	1.167	3.045	3.362	3.180	1.029	3.084
P	0.324	0.017	0.010	0.013	0.391	0.016
Husband's education						
Un educated	15.55±2.8	8.66±2.4	21.37±1.9	22.38±4.7	11.17±1.7	14.50±3.5
Primary	15.60±2.2	8.53±2.3	20.86±1.9	22.18±4.6	11.30±1.4	14.34±3.0
Secondary	15.19±2.2	8.57±2.4	21.16±2.0	21.71±4.7	11.04±1.6	14.17±2.9
Diploma	15.42±2.2	8.72±2.1	21.64±1.9	21.81±5.9	11.42±1.4	13.70±2.9
Bachelor and Above	15.48±2.9	7.48±2.4	20.72±2.4	19.11±4.8	11.13±1.4	12.38±3.1
F	0.905	3.204	2.964	5.187	1.302	6.151

P	0.460	0.013	0.019	0.000	0.268	0.000
Place of resident						
Urban	15.47±2.2	8.51±2.2	21.21±2.1	21.64±5.0	11.23±1.5	13.99±2.9
Suburban	15.13±2.6	8.40±2.6	20.82±1.8	21.99±4.6	10.84±1.6	14.11±3.0
T	1.601	0.487	2.166	-0.802	2.842	-0.432
P	0.110	0.627	0.031	0.423	0.005	0.666
Marital Status						
Married	15.43±2.3	8.44±2.3	21.09±2.0	21.6±5.02	11.18±1.5	13.98±3.1
Widowed	14.85±2.5	8.67±2.4	21.38±1.4	22.21±4.1	11.08±1.4	14.49±2.8
Single	15.48±2.6	8.50±2.0	21.23±2.1	22.11±4.3	10.99±1.5	13.93±2.6
Divorce	15.21±2.3	8.86±2.5	21.32±2.0	22.36±5.4	11.04±1.5	14.64±3.4
F	0.804	0.389	0.429	0.579	0.445	0.775
P	0.492	0.761	0.732	0.629	0.721	0.508
Perceive to Economic Status						
Insufficient	15.54±2.1	8.80±2.6	20.84±1.9	23.06±4.7	10.94±1.5	14.90±3.2
Barely Sufficient	15.33±2.4	8.38±2.2	21.32±2.1	21.31±5.0	11.20±1.5	13.75±2.9
Sufficient	15.42±2.4	8.39±2.2	21.01±1.9	21.18±4.5	11.24±1.5	13.69±2.8
F	0.472	2.094	3.677	9.327	2.191	10.540
P	0.624	0.124	0.026	0.000	0.112	0.000

4.5.2 Medical and health condition determining of women's perceived toward screening methods

Mean of perceived benefits and barriers for utilizing screening methods in relation to medical and health condition variables have shown in Table 27. This study found that there was not a significant relation of perceived benefits of BSE and medical and health condition variables. Meanwhile; the highest mean of perceived benefits of BSE was found in women who were 4 paras (15.83±2.18), used the contraceptive (15.41±2.37) especially contraceptive with an oral pill (15.79±2.23), had a BC family history (15.41±2.39), not lactated (15.48±2.55), smoking (16.00±1.95), did not have a chronic disease (15.40±2.41) and themselves referred for screening center (15.44±2.29). But, the significant relation was not found.

A significant higher mean of perceived barriers of BSE was observed in women who use oral pill as contraceptive (9.44±2.41), (F= 5.346, P= 0.000), not smoking

(8.55±2.35) (T=-3.171, p= 0.002) and women had not minor past breast disorders (8.64±2.36) (T= -2.181, P=0.030). Similarly, high mean of perceived barriers of BSE was pointed out in women who no para (8.61±2.33), does not use contraceptive (8.60±2.32), had a chronic disease (8.51±2.27), other relative referred them to the screening center (9.53±3.16). But this difference statistically was not significant.

This study found that there was not a significant relation of perceived benefits of mammography and medical and health condition variables. Meanwhile the higher mean of perceived the benefits of mammography was shown in women who were not use of contraceptive (21.19±1.98), not have a BC family history (21.18±2.00), and themselves referred for screening center (21.16±2.15).

A significant higher mean of perceived barriers of mammography was indicated in women who use oral pill as contraceptive (23.07±4.95), (F= 2.876, P= 0.022) and not smoking (14.08±2.97) (T=-2.876, p= 0.004), and not had past minor breast disorders (22.11±4.96) (T= -2.989, P= 0.003). The current study indicated that the mean of perceived barriers of mammography was high in women who had 5 paras or more (22.66±4.74), not had a BC family history (21.76±4.94), had a chronic disease (21.93±5.00), doctors referred them to screening center (21.26±4.29). Meanwhile the significant difference was not found.

This study found that there was not a significant relation of perceived benefits of CBE with medical and health condition variables. Meanwhile the high mean of the perceived benefits of CBE was found in women who were used of contraceptive (11.16±1.55), not had a BC family history (11.16±1.56), smoking (11.57±1.50), and other relatives referred them to the screening center (13.47±3.22).

The current study revealed on that mean of perceived barriers of CBE was significantly high in women who use oral pill as contraceptive (14.98±3.23), (F= 3.757, P= 0.005), not smoking (14.08±2.97) (T=-2.305, p= 0.021) and those not have a past minor breast disorder (14.40±3.16) (T=-4.094, P=0.000). Similarly, high mean of perceived barriers of CBE was found in women who were 5 para or more (14.60±3.35), not had a BC family history (14.10±3.06), had a chronic disease (14.35±3.37), other relative referred

them to screening center (13.47±3.22). But statistically, the differences were not significant.

Table (27): Relationship of perceived benefits and barriers of utilizing screening methods with medical and health condition variables

Variables	Perceived Benefit of BSE	Perceived Barrier of BSE	Perceived Benefit _Mam	Perceived Barrier of Mam	Perceived Benefit of CBE	Perceived Barrier of CBE
Parities						
Nulparity	15.44±2.5	8.61±2.3	21.26±1.9	21.61±4.6	11.16±1.6	13.93±2.9
1 paras	15.60±2.6	8.34±2.3	21.23±2.0	21.97±4.5	11.27±1.4	13.81±2.9
2 paras	15.12±2.4	8.45±2.3	21.15±2.2	21.65±5.5	11.06±1.5	13.84±2.8
3 paras	15.44±2.2	8.57±2.4	21.02±2.1	21.63±4.8	11.05±1.7	14.09±2.9
4 paras	15.83±2.1	7.90±2.1	21.26±1.8	20.71±4.7	11.32±1.3	13.65±2.9
5 paras	15.14±2.3	8.82±2.4	20.94±1.9	22.66±4.7	11.13±1.5	14.60±3.3
Total	15.39±2.3	8.48±2.3	21.11±2.0	21.67±4.9	11.16±1.5	14.02±3.0
F	1.583	2.127	0.542	2.068	0.555	1.593
P	0.163	0.060	0.744	0.067	0.735	0.160
Use of Contraceptive						
Yes	15.41±2.3	8.42±2.3	21.11±2.1	21.67±5.1	11.16±1.5	13.95±3.1
No	15.38±2.4	8.60±2.3	21.19±1.9	21.69±4.4	11.11±1.5	14.07±2.6
T	0.168	-0.929	-0.488	-0.064	0.360	-0.482
P	0.866	0.353	0.626	0.949	0.719	0.630
Contraceptive methods use						
Not use	15.31±2.4	8.65±2.3	21.15±1.9	21.80±4.4	11.11±1.5	14.18±2.7
Contraceptive barrier	15.43±2.2	8.39±2.5	20.83±1.8	20.93±4.9	11.10±1.4	13.65±3.0
Barrier and oral pill	15.79±2.2	8.22±2.0	21.34±2.1	22.15±4.5	11.50±1.3	14.28±3.0
Natural method	15.51±2.4	8.14±2.2	21.22±2.2	21.46±5.2	11.17±1.6	13.68±3.0
Oral pill	14.86±2.3	9.44±2.4	21.08±1.9	23.07±4.9	10.88±1.6	14.98±3.2
F	1.822	5.346	1.078	2.876	1.713	3.757
P	0.123	0.000	0.366	0.022	0.145	0.005
Family History of BC						
No	15.41±2.3	8.48±2.3	21.18±2.0	21.76±4.9	11.17±1.5	14.10±3.0
Yes	15.29±2.3	8.47±2.4	20.81±2.4	21.43±4.7	11.01±1.4	13.56±2.6
T	0.512	0.043	1.741	0.647	0.978	1.697

P	0.609	0.966	0.082	0.518	0.328	0.090
History of First Degree						
No	15.42±2.4	8.48±2.3	21.14±2.0	21.75±4.9	11.16±1.5	14.07±3.0
Yes	14.86±2.0	8.42±2.4	20.83±1.7	20.97±3.8	10.81±1.5	13.11±2.3
T	1.377	0.168	0.869	0.921	1.338	1.856
P	0.169	0.867	0.385	0.357	0.181	0.064
History of Second Degree						
No	15.40±2.3	8.48±2.3	21.16±1.9	21.74±4.9	11.15±1.5	14.07±3.0
Yes	15.39±2.4	8.46±2.3	20.81±2.6	21.49±5.0	11.08±1.4	13.64±2.7
T	0.034	0.075	1.434	0.426	0.426	1.200
P	0.973	0.940	0.152	0.670	0.670	0.230
Lactation						
Yes	15.37±2.3	8.48±2.3	21.05±2.1	21.76±5.0	11.10±1.5	14.06±3.0
No	15.48±2.5	8.48±2.3	21.34±1.8	21.56±4.5	11.27±1.5	13.90±2.9
T	-0.575	-0.024	-1.693	0.495	-1.338	0.658
P	0.566	0.981	0.091	0.620	0.181	0.511
Smoking						
Yes	16.00±1.9	7.41±2.3	21.65±1.7	19.70±5.6	11.57±1.5	13.02±3.4
No	15.36±2.4	8.55±2.3	21.10±2.0	21.84±4.8	11.12±1.5	14.08±2.9
T	1.771	-3.171	1.771	-2.876	1.885	-2.30
P	0.077	0.002	0.077	0.004	0.060	0.021
Have Chronic Disease						
Yes	15.39±2.3	8.51±2.2	21.07±2.0	21.93±5.0	11.33±1.5	14.35±3.3
No	15.40±2.4	8.47±2.3	21.14±2.0	21.64±4.8	11.09±1.5	13.91±2.8
T	-0.054	0.183	-0.381	0.692	1.845	1.726
P	0.957	0.855	0.704	0.489	0.065	0.085
History of past minor breast disorder						
Yes	15.47±2.3	8.26±2.3	21.28±2.1	21.06±4.4	11.14±1.6	13.50±2.7
No	15.34±2.4	8.64±2.3	21.01±2.0	22.11±4.9	11.15±1.5	14.40±3.1
T	0.694	-2.181	1.729	-2.989	-0.051	-4.094
P	0.488	0.030	0.084	0.003	0.960	0.000
Referred by						
Herself	15.44±2.2	8.21±2.3	21.16±2.1	20.28±4.9	11.10±1.6	12.89±2.7
Health staff	15.36±2.1	8.24±2.2	21.12±2.0	21.26±4.2	10.81±1.3	13.43±2.4
Other relative	14.76±2.1	9.53±3.1	19.88±1.2	20.53±4.8	11.18±1.8	13.47±3.2
F	0.730	2.510	2.926	1.599	1.379	1.807
P	0.483	0.083	0.055	0.203	0.253	0.165

4.5.3 Women perceived toward the utilizing of screening method

Women perceived toward the benefits and barriers of screening methods may have related to practicing or utilizing the screening methods. In Table 28, the mean of the women perceives of benefits and barriers toward the screening methods in regards to practicing and utilizing screening method have shown. The study found that mean of women perceived to benefits of practicing BSE was significantly increased with regularly of practicing of BSE (F=59.044, p=0.000), mean of never practice, rarely practice and regularly practice of BSE were (14.22±2.33), (15.67±2.29), (16.70±1.80) respectively. Similarly, mean of women perceived to benefits of practicing BSE was high in those utilizing CBE for screening (15.75±2.21) and doing mammography (15.49±2.18), but this difference was statistically not significant.

The study found that mean of women perceived to barriers of practicing BSE was significantly decreased with regularity of practicing of BSE (F=82.454, p=0.000), mean of never practice, rarely practice and regularly practice of BSE were (9.82±2.27), (8.16±2.08), (7.01±2.06) respectively. In a same concerning, mean of barriers of practicing of BSE was significantly low (F=10.141, p=0.000) in women who utilizing CBE for screening (7.64±2.19) in comparison to those who utilized for diagnosis (8.86±2.32) or, not participate (8.86±2.32).

Regarding to benefits of mammography, mean of perceived women was significant (F=6.828, p=0.001) increased among regularly practiced BSE (21.52±2.00) compare to rarely practice (21.22±2.06) or not practiced BSE (21.22±2.06) respectively. Similarly a significant higher mean of the perceived benefit of mammography (T=2.872, p=0.004) has been seen in women who do a mammogram (21.51±2.12) compared to those who have not (20.90±2.01). High mean of perceived benefits of mammography was observed among those who utilizing CBE for screening (21.43±1.96) compare to those who not participate or utilizing CBE for diagnosis. But statistically, the differences were not significant.

Regarding to barriers of mammography, women's perceived was significantly less in those regularly practice BSE (F=30.815, p=0.000), utilizing CBE for screening (F=47.109, p=0.000), and doing mammography (T=-5.607, p=0.000). Mean of perceived barrier of mammography regularly less in those regularly practice BSE (19.33±4.42), rarely practice (21.55±4.87) or never practice (21.55±4.87). Similarly, Mean of perceived

barrier of mammography was less in those utilized CBE for screening (18.57±4.15) and do mammography (20.09±4.59).

In concerning to benefit of CBE, this study found no significant differences in mean of perceived of the benefit of CBE versus utilizing screening method (BSE, CBE, and Mammography)

Regarding to barriers of CBE, women's perceived was significantly less in those regularly practice BSE (F=32.256, p=0.000), utilizing CBE for screening (F=65.615p=0.000), and do mammography (T=-6.675, p=0.000). Mean of perceived barriers of CBE regularly less in those regularly practice BSE (12.61±2.62), rarely practice (13.86±2.98) or never practice (15.07±2.90). Similarly, Mean of perceived barriers of CBE was less in those utilizing CBE for screening (12.28±2.64) compared to those utilizing CBE for diagnosis (13.50±2.61) or not participate (15.59±2.97), and are similar to those do mammography (12.87±2.56) versus not doing the practice (14.90±3.11).

Table (28): Relationship of perceived women to benefits and barriers for utilizing screening methods with practicing screening methods

Variables	Perceive Benefit of BSE	Perceive Barrie of BSE	Perceive Benefit _Mam	Perceive Barrier of Mam	Perceive Benefit of CBE	Perceive Barrier of CBE
Practice _BSE						
Never practice	14.22±2.3	9.82±2.2	21.22±2.0	23.31±4.6	11.01±1.5	15.07±2.9
Rarely practice	15.67±2.2	8.16±2.08	21.22±2.0	21.55±4.8	11.24±1.5	13.86±2.9
Regularly practice	16.70±1.8	7.01±2.06	21.52±2.0	19.33±4.4	11.12±1.6	12.61±2.6
Total	15.40±2.3	8.48±2.36	21.13±2.0	21.71±4.9	11.15±1.5	14.02±3.0
F	59.044	82.454	6.828	30.815	1.648	32.256
P	0.000	0.000	0.001	0.000	0.193	0.000
Purpose of Participating in Screening						
Not participate	15.43±2.3	8.86±2.3	21.08±1.9	23.68±4.7	11.22±1.5	15.59±2.9
For screening	15.75±2.2	7.64±2.1	21.43±1.9	18.57±4.1	11.12±1.4	12.28±2.6
For diagnosis	15.39±2.3	8.47±2.3	21.13±2.2	21.24±4.7	11.14±1.5	13.50±2.6
Total	15.46±2.3	8.49±2.34	21.16±2.1	21.73±4.9	11.17±1.5	14.08±3.0
F	0.956	10.141	1.093	47.109	0.228	65.615
P	0.385	0.000	0.336	0.000	0.796	0.000

Do Mammography						
Yes	15.49±2.1	8.34±2.3	21.51±2.1	20.09±4.6	11.21±1.7	12.87±2.56
No	15.42±2.3	8.79±2.3	20.90±2.0	22.81±4.7	11.14±1.4	14.90±3.1
Total	15.44±2.2	8.64±2.3	21.10±2.1	21.92±4.9	11.16±1.5	14.23±3.1
T	0.314	-1.877	2.872	-5.607	0.408	-6.675
P	0.754	0.061	0.004	0.000	0.684	0.000

The items of CHBM measure women attitude regarding to the difference barriers which related to different aspects women psychology. Table 29 showed the rate of women agreement with each barrier. This study found fear of BSE practice was the main barriers. Women mostly 130(17.4%) agreed to "doing BSE would make them worry about BC". While feeling embarrassing 33(4.4%), and taking too much time 11(1.5%) were not a high barrier for the practicing of BSE.

Regarding to barriers of mammography, this study found that given priority to other problems, and cost of mammography was the main barriers of utilizing mammography. 206 (27.5%) of women approved that "the other important problems than doing mammography" were barriers for them in doing mammography, 159(21.2%) of women agree with that "having a mammogram would cost too much money", 147 (19.6%) of women agree with afraid of treatments, "including potentially losing my breast" was barriers for them from utilizing mammography.

Regarding to the barriers of CBE, 184 (24.5%) of women agree with the statement that the practicing of breast exams by a physician would interfere with their routine activities, and 141 (18.8%) of women agree with breast exams performed by a physician are time consuming for them.

Table (29): women's belief about the barrier's items of (CHBMs) screening methods

No.	**Women's attitude to practice screening methods**	**Not agree**	**Neutral**	**Agree**
B.6	**Barriers-BSE**			
103	I feel funny doing breast self-examination.	548(73.2)	119(15.9)	82(10.9)
104	Doing breast self-examination during the next year will make me worry about breast cancer.	544(72.6)	75(10.0)	130(17.4)
105	Breast self-examination will be embarrassing to me.	622(82.9)	95(12.7)	33(4.4)

106	Doing breast self-examination will take too much time.	687(91.6)	52(6.9)	11(1.5)
B8.	**Barriers-Mammogram**			
112	I was afraid of treatments, including potentially losing my breast	492(65.6)	111(14.8)	147(19.6)
113	I don't know how to go about getting a mammogram.	512(68.4)	146(19.5)	91(12.1)
114	Having a mammogram would be too embarrassing.	461(61.5)	176(23.5)	112(15.0)
115	Having a mammogram would take too much time.	444(59.2)	167(22.3)	139(18.5)
116	Having a mammogram would be too painful.	625(83.4)	89(11.9)	35(4.7)
117	Having a mammogram would expose me to unnecessary radiation.	636(84.8)	91(12.1)	23(3.1)
118	I would not remember to schedule a mammogram.	478(63.7)	144(19.2)	128(17.1)
119	I have other problems more important than getting a mammogram.	399(53.2)	145(19.3)	206(27.5)
120	Having a mammogram would cost too much money.	419(55.9)	172(22.9)	159(21.2)
B10	**Barriers- Clinical Breast Examination**			
124	Breast exams performed by a physician can be painful.	707(94.3)	33(4.4)	10(1.3)
125	Breast exams performed by a physician are time consuming.	462(61.6)	147(19.6)	141(18.8)
126	My family/ friends would make fun of me if I have a breast exam performed by a physician.	676(90.1)	40(5.3)	34(4.5)
127	The practice of breast exams performed by a physician interferes with my activities	408(54.4)	158(21.1)	184(24.5)
128	I am afraid I would not be able to go to a breast exam performed by a physician.	537(71.6)	98(13.1)	115(15.3)
129	Having breast exams performed by a physician is expensive.	465(62.0)	151(20.1)	134(17.9)

Table 30 showed that there was a high significant correlation of BC knowledge with health belief model components in excepted to perceived seriousness. A very strong positive correlation has between BC knowledge and health motivation, (r=42, p=0.00). This study indicated the negative significant correlation of BC knowledge with the barrier of screening methods.

Table (30): Spearman correlation of BC knowledge with CHBM component

CHBM components	Correlation	P. value
Perceived seriousness	.033	0.365
Perceived susceptibility	.162**	0.000
Perceived health motivation	.426**	0.000
Perceived confident	.392**	0.000
Perceived benefits of BSE	.332**	0.000
Perceived barrier of BSE	-.271**	0.000
Perceived benefits of mammography	.269**	0.000
Perceived barrier of mammography	-.275**	0.000
Perceived benefits of CBE	.165**	0.000
Perceived barriers of CBE	-.262**	0.000

Logistic regression analysis was used to predict factors related to practice BSE regularly. All variable regarding to socioeconomic, medical and health condition, knowledge and relevant sub-scale of CHBM was included in this analysis. The result of this model showed that eleven variables with a significant odds ratio (Table 31). Women who live in a suburban area (OR=0.225, CI= (0.073-0.0693)) and had a family history of BC (OR=0.069, CI = (0.015-0.310)) were more likely to never practice BSE. Women who no lactated have been over 10 times more likely practice BSE regularly (OR=10.23, CI = (1.766-59.331)), and those pregnant in high age were over one time have practiced BSE regularly (OR=1.151, CI = (1.045-1.268)). Women who have good knowledge about BC (OR=1.241, CI = (1.083-1.423)), perceived susceptibility (OR=1.721, CI = (1.245-2.380)), good health motivation (OR=1.340, CI =(1.122-1.599)), perceived confident (OR=1.211, CI =(1.064-1.378)), and perceived benefit of BSE (OR=1.332, CI =(1.021-1.737)) were over one time more likely practice BSE regularly. Meanwhile; women perceived seriousness of BC (OR=0.886, CI =(0.794-0.989), and barrier of BSE was more likely to never practice BSE (OR=0.514, CI =(0.379-0.695).

Table (31): Logistic regression defining the indicators of regularly practice BSE

Variables	B	Wald	Sig.	Odd ratio	95% C.I.for EXP(B)	
					Lower	Upper
Address (sub urban)	-1.493	6.756	.009	.225	.073	.693
Age at first delivery	.141	8.130	.004	1.151	1.045	1.268
Not history of BC	-2.677	12.159	.000	.069	.015	.310
Not lactation	2.326	6.729	.009	10.23	1.766	59.331
Good knowledge of BC	.216	9.647	.002	1.241	1.083	1.423
Perceive seriousness	-.121	4.630	.031	.886	.794	.989
Perceive susceptibility	.543	10.774	.001	1.721	1.245	2.380
Health motivation	.292	10.488	.001	1.340	1.122	1.599
Perceive confident	.191	8.386	.004	1.211	1.064	1.378
Perceive benefit (BSE)	.286	4.464	.035	1.332	1.021	1.737
Perceive barrier(BSE)	-.666	18.605	.000	.514	.379	.695
Constant	-17.396	20.583	.000	.000		

Logistic regression analysis was used to predict factors related to participate in screening. All variable regarding to socioeconomic, medical and health condition, knowledge and relevant sub-scale of CHBM was included in this analysis. The result of this model showed that eight variables with a significant odds ratio (Table 32). Older women (OR=1.082, CI =(1.027-1.139)), and those who have a family history of BC (OR=0.271, CI =(0.094-0.778)) were more likely to participate in screening. Women who have good knowledge about BC (OR=1.459, CI = (1.254-2.698)), perceived susceptibility (OR=1.377, CI =(1.086-1.747)), good health motivation (OR=1.156, CI =(1.003-1.334)) were over one time likely to participate in screening. Meanwhile; women who more perceived barrier's mammography (OR=0.874, CI =(0.773-0.990)) and CBE (OR=0.734, CI =(0.591-0.911)) were more likely to not participate in screening.

Table (32): Logistic regression defining the indicators of participating in screening

Variables	B	Wald	Sig.	Odd ratio	95% C.I.for EXP(B)	
					Lower	Upper
Old age	.079	8.934	0.003	1.082	1.027	1.139
Not History of BC	-1.307	5.885	0.015	0.271	0.094	0.778
Good knowledge	0.378	23.897	0.000	1.459	1.254	1.698
Perceived susceptibility	0.320	6.951	0.008	1.377	1.086	1.747
Health motivation	0.145	3.982	0.046	1.156	1.003	1.334
Perceived confident	-0.164	9.730	0.002	0.849	0.766	0.941
Perceived barrier (mam)	-0.134	4.508	0.034	0.874	0.773	0.990
Perceive barrier (CBE)	-0.310	7.834	0.005	0.734	0.591	0.911
Constant	-5.941	5.292	0.021	0.003		

Logistic regression analysis was used to predict factors related to have mammography. All variable regarding to socioeconomic, medical and health condition, and relevant sub-scale related to CHBM was included in this analysis. The result of this model showed that eight variables with a significant odds ratio (Table 33). Old age women (OR=0.909, CI =(0.869-0.950) and those who have good knowledge (OR=0.752, CI =(0.689-0.821) were more likely to not have a mammography. Meanwhile, women who perceive good confident (OR=1.115, CI =(1.046-1.188)), and perceived barriers to CBE (OR=1.197, CI =(1.092-1.313)) were over one time more likely to have mammography.

Table (33): Logistic regression defining the indicators of having a mammography

Variables	B	Wald	Sig.	Odd ratio	95% C.I.for EXP(B)	
					Lower	Upper
Old age (years)	-.096	17.62	.000	.909	.869	.950
Good knowledge	-.285	40.78	.000	.752	.689	.821
Perceived confident	.109	11.27	.001	1.115	1.046	1.188
Perceived barrier (CBE)	.180	14.62	.000	1.197	1.092	1.313
Constant	6.605	14.75	.000	738.51		

4.5.4 Patient delay in utilizing of screening method in relation to their attitude

Women's attitude toward barriers and benefits of screening methods may lead to delaying or early use of those methods. Table 34 showed the Spearman's rho correlation of women's attitude of utilizing of screening method with patient delay. Spearman's rhos

shows that there was a significant positive correlation between the perceived barrier of mammography and patient delay (R=0.149.P=0.02). High women's perceived to barriers of mammography were associated with more patient delay. Similarly, patient delay was passively associated with perceived barriers of BSE and there was no association between perceived barriers of CBE and patient delay. Perceived benefits of utilizing BSE, CBE and mammography were negatively associated with patient delay. But this relation statistically was not significant.

Table (34): Spearman's rho correlation of patient delay with women's attitude toward utilizing screening method

Women,s attitude toward screening method	**Patient delay**	
	Correlation Coefficient	**Sig. (2-tailed)**
Perceive Benefit of BSE	-0.057	.377
Perceive Barrie of BSE	0.070	.272
Perceive Benefit of Mammography	-0.019	.769
Perceive Barrier of Mammography	0.149*	.020
Perceive Benefit of CBE	-0.035	.585
Perceive Barrier of CBE	0.000	.997

Logistic regression analysis was used to predict the factors related to patient delay more than 3 months. The model was accounted for 70% of the variance in patient delay. Aged women, unemployed, those who live out of city, widow, those who perceived barely self-sufficient economic state, women with long lactation period, confident, those who experienced more barrier for treatment, were more likely to be delay for presentation(more than 3 months), but among all variables long lactation period was a significantly predictor for patient delay (Table 35).

Table (35): variables in binary logistic regression analysis of predicting 3 months delay

Variables predicted patient delay (more than 3 months)	B	Wald	Odd ratio	Sig.	95% C.I.for EXP(B)	
					Lower	Upper
Age (year)	0.004	0.039	1.004	0.843	0.964	1.045
Occupation (um employed)	0.369	0.781	1.447	0.377	0.638	3.282
High Educational level (year)	-0.006	0.017	0.994	0.898	0.910	1.086
High husband educational level (year)	0.014	0.197	1.014	0.657	0.953	1.079
Live out of city	-0.121	0.137	0.886	0.712	0.466	1.683
Married		5.574	1.00	0.062		
Widow	0.441	0.105	1.555	0.746	0.107	22.5
Divorce	2.179	2.036	8.835	0.154	0.443	176.1
Perceived un sufficient to economic		3.411	1.00	0.182		
Perceive barely sufficient to economic	-0.147	0.123	0.864	0.726	0.380	1.96
Perceive sufficient to economic	0.417	1.356	1.518	0.244	0.752	3.06
Parity (number of children)	-0.202	2.330	0.817	0.127	0.630	1.06
Positive family history of BC	-0.490	1.731	0.612	0.188	0.295	1.27
Total lactation period (months)	0.099	4.302	1.104	0.038	1.005	1.21
Knowledge	0.036	0.589	1.037	0.443	0.945	1.14
Perceived seriousness of BC	-0.008	0.067	0.992	0.796	0.933	1.05
Perceived susceptibility of BC	-0.045	0.267	0.956	0.605	0.805	1.14
Health motivation	-0.056	1.250	0.946	0.264	0.858	1.04
Confident	0.001	0.001	1.001	0.975	0.936	1.07
Perceived barriers of treatment	0.035	1.065	1.036	0.302	0.969	1.10
Perceived benefits of treatment	-0.143	2.095	0.867	0.148	0.714	1.05
Constant	0.593	0.056	1.810	0.813		

5. DISCUSSION

5 . Discussion Preface

The current study was about describing the utilization of screening methods (BSE, CBE, and mammography) among women in Sulaimani city, and defining the barriers and reasons for not utilization of the screening methods. Socioeconomic, medical and health condition of women could in different pathways determine the utilization rate of screening methods and their barriers. At the basic level, socioeconomic, medical and health condition directly could relate to utilizing the screening methods and their barriers, and indirectly through the awareness could determine the utilization of screening methods or their barriers. (This is more explained in figure 2)

In this chapter, all findings of the current study were interpreted and discussed with other literature findings. This chapter encompassed seven sections, which were about 1) description of the study population, the rate of utilization of screening method, 2) Awareness and participation Rate (Utilizing screening methods), 3) Reasons for utilizing the screening methods, 4) Socioeconomic and medical setting description of utilizing screening methods, 5) Knowledge about breast cancer, 6) Determinant of women's attitude toward breast cancer, 7)Women's attitude (benefit and barrier) toward utilizing screening methods.

5.1 Description Of Study Population

In Kurdistan screening model women were recommended to monthly BSE after age 20 years, CBE have to be done annually after 30 years, and mammography was recommended annually or biannually after age 40 years (More explained in the methodology). Therefore, we recruited women aged more than 20 years old. The socioeconomic and health background of the study sample have been described follow.

5.1.1 Socio economic description of study population

Mean age of the woman participant was 40.9± 9, and nearly more than half of participants (56.8%) were aged more than 40 years, and (31.3%) were in the age group 30-39 years old. Education levels of study participants were low accordingly, (11.9%) of women were illiterate, and most women were in the primary level of education (29.1%). Only (9.3%) had Bachelor and above degree.

Regarding to occupation, however developing countries are proceeding to be more industrialized, women mostly (65.7%) were not having a job (housewife). Most of the women were married (79.7%). It can be observed that age of married of study participants, mostly lied below 30 years old, because only (11.9%) of women aged below 30 years old.

Another variable of study research was the economic status of women. Self-economic perception of women was measured. In this concerning, nearly half of women (51.1%) perceived barely sufficient of their economic status, (24.1%) of women perceived insufficient economic status.

5.1.2 Medical and obstetric description of study population

Medical and health conditions of women were taken as basic indicators for utilizing screening methods, patient delay and its barriers.

With the industrialization of this community, women's childbearing goes decreased, and this is considered as the one risk factor of BC. The current study found most women had more gravidas (women's mean of gravidas was 3.9± 2.3), almost nearly one third of women (35.3%) had 5 gravidas or more. In other concerning, average mean women parity was 3.2 ±1.9, and almost (21.2%) of women had was 5 children or more, (6.5%) of women was nulliparous. Nearly half of women had not abortion or dead child (48.4%), and (17.7%) had one child abortions. Consider to parity and gravida this population are accordingly protective from BC, since our sample women population had high average of parity.

High age of childbearing and use of contraceptive was considered the risk for BC (Dale; and Federman, 2003). The current study found age at delivery began averagely in 22.94 ±5.3 years, and it is medically normal for pregnancy and childbearing (kasper et al., 2005). Mean age at menarche and at first baby was considered to be protective in this study. Women parity mostly was being prevented by the using of contraceptive methods. And the use of contraceptive would decrease the childbearing duration. This study found the contraceptive use was more prevalent among women, almost most of the women (72.1%) use contraceptive to prevent pregnancy, and the mean of duration of the contraceptive was 3.2 ±1.9 years. Women mainly used the natural method uniquely (32%), contraceptive (barrier) (18.9%) with or without natural methods, oral contraceptive was (11.0%).

The main non-modified risk factor for BC is the family history. From another side, women with a family history were more indicated for the utilizing screening methods. According to screening model in the region (Sulaimani) women with a family history were recommended for mammography screening 5 years earlier. In this study, almost (14.4%) of women were presented with a family history of BC, first degree family history was (4.8%), and second degree family history was (10.7%). The prevalence of positive family history in this study was high than Erbil and Saudi Arabia which is reported 12% (Ahmed et al., 2016) (Dandash et al, 2007).

Lactation is a one of women's health behavior to prevent the BC. Among our study participant high rate of women had this behavior and lactated for long period. Almost (73.6%) were lactated women, and on average, mean of the lactation period (in year) among breastfeeding women was 4.98 ± 4. The high average mean of the lactation period would be related to high parity, because women lactated the average number of children was the 3.23±1.8.

Smoking was one of unhealthy behavior which may causes cancer generally. Similarly, this unhealthy behavior may have such adversely affect with the screening behavior. In our study few of the women (6.1%) were smoked. However the percentage of smoker women were low, most women were at risk of passive smoking, (42.1%).

5.2 Awareness And Participation Rate (Utilizing Screening Methods)

Basically; awareness is a preliminary necessity for practice the screening methods, and unawareness about screening methods may become a barrier for not utilizing them. The awareness and practice rate have shown follow.

5.2.1 Awareness and practice of BSE

Breast self- examination is one of the screening methods. In the Kurdistan screening model, the women aged more 20 years were recommended to conduct this screening behavior monthly. In most developing countries, BSE has not introduced well among women, still many women do not aware about practicing of BSE as screening behavior for BC. Even among women who aware about BSE as a screening method, low proportion of women practice BSE or performed regularly.

Regarding to BSE awareness current study found that most women (75.2%) knew or heard how perform the BSE, but only half of them (49.7%) knew that BSE is a monthly behavior. The current study found one third of women (31.7%) were never

practicing BSE, and (50.3%) of women practice BSE rarely, and only (18.0%) of women regularly practice BSE. Awareness about BSE and practice BSE in Iraq/Sulaimani were high in the most countries in the region. In study in Saudi-Arabia on 1,001 women aged 50–74 years old, only 25% of the women reported about knowing about BSE, among those 57% of women performed a BSE (El Bcheraoui et al, 2015) In another neighbor country, Iran, 64.9% of women no had preexisting knowledge about BSE and only 14.8% of women conduct BSE and in this number only 9.4% had done BSE monthly (Ghodsi et al, 2014). In other Iranian study it was found, 45.9 % women was performed BSE, but only 10.9% women performed BSE regularly (Tahmasebi and Noroozi, 2016).

In contrast to that regular practicing BSE in some countries have shown to be higher than our findings. In UAE study has shown that more than half of women did regularly perform the BSE (Elobaid et al, 2014). Similarly; among health worker in Tabriz/Iran, has shown high figure, 73.2% of participants have performed BSE, and 26.9% of them performed it regularly (Mokhtary and Markani, 2014).

It can be observed that there is immense gap between awareness and practicing the BSE. However, the awareness rate was high in developing countries, but still less of women perform regularly the BSE. From another side women in the current study women have performed this screening behavior in high age, the median of age onset of practicing BSE was 38 years. It can be concluded that, this screening behavior prevailed currently, or in this time. The high difference between the rate of awareness and practicing BSE would be related to other screening barriers which we explained follow.

5.2.2 Awareness and practice of CBE and mammography

The low participation rate was observed in the developing countries. Screening methods still not introduced well among women in these countries. For instance, among of Qatari women less than 23 % identified the clinical breast examination (CBE) and mammography as the methods for detection of BC (Bener, et al, 2009). Lack of information about screening method is identified as the reason or barriers for not participating. In UAE survey have shown that 44% of women who not screened was presented with lack of knowledge about mammography as the very existence of screening techniques (Elobaid et al, 2014).

Despite many women (78.9%) identified CBE as a screening method in this study, but women utilizing CBE for the screening among age 30 years and above was low, (9.5%), and those utilized CBE for the diagnosis their minor breast disorder (32.2%) and (58.3%) never visited any clinic or screening center. There is a huge gap between awareness about CBE and utilizing CBE. Low participation rate (utilizing CBE for screening) may be related to screening awareness in Iraq and the regional countries. In UAE, 44% women did not participate due to lack of knowledge about screening (Elobaid et al, 2014). The other reasons and barriers of utilizing CBE would be explained below.

The participation rate in screening indicates the performance assessment of the screening program. Participation rate is low in developing countries, despite of that annually participate rate was not reported in these countries. For instance, utilizing CBE in their life among UAE women was 49.4% (Elobaid et al, 2014). Similarly among Qatari women, only 23.3% have reported to utilize CBE in their life (Dandash et al, 2007), and in Saudi, in women aged 50–74 years, about 89% of the women reported not participate in the screening in the past year (El Bcheraoui et al, 2015). Finding in the current study showed lower utilization of CBE compared to those countries. Among women aged more than 30 years and above, (58.3%) had never utilized CBE in their life (9.5%) of women utilized CBE for screening in their life once or more, and (32.2%) of women have utilized CBE for the diagnosis of their minor breast disorder. Median of the frequency of CBE utilizing in their long life was 2, and median age of utilizing CBE was 38 years.

Regarding to mammography, in the current study, 294 (39.3%) of women did hear about mammography screening, (done every 2 years after age 40 year), but among women aged more than 40 years, (23.6%) had a mammography in their life once or more. Women median age at participating in mammography screening was 43(with 14 IQR). In a survey done in Iran, although more women (62.2%) had information about mammography, an almost same rate (25.8%) was observed for utilization as our study (Ghodsi et al, 2014). However, compared to Saudi Arabia, where mammography was identified by (9.3%) of women (Dandash et al, 2007), and 92% reportedly never had a mammography (El Bcheraoui et al, 2015), awareness and history of mammography were high in our study. The 23.6% utilization of mammography found in our study was mostly related to prescribe mammography, instead of screening mammography because

they were prescribed by physicians for the diagnosis of breast disorder, and not for screening.

5.3 Reasons For Utilizing The Screening Methods

A monthly practice of BSE would be an effective care for determining the breast abnormalities during mammography screening intervals. During screening interval women by practicing BSE could detect the lump or other abnormalities. In this study among those who practicing BSE, different reason and purpose were determined. The current study found nearly half of women practice the BSE to know any change in their breast 229 (45.7%), and a quarterly practice BSE to know changes in their breast and fear of having the BC. Other reasons for practicing BSE in this study were, "I have a family history of BC", "I have breast Pain", and "Doctors advise"

Women who detect any abnormalities during BSE accidently are recommended to utilize CBE and mammography as part of the early diagnosis program. Regarding to CBE as mentioned above, despite of those who utilizing CBE for regular screening of their breast, many women utilizing CBE for the diagnosis of their minor breast disorder. Varies clinical presentations were reported during visiting screening center or clinic. More than half of women reported that purpose of their first utilizing CBE was for the breast pain (57.8%), for the mass was (6.5%), and for pain with mass was (17.3%). And another reported presentations was increasing the breast size, skin change, nipple discharge and insertion. These findings are almost controversial with a study in Malaysia which it stated that only 15 % of women were present with breast pain (Teh et al., 2015).

Furthermore, in Estonian study, the most frequent initial symptom was a painless lump in the breast (Innos et al, 2013). In a Malaysian and Thailand, among women attended clinic, the commonest symptom was a breast lumps (Teh et al., 2015) (Poum et al, 2014). In UK, palpable mass have been decreased in presenting in the clinics, because mammography could detect lump in preclinical stage, before palpable by physicians or detecting in BSE (Moiel and Thompson, 2014). Meanwhile, some painless lamp are detected among Libyan women during BSE (Ermiah et al, 2012).

5.4 Socioeconomic And Medical Description Of Utilizing Screening Methods

Defining the relation of utilizing of screening methods with socioeconomic, and medical and health background was one objective of this study. In another word, socioeconomic and medical variables in this study were set up as the basic determinants or barriers for the utilizing of screening methods. In this section we would be discussing the determinant of utilizing screening method. (*It is explained in Figure 2*)

5.4.1 **Utilizing of BSE**

As we mentioned above, there was a huge gap between women's awareness about BSE and the practice of that. For instance, half of women (49.7%) knew that BSE was a monthly behavior and only (18.0%) practiced BSE regularly. Utilizing this very beginning screening behavior could be related to women's socioeconomic status and/or health systems. Obstetric, medical, and health behavior of women were taken as another initial indicator for practicing BSE in this study.

5.4.1.1 Socioeconomic indicators of utilizing breast self-examination

As mentioned above, one third of women (31.7%) were never practicing BSE, and (18.0%) of women have been regularly and (50.3%) rarely practice BSE. Among socioeconomic variables, education and having a job (employed) were significantly associated with practice BSE regularly, statistic shows (X^2 = 6.7, P-value= 0.04), (X^2 = 6.29, P-value= 0.04) respectively. Never practice of BSE were significantly high among uneducated (40.4%) and unemployed (34.1%). The positive association of education and having job have been concluded in many studies (Ermiah et al, 2012) (Maghous et al, 2016), (Innos et al, 2013) (Mokhtary and Markani, 2014). However, regular practice BSE were more among women age 30-39 years, sub-urban resident, married, sufficient self-perceived economic status, but current study could not find the significant association. While, other study found that statistical significant association of marital status with practicing BSE (Mokhtary and Markani, 2014). In this study, we categorized the performing of BSE to never, rarely and regular practice. This may lead to the different findings in our study in comparison to other studies.

High performance of regular practice of BSE in employed and educated women could be explained by the health belief model. Study has shown that score of perceived benefits of BSE, perceived self-efficacy, health motivation were higher in employed

women, gradually increase with level of education, and same study explain that perceived barrier of BSE was low in employed women (Fouladi et al, 2013).

5.4.1.2 Medical and health background indicators of utilizing BSE

This study found a significant higher percentage of regular practice of BSE in women who had a BC family history, lactated women, smoking, utilizing CBE either for screening or for treatment, and have had past minor breast disorder.

Higher practicing BSE by women presented with family history(Noroozi et al, 2010) or first degree of family history have been directly explained by almost the constructs of health believe model (Fouladi et al, 2013). From another concern it could be explained that those women who have checked their breasts infrequently they would think they are not at risk of the BC because they had not family history of BC (Jones et al, 2015).

In this study marital status and parity were not significantly related with performing BSE, while lactation had significant relationship. Significant relation of marital status with performing BSE was indicated in some studies (Noroozi, 2010) (Mokhtary et al, 2014), but relation of lactation with performing BSE was not studied yet.

Regarding the practice of BSE with past breast history, women with past minor breast disorders and women who utilizing CBE could be their conditions have been detected by their regular practicing of BSE, or they learn to practice BSE from visiting a clinic or screening center. Therefore, this relationship would be made. From another side, women who have such breast disorder would more perceive seriousness, and then practice BSE. Furthermore, the relationship of the utilizing clinical breast examination (CBE) or visiting screening center for breast problem with regular practicing of BSE could be explain in way, women would have same perceived to the benefits and barriers of practicing the BSE, as well as other screening methods, utilizing CBE and mammography (Badakhsh et al., 2018) (Yılmaz and Durmuş , 2016). In the current study almost half of women utilized the CBE and only two third practiced the BSE.

Smoking is a negative health behavior which is adversely associated with performing of BSE (Amoran and Toyobo, 2015) (Anwar et al., 2018), while our finding was controversial with this consisting finding.

5.4.2 Participation in screening (CBE Screening)

Clinical breast examination is the main method of screening methods, healthy women utilize the CBE for screening purpose. Another utilization of CBE is in the diagnosis of minor breast disorders and treatment. Utilization of CBE for screening purpose has been defined as the screening participation. According to the Kurdistan model (Sulaimani), women age more 30 years have been recommended to participate in screening annually.

In this study, among 661 women age more than 30 years who participated in this study, only (15.7%) women had participated in the screening (utilizing CBE for screening purpose). From another side, among 477 women who interviewed out the screening center, 58.3%) of women aged more than 30 year old never participated in screening and only (9.5%) of women have participated in the screening, utilized the CBE for screening. The rate considered quite low compared to other study in middle of Iraq and Saudi Arabia (Alkhazrajy and Souza, 2018) (Abdel Aziz et al, 2017). Low participation rate in our study is mostly related to the categorization of those who utilize the CBE into two groups, diagnosis use and screening use.

The socioeconomics and medical characteristics of the never participate (never use CBE) and participate in screening (utilized CBE for screening) have been examined in this study. Such socioeconomic and medical characteristics had a role of barriers for participation in screening.

5.4.2.1 Socioeconomic indicators of participation in screening

This study showed that employed women (X^2 = 11.7, P-value= 0.00), high education level (X^2 = 17.3, P-value= 0.002), and husband education level (X^2 = 25.5, P-value= 0.00) were associated with utilizing of CBE as a screening method. This finding was parallel with many published literatures (Banegas et al, 2012), (Ahmadian et al, 2010). However, in this study, variables such as age, place of residence, perceived economic status were the difference in utilizing the screening method, the differences statistically was not significant. Education could be related to knowledge about BC, because those who more educated have been expected to have a good knowledge about BC. Regarding to employment, women who have jobs have had a good chance to contact to the health center, good social networking, and good knowledge.

In a survey on 1200 Qatari women has found that, young women mostly utilized the screening methods (Bener et al, 2009). While in a Brazilian survey, the youngest age group never participated in screening (Vieira et al, 2015). This controversial out-come may relate to a different age at diagnosis of BC among the countries. Difference ages at diagnosis mostly affect women perception about age susceptibility. Some women believe that they are not at risk because they are young, therefore they are less prone to participate in screening. From another side, in some developing countries young women are most likely to be more educated therefore participation rate mostly seen in the younger group.

5.4.2.2 Medical indicators of participation in screening

Regarding to medical variables current study found that utilizing CBE for screening was significantly high only in women who had BC family history (X2 = 25.1, P-value= 0.00). This finding was similar out-come with many studies (Bener et al, 2009), (Moodi et al, 2012). Family history is main non-modified risk factors, women with a family history was more susceptible to BC. In Morocco study, family history of BC was significantly higher in whom reported a fear of BC (Maghous et al, 2016). From another side, some women believe that they would not be susceptible, because they did not have a family history. In qualitative study on Iranian women have shown that women who did not have BC in their family not use CBE, because they have thought unlikely to get BC (Khakbazan et al, 2014). However, high participation rate in the screening was found in women who have 2 or 3 children, not lactated, not have a chronic disease, and not have smoking, but this rate was not statistically significant.

5.4.3 Mammography utilizing in women

Mammography is one of the screening methods which recommended for women age more than 40 years in the Kurdistan screening model. From another side, mammography is a diagnostic test for women presented with the minor breast disorders. In the Kurdistan model, mammography is prescribed for examination of BC for further diagnosis rather than women's choice for screening. In the current study, among 426 women aged 40 year and more, (28.8%) women had done mammography either for screening or for diagnosis. In Kurdistan since there is not a pure screening program, both early detection programs, early diagnosis and screening are running simultaneously, it is difficult to find out whether mammography is used for screening or for diagnosis.

5.4.3.1 Socioeconomic indicators of mammography

A survey in Brazil reveals on that, women who previously not undergone a mammogram were mostly from lower of socioeconomic status (Vieira et al, 2015). However; in this model mammography are mostly being done for visiting women depend on physician decision at the center of the screening, but some socioeconomic variables still had a relation with the mammography done. The current study found that mammography significantly have been done for women who have employed (X2 = 4.33, P-value= 0.03) and women perceived barely sufficient economic status (X2 = 8.39, P-value= 0.015). One explanation of that could be women who employed or have a regular job, and barely perceived their economic status, they would be able to follow the physician's recommendation about mammography.

In this concerning, the current study found the percentage of women who done mammography was increased with increasing education level and education of their husband, but this relation was not statistically significant. Similarly, the percentage of women who have done mammography were high in urban resident (Sulaimani), and widow or divorce women, but significant difference was not found.

Socioeconomic characteristics, such as age, education, marital status and occupation mostly were studied as the determinants of screening participation (Ahmadian et al, 2010), but these relations were not confirmed well. For instance despite of that many studies reveal on that high education were more likely associated with screening participation (Bener et al, 2009). While in UAE study education level was negatively associated with participating in mammography screening (Elobaid et al, 2014).

5.4.3.2 Medical and health indicators of mammography

According to the Kurdistan screening model, some medical variables such as parity, BC family history have determined mostly the target group of the mammography screening. In general, women's health condition would be related to the utilizing of mammography. In the qualitative study in the UK, has found, many of the women did not participate in screening because they had other chronic health conditions. The other health problems would be interfered them to do not give priority their early detection of their BC. In other word, women who are dependent due to diseases or caring for others, participation in the screening would not be a priority for them (Heisey et al, 2011). In contrast to that, some studies revealed on that women diagnosed with

hypertension were more likely to have a mammogram according to the schedule (El Bcheraoui et al, 2015). Noteworthy, women's diagnosis with hypertensive and not dependent could take care of their general health due to their high contact with the health system.

In the current study mammography were significantly done for women who practice BSE regularly (X^2 = 17.4, P-value= 0.00). This study found, women who regularly practice the BSE would be similarly utilized another screening method "mammography" efficiently. The current study found women who regularly practice BSE would be more insist on their schedule of mammography, or may they found some abnormalities which needs further investigation. This finding may indicate that there is a general factors which proceed women to perform overall screening methods.

The current study has found that mammography was mostly done in women who have 2 children, not use contraceptive, have BC family history, not lactate, smoker, have a chronic disease, and in women who first visit the center for screening purpose. But none of this rate statistically was significant.

5.4.4 Patient delay in using CBE for diagnosis

Another utilization of screening methods is by women who have minor breast disorders in the early diagnosis program. Women with minor breast disorders may delay in utilizing screening methods for a period of time. In early diagnosis program women with minor breast disorder should fully examine for BC and early treated. Patient delay in women with BC and symptomatic women has not been reported in the previous studies in Kurdistan. A total of 333 women had minor breast disorders when the first time they visited the health center or clinic. This study found the median of patient delay was 30 days with 113 interquartile range (IQR), which was comparatively higher as compared to the patient delay observed in the British (13 days) and New Zealand (14 days) (Nosarti et al., 2000), (Meechan et al., 2002) studies. The median of patient delay in women presenting with BC symptoms in this study was lower in those diagnosed when compared with findings in other LMIC; however, it was still higher than that reported in the developed countries. For instance, patient delays in diagnosed women were as follows: Morocco (6 months), Libya (4 months), Iran (3 months), Pakistan (17.2 weeks), Egypt (2.7 months), and Malaysia (2 months) (Ermiah et al, 2012) (Maghous et al, 2016) (Malik and Gopalan, 2003) (Unger-Saldaña, 2014). However, patient delay in diagnosed women was lower in developed countries, such as Estonia and Britain: 16

days (Innos et al, 2013) (Arndt, 2002). Even in Thailand, it was reported to be 12 days (Poum et al, 2014). A long patient delay in diagnosing women compared to women presenting with symptoms in LMIC may indicate that a longer delay in diagnosing women led to the delayed prognosis of BC and increased the clinical stages in these women.

5.4.4.1 Socioeconomic indicators of patient delay

Socioeconomic characteristics were indicated as a determinant of patient delay. A statistic relation of socioeconomic and medical variables was studied with patient delay in this section. Current study indicated the significant relation of marital status (p- value= 0.005), and perceived economic status (p- value= 0.047) with patient delay. The median patient delay was significantly higher among those who are widow 140.0 (IQR= 317.5) and perceive barely sufficient economic status 35.0 (IQR=140).

In contrast for our study, for married women, fear of loss husband has been determined as reasons for patient delay (Ermiah et al, 2012). Many women in the LMCs, their greatest fear is that their husbands may neglect or abandon them (Cheng-Har Yip, 2008). Another reason of married women could be related to higher parity and high number of children in the family, these may interfere women activity about their health behavior in term of participation of screening.

However, in the current study, the median patient delay was high in uneducated women 36.5(IQR=120) or primary educated level 45.0(IQR=83), suburban (district) resident 45.0 (IQR=102). But, none of these relation were statistically significant. The effect of education in delayed presentation has been studied more. In general understanding, it can be concluded that among socioeconomic factors, education have confirmed as determinant for early presentation, and conversely illiterate significantly increase the risk of delay (Innos et al, 2013) (Ermiah et al, 2012).

Regarding to place of resident, In Morocco, living in rural area was being with more than six months delay, because they live far away from health care center (Maghous et al, 2016). In a same concerning, in Thailand study, distance from, and time to hospital were both significant association with patient delay (Poum et al, 2014). In Kurdistan however all health systems have been sensitized to referring system, but there is only on screening center in Sulaimani city.

5.4.4.2 Medical illness and use of contraceptive association with patient delay

The current study found the significant relation of having a chronic disease and delay patient in using screening methods (p-value= 0.007). Median patient delay in women presented with chronic diseases was 45.0 (IQR=154.5). Women who had another health problems also have not considered their minor disorder of their breast as a serious problem, or their health conditions lead them more dependent, therefore they have not utilized screening method early.

Similarly median patient delay in this study, was higher among women who had 4 children, but significant relation was not found. There is some study which mentioned that, most women give priority to their family work, or brought up their children, women with high parity could be delay in presentation.

However, comorbidity in the British study was not a barrier to an early presentation but age more than 65 year was the cause for patient delay (Arndt et al, 2002). Regarding a warning signs, the present study reported that more than 65% of women presented with pain (tenderness) and lump with pain, and patient delay was longer in these two presentations. However, statistical significance was not observed, but same finding was statistically confirmed in the study conducted in Pakistan (Memon et al., 2013). This may indicate that women did not care much about these two signs. Similarly, median patient delay was higher among women who had four children. Same outcome was approved in a study in Poland (Brzozowska et al., 2014). This finding may indicate that women's childcare could intervene with patient delay by giving more priority to homecare and children instead to their own health.

Many studies also reveals on that, women who interpret their minor disorder of breast to be related to a normal situations such as breastfeeding, hormonal changes, trauma, fatty mass, menstruation or menopausal changes, which led to delayed presentation (Lim et al, 2015) (Heisey et al, 2011), (Khakbazan et al, 2014). In our study, women who referred by doctors were more delay, this could be explained by that, those women who are delay they do not have enough knowledge about BC warning sign and symptoms.

5.5 Knowledge About Breast Cancer

Knowledge about BC is another determinant of the utilizing screening methods. Knowledge about BC had related to women's awareness about the nature of the BC

diseases, warning signs and symptoms, risk factors, early detection. Overall mean of knowledge according to breast CAM scale was 20.43±4.12. These findings regarding to knowledge about BC could be considered high in compared to other findings in neighbor countries.

In general, knowledge about BC in developing countries is low. For instance, study in Arabic Saudi found only 5% had a good general knowledge about BC (Elobaid et al, 2014). Even among educated women in that countries, 376 female teachers, have been dictated that only 12.0% had gained good knowledge (Dandash et al, 2007). Similarly, in Iran have been confirmed, that women not have enough knowledge about warning sign and risk factors (Ghodsi et al, 2014).

In this study, knowledge about screening method was high regarding BSE, (75.2%) of women know how perform the BSE) however half of women (49.7%) knew that BSE are done monthly. Compared BSE, knowledge about mammography was low, 294 (39.3%) of women did not hear about mammography screening.

Regarding to the fatality and treatment of BC, most women (94.7%) knew BC in high mortality (fatalist) without treatment, and (93.7%) of women knew that BC is curable in early stage. In regarding to warning signs of BC, women have high knowledge about lump (96%), pain (93.2%) and abnormal changes in the size (88.5%), but some of the women knew about nipple retraction (50.4%). Women's knowledge about all warning signs in current study was high compared to findings in Iranian study an except to nipple retraction which was shown (75%) of women had good awareness about nipple retraction (Tazhibi, 2014). Women's knowledge about lump and change in the size of the breast was higher in in current study compared to findings in other Sulaimani study which it reported (76.0%) and (73.2 %) respectively, but information about nipple retraction was come out converse once again (Amin et al, 2017).

Lastly, knowledge about risk factors and healthy behaviors were prominently varies per each item. Knowledge about practicing lactation (96.8%), physical exercise (96%) and family history (80.2%) were high. While only few of women knew that late menopause (6.9%) and delivery in late age (more than 30 years) (26.8%) were risk factors for BC. Apart from these two risk factors, late menopause and delivery in late age, women's knowledge about BC risk factors was high in this study in compared to Saudi Arabia women (Al- Dayel et al, 2019). While, concerning to the late menopause

women in Iranian study showed the high awareness, (93.7%), and less women had good knowledge about family history (66%) compared to current study (Tazhibi, 2014).

5.5.1 Knowledge about BC in association with utilizing screening methods

The association of BC awareness with the utilizing of screening method has studied in this section. In this study BC knowledge was a significantly indicated for all utilization of all screening methods. Low age at diagnosis may lead to women to be more aware about the utilizing the screening methods.

This study found that there was a significant association between BC knowledge and practice of BSE (F=86.05, P=0.000). Those women who practice BSE regularly were more aware compared to rarely practice BSE, and never practice BSE. This finding could be explain in way, knowledge about BC and early detection would increase the positive attitude toward BC and seeking positive health behavior and practice BSE (Charkazi et al, 2013). Many studies have revealed on the significant improvement in practicing screening behavior (BSE) by providing knowledge (Tahmasebi and Noroozi, 2016) (Ahmed et al, 2014). Because improve knowledge about BC would enhance the women's perceived about seriousness and susceptibility of BC, and improve the women health motivation and self-efficacy, increase perceived to benefit of practicing of BSE, decrease perceived barrier of BSE (Mohamed et al, 2016) (Masoudiyekta et al., 2018).

This study found that there was a significant association between BC knowledge and participate in screening (F=85.26, P=0.000). BC knowledge was significantly high among those women who participate for screening purpose in respect to those who participate to diagnosis, diagnosis participant compared to never participate. Similar findings was obtained in other published literatures (Wang et al, 2009), (Moodi et al, 2012).

Regarding to mammography, this study found that there was a significant association between BC knowledge and those who had mammography (T=8.431, P=0.000). The significant relation of BC knowledge with mammography use could has been explained by previous study which is mention that women with more knowledge were likely to perceived fewer barriers and more benefits of mammography screening(Wang et al, 2009). Similar findings were obtained in other published literatures (Wang et al, 2009), (Moodi et al, 2012). Higher knowledge about BC may

have increased the women's perceived about their susceptibility, seriousness of BC, and benefit of screening methods. Health awareness and knowledge would increase positive attitude toward BC and seek to the positive health behavior (Tahmasebi and Norrozi, 2016) (Ahmed et al, 2014).

5.5.2 Breast cancer knowledge relationship with patient delay

Another utilizing of screening method was for diagnosis. Women with minor breast disorder may delay in presenting their condition due to lack of knowledge. In this respect, a qualitative study have suggested that women knowledge are require to reduce patient delay (Khakbazan et al, 2014). This study found that low patient knowledge was related to more patient delay, but the relationship was weak and not statistically significant ($R = -0.013$, $p = 0.817$). The significant relation of knowledge with patient delay has been approved in many studies. A study confirmed that knowledge decreased patient delay by an odd of 2.5 (Dandash et al, 2007). Specifically, some studies have determined low knowledge about warning signs for a longer patient delay (Maghous et al, 2016),(Khakbazan et al, 2014).

When women feel the minor disorders in their breast, the knowledge about their conditions in relation to taking an action toward early diagnosis might not sufficient. Another explanation would be, patient delay in this study was accordingly low, and this may relate to high women's perceived susceptibility when they had a minor breast disorder. Therefore the effect of knowledge could be limited due to high perceived of susceptibility.

5.5.3 Determinant of BC awareness

The association of socioeconomic, medical and health conditions with the screening methods was studied in the previous section. This association may be mediated with the knowledge about BC. In another word, women with different socioeconomic, medical and health background have such awareness or knowledge about BC and these knowledge would turn to the practicing the screening methods. Knowledge about BC may be mediate the relation of socio-economic and medical background with practicing screening methods.

5.5.3.1 Socioeconomic determinant of breast cancer knowledge

As mentioned above, mean of knowledge of BC, according to breast CAM was 20.43± SD= 4.12. In this study high knowledge about BC was observed in women who

are age more than 40 years (F= 4.63, p=0.01), high education level (F= 14.14, p=0.000), high husband education (F= 7.847, p=0.000), employed (F= 6.328, p=0.000), self-perceived barely economic status (T= 5.404, p=0.000). The current study showed that employed women, higher education level, and husband education level were significant indicators for utilizing CBE. Similarly, same socioeconomic variables were indicators for BC knowledge. Therefore, it can be concluded that the association of these variables with utilizing the screening method could be mediated through the knowledge. Women who employed and have high education level would have a high chance for knowledge about BC compared to uneducated women and unemployed women.

5.5.3.2 Medical and health determinants of breast cancer awareness

Another basic determinant of BC knowledge in this study was medical and health background of the women. This study finding revealed on that, same medical and health condition variables indicated the BC knowledge and utilizing CBE. Among medical and health condition variables, BC family history, and women who have past minor breast disorders were one of these variables which were significantly associated with BC awareness (T= 2.956, P= 0.003), (T=8.41, p=0.000). Women mostly attained knowledge from their relative who had affected BC (friend and acquaintance) (Dandash et al, 2007). These result could be concluded in way that women with family BC would be more aware about BC and this will lead to participate in the screening methods. On the other hand, women's BC knowledge was higher among women had 4 children, use contraceptive, not lactate, smoking, not have a chronic disease, self-referred to the center, but a statistical difference was not observed.

5.6 Determinant Of Women's Attitude Toward Breast Cancer

A part of socioeconomic, medical and health conditions, and knowledge about BC, women's personal belief is another indicator of the utilization of screening methods. Women personal belief has taken the main effect in determining the utilization of screening methods in this study. According to health believe model, women's perceived of seriousness and susceptible of BC, health motivation and confidence would take a role toward the utilizing screening method and early diagnosis. Negative women's attitude toward BC may become a barrier to utilizing screening methods or participate in screening.

Women in different socioeconomic, medical and health background could have different perceived beliefs toward BC seriousness, susceptibility, and health motivation and confident would vary accordingly. Perceived seriousness, susceptibility, and having motivation and confidence were measured base (CHBM- version 2). The overall mean of the perceived seriousness of BC, susceptibility of BC, motivation and confident were (19.26±5.37), (8.12±1.78), (18.87±3.51), and (20.28±4.48) respectively. Socioeconomic and medical characteristic of women has been studied in relation with women's attitude toward BC.

5.6.1 Women's attitude toward BC in relation with utilizing of screening methods

Women's attitudes regarding to BC could be directly related to women screening behavior according to health belief model. As well as women's attitude about BC have been highly determined by BC knowledge in this study. Therefore, women attitude could be mediate the BC knowledge and practicing the screening methods.

5.6.1.1 Women attitude toward breast cancer and utilizing of BSE

Finding in this study was parallel with the health belief model about screening behavior (BSE), in except to perceived susceptibility which was not statistically related to the practicing the BSE. High health motivation (F=58.911, p=0.000) and confident (self-efficacy to practice BSE) (F=90.254, p=0.000) were significantly observed in women who regularly practice BSE. Many studies have confirmed same finding (Norrozi et al, 2010) (Shiryazdi et al, 2014) (Tahmasebi and Noroozi, 2016).

Regarding to perceived seriousness, current study found women's perceived seriousness was significantly low in those women who regularly practice BSE (F=4.589, p= 0.010). Similar finding was found among women health worker in Turkish study (Tahmasebi, 2010) (Yılmaz and Dolms, 2016).

Perceived susceptibility was weak in determining the practicing BSE. Regular performance of BSE had highest score of perceived susceptibility, the statistic has not shown a significant difference. Greater susceptibility of BC was observed in women who perform BSE in two studied (Shiryazdi et al, 2014), (Yılmaz and Dolmis, 2016) while other study in Iran found out the negative out-come (Noroozi, 2010).

5.6.1.2 Women's attitude toward BC and utilizing screening methods (CBE and mammography)

According HBM, perceived seriousness of the disease would seek people to take an action, or new behavior. In this study, perceived seriousness of BC was low in those who utilizing screening methods (CBE and mammography). While this difference was not statistically significant. However this finding was controversial with theory of health belief model, but there is many studies that could not also confirm this result (Yılmaz and Dolmis, 2016), (Moodi et al, 2012) (Shiryazdi et al, 2014).

Perceived susceptibility of BC was one of the concept of HBM, which was most frequently confirmed as a main determinant of utilizing screening methods (Yılmaz and Dolms, 2016), (Moodi et ak, 2012) (Fouladi et al, 2013), (Seyed Mostafa Shiryazdi, 2014). Perceived susceptibility of BC was significantly high in women utilizing CBE as a screening method compare to those do not participate or utilize the CBE for diagnosis (F=10.194, p=0.000), and high significant perceived susceptibility of BC was observed in those do mammography, meanwhile this difference statistically was not significant. One explanation for that is mammography is mostly physician decision for diagnosis instead women seeking for screening in Kurdistan model. For women with minor breast disorder, after CBE, the physician will decide to do mammography or not. Even thought, there is a study that improve the high frequent use of mammography in the women who perceive high risk of BC (Meisel et al, 2015).

Current study found the significant relation of perceived health motivation with utilizing of screening model, CBE (F=39.899, p=0.000) had mammography (T=3.881, p=0.000). This finding is in agreement with previous studies (Moodi et al, 2012), (Fouladi et al, 2013). From another side, in this study, perceive confident was not statistically related with the use of screening methods, while some other studies found the significantly relation (Yılmaz and Dulms, 2016), (Moodi et al, 2012).

5.6.1.3 women's attitude toward BC in relation with Patient delay

Women with minor breast disorder may not utilized screening method in time because of negative or lack attitude toward BC. Women's belief about BC could have an effect on women's decision to utilizing screening methods for diagnosis their minor breast disorder earlier. The present study showed that among health belief model constructs, women's health motivation ($R = -0.166$, $p = 0.009$) was significantly related

to patient delay or not seeking treatment. Same finding was observed in the Iranian study; while in the Iranian study, all constructs of health belief model, such as perceived confidence, perceived seriousness, and susceptibility, significantly determined the patient delay (Nejad et al., 2017), this model explained that how women belief and attitude contributed to making decisions to prevent diseases (Taymoori and Berry, 2009). In this study, women who reported a high health motivation were more likely to not delay in presenting symptoms or seeking to early diagnosis and treatment.

In the current study, women's perceived seriousness of BC and perceived susceptibility were associated with patient delay, while these were statistically not significant. Women who perceived less seriousness (fear about BC) and susceptibility (perceived to get BC) reported a longer delay in presentation and not seeking treatment. This finding was controversial with the studies in LMICs, which indicated the fear from diagnosis was the barrier for early presentation (Cheng-Har Yip, 2008), (Khakbazan et al, 2014). Similarly, in a Poland study, fear of being diagnosed with cancer was observed for (48%) causes of patient delay (Brzozowska et al., 2014).

5.6.2 Socioeconomic characteristics of women in determining of women's attitude toward breast cancer

The difference in the women's attitude toward BC have been found across socio economic background (Yılmaz and Dolmis, 2016) (Tsu-Yin Wu et al, 2006). In this study, however, women's perceived seriousness only significantly indicated the utilizing of regular BSE, and did not have a significant relation with other screening behaviors. In same concerning, in this study none of socioeconomic variables have related to women perceived seriousness of BC. This study found that women perceived seriousness of BC was higher in women aged 30-39 years, employed, un-educated, urban (Sulaimani) resident, married, barely self-perceived economic status. While none of these differences were statistically significant. It could be concluded that women perceived seriousness it would not be mediate the socioeconomic variables and utilizing the screening method excepting to practicing of BSE.

As mentioned above, perceived susceptibility was only a determination of utilization of CBE and mammography, but not the practice of BSE. From another side, among socioeconomic variables only age was related to the perceived susceptibility, perceived susceptibility of BC was significantly lower in women aged grouped 20-29 years comparatively ($F=4.237$, $p=0.015$). Similarly, perceived susceptibility of BC was

higher in women who employed, urban resident (Sulaimani), divorced, and lowest in un-educated women and insufficient self-perceived economic status. But statistic association was not found.

Health motivation is one of the CHBMs construct which is immensely determined the utilizing of screening behaviors. In this study, health motivation was statistically high in women who employed (T=5.379, p=0.000), place of residence (T= 2.318, p= 0.021), education level (F=15.504, p=0.000), husband's education (F=8.062, p=0.000), perceived economic (F=6.262. p=0.002). From other hand, women who utilizing all screening methods had a significant higher health motivation. Therefore, it can be concluded that health motivation could mediate the relation of these socioeconomic variables and utilization of screening methods.

High confidence was statistically higher in employed women (T=2.43, p= 0.015), as well as highly confidential was also observed in women who practice BSE regularly. The employment may lead women to gain confident and thereby they may regularly practice the BSE. In same concerning high confidence was observed in the age group 20-29 years, un-educated, sub- urban resident, and the widow, meanwhile none of these differences have statistically been significant.

5.6.3 Medical background and health condition of women in determining of women's attitude of breast cancer

As mentioned above, medical and health condition of women has mostly determined the BSE examination only. However, other screening methods are mostly indicated depend on medical and health condition of women. In this concerning medical background and health conditions of women have been studied in relation with women's attitude about BC. This study has shown that none of medical and health variables significantly was associated with perceived seriousness.

Regarding to the susceptibility of BC, the perceivness was significantly high among women who have a BC family history (T=-4.373, p= 0.000), and women who have past minor breast disorder (T= 4.36, P=0.000). This can be explained in the way, women who present with BC family history would more perceive susceptibility of BC, and this high perceivness would lead to a more regular practice the BSE or other screening methods.

Health motivation is mostly vary across most medical and health condition variables. Health motivation was significantly higher among women who were 4 gravidas (F=5.206, p= 0.000), one para (F=9.244, p= 0.000), use the natural method as contraceptive(F=5.084, p= 0.000), have a BC family history(T=-2.902, p= 0.004), not lactate(T=-2.649, p= 0.008), smoker (T=2.884, p= 0.004), not have chronic disease (T=-3.372, p= 0.001) and those who have a minor breast disorder (T=2.87, P=0.004). In the current study, however health motivation in women with difference medical and health conditions was varies, but the differences of medical and health conditions were not significantly related to the utilization of screening methods (CBE and mammography).

High confident was significantly high among women who were using contraceptive and oral pill (F=3.693, p= 0.005), smoking (T=2.910, p= 0.004) and women who have a minor breast disorder (T=3.13, P=0.004).

5.7 Women's Attitude (benefit and barrier) Toward Utilizing Screening Methods

One of the objective of this study was to define the barriers of screening method. The current study has shown that women's knowledge about BC was a high determinant of perceived barriers of utilizing screening methods. Therefore, lack of knowledge may lead to high perceived of barriers and not utilizing screening methods. Women perceived toward the benefits and barriers of utilizing screening method have measured based on CHBM. In these concerning, depend on health belief model, women's utilizing of screening methods are stand on women's perceived toward benefit and barriers of these methods (Glanz et al, 2008), (*It is explained in Figure 2*). 8

5.7.1 Perceived the benefits and barriers and utilizing BSE

Women perceived toward benefit and barriers of practice BSE would have judge on practicing BSE. Positive effect of perceived benefit and negative effect of perceived barrier with practicing BSE were confirm in many studies (Tahmasebi and Norrozi, 2016) (Shiryazdi et al, 2014) (Noroozi, 2010). In another word, women who perceived greater barriers of BSE would be less likely to perform BSE regularly.

The current study found that women perceived to benefit of practicing BSE (F=59.044, p=0.000) and even perceived benefit of mammography (F=6.828, p=0.001) were regularly increased with regularity of practicing of BSE.

In similar concerning, women perceived barriers to BSE (F=82.454, p=0.000) was regularly decrease with regularity of practicing of BSE, never practice, rarely practice and regularly practice of BSE. Similarly, regular practice of BSE had the same relation with a perceiving barrier of mammography (F=30.815, p=0.000) and CBE (F=32.256, p=0.000) too.

5.7.2 Perceive benefits and barriers, and utilizing of screening methods (CBE and mammography)

Although mammography was mostly done for diagnosis by a physician, women perceived of the benefit of mammography was related to do mammography. In this study, a significant high of the perceived benefit of mammography (T=2.872, p=0.004) has been observed in women who had a mammogram. Similarly, perceived barriers of mammography was significantly less in women who utilizing CBE for screening (F=47.109, p=0.000), and doing mammography (T=-5.607, p=0.000). These finding is agreement with many published studies, (Yılmaz and Dolms, 2016), (Moodi et al, 2012). And there is some studies which did not confirmed the perceived barriers relation while confirmed the perceived of benefit (Shiryazdi et al, 2014).

Perceived of the benefit of CBE was not significantly related to utilizing screening methods (CBE, mammography). In this study, women mostly did not perceive the benefit of annual examining of their breast by a physician, while they thought biannually mammography screening would be have benefit to find the mass and preventive from BC. Regarding to barriers of CBE, women's perceived was significantly less in those utilizing CBE for screening (F=65.615p=0.000), and doing mammography (T=-6.675, p=0.000). One explanation of this finding would be, most women have the same perceived of barrier for CBE and mammography.

5.7.3 Socioeconomic determining of women's perceived of utilizing screening methods

As mentioned above, women's perceived to the benefit and the barrier of utilizing screening methods were varied. Some women perceive more benefits of mammography rather than CBE and BSE. Similarly, women perceived barriers to utilizing the screening methods are also varied. In general, the women's attitude has a correlation with practicing screening methods. Women who more perceived the benefits and less perceived the barriers were more likely utilizing the screening

methods. In this regarding, this study examined the socioeconomic determinants of women's attitude regarding to utilizing of screening methods.

5.7.3.1 Socioeconomic determinants of the women's attitude toward utilizing BSE

The current study found that high perceived of benefits of BSE was significantly higher in employed women (T= 2.331, p= 0.020). Regarding to the barriers of BSE, illiterate was the main indicators, high perceived of barrier was found in women who are uneducated (F=3.045. p=0.017), and husband's diploma education or uneducated (F=3.204. p=0.013). In this concerning, these findings could be explained in the way, the employed and high educated women practice BSE mainly due to their positive attitude toward the benefit and barriers of BSE.

5.7.3.2 Socioeconomic determinants of women's attitude about the utilizing screening CBE and mammography.

Unlike BSE, women's perceived benefits of mammography have been quite determined by socioeconomic status. A significantly high perceived benefits of mammography was found in women who were diploma education level (F=3.362, p=0.010), diploma husband's education (F=2.964, p=0.019), urban resident (T=2.166, p=0.031), and barely sufficient economic status (F=3.677, p=0.026). Regarding to perceived barriers of mammography, uneducated (F=3.180, p=0.013), uneducated husband (F=5.187, p=0.000), insufficient economic status (F=9.327, p=0.000) were the main determinant. Women attitude regarding to the utilizing of screening method have been determined by their socioeconomic status. A study in India has shown educated women, and those having job had positive attitude concerning to utilizing screening methods (Kadam, et al, 2016).

Similarly in this study, regarding to CBE, among socioeconomic variables, women urban resident (T=2.842, p=0.005) were more perceived the benefits of CBE. This study found that uneducated (F=3.084, p=0.016), uneducated husband (F=6.151, p=0.000), insufficient economic status (F=10.540, p=0.000) was associated with high women's perceived barriers of CBE.

5.7.4 Medical and health condition determining of women's perceived toward screening methods

Women in difference health condition and susceptibility of BC could have different attitudes in utilizing the screening methods. Women's belief about utilizing screening methods in relation with their health condition was examined as one objective of this study.

5.7.4.1 Medical and health condition determinants of women perceive about utilizing of BSE

This study found the perceived benefits of BSE was not determined by medical and health condition of women, there was not a significant relation of the perceived benefit of BSE and medical and health condition variables. In regarding to perceived barriers to BSE, women who use oral pill as contraceptive (F= 5.346, P= 0.000), not smoking (T=-3.171, p= 0.002) and women had not minor past breast disorders (T= -2.181, P=0.030) perceived more barriers of practicing of BSE. It could explain this finding in prospective like, women who are not smokers, not have pass minor disorder, and use an oral pill as contraceptive they feel more barriers of practice of BSE, and therefore they may not practice BSE regularly.

5.7.4.2 Medical and health condition determinant of women perceive about utilizing of CBE and mammography

This study found that women's perceived the benefits of mammography and CBE were not determined by medical and health conditions of women. However, there was a difference mean of perceived benefits of CBE and mammography but a statistical difference was not found.

While, regarding to perceived barriers of mammography and barrier of CBE, this study found that women who use oral pill as contraceptive (F= 2.876, P= 0.022) and not smoking (T=-2.876, p= 0.004), and not have a past minor breast disorder (T= -2.989, P= 0.003) perceived more barrier of mammography. Similar finding was observed for CBE, use oral pill as contraceptive, (F= 3.757, P= 0.005), not smoking (T=-2.305, p= 0.021) and those are not having past minor breast disorder (T=-4.094, P=0.000) have perceive more barrier of CBE. In some other study less barrier has been found in the women who present with a BC family history (Kadam, et al, 2016).

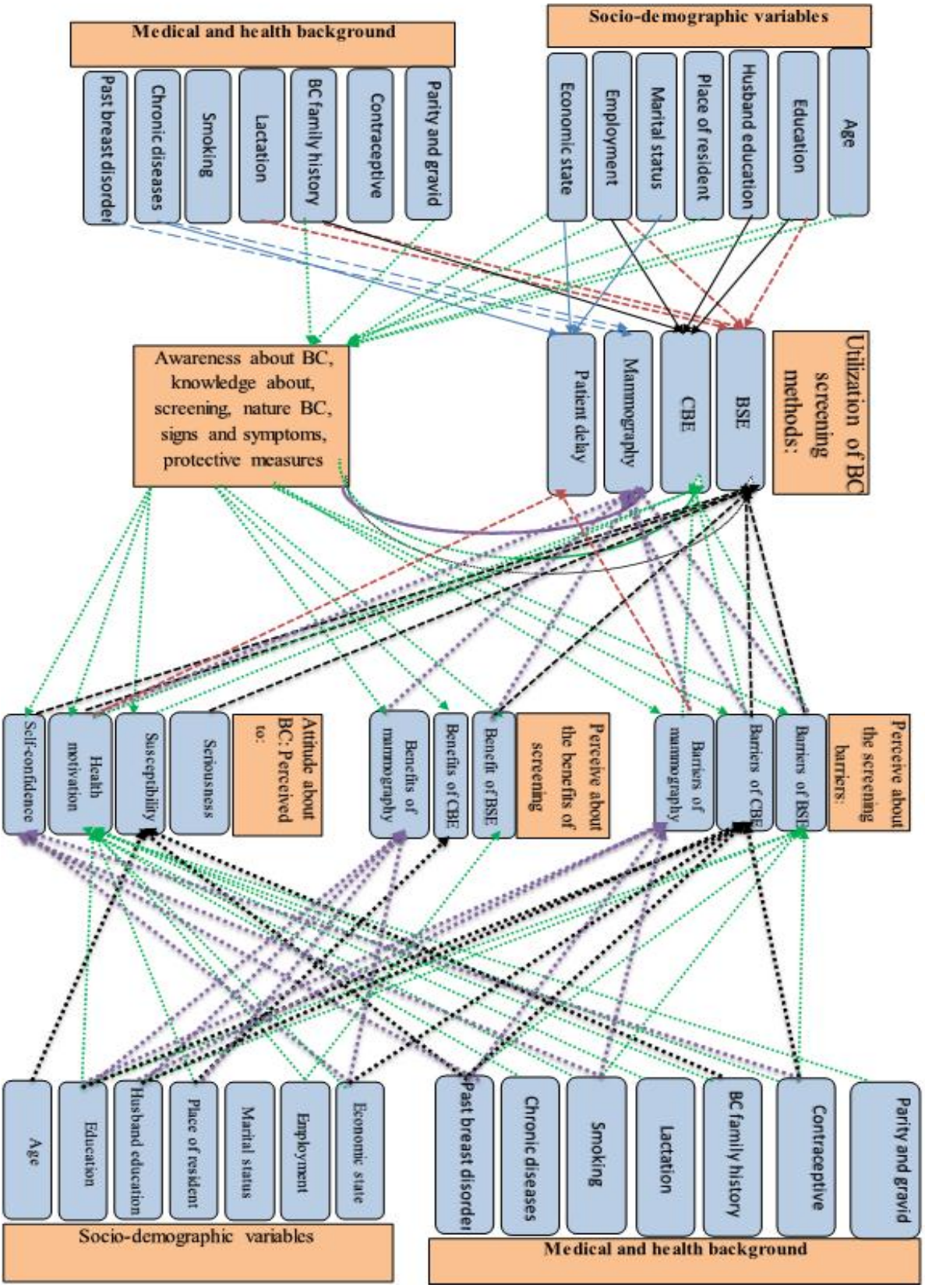
In this study we have used the health belief model as conceptual background to understand the screening health behavior and the barriers. Meanwhile, data about women's knowledge in regarding to BC in this study have revealed on that, knowledge has a taken central role on women's attitude and screening practice. Same finding have also found in many studies (Akpinar et al, 2011) (Ramathuba et at, 2015). Therefore, our finding could be explained through the both theories, Knowledge, attitude and practice model (KAP) and health belief model HBMs. This concept have been more explained in Figure 2.

5.7.4.3 Aspect of defining the barriers of screening methods

One objective of this study was to find out the barriers of screening methods. Socioeconomic, medical and health condition of women, knowledge and attitude about BC and early diagnosis were studied as a barrier of utilizing screening methods. Another finding of this study was to define the different aspects of barriers regarding to utilizing of screening methods. According to CHBM, many aspects (items) consistently were defined as the barriers of screening methods. Regarding to barriers of BSE, fear and worry of the result BSE practice (17.4%), feeling embarrassed during (4.4%), and BSE takes too much time 11(1.5%) were the main aspects of defining the barriers of utilizing the BSE among women. Concept of barriers among women may be required to more qualitative study, meanwhile in this study participant women have defined the barrier to some prospective.

Regarding to barriers of mammography, the current study found that given priority to other problem (27.5%), and cost of mammography (21.2%) were the main aspect of the defining of the barriers of utilizing mammography. As well as afraid of treatments and losing breast (19.6%) was another aspect of determining the barriers of utilizing mammography. Regarding to the barriers of CBE, their daily activities interfering by CBE (24.5%) and CBE time consuming (18.8%) contribute to the main defining the barriers of CBE. A similar study in Sulaimani has found that main barriers of not attending screening were “I don't have sign and symptom” by (61.9%) and “Fear of outcome” by (28.8%) (Amin et al., 2017).

Figure (2): Model of utilizing screening methods



5.7.5 Predictors of utilizing of screening methods

In order to we could predict the utilizing of screening methods in our women sample versus never utilizing, we run binary logistic regression. In this regarding all variables in this study were used for constructing this model.

5.7.5.1 Predictors of BSE

The predictors of BSE have been more identified in the published literatures. In the Iranian study, some socio-demographic and health related variables were determined as the predictors for BSE performance. Age, information sources, having a family history of BC, current marital status, years of education, menarche, and menopausal status predicted BSE performance (Noroozi, 2010). In this study, the logistic analysis model was constructed for predicting only regular performing of BSE in versus never performing. All study related variables were included to the model, and eleven variable predicted the performing of BSE regularly. This model was accounted for (58%) of variance of performing. Suburban resident, family history, not lactate, those pregnant in high age, good knowledge about BC, perceived susceptibility, good health motivation, perceived confident, and perceived benefit of BSE, low perceived seriousness of BC , and low barrier of BSE were predictors for regular practice of BSE. Similarly, education, parity, contraceptive use, perceived susceptibility, fewer perceived barriers, confident, and healthy motivation have been identified as predictor in many studies (Kirca et al., 2018) (Tavafian et al., 2009) .

5.7.5.2 Predictors of screening methods (CBE and mammography)

Different sociocultural circumstance may contribute in the variation of the screening methods predictors. In this study, logistic regression analysis was used to predict the factors related to participation in screening. The model accounted for 46.6% of the variance in utilizing CBE. Older women, and those who have a family history of BC were more likely to participate in screening. Women who have a good knowledge of BC, perceived susceptibility, good health motivation were more likely to participate in screening. Meanwhile, women who perceived barriers of mammography and CBE were not likely to participate in screening. Negative outcome was found regarding perceived confidence. In some other study, low family income, smoking, and comorbidity have been a predictors of the screening methods (Khaliq et al, 2015).

Regarding to prediction of mammography, however this screening method was mostly related to physician examination choice for diagnosis of minor breast disorders. But women socioeconomic, medical and health status, knowledge and their attitude regarding to BC and treatment still predict the mammography do. Logistic regression showed that old age women and those who have good knowledge were more likely to not have a mammography. Meanwhile, women who perceive good confident, and perceive barriers to CBE were over one time more likely to have mammography. In this concerning, Iranian study have define the middle age group, married and family history as a predictors of regular performing of mammography screening (Taymoori et al, 2012). As well as, among health belief model, low perceive susceptibility and low perceive of mammography barriers were determined as main predictors to the adjustment to mammography recommendation. Meanwhile, in Saudi Arabia study, knowledge, age were the significant predictors of performing mammography (Al-Dayel et al, 2019).

5.7.6 Patient delay in utilizing of screening method in relation to their attitude

According to Kurdistan early detection program, women with minor breast disorder were recommended to participate or utilizing screening methods. This study found that women who more perceived barrier of mammography were more delay in presenting their condition or delay in participating in screening. In another word, high women's perceived to barriers of mammography were significantly associated with more patient delay (R=0.149.P=0.02).

Perceived benefits of utilizing BSE, CBE and mammography were negatively associated with patient delay. But this relation statistically was not significant. Same finding was observed in the Iranian study; while in the Iranian study, both perceived barrier and benefit to treatment, significantly determined the patient delay (Nejad et al., 2017), this model explained that how women belief and attitude contributed to making decisions to prevent diseases (Taymoori and Berry, 2009).

This finding was not controversial with the studies in LMICs, which indicated the fear from diagnosis was the barrier for early presentation (Cheng-Har Yip, 2008), (Khakbazan et al, 2014). Similarly, in a Poland study, fear of being diagnosed with cancer was observed for (48%) causes of patient delay (Brzozowska et al., 2014).

5. CONCLUSION AND RECOMMENDATION

Unlike the HICs, the screening model in the Iraq do not encompasses only healthy women, symptomatic women also were screened in the program. This study found that women mostly did not utilize screening methods efficiently. Socio economic and women's health condition, knowledge about BC, women attitude and beliefs about BC have determined the utilizing the screening methods to high extend.

6.1 Conclusion:

Awareness and regular performing of BSE considerably high by comparing to the region. The study illustrated that although women have aware about BSE, but few of them perform BSE regularly. Education, employees, family history, pass history of breast disease, lactation were significantly associated with regular performing of BSE. As well as, family history, not lactate, those pregnant in high age, good knowledge, perceived susceptibility, self-efficacy, health motivation, benefit of BSE, low seriousness of breast cancer and low barrier of breast self-examination were predictors of regular practice of BSE.

Despite many women identified the CBE as a screening method, but their participation in the screening was less, only one-tenth of women utilized CBE for screening, and 23.6% had done mammography once or more in their life. Education, occupation, family history and knowledge of BC were the main indicators of utilization of these screening methods. Health beliefs, such as perceived susceptibility, health motivation, perceived benefits/barriers of CBE and mammography determined the screening methods.

The patient delay was higher compared to the HICs. Socioeconomic and health conditions, such as marital status, insufficient economic status, and associated comorbidities, were significantly associated with a longer patient delay. In addition to this, among health belief model constructs, women’s health motivation and perceived barriers to medical care contribute to the patient delay.

6.2 Recommendation:

Various programs and models have been launched worldwide to improve the utilizing screening method efficiently. Defining the determinants of these screening methods and their barriers would help the effectiveness of the programs for improve screening behavior in women.

The following point have been recommended

1. The Ministry of Health through hospital authorities should diversify breast health education in MCH clinics to incorporate; more breast health education sessions. Women teaching program regarding to early detection would more emphasis the regular performing of BSE, women should be informed about the monthly practice of BSE. For instance, Improve women's health motivation, self-efficacy, and sensitizing women about the benefits of BSE would help the improvement in high rate of regular performing of BSE. From interventional point of view, high intention should be given for the women who is illiterate, unemployed, not lactate, and not visited the screening center. Enhancing knowledge about BC and screening, emphasizing the BC susceptibility and screening benefits (CBE and mammography), and promoting better health condition will help in better participation.
2. The Ministry of Health should establish and introduce mobile screening units to improve uptake. Strengthening the referring system from primary health center would help early diagnosis program.
3. The Ministry of higher Education and that of Public Health should work on a policy framework to disseminate BC screening information to women of reproductive age at middle level colleges to counter fear and misconceptions. These interventions should a center on enhancing self-efficacy of BC screening and reducing the barriers.
4. It may be true that physicians failed to inform their patients about the need for a screening mammogram, therefore better counselling with nurse before coming to a decision have to be introduced in the screening center. Nurse have to be trained on good communication skill. Nurse could target those who have not received advice in the past from medical care personnel on the needs of screening methods.

5. The BC Screen Center should have quality assurance programs and induction policies, including safety tools, such as checklists, to ensure that intervention program are performed by acceptable way. The most commonly identified barriers include lack of education, lack of awareness and inappropriate health insurance.
6. The findings of this study should direct awareness program's organizers to create content that will cater for the actual lack of information such as informing people of the available BC screening resources and how to access them. Using mass media could stimulate public awareness about BC screening methods.
7. Further research is needed to better understand how these cognitive and environmental barriers interact to predict BC screening behaviors among this underserved population of women from other place in Kurdistan. Age at BC diagnosis is low in Kurdish women that has not been studied, there is a necessity of case control study to that deal.

   We recommend that future researchers recruit participants from a diverse range of areas to increase the representativeness of findings. More study are require to find out the effect the Kurdistan early detection program in term of decrease mortality, decrease age at diagnosis, and prolong age suffering.

   Patient delay could be measured for symptomatic BC women rather than diagnosed women. Patient delay could be crucial indicator for assessing the early diagnosis programs.

REFERENCE

1. Abdel-Aziz SB, Amin TT, Al-Gadeeb MB, Alhassar MI, Al-Ramadan A, Al-Helal M, Bu-Mejdad M, Al-Hamad LA, Alkhalaf EH. (2017). Perceived Barriers to Breast Cancer Screening among Saudi Women at Primary Care Setting. Asian Pac J Cancer Prev. 2017; 18(9): 2409–2417. doi: 10.22034/APJCP.2017.18.9.2409.

2. Abolfotouh AM, Mustafa AA, Mahfouz AA, Al-Assiri MH, Al-Juhani AF and Alaskar AS. (2015). Using the health belief model to predict breast self examination among Saudi women. BMC Public Health 15 (1163), 1-12. DOI 10.1186/s12889-015-2510-y

3. Aflakseir A, Abbasi P. (2012). Health Beliefs as Predictors of Breast Cancer Screening Behavior in a Group of Female Employees in Shiraz. Iranian Journal of Cancer Prevention 5(3),124-9.

4. Ahmadian M, Abu Samah A, Emby Z, and Redzuan M. (2010). Instrument Development for Understanding Factors Influencing Mammography Compliance among Iranian Women in Metropolitan Tehran, Iran. Asian Social Science 6 (10), 88-96. www.ccsenet.org/ass

5. Ahmed FA, Osman HA and Abo Elmatti GM. (2014). The Effectiveness of Breast Health Promotion Counseling on Breast Cancer Screening Behaviors Among Female Patients. Life Science Journal 11(8), 835-845. http://www.lifesciencesite.com.

6. Ahmed HA, Ruanduzy LA, and Yousif PH. (2016). Breast Cancer Among Women of Erbil. Iraqs Kurdistan Region international journal of advance research 4(9), 214-221. http://dx.doi.org/10.21474/IJAR01/1475.

7. Akinyemiju T, Moore JX, Ojesina AI , Waterbor JW, and Altekruse SF. (2016). Racial disparities in individual breast cancer outcomes by hormone-receptor subtype, area-level socio-economic status and healthcare resources. Breast Cancer Res Treat 157(3),575–586. doi:10.1007/s10549-016-3840-x..

8. Akpinar YY, Baykan Z, Naçar M, Gün I, Çetinkaya F. (2011). Knowledge, attitude about breast cancer and practice of breast cancer screening among female health care professionals: a study from Turkey. Asian Pac J Cancer Prev. 12(11):3063-8.

9. Al- Hashimi MY, and Wang XJ. (2014). Breast Cancer in Iraq, Incidence, Trend 2000-2009. Asian Pacific Journal of Cancer Prevention 15 (1), 281-286. http://dx.doi.org/10.7314/APJCP.2014.15.1.281

10. Alkhazrjy LA, Souza AM. (2018). Effectiveness And Results Of Iraqi Breast Cancer Screening Program Applied At Primary Health Care Centers. International Journal Of Medical Research & Health Sceinces. 7 (10), 91-102. www.ijmrhs.com.

11. AL-Alwan NA, Al-Diwan JK, Al-Attar WM, Eliessa RA. (2012). Knowledge, attitude & practice towards breast cancer & breast self examination in Kirkuk

University, Iraq. Asian Pacific Journal of Reproduction 1(4), 308-311. www.elsevier.com/locate/apjr

12. AL-Alwan NA, and Mualla FH. (2014). Promoting Clinical Breast Examination as A screening Tool for Breast Cancer in Iraq. National Journal of Nursing Specialties 27(1), 76-82.

13. AL-Alwand NA, Tawfeeq FN, Sattar SA, Yihya F. (2019). Assessing the Peroid Between Diagnosis of Breast Cancer and Surgical Treatmentn Among Mastectomized Female Patient in Iraq. Internationa Journal of Medical Research & Health Science. 8 (1), 43-50. www.ijmrhs.com.

14. Al- Dayel M, Arafa M, Nooh R, Alamri F, Fareed M. (2019). Knowledge, Attitude And Practice About Breast Cancer Among Saudi Women: A Cross- Sectinal Study In Riyadh. International Journal Of Medical Research And Health Science. 8(6), 38-48. www.ijmrhs.com.

15. American Cancer Society (ACS). (2016). Breast Cancer Risk and Prevention. https//:www.cancer.orgcontentdamCRCPDFPublic8580.00.pdf. (October 16. 2017).

16. Amin BA, Babakir-Mina M, Mohialdeen FA, and Gubari MI. (2017). Knowledge, Attitude and Practice toward Breast Cancer among Kurdish Women in Sulaimani Governorate/ Iraq. Kurdistan Journal of Applied Research. 2(2), 1-7. DOI: 10.24017/science.2017.2.1

17. Amoran OE and Toyobo OO. (2015) Predictors of breast self-examination as cancer prevention practice among women of reproductive age-group in a rural town in Nigeria. Niger Med J. 56 (3), 185-189. DIO:10.4103/0300-1652.160362.

18. Anwar SL, Tampubolon G, Hemelrijck MV, Hutajulu SH, Watkins J, AND Wulaningsih W. (2018). Determinants of cancer screening awareness and participation among Indonesian women. BMC Cancer. 18(208), 1-11. https://doi.org/10.1186/s12885-018-4125-z

19. Arndt V, Sturme TS, Stegmaier S, Ziegler H, Dhom G, and Brenner H. (2002). Patient delay and stage of diagnosis among breast cancer patients in Germany – a population based study. Br J Cancer 86: 1034 - 1040. DOI: 10.1038/sj/bjc/6600209 www.bjcancer.com.

20. Badakhsh M, Balouchi A, Taheri S, Bouya S, Ahmadidarehsima S, Aminifard M. (2018). Attitude and Practice Regarding Breast Cancer Early Detection among Iranian Women: A Systematic Review. Asian Pac J Cancer Prev. 19 (1), 9-16. DOI:10.22034/APJCP.2018.19.1.9

21. Banegas PM, Bird Y, Moraros J, King S, Prapsiri S, and Thompson B. (2012). Breast Cancer Knowledge, Attitudes, and Early Detection Practices in United States-Mexico Border Latinas. Journal Of Women's Health. 21(1), 101-107. DOI: 10.1089/jwh.2010.2638.

22. Bener A, El Ayoubi HR, Moore MA, Bash B, Joseph S, and Chouchane L. (2009). Do We Need to Maximise the Breast Cancer Screening Awareness?: Experience with an Endogamous Society with High Fertility. Asian Pacific Journal of Cancer Prevention. 10: 599-604.

23. Blanch J, Sala M, Josefa I, Domingo L, Fernandez B, Otegi A, Barata T, Zubizarreta R, Ferrer J, Castells X, Rue M, and Salas D. (2014). Impact of Risk Factors on Different Interval Cancer Subtypes in a Population-Based Breast Cancer Screening Programme. PLoS One ,9(10) 1-10. doi:10.1371/journal.pone.0110207

24. Brzozowska A, Duma D, Mazurkiewicz T, Brzozowski W and Mazurkiewicz M. (2014). Reasons for delay in treatment of breast cancer detected due to breast self-examination in women from the Lubelskie region. Ginekol Pol. 85(1), 14-17.

25. Center for Disease control and prevention (CDC). (2018). www.cdc.govcancerbreastpdfBreastCancerFactSheet.pdf h. Page last reviewed: November 5, 2018.

26. Charkazi A, Samimi A, Razzaghi KH, Kouchaki GM, Moodi M, Meirkarimi K, Kouchaki AM, and Shahnazi H. (2013) Adherence to Recommended Breast Cancer Screening in Iranian Turkmen Women: The Role of Knowledge and Beliefs. ISRN Preventive Medicine: 1-8. http://dx.doi.org/10.5402/2013/581027.

27. Cheng-Har Yip, Smith RA, Anderson BO, Miller AB, Thomas DB, Ang ES, Caffarella RS, Corbex M, Kreps GL, and McTiernan A. (2008). Guideline Implementation for Breast Healthcare in Low- and Middle-Income Countries. American Cancer Society. 113(8), 2244–2256. DOI: 10.1002/cncr.23842

28. Crooks CE and Jones SD. (1989). Educating women about the importance of breast screenings: the nurse's role. Cancer Nurs. 12(3), 161-164.

29. Dale; DC and Federman DD. (2003). Scienctific American Medicine. Web MD ,New York. 2, P: 2253-2260.

30. Dandash FK., Al-Mohaimeed A. (2007) Knowledge, Attitudes, and Practices Surrounding Breast Cancer and Screening in Female Teachers of Buraidah, Saudi Arabia. International Journal of Health Sciences, Qassim University. 1(1), 61-71.

31. DeSantis EC, Fedewa SA, Sauer AG, Kramer JL, Smith RA, and Jemal A. (2016) Breast Cancer Statistics, 2015: Convergence of IncidenceRates Between Black and White Women. CA: A Cancer Journal for Clinicians. 66(1), 31-42. doi: 10.3322/caac.21320. cacancerjournal.com

32. Dundar PE, Ozyurt BC, and Erdurak K. (2012). Sociodemographic Determinants of Nonattendance in a Population-BasedMammography Screening Program in the City of Manisa, Turkey. The ScientificWorld Journal. 1-14. 10.1100/2012/816903.

33. El Bcheraoui C, Basulaiman M, Wilson S, Daoud F, Tuffaha M, AlMazroa MA, Memish ZA, Al Saeedi M, and Mokdad NH. (2015). Breast Cancer Screening in

Saudi Arabia: Free but Almost No Takers. journal.pone. 10 (3), 1-10. DOI:10.1371/journal.pone.0119051.

34. Elobaid YE, Aw TC, Grivna M, Nagelkerke N. (2014). Breast Cancer Screening Awareness, Knowledge, and Practice among Arab Women in the United Arab Emirates: A Cross-Sectional Survey. Plosone. 9 (9), 1-6. doi:10.1371/journal.pone.0105783.

35. Ermiah E, Abdalla F, Buhmeida A, Larbesh E, Pyrhönen S and Collan Y. (2012). Diagnosis delay in Libyan female breast cancer. BMC Research Notes. 5(452), 1-8. http://www.biomedcentral.com/1756-0500/5/452.

36. Eun HL, Kim KW, Kim YJ, Shin DR, Park YM, Lim HS, Park JS, Kim HW, Kim YM, Kim HJ, and Jun JK. (2016). Performance of Screening Mammography: A Report of the Alliance for Breast Cancer Screening in Korea. Korean J Radiol. 17(4),489-496. http://dx.doi.org/10.3348/kjr.2016.17.4.489

37. Eunji SL, Nhung BC, Suh M, Park B, Jun JK, and Choi KS. (2017). Cancer mortality-to-incidence ratio as an indicator of cancer management outcomes in Organization for Economic Cooperation and Development countries. Epidemiology and Health. 39, 1-11. https://doi.org/10.4178/epih.e2017006

38. Fouladi N, Pourfarzi F, EMazaheri E, Alimohammadi H , Rezaie M, Amani F, and Nejad MR. (2013). Beliefs and Behaviors of Breast Cancer Screening in Women Referring to Health Care Centers in Northwest Iran According to the Champion Health Belief Model Scale. Asian Pac J Cancer Prev. 14 (11), 6857-6862. DOI:http://dx.doi.org/10.7314/APJCP.2013.14.11.6857

39. Ghodsi Z, Hojjatoleslami S. (2014). Breast self examination and mammography in cancer screening: women health protective behavior. J prev med hyg 55: 46-49.

40. Glanz K, Barbara K, and K. Viswanath. (2008). Health behavior and health education : theory, research, and practice. 4th edition. Jossey-Bass A Wiley Imprint United States of America. 45-62. www.josseybass.com.

41. Grace XM, Fang C, Wang MQ, Shive SE, and Ma XS. (2013). Pathways of Breast Cancer Screening Among Chinese American Women. J Community Med Health Educ. 3(209), 1-13. 10.4172/2161-0711.1000209

42. Gürsoy AA, Yılmaz f, Erdöl H, Bulut HK, Mumcu HK, Yeşilçiçek K, Kahriman I, Hindistan S, and Nural N. (2009). The effect of peer education on university students' knowledge of breast self-examination and health beliefs. The Journal of Breast Health. 5(3),135-140.

43. Habib SO, Al-Diab JM, Al-Haroon SS, Mohsin AA, Al-Elwe WM, Hasan JG, Al- and Emara KM. (2010). Experience and Outcome of Population-based Cancer Registration in Basrah-Southern Iraq in 2005-2008. Asian Pacific Journal of Cancer Prevention 11: 1151-1154.

44. Heisey R, M. Clemons, L. Granek, K. Fergus, S. Hum, B. Lord RN, D.R. McCready, and B. Fitzgerald RN. (2011). Health care strategies to promote earlier presentation of symptomatic breast cancer: perspectives ofwomen and family Physicians, Current Oncology. 18(5), 227-237.

45. Hellmann SS, Njor SH, Lynge E, Euler-Chelpin M, Olsen A, Tjønneland A, Vejborg I, and Andersen ZJ. (2015). Body mass index and participation in organized mammographic screening: a prospective cohort study BMC Cancer. 15(294), 1-9. DOI 10.1186/s12885-015-1296-8

46. Henley JS. RNA, Cheryll C. Thomas, Greta M. Massetti, Brandy Peaker, Lisa C. Richardson. (2017) Invasive Cancer Incidence, 2004-2013, and Deaths, 2006-2015, in Nonmetropolitan and Metropolitan Counties - United States. US Department of Health and Human Services/Centers for Disease Control and Prevention. 66 (14), 1-13.

47. Henriksen MV, Guassora AD, Brodersen J. (2015). Preconceptions influence women's perceptions of information on breast cancer screening: a qualitative study. BMC Res Notes. 8(404), 1-9. DOI 10.1186/s13104-015-1327-1.

48. Houfek JF, Waltman NL, and Kile MA. (1997). The nurse's role in promoting breast cancer screening. Nebr Nurse. 30 (3), 4-9.

49. Innos K, Padrik P, Valvere V, Eelma E, Kütner R, Lehtsaar J and Tekkel M. (2013). Identifying women at risk for delayed presentation of breast cancer: a cross-sectional study in Estonia. BMC Public Health. 13 (947), 2-7. http://www.biomedcentral.com/1471-2458/13/947.

50. Jazayeri SB, Saadat S, Ramezanid R, and Kaviani A. (2015). Incidence of primary breast cancer in Iran: Ten-year national cancer registry data report. The International Journal of Cancer Epidemiology, Detection, and Prevention. 867, 1-9. http://dx.doi.org/10.1016/j.canep.2015.04.016

51. Jones CL, Maben J, Lucas G, Davies EA, Jack RH, and Ream E. (2015). Barriers to early diagnosis of symptomatic breast cancer: a qualitative study of Black African, Black Caribbean and White Britishwomen living in the UK. BMJ Open. 5, 1-17. doi:10.1136/bmjopen-2014-006944.

52. Kadam YR, Gore AD, Quraishi SR, Dhoble RV, Sawant MR, and Gore AD. (2016). Barriers for Early Detection of Cancer Amongst Urban Indian Women: A Cross Sectional Study. Iran J Cancer Prev. 9 (1) 1-6. doi: 10.17795/ijcp.3900.

53. Kariri M, Jalambo MO, Zabut B, Kanou B, Deqes S, Younis S, and Balawi Y. (2017). Risk Factors for Breast Cancer in Gaza Strip, Palestine: a Case-Control Study. Clinical Nurtrition Research 6(3),161-171. https://doi.org/10.7762/cnr.2017.6.3.161.

54. kasper, Braunwald, Fauci, et al. (2005). Harrison's Principles of Internal Medicine. New York, McGraw-Hill Volume 1, 16 edition. 520-525.

55. Khakbazan Z, Taghipour A, Roudsari RL, Mohammadi E, and Omranipour R. (2014). Delayed Presentation of Self-discovered Breast Cancer Symptoms in Iranian Women: A Qualitative Study. Asian Pac J Cancer Prev. 15(21), 9427-9432. DIO: 10.7314/APJCP.2014.15.21.9427

56. Khaliq W , Aamar A, Wright SM. (2015). Predictors of Non-Adherence to Breast Cancer Screening among Hospitalized Women. PLoS ONE. 10(12): e0145492. doi:10.1371/journal.pone.0145492

57. Kirca N, Tuzcu A, and Gozum S. (2018). Breast Cancer Screening Behaviors of First Degree Relatives of Women Receiving Breast Cancer Treatment and the Affecting Factors. Eur J Breast Health. 14(1), 23-28. DIO: 10.5152/ejbh.2017.3272.

58. Kochanczyk ML. (1982) An education program which prepares nurses to teach breast self-examination. JOGN Nurs. 11(4), 222-224.

59. Kwok C, Endrawes G, and Lee CF. (2016). Breast Cancer Screening Beliefs Questionnaire: Psychometric properties assessment of the Arabic version European Journal of Oncology Nursing 20: 42-48. http://dx.doi.org/10.1016/j.ejon.2015.08.003.

60. Lewis SM, Heitkemper MM, Dirksen SR. (2000). Medical Surgical Nursing, Assessment and Management of Clinial problem. 5 Edition, P: 1472-1486. Harcourt Health Sciences Company, St. Louis, Missouri. USA.

61. Lim JN, Potrata B, Simonella L, Celene W, Tar-Ching Aw, Dahlui M, Hartman M, Mazlan R, and Taib NR. (2015). Barriers to early presentation of self-discovered breast cancer in Singapore and Malaysia: a qualitative multicentre study. BMJ Open 5: 1-9. doi:10.1136/bmjopen-2015-009863.

62. Linsel L, LJ Forbes, M Kapari, C Burgess, L Omar, L Tucker1 and AJ Ramirez. (2009). A randomised controlled trial of an intervention to promote early presentation of breast cancer in older women: effect on breast cancer awareness. British Journal of Cancer 101: 40 - 48. doi:10.1038/sj.bjc.6605389 www.bjcancer.com.

63. Lundqvist A, Andersson E, Ahlberg I, Nilbert M, and Gerdtham U. (2016). Socioeconomic inequalities in breast cancer incidence and mortality in Europe—a systematic review and meta-analysis. The European Journal of Public Health: 1-10. http://eurpub.oxfordjournals.org/

64. Maghous A, Rais F, Ahid S, Benhmidou N, Bellahamou K, Loughlimi H, Marnouche E, Elmajjaoui S, Elkacemi H, Kebdani T and Benjaafar N. (2016). Factors influencing diagnosis delay of advanced breast cancer in Moroccan women. BMC Cancer. 16(356),1-8. DOI 10.1186/s12885-016-2394-y

65. Majek O, Dane J, Skovajsova M, Bartonkova H, Buresova L, Klimes D, Brabec P, Kozeny P and Dusek L. (2011). Breast cancer screening in the Czech Republic: time trends in performance indicators during the first seven years of the organised

programme. BMC Public Health. 11(288), 1-13. http://www.biomedcentral.com/1471-2458/11/288

66. Majid A R, Mohammed AH, Hemin HA, Wasan AA, Rashid MR and and Michael HD. (2012). A population-based study of Kurdish breast cancer in northern Iraq: Hormone receptor and HER2 status. A comparison with Arabic women and United States SEER data. BMC Women's Health, 12(16), 2-10. http://www.biomedcentral.com/1472-6874/12/16.

67. Majid A R, Mohammed AH, Hemin HA, Wasan AA, Safer BM, Rashid MR and and Michael HD. (2009). Breast cancer in kurdish women of northern Iraq: incidence, clinical stage, and case control analysis of parity and family risk. BMC Womens Health. 9(33), 1-6. http://www.biomedcentral.com/1472-6874/9/33.

68. Malik IA and Gopalan S. (2003). Use of CAM results in delay in seeking medical advice for breast cancer. Eur J Epidemiol. 18(8), 817-822.

69. Marmot MG, Altman D G, Cameron D A, Dewar J A, Thompson S G, Wilcox M. (2013). The benefits and harms of breast cancer screening: an independent review A report jointly commissioned by Cancer Research UK and the Department of Health (England) October 2012. Br J Cancer 108: 2205-2240. www.bjcancer.com DOI:10.1038/bjc.2013.177.

70. Masoudiyekta L, Rezaei-Bayatiyani H, Dashtbozorgi B, Malehi AS, and Moradi S. (2018). Effect of Education Based on Health Belief Model on the Behavior of Breast Cancer Screening in Women. Asia Pac J Oncol Nurs. 5: 114-120. DIO:10.4103/apjon.apjon_36_17.

71. Meechan G, Collins J and Petrie K. (2002). Delay in seeking medical care for self-detected breast symptoms in New Zealand women. The New Zealand medical journal. 115(1166), U257.

72. Meisel SF, Pashayan N, Rahman B, Side L, Fraser L, Gessler S, Lanceley A, Wardle J. (2015), Adjusting the frequency of mammography screening on the basis of genetic risk: Attitudes among women in the UK. The Breast. 24: 237-241. http://dx.doi.org/10.1016/j.breast.2015.02.001

73. Memon ZA, Shaikh AN, Rizwan S, and Sardar MB. (2013). Reasons for patient's delay in diagnosis of breast carcinoma in Pakistan. Asian Pac J Cancer Prev 14 (12), 7409-7414. DOI:http://dx.doi.org/10.7314/APJCP.2013.14.12.7409.

74. Mittmann N, Stout NK, Lee P, Tosteson NA, Trentham-Dietz A, Alagoz O, and Yaffe MJ. (2015). Total cost-effectiveness of mammography screening strategies • Research Article Total cost-effectiveness of mammography screening strategies. Health Reports, Statistics Canada.26 (12), 16-25.

75. Mohamed HA, Ibrahim YM, Lamadah SM and Abo El-Magd MH. (2016). Application of the Health Belief Model for Breast Cancer Screening and Implementation of Breast Self- Examination Educational Program for Female Students of Selected Medical and Non-Medical Faculties at Umm al Qura

University". Life Science Journal 13(5),21-33. http://www.lifesciencesite.com. doi:10.7537/marslsj13051603.

76. Moiel D, and Thompson J. (2014). Early Detection of Breast Cancer Using a Self-Referral Mammography Process: The Kaiser Permanente Northwest 20-Year History. The Permanente Journal. 18(1), 43-48. http://dx.doi.org/10.7812/TPP/13-038

77. Mokhtary L, and Markani AK. (2014) Health Beliefs and Breast Cancer Early Detection Behaviors among Health Care Providers in Tabriz Healthcare Centers, Iran. Basic & Clinical Cancer Research. 6(2), 16-22. www.bccrjournal.com.

78. Moodi M, Rezaeian M, Mostafavi F, Sharifirad GR. (2012). Determinants of mammography screening behavior in Iranian women: A population-based study. Journal of Research in Medical Sciences. 17:750-59. www.journals.mui.ac.ir/jrms.

79. Moskowitz M. (1979). Clinical examination of the breasts by nonphysicians: a viable screening option?. Cancer. 44(1), 311-314.

80. Moutel G, Duchange N, Darquy S, Montgolfier S, Papin-Lefebvre F, Jullian O, Viguier J, and Sancho-Garnier H. (2014). Women's participation in breast cancer screening in france- an ethical approach BMC Medical Ethics 2014, 15 (64),1-8. http://www.biomedcentral.com/1472-6939/15/64.

81. Najjar H, and Easson A. (2010). Age at diagnosis of breast cancer in Arab nations. International Journal of Surger. 8 (2010) 448-452. doi:10.1016/j.ijsu.2010.05.012.

82. Nejad SO, Masoudnia E, and Heydari A. (2017). The Impact of Psychosocial Factors in the Delay in Seeking Medical Treatment among Women with Breast Cancer Symptoms: An Appraisal of Health Belief Model. Iranian Quarterly Journal of Breast Diseases. 10 (3), 41-54.

83. Noroozi A, Jomand T, and Tahmasebi R. (2010). Determinants of Breast Self-Examination Performance Among Iranian Women: An Application of the Health Belief Model. J Canc Educ 22. DOI: 10.1007/s13187-010-0158-y.

84. Nosarti C, Crayford T, Roberts JV, and David AS. (2000). Delay in presentation of symptomatic referrals to a breast clinic: patient and system factors. Br J Cancer. 82(3), 742–748. http://www.idealibrary.com on.

85. Perry N, Broeders M, Wolf C., Törnberg S, Holland R, Karsa L. (2006). European Guidelines for Quality Assurance in Breast Cancer Screening and Diagnosis. International Agency for Research on Cancer (IARC). 4th edition. ec.europa.eu/heath.

86. Poum A, Supannee Promthet SP, Stephen W Duffy, and Donald Maxwell Parkin. (2014) Factors Associated With Delayed Diagnosis of Breast Cancer in Northeast Thailand. J Epidemiol 24: 102-108.

87. Ramathuba DU, Ratshirumbi CT, Mashamba TM. (2015). Knowledge, attitudes and practices toward breast cancer screening in a rural South African community. Curationis. 38(1): 1172. doi: 10.4102/curationis.v38i1.1172

88. Ravesteyn N T, Miglioretti DL, Stout NK, Lee SJ, Schechter CB, Buist DS, Huang H, Heijnsdijk EA, Trentham-Dietz A, Alagoz O, Near AM, Kerlikowske K, Nelson DH, Mandelblatt JS, and de Koning HJ. (2012). What level of risk tips the balance of benefits and harms to favor screening mammography starting at age 40? National Institute of Health. 156 (9), 609–617. doi:10.1059/0003-4819-156-9-201205010-00002.

89. Schoor VG, Moss SM, Otten JDM, Donders R, Paap E, den Heeten GJ, Holland R, and Broeders MJM. (2011). Increasingly strong reduction in breast cancer mortality due to screening. Br J Cancer. 104(6), 910 - 914. doi:10.1038/bjc.2011.44 www.bjcancer.com.

90. Shields M and Wilkins K. (2009) An update on mammography use in Canada. Statistics Canada,Health Reports. 20(3), 1-13.

91. Shiryazdi SM, Kholasehzadeh G, and Kargar S. (2014). Health Beliefs and Breast Cancer Screening Behaviors among Iranian Female Health Workers. Asian Pacific Journal of Cancer Prevention 15 (22), 9817-9822. DOI:http://dx.doi.org/10.7314/APJCP.2014.15.22.9817.

92. Smith RA. Andrews KS, Brooks D, and Fedewa SA. (2017). Cancer Screening in the United States, 2017: A Review of Current American Cancer Society Guidelines and Current Issues in Cancer Screening Cancer Journal for Clinicians 67(2) ,100-121. DIO: 10.3322/caac.21392.

93. Stamenić V, and Marija S. (2011) Urban-rural differences in a population-based breast cancer screening program in Croatia. Croat Med J 52: 76-86. doi: 10.3325/cmj.2011.52.76.

94. Stanhope M and Lancaster J. (2010), Community Public Health Nursing. 5 Edition. P: 567-569. Harcourt Health Science Company. Missouri. USA.

95. Sung J F, Blumenthal DS, Coates RJ, Alema-Mensah E, and Altanta MS. (1997). Knowledge, Beliefs, Attitudes, And Cancer Screening Among Inner-City African-American Women. Journal Of The National Medical Association. 89(6),405- 411.

96. Tahmasebi R, Noroozi N. (2016) Is Health Locus of Control a Modifying Factor in the Health Belief Model for Prediction of Breast Self-Examination? Asian Pacific Journal of Cancer Prevention. 17(4), 2229-2233. http://dx.doi.org/10.7314/APJCP.2016.17.4.2229.

97. Tavafian SS, Hasani L, Aghamolaei T, and Gregory D. (2009). Prediction of breast self-examination in a sample of Iranian women: an application of the Health Belief Model. BMC Womens Health. 9 (37), 1-7. doi:10.1186/1472-6874-9-37.

98. Taymoori P, and Berry T. (2009). The Validity and Reliability of Champion's Health Belief Model Scale for Breast Cancer Screening Behaviors Among Iranian Women. Cancer Nurs. 32(6), 465-472.

99. Taymoori P, Berry T, Farhadifar F. Predicting mammography stage of adoption among Iranian women. J Edu Health Promot. 1:13. DOI: 10.4103/2277-9531.98571

100. Tazhibi M, and Feizi A. (2014). Awareness Levels about Breast Cancer Risk Factors, EarlyWarning Signs, and Screening and Therapeutic Approaches among Iranian Adult Women: A large Population Based Study Using Latent Class Analysis. BioMed Research International: 1-9. http://dx.doi.org/10.1155/2014/306352.

101. Teh YC, Tan JH, Taib NA, Rahmat K, Westerhout CJ, Fadzli F, See SM, Jamaris S and Yip CH. (2015). Opportunistic mammography screening provides effective detection rates in a limited resource healthcare system. BMC Cancer. 15 (405), 1-6. DOI 10.1186/s12885-015-1419-2

102. Tsu-YW, Brady MA, Chen YW, Hergert C. (2006). Health beliefs and practices related to breast cancer screening in Filipino, Chinese and Asian-Indian women. Cancer Detection and Prevention 30: 58-66. doi:10.1016/j.cdp.2005.06.013.

103. Unger-Saldaña K. (2014). Challenges to the early diagnosis and treatment of breast cancer in developing countries. World Journal of Clinical Oncology. 5 (3), 465-477. http://www.wjgnet.com/esps/helpdesk.aspx. DOI: 10.5306/wjco.v5.i3.465

104. Vieira RA, Peres SV, Silva TB , Carvalho Mauad MR, de Oliveira VG. Lourenc LS¸ Filho LM. (2015). Barriers related to non-adherence in a mammography breast-screening program during the implementation period in the interior of Sa ˜o Paulo State, Brazil. Journal of Epidemiology and Global Health 5, 211–219. http://dx.doi.org/10.1016/j.jegh.2014.09.007.

105. Wang HJ, Mandelblatt J, Liang W, Jung Ma BY, and Schwartz MD. (2009). Knowledge, Cultural, and Attitudinal Barriers to Mammography Screening among Non-Adherent Immigrant Chinese Women: Ever versus Never Screened Status. National Institute of Health-Cancer 115(20), 4828–4838. doi:10.1002/cncr.24517.

106. Wen YC, Ong WS, Tan PH, Leo NQ, Ho GH, Wong CS, Chia KS, ChowKY, Tan MH , and Peter AS. (2012). Validation of the Gail model for predicting individual breast cancer risk in a prospective nationwide study of 28,104 Singapore women. Breast Cancer Research. 14 (19), 1-12. http://breast-cancer-research.com/content/14/1/R19.

107. World Health Organization (WHO). Cancer prevention Early Diagnosis and Screening. (2017). http://www.who.int/cancer/prevention/diagnosis-screening/breast-cancer/en/.

108. Yılmam M, and Durmuş T. (2016). Health Beliefs and Breast Cancer Screening Behavior among a Group of Female Health Professionals in Turkey. J Breast Health 12: 18-24. DOI: 10.5152/tjbh.2015.2715.

109. Young Eun, Eunice E. Lee, Mi Ja Kim, and Louis Fogg. (2011) Breast Cancer Screening Beliefs among Older Korean American Women. J Gerontol Nurs 35 (9), 40–50. doi:10.3928/00989134-20090731-09.

Breast Cancer Awarenes Month

نامادەکردنی :

د.سەفاریا شوان عبدالرحمن

بژیشکی پسپۆڕی خێزانی و نەخۆشیەکانی مەمک

Fighting to Save the 1 in 8

هەرێمی کوردستان

وەزارەتی تەندروستی

بەڕێوەبەرایەتی گشتی تەندروستی سلێمانی

کلینیکی چارەسەری نەخۆشیەکانی مەمک

سلێمانی - نەخۆشخانەی شار

Breast Disease Treatment Center

Iraq - Sulaimani

جۆری پشکنین	٢٠ – ٢٩ ساڵ	٣٠ - ٣٩ ساڵ	٤٠ ساڵ بەرەو ژوور
پشکنینی خۆیی	مانگانە	مانگانە	مانگانە
پشکنینی کلینیکی		ساڵانە	ساڵانە
ماموگراف			٢٠١ ساڵ (پێشتر دەکرێت بۆ نەو کەسانەی گومانی تووش بوونیان لێ دەکرێت)

شێرپەنجەی مەمك چیە ؟

باوترین جۆری شێرپەنجەیە کە تووشی خانمان دەبێت ، وەلەنێوان هەموو ٨ نافرەت یەکێکیان ئەگەری تووش بوونی هەیە بە شێرپەنجەی مەمك ، هەروەها لەپیاواندا بە رێژەی ١٪ .

گرێ : زیاد بوونێکی نائاسایی خانەی لەشە مەرج نیە هەموو گرێیەك شێرپەنجەیی بێت.

وەك گرێی چەوری و گرێی لیفی کە چارەسەریان ئاسانە . بەڵام گرێی شێرپەنجەیی پێویستە زوو چارەسەر بکرێت و رێ لە بڵاوبوونەوەی بگیرێت .

هەندێك هۆکار رێژەی تووش بوون بە نەخۆشیەکە بەرز دەکەنەوە

١- هۆکاری بۆماوەیی لە خێزاندا

٢- تەمەن ، ئەوخانمانەی تەمەنیان لە سەروو ٤٥ - ٥٠ ساڵیەوەیە

٣- گۆڕانکاری لە هۆرمۆنات

* ئەو نافرەتانەی کە دووگیان نەبوون ، یاخود دوای تەمەنی ٣٠ ساڵی دووگیان بوون

*شیرنەدان

*بانگ بوون پێش ١٢ ساڵی

*لێچوونەوە (تەمەنی نائومێدی لە نافرەتاندا) لە دوای ٥٥ ساڵ ی

*بەکارهێنانی هۆرمۆنات (دەرمان) دوای لێچوونەوە (تەمەنی نائومێدی)

*بەکارهێنانی دەرمانی دژە سکپڕی بۆ ماوەیەکی زۆر

٤- قەڵەوی و زۆر خواردنی چەوری

٥- بەرکەوتنی تیشك (الاشعه)

٦- جگەرە کێشان و خواردنەوەی کحول

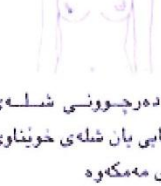
نیشانە بە ناگاهێنەرەوەکانی تووش بوون بە شێرپەنجەی مەمك

نیشانە بەناگاهێنەرەوەکان بریتین لە:

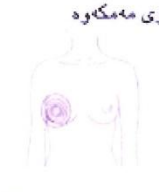
١- دروستبوونی گری (زۆرترین حالەتەکانی شێرپەنجە مەم نیشانەیە دەردەکەون) یان (نەستوربوونی نائاسایی بەشێکی پێستی مەمك)

٢- چاڵ بوونی پێست لەو شوێنەی کە شێرپەنجەکەی تووشبووە.

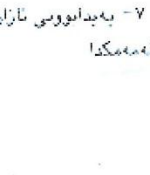
٣- گۆڕانی ڕەنگ (سوورببوونەوە) و شێوەی پێست وەکو برین



٤- گۆڕانی گۆی مەمك وەك بەناوداچوونی و گۆڕانی ڕەنگەکەی

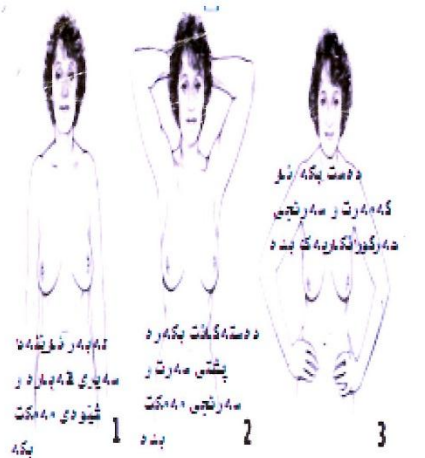


٥- دەرچوونی شلەی نائاسایی یان شلەی خوێناوی لەگۆی مەمکەوە



٦- بەبڵبوونی گرێ لەبن باڵدا

٧- بەبڵبوونی نازار لەمەمکدا



Appendix B : Breast cancer screening detection rate of different techniques

Parameter	2007-2009	2010	2011	2012	2013	2014	2015	2016	Total
Total woman visitors (*n*)	10,298	9718	11,081	8473	18,226	20,549	16,783	5812	100,769
Breast cancer (*n*)	103	75	81	98	120	148	135	33	793
Eligible women registered in the first round (*n*)	4656	4557	6043	5202	5421	6323	5119	3170	40,491
Second screening round visiting (*n*)	-	-	-	-	10155	11240	9300	2393	33,088
Overall visiting (*n*)					15,576	17,563	14,419	5563	53,121
Ultrasound (*n*)	4505	3522	3253	3064	5800	6712	5495	3103	35,454
Mammography (*n*)	1396	1560	1946	1476	2927	3342	3162	2274	18,083
Final needle aspiration (*n*)	416	311	338	239	311	240	212	-	2067
Core biopsy (*n*)	-	-	-	-	261	313	290	103	967

Appendix C: The reasons for the women to visit the center in 2013–2015

Years	For early diagnosis				For screening	Total	participation methods		
	Feeling lump *n* (%)	Feeling of breast pain *n* (%)	Breast discharge *n* (%)	Other *n* (%)	n (%)		Direct visit n (%)	Referred by health staff n (%)	Total
2013	1597 (19.4)	4812 (58.7)	469 (5.7)	316 (3.8)	1003 (12.2)	8197	4382 (77.2)	1293 (22.7)	5675
2014	2189 (19.9)	6798 (61.9)	416 (3.7)	627 (5.7)	947 (8.62)	10,977	7116 (76.8)	2142 (23.1)	9258
2015	1649 19.9)	5315 (64.2)	257 (3.1)	351 (4.2)	700 (8.4)	8272	5540 (77.4)	1611 (22.5)	7151
2016	819 (19.3)	2291 (54.2)	118 (2.7)	159 (3.7)	370 (8.7)	4225	2805 (80.0)	701 (19.9)	3506
Total	6254 (19.7)	19,216 (60.6)	1260 (3.9)	1921 (6.0)	3020 (9.5)	31,671	19,843 (77.5)	5747 (22.4)	25,590

Appendix D: Socio-demographic characteristic of screening participant per years

Years	Age of screened women Mean±SD	Age at diagnosis of BC women	Place of residence		Marital status		
			Center of Sulaimani n (%)	Out of the city n (%)	Single	Married	Widow
2007	37.3±10		151 (93.2)	11 (6.8)	21 (1.5)	140 (98.4)	2 (0.1)
2008	34.3±10	49.1±7	960 (84.2)	180 (15.8)	168 (14.6)	963 (83.9)	16 (1.3)
2009	36.2±11	49.9±11	2510 (78.4)	688 (21.6)	412 (13.7)	2504 (83.2)	93 (3.0)
2010	35.1±10	49.3±10	3478 (79.7)	881 (20.1)	724 (16.2)	3589 (80.2)	159 (3.5)
2011	35.6±11	49.9±10	4586 (76.1)	1438 (23.9)	915 (15.2)	5028 (83.8)	53 (0.8)
2012	38.4±11	48.7±12	3799 (73.1)	1393 (26.9)	655 (12.7)	4239 (82.6)	238 (4.6)
2013	41.6±9	48.8±10	3837 (71.3)	1539 (28.7)	324 (4.9)	4791 (88.9)	269 (6.0)
2014	42.1±9	50.1±13	4299 (69.2)	1910 (30.8)			
2015	42.1±9	47.7±10	3619 (72.6)	1363 (27.4)	246 (4.9)	4674 (94.4)	28 (0.5)
2016	42.0±9	46.7±13	1949 (64.7)	1063 (35.3)	33 (1.0)	3010 (98.7)	5 (0.2)
Total	38.5±10	49.1±11	29,188(73.6)	10,466(26.4)	3498(10.1)	30,198 (87.3)	863 (2.4)

Appendix E: Questionnaire of the study

University Of Sulaimania/ Faculty Of Medical Sciences

School Of Nursing

Name Of Project: Utilization Of Breast Cancer Screening Methods among Women in Sulaimania

Questionnaire No: Date:

Section One: Socio-demographic, medical and obstetric data

I. Socio-demographic

1. Age by year: ..... 2. Occupation: .....
3. Religion: ..... 4. Education level: ..... 5. Husband education level: .....
6. Address (place of residence): .....
7. Marital status: Married ◯ Divorced ◯ Widowed ◯ Single ◯
8. Perceived family income level: Sufficient ◯ Barely sufficient ◯ Insufficient ◯

II. Reproductive characteristics

9. No. of delivery (gravida): ..... 10. No. of children she has (para):..... 11. No. of abortion or death:.....
12. Age at first delivery: .....

III. Contraceptive use

13. Have you used contraceptive method of birth control? Yes ◯ No ◯
14. Type of contraceptive method ..... 15. Duration of use .....

IV. Family history of breast cancer:(*number of affected breast cancer in your family*)

16. Sisters: ..... 17. Daughters: ..... 18. Mother:.....
19. Aunt:..... 20.Grandmother:..... 21. Others:.....

V. Lifestyle

22. Did you lactate your baby Yes ◯ No ◯ 23. Duration of lactation in year: .....
24. Howmany babies you have lactate: .....
25. Have either time smoke Yes ◯ No ◯ 26. Duration of smoking in year:.....
27. Does anyone smoke in your family Yes ◯ No ◯

VI. Previous breast diseases and screening participation

28. So far how often you have done clinical breast examination?..... 29. Date of each visit .....
29. Why have you not attend clinic to examine your breast?
I have not such breasts problem ◯ I am afraid to have a breast cancer ◯
I not have such information ◯ Other.....
30. What was the reasons that you visit clinic or health center ?
Pain ◯ Mass ◯ skin charges ◯ increase breast size ◯ Nipple discharge ◯ Nipple insertion ◯ abscess ◯ screening ◯ Other..... Determine the results (diagnosed):.....
31. Howmany mammograms have done for you: ....., 32. Date of doing each mammographs .....
33. Where have you done a mammography? From Dr's office ◯ from screening center ◯
34. Have you done any breast surgery? Yes ◯ No ◯
35. Do you have any other chronic diseases? Yes ◯ No ◯
36.What are your chronic diseases? .....

VII. Method of participating inscreening program and delay in diagnosis and treatment

37. Who have directing you to attend health care center to therapy or screening? Myself ◯
Dr. ◯ other ◯

38. How long have you known or noticed the breast problem before you visit health center .....

VIII. Pattern of breast abnormality and describe abnormality at first visit

39. What are the troubles in your breast?
Pain ◯ Mass ◯ skin charges ◯ increase breast size ◯ Nipple discharge ◯ Nipple insertion ◯ abscess ◯ screening ◯ other ◯
40. Which of your breast has affected trouble? Left ◯ right ◯ both ◯
41. Describe the pattern of pain: Cyclical ◯ Non-cyclical ◯ Radiated to auxillary ◯ ◯
42. Describe of nipple and areola distortion: Discharge ◯ Ulcer ◯ Excoriation ◯ Retraction ◯ ◯
43. Describe the discharge: Color: ..... Type: ..... Amount: .....
44. Do you have any type of swelling? Axillary swelling ◯ Arm swelling ◯ supraclavicular ◯ None ◯

IX. History of practicing screening tools (BSE) and reason for performing them

45. Have you ever checked your breasts for sign of lesion the last year? Never ◯ rarely ◯ regularly ◯
46. How often did you check your breast in last six months? .....
47. At which age you started breast self-examination? .....
48. The reason of doing BSE
    - To examine the breast regularly ◯
    - Breast cancer in my family ◯
    - Doctors' advice ◯
    - Check the progression of some abnormality ◯
    - Might have breast cancer in the future ◯
    - Others .....
49. Reason for non-doing BSE
    - Scared of being diagnosed with BC ◯
    - Can never have cancer ◯
    - There is no benefit ◯
    - Other.....
50. Source of information about utilizing screening methods:
TV/Radio ◯ Internet ◯ Primary health care ◯ Friends and relative ◯ other ◯

Section Two: awareness about Breast cancer:

(Breast Cancer Awareness Measure (Breast CAM) version 2): (Did you know following statement about BC?

No.	Knowledge about: screening, breast cancer, sign and symptos and risk factor	Yes	No	I do not know
A1.	**Screening**			
51	Do you know how to perform BSE			
52	Do you know about CBE, (Every year visit screening center after 30 years old)			
53	Do you hear about mammogram (every 2 years visit screening center after 40 years old)			
54	BSE should be done monthly			
55	Did you know there is screening program in the Sulaimania befor you come here			
A2.	**Breast Cancer**			
56	BC is curable in early stages			
57	BC is highly mortality without treatment			
58	Painless in early stages			
59	BC more common in women over age			

60	BC more common in obese women			
A3.	**Warning signs (Is there any concerning of these disorder with breast cancer)**			
61	pain			
62	A lump is definitely cancer			
63	Sudden and abnormal changes in size			
64	Discharges from nipple			
65	Changes in nipple shape, nipple rush			
66	Redness of skin			
67	Nipple retraction			
A4.	**Risk Factors and health behavior (what is the effect of the following factors for Breast cancer)**			
68	Radiotherapy			
69	Practice physical exercise			
70	Smoking			
71	Alcohol			
72	Low fat intake			
73	Late menopause			
74	Long oral contraceptive pills			
75	Family history of breast cancer			
76	Breast feeding practice			
77	Trauma to breast area			
78	Nulliparity (infertility)			
79	High age at first delivery (more than 30 years)			

Section Three: Reason and Barrie to Not-Confirming Screening Test (BSE, CBE, and Mammography)

Champion'sHealth Belief Model Scale (CHBMS): (*To which degree you are agree with following statement ?)*
SD: Strongly Disagree, D: Disagree, N: Neutral, A: agree, SA: Strongly Agree

No.	Attitude	SD	D	N	A	SA
B1	**Seriousness**					
80	The thought of breast cancer scares me.					
81	When I think about breast cancer, my heart beats faster.					
82	I am afraid to think about breast cancer					
83	If I had breast cancer my whole life would change.					
84	If I developed breast cancer, I would not live longer than 5 years.					
B2	**Susceptibility**					
85	It is extremely likely I will get breast cancer in the future.					
86	I feel I will get breast cancer in the future.					
87	My chances of getting breast cancer are great.					
B3	**Health motivation**					
88	I want to discover health problems early.					
89	Maintaining good health is extremely important to me.					
90	I search for new information to improve my health.					
91	I feel it is important to carry out activities that will improve my health.					
92	I eat well-balanced meals.					
B4	**Confidence**					
93	I am confident I can perform breast self-examinations correctly.					
94	If I were to develop breast cancer I would be able to find a lump by performing breast self-examination.					

95	I am able to find a breast lump if I practice breast self-examination alone.					
96	I am able to find a breast lump that is the size of a quarter.					
97	I am sure of the steps to follow for doing breast self-examination.					
98	I can use the correct part of my fingers when I examine my breasts.					
B5	**Benefits –*BSE***					
99	When I do breast self-examination I feel good about myself.					
100	When I complete monthly breast self-examination I don't worry as much about breast cancer.					
101	Completing breast self-examination each month will allow me to find lumps early.					
102	If I complete breast self-examination monthly during the next year I will decrease my chance of dying from breast cancer.					
B.6	**Barriers-BSE**					
103	I feel funny doing breast self-examination.					
104	Doing breast self-examination during the next year will make me worry about breast cancer.					
105	Breast self-examination will be embarrassing to me.					
106	Doing breast self-examination will take too much time.					
B.7	**Benefits-Mammogram**					
107	If I get a mammogram and nothing is found, I will not worry as much about breast cancer.					
108	Having a mammogram will help me find breast lumps early.					
109	If I find a lump through a mammogram, my treatment for breast cancer may not be as bad.					
110	Having a mammogram is the best way for me to find a very small lump.					
111	Having a mammogram will decrease my chances of dying from breast cancer.					
B8.	**Barriers-Mammogram**					
112	I was afraid of treatments, including potentially losing my breast					
113	I don't know how to go about getting a mammogram.					
114	Having a mammogram would be too embarrassing.					
115	Having a mammogram would take too much time.					
116	Having a mammogram would be too painful.					
117	Having a mammogram would expose me to unnecessary radiation.					
118	I would not remember to schedule a mammogram.					
119	I have other problems more important than getting a mammogram.					
120	Having a mammogram would cost too much money.					
B9.	**Benefits- Clinical Breast Examination**					
121	I have a lot to gain by having breast exams performed by a physician.					
122	Breast exams performed by a physician can help me find lumps in my breast.					
123	I would not be so anxious about breast cancer if I had a breast exam performed by a physician every years.					
B10	**Barriers- Clinical Breast Examination**					
124	Breast exams performed by a physician can be painful.					
125	Breast exams performed by a physician are time consuming.					
126	My family/ friends would make fun of me if I have a breast exam performed by a physician.					
127	The practice of breast exams performed by a physician interferes with my activities					
128	I am afraid I would not be able to go to a breast exam performed by a physician.					
129	Having breast exams performed by a physician is expensive.					

زانکۆی سلێمانی/ فەکەڵتی زانستە پزیشکیەکان

سکوڵی پەرستاری

ناوی پرۆژە: بەرجەستەکردنی پشکنینی پێشوەختەی سێرپەنجەی(سکرینیگ) مەمک لە نێو ژنان لە پارێزگای سلێمانی

ژمارەی فۆرمی پرسیار: ..... بەروار: .....

بەشی یەکەم: باری کەسی و کۆمەڵآیەتی و پزیشکی و سکپری:

باری کەسی و کۆمەڵآیەتی

1. تەمەن بە ساڵ: ..... ٢. کارەکەی:.....

٣. ئاین:..... ٤. ئاستی خوێندەواری:..... ٥. ئاستی خوێندنی هاوسەرەکەی:.....

٦. ناونیشانی (شوێنی نیشتەجێبوون): .....

٧. باری خێزاندارە: خێزاندارە ◯ تەڵاقدراوە ◯ بێوەژنە ◯ سەڵتە ◯

٨. بۆچونت لە بارەی داهاتی خێزانیت: تەواو بەپێی پێویستە ◯ تارادەیەک تەواوە ◯ بە پێی پێویست نیە ◯

مێژووی منالبوون

٩. ژمارەی سکەکانی: ..... ١٠. ژمارەی منداڵی زیندوو : ..... ١١. ژمارەی لەبارچوەکان یان مردوو: .....

١٢. تەمەن لە کاتی لە دایکبوونی منداڵی یەکەم: .....

رێگری کردن لە منالبوون:

١٣ . ئایە هیچ رێگەیەکت گرتوەتە بەر بۆ رێگریکردن لە منداڵبوون: بەڵێ ◯ نەخێر ◯

١٤. رێگەی رێگریکردنەکەت لە منالبوون چی بووە؟ ..... ١٥. بۆ ماوەی چەنێک بە کارت هێنا: .....

بونی مێژووی خێزانی شێرپەنجەی مەمک (ژمارەی توشبووانی شێرپەنجەی مەمک لە خێزانەکەیدا):

١٦. خۆشکەکانی:..... ١٧. کچەکانی: ..... ١٨. دایکی: .....

١٩. پورەکانی:..... ٢٠. داپیرەکانی:..... ٢١. کەسی دیکە:.....

شیوازی ژیان:

٢٢. شیری خۆت بە منداڵ داوە؟ بەڵێ◯ نەخێر◯ ٢٣. بۆ ماوەی چەنێک شیرت بە منداڵەکانت داوە؟:.....

٢٤. شیرت بە چەند منداڵ داوە؟ .....

٢٥. هیچ کاتێک جگەرەت کێشاوە؟ بەڵێ ◯ نەخێر◯ ٢٦. بۆ ماوەی چەنێک جگەرەت کێشاوە .....

٢٧. هیچ کەسێک لە خێزانتان جگەرە دەکێشێ؟ بەڵێ ◯ نەخێر ◯

بونی نەخۆشی مەمک لە پێشوتردا، وە بەشداریکردن لە پرۆگرامی پشکنینی مەمک

٢٨. تا ئێستا چەندجار سەردانی نۆرینگە یا بنکەی تەندروستیت کردوە بۆ پشکنینی مەمکت ؟ .....

٢٩. لە چی بەرواریک سەردانت کردوە؟.....

٢٩. بۆچی تا وەکو ئێستا سەردانی کلینیک یان بنکەی تەندروستیت نەکردووە بۆ پشکنینی پێشوەختەی مەمکت؟

هیچ کێشەیەک لە مەمکمدا نەبووە ◯ ترسام لە دیاریکردنی شێرپەنجەی مەمک ◯

زانیاریم لە بارەی پشکنینی پێشوەختەوە نیە ◯ شتی تر .....

٣٠. بۆ چی هۆکارێ سەردانی نۆرینگە یان بنکەی تەندروستییت کرد؟

ئازار ◯ گرێ ◯ گۆران لە پێستی مەمک ◯ مەمکم ئاوساوە ◯ مەمکم دەردراوی هەیە ◯ گۆی مەمکم بەناودا چووە ◯ دومەڵ ◯ تەنها پشکنینی پێشوەختەی دەکەم ◯ شتی تر ◯ ،
دیاریکردنی نەخۆشیەکە و لەگەڵ بەرواری:.....

٣١. پێشوتر چەند مامۆگرافیت بۆ کراوە؟..... ، ٣٢. بەرواری هەر مامۆگرافیەک؟ .....

٣٣. لە کوێ دواین مامۆگرافیت کردووە؟ لە نۆرینگەی دکتۆر ◯ لە سەنتەری پشکنینی پێشوەختە ◯

٣٤. هیچ جۆرە نەشتەرگەریەکی مەمکت کردووە؟ بەڵێ ◯ نەخێر◯

٣٥. هیچ جۆرە نەخۆشیەکی درێژخایەنت هەیە بەڵێ ◯ نەخێر◯

٣٦. نەخۆشیە درێژخایەنەکەت چیە؟ .....

<u>نەخۆشیەکانی مەمک (شێوازی بەشداریکردن لە پرۆگرامی پشکنینی پێشوەختە، یان دواکەوتن لە چارەسەر و پشکنین)</u>

٣٧. کێ رێنوێنی کردی تا سەردانی بنکەی تەندروستی بکەی بۆ چارەسەر یان پشکنینی پێشوەختە؟ خۆم ◯ دکتۆر ◯ کەسی دیکە ◯

٣٨. بۆ ماوەی چەنێک دەبێت، هەستت کردووە یان دەزانی کەوا کێشەیەک لە مەمکتدا هەیە پێش ئەوەی سەردانی بنکەی تەندروستی بکەی؟.....

<u>چۆنێتی ناتەواویەکانی مەمکی نەخۆش:</u>

٣٩. هیچ جۆرە ناتەواویەک لە مەمکتدا هەیە؟

ئازار ◯ گرێ ◯ گۆران لە پێستی مەمک ◯ مەمکم ئاوساوە ◯ مەمکم دەردراوی هەیە ◯ گۆی مەمکم بەناودا چووە ◯ دومەڵ ◯ تەنها پشکنینی پێشوەختەی دەکەم ◯ شتی تر.....

٤٠. کام لە مەمکەکانت ناتەواوی هەیە؟ راست ◯ چەپ◯ هەردووک ◯

٤١. شێوازی ئازارەکەی چۆنە؟ دەخولێتەوە ◯ خولانەوەی نیە ◯ بەرەو بن باڵ تیشکدەدات ◯

٤٢. شێوازی ناتەواوی گۆی مەمکەکە چۆنە؟ دەردراوی هەیە ◯ بریتی هەیە ◯ روشانی هەیە ◯ بەناودا رۆشتووە ◯

٤٣. شێوازی دەردراوەکەی چۆنە؟ رەنگەکەی ..... جۆرەکەی..... بڕەکەی.....

٤٤. هیچ جۆرە ئاوسانێکت نیە؟ ئاوسانی بن باڵ ◯ باڵەکانت ◯ سەرشان ◯ یان ئاوسانی تر◯

<u>مێژوی بەشداریکردن یان بەکارهێنانی ئامرازەکانی پشکنینی پێشوەختە(پشکنینی خۆیی) وە هۆکارەکانی بەکارهێنانی:</u>

٤٥. هیچ کاتێک پشکنینت بۆ خۆت کردووە بە مەبەستی دیاریکردنی نیشانەی لک لە مەمکتدا لە ماوەی ساڵێکی رابردودا؟

هەرگیز ◯ بە دەگمەن ◯ بە رێکی◯

٤٦. چەند جار پشکنینت بۆ مەمکی خۆت کردوە لە ماوەی شەس مانگی رابردودا؟ .....

٤٧. لە چی تەمەنێک دەستت کرد بە پشکنینی مەمکی خۆت؟ .....

٤٨. هۆکارەکانی جێبەجێکردنی پشکنینی خۆیی مەمک؟

بۆ ئەوەی بە رێکی ئەم کارە بکەم بۆ خۆم◯

لە بەر بونی مێژووی خێزانی شێرپەنجەی مەمک◯

ئامۆژگاری دکتۆر ◯

دیاریکردنی هەر بەرەو پێشجونێکی نەخۆشی لە مەمکمدا◯

لەوانەیە توشی شێرپەنجەی مەمک ببم لە داهاتوودا ◯

هۆکاری تر.....

٤٩. هۆکارەکانی نەکردنی پشکنینی خۆیی مە مک

ترس لە دەرکەوتنی شێرپەنجەی مەمک ◯

هەرگیز ئەو شێرپەنجەیەم نیە ◯

هیچ سودێکی نیە ◯

هۆکاری تر.....

٥٠. سەرچاوەی زانیاریەکانت لە بارەی پرۆگرامی پشکنینی پێشوەختە

رادیۆ/تەلەفزیۆن◯ ئینتەرنێت ◯ سەنتەری تەندروستی ◯ هاوڕێ و دۆست ◯ کەسی دیکە ◯

بەشی دووەم: ئاگایی لە بارەی شێرپەنجەی مەمک

پێوەری ئاگایی شێرپەنجەی مەمک: (ئایا ئەم دەستەواژانە لە بارەی شیرپەنجەی مەمکەوە دەزانی؟

ژ	زانیاری لە بارەی: پشکنین،شێرپەنجەی مەمک، نیشانەکانی، مەترسیەکانی	بەڵێ	نەخێر	نازانم
١١	پشکنینی پێشوەختەی شیرپەنجەی مەمک			
٥١	ئایا دەزانی چۆن پشکنینی خۆی مەمک جێ بەجێ دەکرێت؟			
٥٢	دەزانی کە پشکنینی نۆرینگەیی مەمک پێشوەختە دەبێ بکرێ (هەموو سالێ، دوای تەمەی ٣٠ سال)			
٥٣	دەزانی کە دەبێ پشکنینی پشوەختەی مامۆگرافی بکەی (هەموو دوو سال جارێ دوای تەمەنی ٤٠ سالی			
٥٤	مانگانە دەبێ پشکنینی خۆیی بۆ مەمک بکرێت			
٥٥	ئایا دەتزانی پرۆگرامی پشکنینی پێشوەختە هەیە لە سلێمانی پێش ئەوەی بێیت بۆ ئەم سەنتەرە			
٢١	شێرپەنجەی مەمک			
٥٦	شێرپەنجەی مەمک دەکرێ چارەسەر بکرێ لە قۆناغەکانی سەرەتاییدا			
٥٧	شێرپەنجەی مەمک رادەی مردنی بەرزە ئەگەر چارەسەر نەبێت			
٥٨	شێرپەنجەی مەمک بێ ئازارە لە قۆناغەکانی سەرتاییدا			
٥٩	شێرپەنجەی مەمک زۆرباوە لە ژنانی تەمەن گەورەدا			
٦٠	شێرپەنجەی مەمک زۆر باوە لە ژنانی قەلەودا			
٣١	نیشانە ئاگادارکەرەوەکانی (ئەم ئاتەواویانەی خوارەوە پەیوەندی هەیە بە شێرپەنجەی مەمکەوە)			
٦١	ئازار			
٦٢	بونی گرێ بێ چەند و چون شێرپەنجەی مەمکە			

٦٣	ناتەواوی لە ناکاوی گۆرانی قەبارەی مەمک				
٦٤	دەردراوی گۆی مەمک				
٦٥	گۆرانکاریەکانی شێوەی گۆیی مەمک و روشاندنی				
٦٦	سوربونەوەی پێستەکەی				
٦٧	بەناوداچونی گۆی مەمک				
٤١	**فاکتەرە ترسناکەکان لەگەڵ رەفتاری تەندروستیانە (کاریگەری ئەم فاکتەرانەی خوارەوە لە سەر شێرپەنجەی مەمک چیە؟)**				
٦٨	بە جێ گەیاندنی شیرپێدانی منداڵ				
٦٩	جێ بە جێ کردنی وەرزش				
٧٠	خواردنی کەم چەوری				
٧١	جگەرەکێشان				
٧٢	خواردنەوە (کهولیەکان)				
٧٣	چارەسەری تیشکی				
٧٤	دواکەوتنی وەستانی سوری مانگانە لە تەمەنی خۆیدا				
٧٥	بەکارهێنانی حەبی مەنع بۆ ماوەیەکی زۆر				
٧٦	بونی میژووی خێزانی شێرپەنجەی مەمک				
٧٧	پێداکوتانی ناوچەی مەمک				
٧٨	منداڵ نەبوون (سکنەکردن)				
٧٩	منالی یەکەم لە تەمەنێکی گەورەدا ببێ (لە دوای تەمەنی ٣٠ سالی)				

بەشی سێیەم: هۆکار و رێگرییەکانی نەکردنی پشکنینی پێشوەختە (پشکنینی خۆیی، پشکنینی نۆرینگەیی، پشکنینی ماموگرافی)

پێومری مۆدڵی رەفتاری تەندروستی چامپیەن (تا چی رادەیەک رازیت لەگەڵ ئەم دەستەواژانەی خوارەوە ؟)

ژ	دەستەواژەکان لە بارەی نارەزو و خولیا	تەواو رازینیم	رازی نیم	بریارێکم نیە	رازیم	تەواو رازیم
ب١	**هەست بە ترسناکی**					
٨٠	کاتێک شێرپەنجەی مەمکم بیردەکەوێتەوە ترس دەمگرێ					
٨١	کاتێک لە بارەی شێرپەنجەی مەمکەوە بیردەکەمەوە دلم خێرا لێدەدات					
٨٢	من دەترسم بیر لە شێرپەنجەی مەمک بکەمەوە					
٨٣	هەموو ژیانم دەگۆرێ ئەگەر توشی شێرپەنجەی مەمک ببم					
٨٤	بروام وایە ناتوانم ٥ سال زیاتر بژیم لەگەڵ شێرپەنجەی مەمک					
ب٢	**گومانی توشبوون**					
٨٥	من تا نەوپەری، پێدەچێ توشی شێرپەنجەی مەمک ببم لە داهاتوودا					
٨٦	وا هەست دەکەم من پێدەچێ (نەگەری هەیە) توشی شێرپەنجەی مەمک ببم					
٨٧	چانسی (خۆیم) تاکە کەسیم لە توشبونی شێرپەنجەی مەمک گەورەیە					
ب٣	**فاکتەری بزوێنەر (یالنەر)**					
٨٨	من دەخوازم کێشە تەندروستیەکانم زوو بدۆزمەوە پێش نەوەی رووبدەن					
٨٩	پاراستنی تەندروستی باش تا نەوپەری گرنگە بۆ من					
٩٠	من هەمیشە دەگەڕێم بۆ زانیاریە نوێیانەی کە تەندروستیم باش بکات					
٩١	من هەست بە گرنگی نەو چالاکیانە دەکەم، کە تەندروستیم باش دەکەن					
٩٢	خواردنەکەم تەواوەو ، ژەماکانم هاوسەنگە					
ب٤	**باوەری (باوەر بە خۆبوون)**					
٩٣	من باوەرم هەیە کە پشکنینی خۆی بە رێکی بۆ خۆم ئەنجام بدەم					
٩٤	ئەگەر من توشی شێرپەنجەی مەمک ببم، نەوە من بەجێکردنی پشکنینی خۆیی مەمک گرێکە دەدۆزمەوە.					
٩٥	من توانای نەوەم هەیە کە گرێی مەمک بدۆزمەوە تەنها لە رێگەی پشکنینی خۆیی مەمکەوە					
٩٦	من توانایی نەوەم هەیە گرێی مەمکم بدۆزمەوە کە قەبارەی چارەکێکی بێت					

٩٧	من دلنیام کە هەنگاوەکانی پشکنینی خۆیی بە دوای یەکدا جێ بە جێ بکەم					
٩٨	من دەتوانم بەشی رێکی پەنجەم بەکاربێنم، کاتێک پشکنینی خۆیی دەکەم					
ب٥	سودەکانی پشکنینی خۆیی					
٩٩	کاتێک من پشکنینی خۆیی بۆ خۆم دەکەم، هەست بە خۆشی دەکەم					
١٠٠	کاتێک مانگانە دەست بە جێبەجێ کردنی پشکنینی خۆیی دەکەم، ئیتر ئەوندە دڵەڕاوکێم لە بارەی شێرپەنجەی مەمکەوە نامێنی					
١٠١	جێبەجێ کردنی پشکنینی خۆیی هەر مانگێک وادەکات گرێ زووتر بدۆزمەوە					
١٠٢	ئەگەر من پشکنینی خۆیی مانگانە جێبەجێ بکەم، لە ماوەی سالی داهاتوودا چانسی مردنم بە شێرپەنجەی مەمک کەمترە					
ب٦	رێگرییەکانی- پشکنینی خۆیی					
١٠٣	هەست دەکەم جێبەجێ کردنی پشکنینی خۆیی شتێکی بێکەڵکە					
١٠٤	جێبەجێ کردنی پشکنینی خۆیی دڵەڕاوکێم زیاددەکات لە بارەی کێشەی بوونی شێرپەنجەی مەمک					
١٠٥	جێبەجێ کردنی پشکنینی خۆیی شتێکی بێزارکەرە بۆ من					
١٠٦	جێبەجێ کردنی پشکنینی خۆیی کاتێکی زۆر دەگرێ					
ب ٧	سودەکانی- مامۆگرام (پشکنینی بە تیشک)					
١٠٧	ئەگەر مامۆگرافی بکەم و هیچ لە مەمکمدا نەبێ ئیتر ئەوەندە ناترسم لە بارەی شێرپەنجەی مەمکەوە					
١٠٨	کردنی مامۆگرافی مەمکەکان، یارمەتیم دەدات کە گرێ پێشوتر لە مەمکەکانمدا بدۆزمەوە					
١٠٩	ئەگەر لە رێگەی مامۆگرافیەوە گرێیەک بدوزمەوە، چارەسەریم لە بۆ شێرپەنجەی مەمک رەنگە ئیتر زۆر خراپ نەبێ					
١١٠	کردنی مامۆگرافی، باشترین رێگەیە کە گرێی زۆر بچوکی مەمکەکانم بدۆزمەوە،					
١١١	کردنی مامۆگرافی مەمکەکانم چانسی مردنم بە شێرپەنجەی مەمک کەمدەکاتەوە					
ب ٨	رێگرییەکان- مامۆگرام					
١١٢	من دەترسم لە چارەسەریەکان، وە لەگەڵ ئەوەدا ئەگەری لە دەستدانی مەمکەکانم					
١١٣	من ئازانم (چۆن بڕۆم) لەکوێ و کەی مامۆگرامی بکەم					
١١٤	کردنی مامۆگرامی مەمکەکان دەبێ زۆر بێزراوبێت					
١١٥	کردنی مامۆگرامی مەمکەکان دەبێ کاتی زۆر بگرێ					
١١٦	کردنی مامۆگرامی مەمکەکان دەبێ ئازاردابێ					
١١٧	کردنی مامۆگرامی مەمکەکان دەبێ توشی بەرکەوتنی تیشکێکی ناپێویستم بکات					
١١٨	من هەر نامەوێ خشتەی مامۆگرامم بیر بێتەوە					
١١٩	من کۆمەڵێ کێشەی ترم هەیە کە لە کردنی مامۆگرامی گرنترە بۆ من					
١٢٠	کردنی مامۆگرام پارەیەکی زۆری تێدەچێ					
ب ٩	سودەکان- پشکنینی نۆرینگەیی (پزیشکی)					
١٢١	من کۆمەڵێ دەستکەوتم دەبێ کە پشکنینی نۆرینگەی بکەم لای پزیشک					
١٢٢	پشکنینی مەمک لە لایەن پزیشکەوە دەتوانێ یارمەتیم بدات لە دۆزینەوەی گرێی مەمکەنم					
١٢٣	من ئەوەندە دڵەڕاوکێم نابێ لە بارەی شێرپەنجەی مەمک، ئەگەر پزیشک پشکنینم بۆ بکات هەموو سالێک،					
ب١٠	رێگرییەکان- پشکنینی نۆرینگەیی- (پزیشکی)					
١٢٤	پشکنینی نۆرینگەیی مەمک لای پزیشک دەبێ ئازاری هەبێ					
١٢٥	پشکنینی نۆرینگەیی مەمک لای پزیشک کاتێکی زۆر دەکوژێ					
١٢٦	خێزانەکەم و هاوڕێکانم دەکرێ گاڵتەم پێبکەن ئەگەر من پشکنینی نۆرینگەیی مەمکم بکەم لای پزیشک					
١٢٧	بە جێگەیاندنی پشکنینی نۆرینگەیی مەمک لای پزیشک کار دەکاتە سەر کار و چالاکییەکانم					
١٢٨	من دەترسم، من توانای ئەوەم نیە بچم بۆ پشکنینی نۆرینگەیی مەمک لای پزیشک					
١٢٩	پشکنینی نۆرینگەیی مەمک لای پزیشک ئرخی گرانە					

هەرێمی کوردستان- عیراق
ئەنجومەنی وەزیران
وەزارەتی تەندروستی
بەڕێوەبەرایەتی گشتی تەندروستی سلیمانی
خۆیەتي

Kurdistan Regional Government
Council of Ministers
Ministry of Health

اقليم كوردستان -العراق
مجلس الوزراء
وزارة الصحة
المديرية العامة لصحة السليمانية
الذاتية

ژمارە / ٥٩٠٥
ڕێکەوت / ١٥ / ٦ / ٢٠١٦

No /
Date / / /

پێشمەرگە پارێزەری ئاشتی و خاکە بەپشتیوانی پێشمەرگە ئارامی دەپارێزرێت

بۆ/ سەنتەری چارەسەری نەخۆشیەکانی مەمک

بابەت / ڕێگەپێدان

تکایە هاوکاری (جمال كريم شكور)خوێندکاری خوێندنی باڵای دکتۆرا (بەشی تەندروستی کۆمەڵ) بکەن لەکاتی سەردانی بۆلاتان بەمەبەستی کۆکردنەوە و وەرگرتنی زانیاری بۆ توێژینەوەکەی .

فاضل عبدالرحمن حسين
بەڕێوەبەری کارگێری
١٥ / ٦ / ٢٠١٦

وێنەیەک بۆ
- خویەتی / بەهرە لەگەڵ بەرابیەکان .
- دوسیەی تایبەت.

خویەتی / بەهرە

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هەرێمی کوردستان – عێراق
نەنجومەنی وەزیران
وەزارەتی تەندروستی
بەڕێوەبەرایەتی گشتی تەندروستی سلێمانی
- کاروباری هونەری -

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اقليم كوردستان – العراق
مجلس الوزراء
وزارة الصحة
المديرية العامة لصحة السليمانية
- الامور الفنيه -

ژمارە :
بەروار: ٢٠١٧/٣
بەروار/ // ڕەشەمێ /٢٧١٦

No
Dare

(لە سایەی بەرخۆدان و قوربانیدانی پێشمەرگە سەقامگیری و ئاسایشی وولاتمان پارێزراوە)

بۆ / بەڕێوبەرایەتی تەندروستی دەربەندیخان +سەنتەری ڕاوێژکاری علی کمال

ب// هاوکاری

ئاماژە بە نووسراوی کۆلێژی پزیشکی / زانکۆی سلێمانی ژمارە (٤١٤) لە (٢٠١٧/٣/٦) هاوکاری خوێندکاری باڵای دکتۆرا (جمال کریم شکور) بکەن بەمەبەستی کۆکردنەوەی زانیاری و پێدانی داتا بە مەرجێك کەل و پەلی نەخوشخانە بە کار نەهێنێت تکایە .

د. میران محمد عباس
بەڕێوەبەری گشتی
/ ٢٠١٧/٣

وێنەیەك بۆ//

زانکۆی سلێمانی / کۆلێژی پزیشکی / لەگەڵ ڕێزدا

کاروباری هونەری / کامل /لە گە ڵ بە ڕایبە کانی

دۆسیە ی تایبە ت

سۆزان //

دکتۆر
هیوا یاسین حمه
بەڕێوەبەری کاروباری هونەری
کاروباری هونەری/

٣ ١٧

Email :dohsuli@yahoo.com

Appendix- G: List of expertises

No.	Name of Expertise	Scientific Title	Place of Job	Years of Experience
1	Badia M.N. Salih	Professor of nursing	Retired	40
2	Shahla K. Alalaf.	Professor	Medicine College, HMU	15
3	Zhian Salah Ramzi	Assistant professor/	Community Medicine /University of Sulaimani	19
4	Fatah Hama Rahim	Assistant professor	Community Medicine /University of Sulaimani	4
5	Chro Najmadin Fattah	Assistant professor	Obstetric and Gynaecology/ university of Sulaimani	25
6	Bushra Mohammed Ali	Assistant professor/	Community Medicine /University of Sulaimani	28
7	Dr. Su Phipps	Assistant Professor	University of Oklahoma, Schusteeman Center, Nursing Colleg	
8	Shukriyia Shdhan Chya	Assistant professor	Dean of college of nursing /Alforat al-Awsat university	30
9	Hallwan Abulrahman Hama Chawesh	General Surgeon	Breast Disease Treatment Center	28
10	Abbas Taher Rashid	General Surgeon	Breast Disease Treatment Center	5
11	Alla Aldulqadr Shalli	Master in diagnostic radiology	Sulaimani Technical Institute/ Sulaimani Polytechnic University	29
12	Zhiyan Ahmead Abdullah	Higher diploma	Maternity hospital	33
13	Sanaria Shwan Abulrahem	Family doctor	Breast Disease Treatment Center	9
14	Nawsherwan Abdulla	MD	Head of Cancer Control Sector of Sulaimani DoH	13

پوختە

پیشەکی و ئامانجی توێژینەوەکە: شێرپەنجەی مەمک یەکێکە لەو نەخۆشیە باوانەی کەوا هەرەشە لە تەندروستی ژنان دەکات لە عێراق. زۆربەی ژنەکان توشی شێرپەنجەی مەمک دەبن لە تەمەنی گەنجێتیدا، وە زۆرجار شێرپەنجەی مەمک لە قۆناغی پەرەسەندویدا پشکنینی بۆ دەکرێ. زوو دیاریکردنی نەخۆشیی و سکرینینگ دوو پرۆگرامی پشکنینی پێشوەختەن وەک ستراتیجی رێگەگرتن لە نەخۆشی شێرپەنجەی مەمک. ئامانجە سەرەکیەکانی ئەم توێژینەوەیە بریتییە لە هەلسەنگاندنی پرۆگرامی پشکنینی پێشوەختە شێرپەنجەی مەمک لە شاری سلێمانی.

رێگای کارکردن: توێژینەوەیەکی یەک ئاست بر (cross-sectional study) لەسەر 750 ئافرەت لە ٢٠ ی جۆزەردانی ٢٠١٦ بۆ ٢٠ی پوشپەری ٢٠١٩ ئەنجامدرا. فۆرمی راپرسی درستکرا بۆ کۆکردنەوەی زانیاری لە بارەی باریکەسێتی، ئاگایی پرۆگرامی پێشوەختە، باری پزیشکی و تەندرستی ژنەکان. بەشێکی تری فۆرمی راپرسیەکە بریتیبوو لە دوو پێوەر، پێوانی ئاگایی شێرپەنجەی مەمک (bCAM)، وە پێوانی مۆدڵی باوەری تەندروستی چامپیەن (CHBM) کەوا بەکارهێنران بۆ پێوانەکردنی زانیاری شێرپەنجەیی ئافرەتاکان و بیروباوەریان لە بارەی پرۆگرامی پشکنینی پێشوەختە. راستێتی و باوەرپێکراوی پێوەرەکان وەرگیرا لە سەر ٥٠ ئافرەت لە کاتی تێستی پێشینەیی توێژنیەوەکەدا (Pilot study).

ئەنجامەکان: نزیکەی نیوەی ئافرەتەکان 49.7% دەیانزانی کەوا پشکنینی خۆی مەمک (BSE) مانگانە دەکرێ. ئەمە لە کاتێکدا تەنها 18.0% ئافرەتە بەشداربووەکان بە رێکی پشکنینی خۆی مەمکیان ئەنجام دەدا. ئاستی خوێندن، هەبوونی کار، مێژووی بۆماوەی نەخۆشیەکە، پێشوتر ناتەواوی مەمک، زانیاری، شیرپێدان، درککردن بە ترسی نەخۆشیەکە، هاندانی تەندروستی، باوەربەخۆبوون، درککردن بە سودەکان و رێگرییەکانی پشکنینی خۆی مەمک بە دیاریکراوی پەیوەندبوون بە رێکی ئەنجامدانی پشکنینی خۆی مەمک. سەبارەت بە پشکنینی نۆرینگەیی مەمک (CBE)، 78.9% ی ئافرەتانی بەشداربوو ئاگاییان هەبوو لە بەکارهێنانی، ئەمە لە کاتێکدا تەنها 9.5% ی بەشداربوانی ئافرەتەکان پشکنینی نۆرینگەیی مەمکیان ئەنجامدابوو بۆ سکرینینگ. بەهۆی راسپاردنی پزیشک بۆ دیاریکردنی نەخۆشی شێرپەنجە، 23.6% ی ئافرەتانی بەشداربوو مامۆگرافیان (Mammography)کردبوو. شیکاری هەلگەراوەیی لۆگیستک (logistic regression analysis) ئەوەی خستەروو کەوا تەمەنی گەورە، مێژووی بۆماوەیی نەخۆشیەکە، زانیاری باشی نەخۆشیەکە، درککردن بە توشبوونی نەخۆشیەکە، کەمتر درککردن بە رێگریەکانی پشکنینی نۆرینگەیی مەمک و مامۆگرافی دەرخەری بەشداریکردنی ئافرەتانن لە پرۆگرامی سکرینینگ. ناوەندی تێکرایی دواکەوتنی ئافرەتانی دەرکەوتوو بە نیشانەکانی نەخۆشیەکە لەم توێژینەوەیەدا بەرزبوو، (30 رۆژ) بوو. پەیوەندییەکی گرنگ هەبوو لە نێوان دواکەوتنی نەخۆش لەگەل هاندانی تەندروستی و درککردن بە رێگریەکانی بەردەم چاودێری پزیشکی.

دەرئەنجام: بەرزکردنەوەی زانیاری لە بارەی شێرپەنجەی مەمک و پشکنینی پێشوەختە، جەختکردن لە سەر ئەگەری توشبوون بە نەخۆشی شێرپەنجە، وە سودەکانی پرۆگرامی سکرنینگ دەبێ یارمەتی باشتر بەشداربونی ئافرەتان بدات لە پرۆگرامەکە. زیاتر گرنگی دەبێ بدرێ بە ئافرەتی نەخوێندەوار و بێکار. زیادکردنی هاندانی تەندروستی ئافرەتەکان، هەستیار کردنی ئافرەتان لە بارەی سودەکانی پشکنینی خۆیی مەمک پشنیاردەکرێ سودی هەبێ بۆ بە ئەنجام گەیاندنی ئەو پشکینیە. پرگرامی پتەوکردنی تەندروستی جەختی لێدەکرێتەوە بۆ هاندانی تەندروستی ئافرەتان سەبارەت بە زوو دیاری کردنی نەخۆشیەکەو پشکنینی پێشوەختە.

حکومەتی هەرێمی کوردستان- عێراق
وەزارەتی خوێندنی باڵاو توێژینەوەی زانستی
زانکۆی سلێمانی
کۆلێژی پزیشکی

بەکارهێنانی ڕێگاکانی سکرینینگی شێرپەنجەی مەمک لە نێو ئافرەتان لە شاری سلێمانی

نامەیەکی دکتۆرا

پێشکەشکراوە بە فەکەڵتی زانستە پزیشکیەکانی زانکۆی سلێمانی وەک بەشێک لە پرکردنەوەی پێداویستیەکانی وەرگرتنی بڕوانامەی دکتۆرا لە پەرستاری تەندروستی کۆمەڵ

لە لایەن

جمال کریم شکور

بە سەرپەرشتی

پرۆفیسۆری یاریدەدەر د. عطیه کریم محمد

جوزەردان 2719 **حوزیران 1440** **June - 2019**