

**Deanship of Graduate Studies
Al-Quds University**



**Knowledge of Breast Cancer and Practices of Breast
Self-Exam among Women attending Governmental
Primary Health Care Centers in North
Gaza Governorate**

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M Sc. Thesis

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Self-Exam among Women attending Governmental
Primary Health Care Centers in North
Gaza Governorate**

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Al-Quds University

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Maternal Child Health (MCH) Nursing Program



Thesis Approval

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Jerusalem – Palestine

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Dedication

To my mother's soul that did not leave me throughout my life, to my husband and sons, to my father, sisters & brothers.

Declaration

I hereby certify that this thesis is submitted for the Master Degree, it is the result of my own research, except where otherwise acknowledged. This study (or any part of the same) has not been submitted for any other higher degree to any other university or institution.

Signed: 

AreejHamouda

15/6/2020

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Abstract

Breast cancer in women is a foremost health problem in both developed and developing countries. There is a rapid increase in breast cancer in Palestine. BC is a significant health threat for women, and is currently the second leading cause of cancer related death in women. BC screening has been shown to reduce mortality. This early detection is crucial. BSE is an alternative method of screening for breast cancer. This study aimed to assess the knowledge about breast cancer and practices of breast self-exam among women in north Gaza governorate . A descriptive cross sectional study design was used with a convenience sample consisted of 335 women attending primary health care centers in northern Gaza governorate, (Al- Shima clinic — Abo Shbak clinic — Jabalia clinic) during the period from July till November 2019. Structured interviewing questionnaire was used. Every woman attending the MCH centers during the study period has a chance to be involved in this study except women with previous history of BC. A pilot study was carried out on (10%) of women's who were excluded from the sample. Data collected and analyzed by using SPSS application version 22; frequencies, percentages, mean, standard deviation, A chi-square and Exact Fisher test with statistical significance $p < 0.05$ at 95% confidence interval were used. The results showed that 58.2% of study participants have low level of knowledge about risk factors of breast cancer; this result indicated that more than half of study participants have low knowledge about risk factors of breast cancer, 39.1% of study participants have low level of knowledge about symptoms of breast cancer, 83.7% expressed low quality in performing breast-self exam. The most frequent barrier to breast-self exam was inability to pay to the doctor 25.4%. There were no statistically significant association between marital status, and level of knowledge about risk factors of breast cancer, knowledge about symptoms of breast cancer and practice of breast-self exam, The study concluded that most of the women have heard of breast cancer,

but they lack adequate knowledge on its risk factors, causes, symptoms, and effects. The majority of the women do not practice BSE due to lack of knowledge. Efforts to improve women's knowledge on breast cancer is warranted, health care worker should be trained to teach BSE for women. MoH should develop teaching manual for use, by health care worker, retraining breast awareness session in place stress the importance of BSE, periodic check of that include CBE for all women. School health programs should include health education on breast cancer & BSE, should start early.

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List of Abbreviations

ACS	American Cancer Society
BC	Breast Cancer
BCAM	Breast Cancer Awareness Measure
BSE	Breast Self-Exam
CBE	Clinical Breast Exam
DCIS	Ductal Carcinoma In Situ
DNA	Deoxyribonucleic Acid
GS	Gaza Strip
IDC	Infiltrating Ductal Carcinoma
ILC	Infiltrating Lobular Carcinoma
LCIS	Lobular Carcinoma In Situ
MCH	Mother Child Health
MoH	Ministry of Health
NGOs	Non-Governmental Organizations
PCBS	Palestinian Central Bureau of Statistics
PHC	Primary Health Care
PHCS	Palestinian Health Care System
UNRWA	United Nations Relief and Work Agency
WB	West Bank
WHO	World Health Organization

Chapter one

Introduction

1.1 Background

Breast Cancer (BC) cases accounts for approximately 2.1 million globally, contributing about 11.6% of the total cancer incidence burden (World Health Organization [WHO], 2018). BC is a critical health problem in developing and developed countries and according to recent researches its rapidly increasing in developing countries (Izanloo et al., 2018). In Palestine, BC is considered the main leading cause of death among females, and the third leading cause of death among both sexes, accounts for 10.0% from all deaths (Health Annual Report, 2018). As a result of the lack of awareness, knowledge, and resources among women BC is projected to rise in developing countries (Doumit, 2017). One recent study revealed that more than 84% of women had no knowledge about BC and its screening tests, this is due to the absence of any symptom or problem' and 'they did not think it was necessary' (Izanloo et al., 2018). According to the WHO, enhancing BC outcome and survival by early detection remains the foundation of BC regulations. Early diagnosis by early detection measures of BC is important in terms of effective treatment of the disease, and an extended life span (Ozdemir and Bilgili, 2010). These measures of early detection are considered one of the nurses' role in maternal, and child health services, hence the nurses are responsible for primarily counselling and informing the women on this issue. Nurses also play a key role in raising awareness on the risks of breast cancer (Rızalar et al., 2017). However, studies have shown that the level of knowledge and practice on the early diagnosis of breast and cervical cancer is low (Karadag et al., 2014). BC is also considered responsible for the most frequent

malignancy-causing deaths and cancer-related mortality and morbidity among women in different parts of the world .

Few studies have been conducted in the Gaza Strip (GS) to examine women's knowledge about BC and its early detection measures. But no studies tackled BSE & the role of the nurses in such area. Therefore, the main aim of the current study was to assess and examine women's in the GS knowledge about BC and its detection measures in addition to the role of nurses in the northern governorate of the GS.

1.2 Statement of the Research Problem

The incidence rate of BC is increasing globally, and nationally in the GS, which is considered the first leading cause of death among women in Palestine in 2017 (Health annual report, 2018). This could be attributed to lack of women's knowledge and awareness about BC and breast self-exam (BSE); it could also be attributed to lack of public health education provided by the nurses for these women regarding early detection measures as well as the important alarming signs of BC. A study conducted in the GS revealed that more than 75% of women had never undergone clinical breast examination, 62% performed breast self-examination, and one third of the women had lack of breast screening knowledge (Abu-Shammala and Abed, 2015). For this lack of knowledge, the incidence and case fatality rate of BC will continue to rise and deterioration of health status on the women would be the substantial outcome. This might have its significant negative effect on the women, her family, and might increase the burden on the Palestinian health care system in terms of increasing complications and its costly management. Negative effect might continue as well in terms of its impact on women's psychological and social status. Moreover, the role of the nurses in increasing the women's knowledge about BC and its early detection measures was neglected in the studies which have conducted in the

GS, however, they have a substantial role through their effective health education measures, this also might have its significant effect on the continuous rising of BC incidence and death rate among the cases.

1.3 Justification of the Study

Several studies have shown the great importance of maximizing the women's knowledge and awareness of the women about BC and its early detection measures. Thus, increasing the women's knowledge have a key important role, and this was approved by the study of Abu-Shammala and Abed (2015), in which they revealed that the women who performed BSE had significantly higher knowledge about BC screening. The results of the current study might have its significant effect on improving the women about BC and its early detection measures, thereby detecting the role of the nurses in health education and women's training about BSE. The results of the current study might reveal the current status of health education level which is conducted in the maternal and child health services in northern Gaza governorate for the women about the issue of breast cancer and early detection measures. Knowing the current status of health education conducted by the nurses in such issue might encourage policy health makers in the GS to activate and improve health education policy in the primary health care centers in the GS, especially in maternal and child health care clinics. Through activation of health education policy in the first line prevention (primary health care), this might save a lot of money spent on treatment, and the management of subsequent complications, which in turn, might produce significant impact in reducing the incidence and death rate among breast cancer cases.

1.4 The Main goal of the study

To assess the knowledge about breast cancer and practices of breast self-exam among women in north Gaza governorate.

1.5 Specific objectives of the study

- 1- To examine the level of knowledge about breast cancer, and practices of breast self-exam among women in north Gaza governorate.
- 2- To identify the nurses' role in educating the women about breast cancer, and breast self-exam in north Gaza governorate.
- 3- To identify the relationship between women's knowledge about breast cancer, and practices of breast self-exam in relation to selected socio-demographic variables.
- 4- To assess the nurses' role in increase knowledge about breast cancer, and practices of breast self-exam.

1.6 Research questions

- 1- What is the level of knowledge about breast cancer and breast self -examinations among women in north Gaza governorate?
- 2- What are the differences in the level of women's knowledge about breast cancer and the practices of breast self-exam, and socio-demographic factors?
- 3- What is the nurses' role in the education on breast cancer, and breast self-exam among women in north Gaza governorate?

1.7 Context of the Study

The Palestinian territories consist of two politically separated areas West Bank (WB) and Gaza Strip. GS is a narrow zone of land bounded of the south by Egypt, on the west by the Mediterranean Sea, and on the east, and north by the occupied territories in 1948. GS is very crowded place with 46 kilometers long and 5 –12 kilo-meters wide and with a total area of 365 km². GS is administratively divided into five governorates: North, Gaza, Mid-

zone, Khanyounis, and Rafah. It consists of four cities, fourteen villages and eight refugees' camps (Palestinian Central Bureau of Statistics {PCBS}, 2016).

1.7.1 Gaza Strip

GS has a population of 1,899,291 people. Population density is 5,154 inhabitants per sq. km. Gaza Strip has an extremely high population growth rate of over 3.3%, and a fertility rate of 3.8, and as a result some 44.2% of the population is under the age of 15 (PCBS, 2017).

1.7.2 Palestinian Health Care System

The Palestinian Health Care System (PHCS) consists of four major providers: Ministry of Health (MoH), United Nation Relief, and Work Agency [UNRWA], Non-Governmental Organizations (NGOs), and for profit private sector. The main provider MoH is operating 27 hospitals (14 in WB and 13 in GS), and 743 PHC facilities (583 in WB, and 160 in GS). Another main component UNRWA is operating 65 PHC facilities (MoH, 2018).

1.7.3 Primary Health Care Centers

Primary health care (PHC) is a major component of Palestinian health care system. PHC provides preventive, promotional, curative, and rehabilitative health care to all Palestinian people especially for children, and other vulnerable groups through MoH, UNRWA, non-governmental, and private centers. PHC centers try to offer accessible and affordable health services for all Palestinians regardless of geographical locations. According to MoH policy, PHC centers classified from level I to level IV according to health services they provide. The total number of governmental PHC centers in the GS is 160, the total number

of UNRWA PHC is 65, while the total number of military health centers is 20 (MoH, 2018). In 2017, the total number of pregnant visits to PHC centers was 154,251. The total number of pregnant women registered (first visit) in the PHC at MoH centers was 34,032, with coverage of 43.6% of pregnant women; the average visit rate for pregnant women to the centers during pregnancy was 4.5 visits (MoH, 2018).

1.8 Operational definition of terms

After reviewing several studies & textbooks, the researcher stated the following operational definition.

1.8.1 Knowledge about breast cancer

Knowledge about BC is the women's own information about the disease, risk factor, signs, and symptoms, and its early detection. It is the obtained by the total score given from the women's answers on the study questionnaire, related to risk factor, symptoms, early detection.

1.8.2 Knowledge of BSE

Knowledge of the method involves the woman herself looking at, and feeling each breast for possible lumps, distortions or swelling. It is obtained by the total score given from the women's answers on the study questionnaire, related to BSE.

1.8.3 Practices of breast self-exam

It is defined operationally as the women's practice of BSE. The respondent who are performing BSE monthly were termed to be practicing BSE. It is the obtained by the total

score given from the women's answers on the study questionnaire on the questions related to performance BSE.

1.8.4 Role of the nurses

It is defined operationally as the role of the nurses who are working in maternal, and child health care services in north Gaza governorate regarding educating the women about breast cancer (Risk factors, signs and symptoms, early detection measures, and BSE).

It will be measured by the total score given from the women's answers on the study questionnaire on the questions related to the role of the nurses in such issue, higher score indicates the higher level of nurses' role and vice versa.

1.9 Layout of the study

This study is divided in to five chapters, which includes an introduction, conceptual framework and literature review, methodology, results and discussion, conclusion and recommendation.

The introduction provided the reader with general information about the study. It also includes background information about breast cancer. This chapter also includes the research problem, goals and objectives of the study, context, and definition of important terms.

The second chapter consisted of two parts: the first part is conceptual framework where the researcher provided a diagram of the conceptual framework of the stud. The second part is the literature review it also includes examples of important studies, which were conducted about this research topic.

The third chapter discussed the methodology, sample, instruments of the study, pilot studies, ethical and administrative considerations, and limitation of the study.

The fourth chapter consisted of two parts: the first part presented the study results. The researcher presented the results in tables, and figures which makes it easier for the reader to understand, and the second part of this chapter includes the discussion.

The last chapter is the conclusion, and recommendations.

Chapter Two

Conceptual framework & Literature review

This chapter presents an integrated overview of explicit knowledge on the basis of existing theory, and literature describing the concepts of interest to the study.

2.1 Conceptual framework

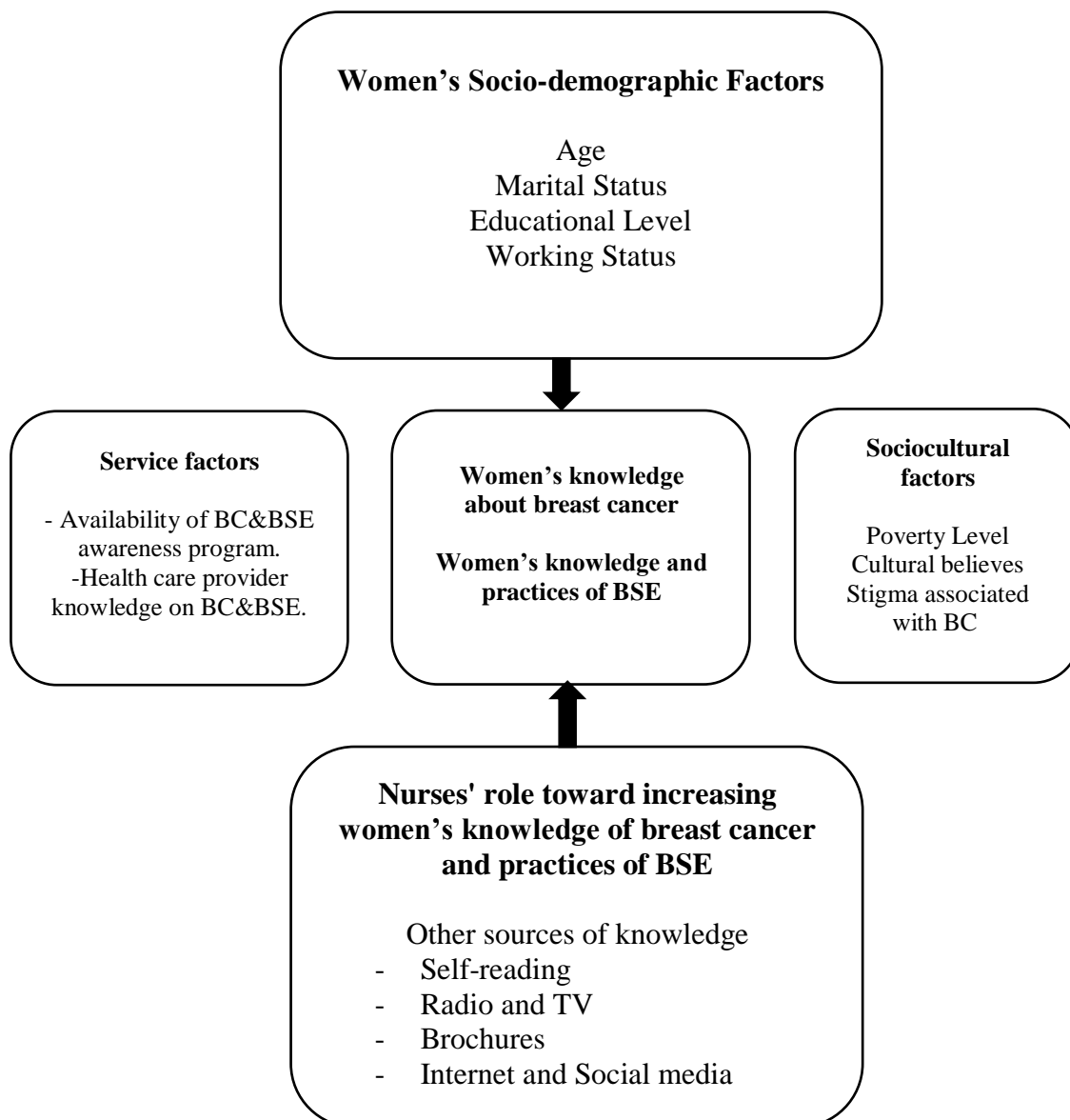


Figure (2.1): Conceptual framework – Self developed

The figure shows the framework of the current study, there are three dimensions in this framework. It explains the various types of factors affecting the women's knowledge of BC, risk factors, signs, and symptoms and practices of BSE from different demographic aspects and resources.

2.2 Concepts

2.2.1 Cancer

Is a term used for diseases in which abnormal cells divided without control and are able to invade other tissues. Cancer cells can spread to other parts of the body through the blood and lymph systems. The process of cancer spreading is called, 'metastasis ' . Growth of cancer cell is different from normal cells. Cancer cells continue to grow and form new abnormal cells instead of dying. Due to the damage of DNA normal cells become cancer cells. Normally when DNA is damaged in normal cells they rapidly repair the damage or die but in cancer cells the damaged DNA is not repaired or dies. It produces new cells containing the damage which is not necessary for the body. Thus, cancer develops inside the body (Nizum, 2014).

2.2.2 Breast cancer

Breast cancer is a kind of cancer that develops from breast cells. BC usually starts off in the inner lining of milk ducts or the lobules that supply them with milk. BC is a world-wide problem, and about 23% of female cancers are breast cancer. According to the American Cancer Society (ACS), several factors increase risk factors for cancer, which are important for women to be familiar with. These include family history, race, age, and life style. The role of the nurse is to guide patients in self-assessment of their health status (monthly self-breast examination), goal setting (for example, lose weight and follow-up

with their healthcare provider), and planning to change their behavior to-ward healthier lifestyles (exercise and low fat diet). Also, regular screening mammogram can usually identify breast cancer for early treatments which are more likely to be effective (Nizum, 2014).

2.2.3 Type of breast cancer (Nizum, 2014).

Breast cancer can begin in different areas of the breast – the ducts, lobules, or in some cases, the tissue in between. There are different types of breast cancer, including non-invasive, invasive, recurrent, and metastatic breast cancer.

2.2.3.1 Ductal Carcinoma in –Situ (DCIS)

DCIS is a type of pre- cancer inside of the ductal system that has not attacked the nearby tissue, there is no way to determine if this type of BC will become invasive or not. This is a very common type of non-invasive cancer with 1 in 5 diagnosed as DCIS.

2.2.3.2 Lobular Carcinoma In Situ (LCIS)

This is a very rare non – invasive tumor by which most doctors believe it will not develop into invasive cancer.

2.2.3.3 Infiltrating Ductal Carcinoma (IDC)

IDC is the most common type of BC. It starts in the milk ducts of breast and spreads to surrounding tissues. Approximately 8 out 10 invasive breast cancers are considered to be IDC.

2.2.3.4 Medullary Carcinoma

It is mostly common among women in their late 40s and 50s, presenting with cells that resemble the medulla (gray matter) of the brain.

2.2.3.5 Infiltrating Lobular Carcinoma (ILC)

ILC is the second most common type of BC after IDC. It usually appears as a subtle thickening in the upper – outer section of the breast. About 1 out of 10 invasive breast cancers considered ILC.

2.2.3.6 Tubular Carcinoma

This type of BC is typically found in women aged 50, and above. It has an excellent 10-year survival rate of 95 %.

2.2.3.7 Mucinous Carcinoma (Colloid)

Mucinous (colloid) carcinoma is a rare type of invasive, and it's formed when cancer cells inside breast produce mucous.

2.2.4 Signs and symptoms of breast cancer

The most common symptom of breast cancer is a new lump or mass. A painless, hard mass that has irregular edges is more likely to be cancerous, but breast cancers can be tender, soft, or rounded. They can even be painful. For this reason, it is important to have any new breast mass or lump or breast change checked by health care professional experienced in diagnosing breast diseases (Nizum, 2014).

Signs and symptoms of BC include:

- Early signs and symptoms
- Late signs and symptoms

2.2.4.1 Early signs and symptoms (Nizum, 2014).

- Lump in the breast- the most common first sign.
 - Lump in the armpit 'axilla'.
 - Changes in breast shape or size:
- ❖ Skin changes,
1. The skin of the breast may be become dimpled or puckered. A thickening and dimpling of the skin is sometimes called orange peel skin.
 2. Redness, swelling and increased warmth
 3. Itching of the breast or nipple (is often not relived by ointments, creams or other medications.
- Nipple changes
1. Normal nipples that suddenly became inverted should be checked by a doctor.
 2. Discharge from one nipple may be sign of BC, especially if it appears spontaneous and is blood- stained (Nizum, 2014).

2.2.4.2 Late signs and symptoms

Late signs and symptoms occur as the cancer spreads to other parts of the body, including other organs (Nizum, 2014).

2.2.5 Breast cancer risk factors

2.2.5.1 General (Nizum, 2014).

- Aging: On average, women over 60 are more likely to be diagnosed with BC. Only about 10-15 percent of breast cancers occur in women younger than 45.

- Gender: BC is 100 times more common in women. The National Cancer Institute estimates that over 190.000 women will be diagnosed with breast cancer annually.

2.2.5.2 Genetics.

- Family history:having a family history of breast cancer, particularly women with a mother, sister or daughter who has or had breast cancer, may double the risk.
- Inherited factors: Some inherited genetic mutations may increase your BC risks. Mutations in the BRCA1 and BRCA2 genes are the most common inherited causes. Other rare mutations may also make some women more susceptible to developing breast cancer(Nizum, 2014).

2.2.5.3 Body (Nizum, 2014).

- Obesity: After menopause, fat tissue may contribute to increases in estrogen levels, and high levels of estrogen may increase the risk of BC. Weight gain during adulthood, and excess body fat around the waist may also play a role.
- Not having children: Women who have had no children, or who were pregnant later in life (over age 35) may have a greater chance of developing BC. Breast feeding may help to lower BC risks.
- High breast density: Women with women with less fatty tissue, and more glandular and fibrous tissue may be at higher risk for developing BC than women with less dense breasts.
- Certain breast changes: Certain benign breast conditions can lead to an increase in BC risk.
- Menstrual history: Women who have menstruation at an early age (before age 12), and /or menopause at an older age (after age 55) have a slightly higher risk of getting BC.

2.2.5.4 Lifestyle

A sedentary lifestyle: physical exercise for four to seven hours weekly may help reduce BC risk.

- Calcium: Some studies have found a relationship between calcium intake and lowered BC risk.
- Brassica vegetables: A study published in American Medical Association Journal, found that Brassica vegetable intake (broccoli, cauliflower, cabbage) is inversely related to BC development (Cuzick, J.2010).
- Night work: several studies have suggested that women who work at night may have a risk for developing BC.
- Mushrooms: A case control study conducted in the year 2009 showed that women who consumed mushrooms had an approximately 50 % lower incidence of BC. Women who consumed mushrooms and green tea had a 90 % lower incidence of BC , Another case control study of 362 Korean women showed a relationship between mushroom consumption and decreased risk of BC (Cuzick, J.2010).
- Iodine deficiency: Iodine has a positive protective impact on BC. This is based on epidemiologic evidence and experienced on animal models.

2.2.5.5 Previous treatments,

Including using of birth control pills, Combined post – menopausal hormone therapy (PHT) and radiation exposure (Nizum, 2014).

2.3 Previous Studies

2.3.1 Local

A cross-sectional study was conducted by Elshami et al. (2018) to assess the awareness level of breast cancer (BC) among females in the GS among 2,774 women using stratified sampling method in four hospitals, and seven high schools. The researchers used Breast Cancer Awareness Measure (BCAM) to assess the confidence, and behavior of women in relation to breast changes, awareness of BC symptoms, risk factors, barriers to seek medical help, and knowledge of BC screening.

The study results showed that 64.2% of the targeted women had rarely (or never) examined their breasts, and 32.8% were not confident to notice changes. Results also showed that, 60.4% of them were aware of the availability of BC screening programs. Moreover, the overall mean for awareness of BC symptoms was 5.9 out of 11, and that of risk factors is 7.5 out of 16. Anxiety was reported as the major obstacle to seeking advice among women, however embarrassment was the most reported among adolescents.

The study concluded that of BC symptoms awareness, risk factors, and screening programs is suboptimal in Gaza. There is a great need for public awareness about BC, and it's also very important to train femalesurgeons to address BC early detection barriers.

A cross-sectional study was conducted by Abu-Shammala, and Abed (2015), it targeted 370 female teachers working at Governmental schools in Gaza city, in which 24 schools were selected randomly of all female schools including primary, preparatory, and secondary .

The study results revealed that more than 75% of the women had never undergone clinical breast examination. It also shows that 60% had never undergone mammography, whereas

62% performed BSE. Women who performed BSE had significantly more knowledge about breast cancer screening. The study showed a significant associations between the practices, and presence of positive breast cancer family history, and the level of education of husbands. The results also revealed that the oldest women demonstrated higher performance rates of screening methods than the youngest. Lack of breast screening knowledge was identified among more than one third of the women, and 24.6% of women did not know any screening method. About a half of the targeted women in the study had misconceptions about BC screening, including the belief that BC is not treatable. Additionally, women residing in Gaza city married to illiterate husbands were more likely to have a high level of misconceptions about BC.

The study also emphasized the importance of early detection, public knowledge about early screening methods, and providing public awareness on BC and it's curability methods. It also stressed on the importance of supporting, and building strong health education programs in schools, and health centers.

Ayed et al. (2015) conducted a descriptive cross-sectional study in Arab American University/ Jenin to assess the level of BSE knowledge, attitude, and practice among female nursing students. A regular random sample of 97 female nursing students were included. Data was collected by using a self-administered questionnaire including socio-demographic characteristic, knowledge level towards BSE, attitude level about BSE, and practice level towards BSE Scale which is developed by the researchers. The study results have shown that 15.5% of the respondents had good overall knowledge towards BSE, the major source of information about BSE (57.6 %) was mass media in the study, 75.3% of participants had positive attitude towards BSE, and 4.1% practiced BSE almost every

month. The study concluded that most female nurses' students had poor knowledge about BSE and did not perform BSE.

A triangulated, descriptive, and cross sectional one that was conducted in order to evaluate the management process of breast cancer in the GS that affect in diagnosis, and treatment processes serving BC patients in the GS. To decrease the gaps in BC management in order to decrease morbidities, and mortalities that happened in addition to help health care providers, and policy makers to formulate strategies for effective BC management. The results showed there are gaps in referral systems between health facilities, and health services abroad. Regarding the prevention, and screening services for breast cancer, there is no any regular sustainable prevention programs for breast cancer except activities for screening. Breast cancer diagnostic services are facing many barriers and challenges that impede the early diagnosis of breast cancer, poor awareness of patents, cultural factors, physician and health system role. Regarding treatment options for breast cancer, there are several obstacles, and barriers that affect negatively on the quality and completeness of care such as frequent shortages, and interruptions in essential chemotherapy medications, and radiotherapy treatment is not available which consider one of the main treatments option for breast cancer patents, moreover there is no specific center for palliative care in Gaza, the study recommended enhancing policies for breast cancer prevention, screening and management, (M. Eid, 2019).

2.3.2 Regional

A cross-sectional study was conducted by Younis et al. (2016) to gain insight into the level of BC knowledge among young adult females in the UAE aged 25 to 45. A sample of 492 females were selected using a convenience sampling method. Data was collected through an interview-based questionnaire. The study results revealed that 89% of the targeted

group knew that breast cancer is common and 45% knew that it affects ages above forty. Their knowledge about signs and symptoms was 53%, and more than half (57%) knew that the most common sign of BC is a breast lump. The results also showed the participants' knowledge on the risk factors was 43%, almost 94% knew that cancer can be detected early, and 93% knew that early diagnosis improves outcome. Almost 67% of the participants had knowledge about BC screening methods. The study concluded that respondents' knowledge of breast cancer is less than expected. As a result, there is a great need for spreading public awareness by conducting more campaigns.

A multicenter, cross-sectional quantitative survey was carried out to determine the factors that influence Qatari women's awareness of breast cancer and its screening activities, and to find ways to effectively promote breast cancer screening activities among Arabic-speaking women in Qatar. Out of 1152 Qatari citizens, and non-Qatari Arabic-speaking residents, 35 years of age or older invited female citizens, 1063 were responded with 87.5% response rate female. The study results revealed that while most participants (90.7%) were aware of breast cancer, less than half had awareness of BCS practices (28.9% were aware of breast self-examination and 41.8% of clinical breast exams, while 26.4% knew that mammography was recommended by national screening guidelines. Only 7.6% had knowledge of all three BCS activities). Regarding BCS practice, less than one-third practiced BCS appropriately 13.9% of participants performed BSE monthly, 31.3% had a CBE once a year or once every two years, and 26.9% of women 40 years of age or older had a mammogram once every year or two years. Awareness of BCS was significantly related to BCS practice, education level, and receipt of information about breast cancer and/or BCS from a variety of sources, particularly doctors and the media. The study concluded that, the low levels of participation rates in BCS among Arab women in this study indicates a strong need to increase awareness of the importance of BCS. Without this

awareness, compliance with the most recent breast cancer screening recommendations in Qatar will remain low. Tam Truong Donnelly et al. (2014).

A descriptive study conducted in Zarqa city to determine Jordanian nurses, 'practice of BSE and knowledge about risk factors of breast cancer. A convenient sample of 112 registered nurses and midwives was used, and a self-administered questionnaire was used for data collection. The study results showed that more than half percent of the targeted group is married, 95.5% had no history of breast problems, and 12.5% reported that they had a family history of BC. The study also revealed that 19.4% of the participants practiced BSE on a regular basis. The study concluded there was a gap between the Jordanian nurses' knowledge and practice of BSE. (Amasha, 2013).

Additionally, Karayurt et al. (2008) a descriptive and cross-sectional study conducted to investigate knowledge and practice of breast self-examination and to determine knowledge of risk factors for breast cancer among high school students. It was conducted in a high school in Manisa, Turkey. The study sample included 718 female high school students. The researcher has used a socio-demographic characteristics data form, knowledge of breast self-examination and risk factors for breast cancer form and breast self-examination practice form was used to collect data. The study results revealed an insufficient knowledge about breast self-examination and a low percentage of students reported that they had performed breast self-examination monthly. The most common reason for not doing breast self-examination was, "not knowing how to perform breast self-examination" (98.5%). Most of the students had little knowledge of the risk factors for breast cancer. The most widely known risk factor by the students was personal history of breast cancer (68.7%). There was a significant relation between breast self-examination practice and age, school grade, knowledge about breast cancer and knowledge about breast self-examination.

The study concluded that, there is a need to increase knowledge of adolescent females about the risks of breast cancer and benefits of early detection. In fact, health care professionals can develop effective breast health care programs, and help young women to acquire good health habits.

A cross-sectional survey was conducted to assess breast cancer screening knowledge, attitudes, and practices among two hundred, and forty-seven women in the city of Al Ain, United Arab Emirates. The researcher has used a Chi Square test and regression analysis to analyze the data. The study results revealed that despite the increase in the uptake of screening modalities in the study group, a lack of knowledge about breast cancer screening is still evident. Almost half (44.8%) of women who never had a CBE and 44.1% of women who never had a mammography expressed a lack of knowledge about the existence of these screening techniques. Nearly one third of the participants interpreted the presence of a breast lump incorrectly and, moreover, expressed fewer worries about the nature of the lump than would normally be expected. The study concluded that the National screening program needs to be improved and directed towards more efficient and targeted utilization of resources. Healthcare professionals play a major role in alerting women to the importance of periodic screening. (Elobaid et al. 2013)

Moreover, (Kan'an, 2018) a cross-sectional study was conducted to assess the level of BC awareness among Jordanian female university students, measure their attitudes toward BC treatment, and compare the level of awareness and attitudes of students in the science and, humanities faculties. The participants were 326 students selected randomly. The study result revealed that, the number of students who had poor levels of awareness about BC, general knowledge about BC scale, knowledge about BC symptoms scale, and knowledge about risk factors of BC scale were 27

0 (83%), 166 (51%), 182 (56%) and 292 (90%), respectively. Also, 92 (28%) students, and 234 (72%) students had high and medium attitudes toward BC treatment, respectively. There was a significant difference between the humanities, and science faculties students' awareness about BC, and their attitudes toward BC treatment ($p < 0.05$). Also, the results revealed that students' main information source about BC was mainly health-care professionals, followed by internet and television. The study concluded that awareness among Jordanian female students about BC and their attitudes toward its treatment is insufficient. Therefore, university compulsory courses need to focus on BC and promote awareness about it.

In Turkey a descriptive, cross-sectional study was conducted by Sakine Memis (2009) to investigate knowledge, attitudes, and behaviors of nursing and midwifery students regarding BSE among 244 female students studying nursing and midwifery.

The study results revealed that more than half of the study participants stated that they had sufficient information about BSE from varied sources, primarily from school curricula. The students knew about who should perform BSE, and how often it should be conducted. However, their knowledge about BSE techniques was limited. Half of the study sample mentioned that they performed BSE at the recommended times and intervals. Meanwhile only one-fifth of the participants used the recommended BSE techniques. They stated that the main reasons for not performing BSE was their lack of knowledge on how to perform it (57%), not having any history of breast health issues (39%), and forgetfulness (18%).

The study concluded that the nurses, and midwifery education had a positive impact on students' knowledge, attitudes, and behaviors in regards to BSE.

Another cross-sectional study conducted by Izanloo et al. (2018) to identify the perception of women in the Northeast of Iran regarding breast cancer screening among 1469 women who have been selected randomly from outpatient clinics in public urban areas in Iran using an interview questionnaire. The study results revealed that more than 84% of interviewees were not informed of BC and screening tests. The main reasons mentioned by women for their failure to do screening tests was ‘absence of any symptom or problem’ and ‘they did not think it was necessary.’

Also, there was not a significant difference between income level, marital status and people's knowledge about breast cancer screening tests. However, employment, education level, and family history had a positive impact on people's awareness of BC, and its screening tests. The study concluded that the lack of women's knowledge from low socioeconomic classes was the main barrier to BC screening. In this regard, organizing training programs by the physicians and the media can help raise screening rates.

2.3.3 Globally

Additionally, Godfrey et al. (2016) a cross-sectional study conducted to assess female university students' knowledge of breast cancer risk factors, signs, and symptoms, and identify BSE practices in Uganda. Using this information, the researchers aimed to design educational intervention to help address the identified knowledge and practice gaps. The researcher has used a structured questionnaire. The study results showed a high level of BC awareness BC (98.0%) and BSE practices (76.5%) among female students. Over half the students (61.3%) had an intermediate level of knowledge about BC risk factors. The results also showed that participants skills in regard to BSE practices were found to be low (43.6%). The majority of students (56.9%) received information about BC from mass media. The study concluded that pre- post-education intervention studies need to be

conducted to evaluate the intervention outcomes related to BC knowledge and BSE practices among female students in Uganda.

Moreover, cross-sectional study was done by Azubuike and Okwuokei (2013) among African women to investigate the level of breast cancer awareness, attitudes and practices towards early detection strategies in Benin city using a purposive, stratified, and simple random sampling among 365 women from 9 health facilities in 6 wards of the municipality. The researchers have used self-administered questionnaires

The study results revealed that 90.5% of the women had general knowledge about BC, but only 49.71% knew up to three BC risk factors. A total of 65.2% could identify up to two BC signs and symptoms. While about 56.5% of them knew at least one early detection strategy, only 17.73% (61/347) practiced regularly at least one of the early detective procedures. Practicing early detection strategies was significantly associated with their knowledge. The study concluded that while substantial number of women remains unaware of BC practice's, a good number of those who have knowledge were yet to translate knowledge, and attitudes into practice.

Another cross-sectional study included 478 women aged >40 years was conducted to evaluate people's beliefs about BC risk factors among women from the western Amazon. The study results revealed that, the main beliefs about the risk factors for breast cancer where breast trauma (95%), use of underwire bra (58.5%), and a high number of sexual partners (55.5%). Women from younger age groups presented higher belief scores than those of women from older age groups. A strong association was noted between high knowledge scores of risk factors and signs/symptoms of the disease, and a high belief scores in the study group. The results indicate the existence of important beliefs related to the risk factors for breast cancer. Women from younger age groups, women who have seen

a gynecologist in the past 2 years, and women who had more knowledge about the risk factors and signs and symptoms of breast cancer had higher belief scores. The study showed a higher score among women from younger age groups, women who have seen a gynecologist in the past 2 years, and women who had more knowledge about the BC risk factors, signs and symptoms. Schilling et al. (2019).

Chowdhury (2011) conducted a cross-sectional descriptive study to assess the level of awareness among women of a reproductive age on breast cancer. Around 175 women were selected and data was collected by using face to face interviews and pretested semi structured questionnaire. The study results revealed that six out of 10 respondents (64%) knew that BC is common among women and almost all (94.29%) mentioned that breast cancer doesn't occur during old age. In addition, half of them said that it was not inherited, signs, and symptoms of breast cancer are spontaneous clear. Those signs come in the form of bloody discharge from nipple often associated with a lump (61.14%), and it could not be cured (54.3%). Majority of them (78.9%) did not know that early diagnosis improves treatment outcome and the risk factor of breast cancer (65.14%). Half of them (57.5%) had knowledge that clinical breast examination such as screening method of breast cancer but vast majority did not practice clinical breast examination. Only 16.67% of the respondents practiced BSE regularly, and among them 83.33% did not know the best time for BSE. Practicing breast feeding was universal among them but only for less than 6 months. The study concluded that women lack awareness about breast cancer, its preventive measures, and risks factors. There is a great need for more public awareness, campaigns, and counseling programs to be conducted by the government and NGO's

In Addis Ababa, Ethiopia, a cross-sectional quantitative study was used to measure the proportion of female healthcare professionals in governmental hospitals of Addis

Ababa. The study focused on breast cancer risk factors, related to knowledge and practice of BSE, CBE and Mammography. The sampling technique employed was stratified random sampling with proportional allocation and systematic random sampling. Proportional allocation was used to allocate the total sample size to each hospital. Data collection was accomplished using self-administered questionnaires. The result of this study revealed that female health workers who were expected to act as role models and educate the public had adequate knowledge of breast cancer risk factors (85.0%), BSE (77.6%), CBE (71.4%), and mammography (81.4%) but poor practice of BSE (35.5%), CBE (32.5%) and mammography (16%), The study recommended there shall be more efforts by Government to improve practice of breast cancer screening methods among female healthcare professionals. Dellie et al. (2012).

Another cross-sectional descriptive study conducted by Achille et al. (2015) to study BC knowledge, attitudes, and practices among 281 health care professionals. The study results revealed that 12.46% of the professionals had good knowledge about BC risk factors and family history. Some of them (55.36%) considered, breast cancer screening to be poorly organized. Systematic practice of clinical examination of breasts was reported by 50.18% of the participants. Mammography was requested by only 48.1% of the participants in case of warning signs. 97.50% reported that women admitted for consultation were systematically advised to perform breast self-examination. The study concluded there is a need for taking actions to enhance health care providers' knowledge about breast cancer. It also Practicing care providers should be delivered continuing medical training related to listening, advice and practice for screening cancers in general and breast cancer in particular.

A cross-sectional study was conducted by Nizum (2011) to find out knowledge level about breast cancer, prevalence of risk factors and practice of BSE among 350 female from three districts (Noakhali, Comilla and Gazipur) of Bangladesh. Self-administered questionnaire was used to collect data. The study results revealed that 57.14% heard about breast self-exam but only 2.70% women was correctly performing breast self-exam and only 6.49% women had correct knowledge about mammography. Most of the respondents had incomplete or wrong information about breast cancer.

In Ethiopia, a cross-sectional study was conducted on January 2015, to assess practice and associated factors of breast self-examination among 420 female Debre Berhan University students, using self-administrated questionnaire. Multistage sampling technique was used to select the study participants. Only 14 (3.5%) had family history of breast cancer. Two hundred fifty-six (64%) of the participants had heard about BSE and 30.25% had good knowledge about BSE. Mass media were the most common source of information about breast cancer. Few of the participants (28.3%) had performed BSE. Lack of knowledge on how to perform BSE was cited as the main reason for not practicing BSE. Knowing how to perform, when to perform, and position to perform BSE and having a perception that BSE is important and useful to detect breast cancer were significant predictors of practices of BSE. This study revealed that most of the participants had low knowledge and practice of BSE Birhane et al. (2015)

Chapter Three

Materials & Methods

3.1 Introduction

This section illustrates the issues related to methodologies used to answer the research questions, the chapter commences with the study design, study population, study setting, period of the study, sample size, sampling and statistical methods that were used.

3.2 Study design

A descriptive cross-sectional design was used in this study. This design was chosen because it is less expensive, suitable regarding time and costs, and meets the study objectives in short time.

3.3 Study population

All women's attending governmental primary health care centers mainly maternal and child health care services in the northern Gaza governorate for follow-up. The average monthly number of women's attending the maternal and child health care services in north Gaza governorate is 2111.

3.4 Sample size and Sampling process

Based on the average monthly number of women's attending the mother and child health care centers with 95% confidence interval, a convenience sample of 335 subjects were included in the study.

3.5 Study setting

The study was conducted at primary health care centers in northern Gaza governorate, (Al-Shimaa clinic – Abo Shbak clinic – Jabalia clinic).Al- Shimaa clinicIt is located in Beit Lahiacity it had a third level of care, it provides complete mother and child health services (vaccination – prenatal, antenatal, and post-natal care, family planning) radiology and dermatology department, dental unit. Abo Shbak clinic also had a third level of care, it provides complete mother and child health services (vaccination – prenatal, antenatal, and post-natal care, family planning) radiology and dermatology department, dental unit, and mental health service. Jabalia clinic had a fourth level of care, and it is considered one of the largest clinics in North Gaza Governorate.

3.6 Period of the study

The study was conducted during the period from July till November (2019).

3.7 Eligibility Criteria

3.7.1 Inclusion criteria

Every woman attending the MCH centers during the study period has a chance to be involved in this study.

3.7.2 Exclusion criteria

1. Women with previous history of BC.
2. Women not willing to participate in the questionnaire.

3.8 Study instrument

Structured interview questionnaire was conducted to accomplish the study objectives. It was developed by the researcher based on different literatures, it consisted of seven parts (socio-demographic, knowledge, practice, barriers, Source of knowledge about BC, and nurses role), (Annex 1).

Part one: this part consist of the questionnaire was on socio-demographic characteristics of the participants, it was made up of 6 items and include: education qualification, marital status, monthly income, age at marriage, age and number of family members.

Part two and three: covering Knowledge of participants about risk factors, signs, and symptoms of breast cancer. Sixteen yes/no statements regarding risk factors were stated, there were 15 true and only 1 false item (number 11). Eleven yes/no statements covering the knowledge of signs, and symptoms of breast cancer, there were 10 true items and only 1 false item (No.3).

Part four: This was covered the time (item no. 1) and proper practice of breast-self exam (items 2-9). This part contained 7 items, and participants mark their answer on the appropriate answer. This part include measurement number of practice regarding: practicing breast-self exam regularly, practicing breast-self exam every month, Breast-self exam lasts from 1 – 2 minutes, Breast-self exam using last parts of the fingers, performing breast-self exam by using three fingers, performing breast-self exam by using comfortable hand, looking in a mirror all the time during breast-self exam. This part was developed by (Doumit, 2017) and modified by researcher in this study.

Part five: This is was a questionnaire on the barriers to breast-self exam. This part contained 9 items, and the participants mark their answer on the appropriate answer. This part

included the measurement of a number of barriers. these included : feeling embarrassed to go to a doctor, feeling anxiety, and fear to go to a doctor, It is difficult to make an appointment with the doctor, I am too busy that I have no time to go to the doctor, going to the doctor cost much money that I cannot pay and It is difficult for me to go to the doctor. This part was developed by Wachira et al. (2017) and modified by researcher in this study.

Part six: This is was a questionnaire on source of knowledge about breast cancer. This part contained five items. These included: brochure from Primary Health Care Center, The Internet, lecture outside the health care center, from a friend / relative, from nurses at MCH clinic. This part was developed by the researcher in this study.

Part seven: This is was a questionnaire on role of the nurse in health education about breast cancer. This part contained six items. These included : the nurse give health education about BC , the nurse give appointments for health education, the nurse trained you how to perform breast-self exam, the nurse asked me to make a mammogram, the nurse told me about risk factors of breast cancer and the nurse told you about special warning signs of breast cancer. This part was developed by the researcher in this study.

3.9 Data Collection Techniques

Structured interview questionnaire was distributed, informed consent was signed, after explanation of the purpose of the study. Ensure privacy, this assessed the researcher to observe how the respondents conducted BSE.

3.10 Ethical and Administrative Considerations

All ethical considerations required to conduct a research were followed, an approval was obtained from Al-Quds University and Helsinki Committee (Annex 2). Moreover, a formal

letter was submitted to the Ministry of Health in the Gaza Strip to get approval to start data collection (Annex 3). In addition, an informed consent was obtained from all the women to participate in the study (Annex 4). No harm for the women to participate in the current study, also the issue of privacy was considered.

3.11 Pilot study

A pilot study was conducted on 10 % of the sample size (30 women) those women excluded from the study, before starting the actual data collection in order to evaluate feasibility, time needed to fill the questionnaire, any unclear or difficult understood statements or words, and to be sure of the clarity of the questionnaire.

3.12 Validity and reliability of the instrument

The researcher distributed the questionnaire to five experts in the field of MCH and research methodology (Annex 3) in order to evaluate adequacy of the questionnaire items to measure knowledge, and practices of women towards breast self-exam, which will ultimately give the questionnaire confidence in its results.

Reliability

There searcher used Cronbach's alpha method to test the reliability of the questionnaire, and the results for each domain is presented in the table 3.1

Table (3.1): Chonbach's alpha for the study questionnaire's domains

No.	Domain	No. of items	Alpha coefficient
1	Knowledge about risk factors of breast cancer	16	0.714
2	Knowledge about symptoms of breast cancer	11	0.773
3	Practice of breast self-exam (BSE)	9	0.899
4	Role of the nurse in health education about BSE	6	0.908

3.13 Statistical management

Statistical package for the Social Sciences version 22 was used to analyze data using appropriate statistical tests(descriptive and inferential), frequencies, percentages, mean, standard deviation, A chi-square and Exact Fisher test with statistical significance $p \leq 0.05$ at 95% confidence interval were used.

3.14 Measurement criteria

Level of knowledge	Low	Moderate	High
Score	Less than 60%	60% – 80%	More than 80%

Low level: if the overall average score on the domain was less than 60%.

Moderate level: if the overall average score on the domain was between 60% to 80%.

High level: if the overall average score on the domain was more than 80%.

3.15 Limitation of the study:

The sample was taken from northern area only which mainly considered as rural area.

Chapter Four

Results and Discussion

Introduction

In this chapter presents the findings of statistical analysis of data. Descriptive analysis of Sociodemographic characteristics illustrated, in addition, results of different variables were explored using proper analytical statistical tests. The results are illustrated below.

4.1 Socio-demographic characteristics of study participants

As shown in Table (4.1), the sample size consisted of 335 woman, 66.9% of study participants had secondary school education and less, while 15.2% had university education, which reflected that most of study participants had low education. On the other hand 84.5% of study participants were married, while 14% were single. 82.1% of study participants have income of less than 1000 NIS, 63.3% married at teenage, 40.9% their age now ranged between 20 – 29 years, and 41.2% have a family of 5 – 7 members.

According the researcher's opinion , this is due to the nature of the population in the northern Gaza governorate they depend on the craft of agricultueas, they prefer early marriage to study so they have highly family members, and their income level is low compared to other areas in the GS.

Table (4.1): Sociodemographic characteristics of study participants

Variable	Number	Percentage (%)
Educational Level		
Bachelor degree	51	15.2
Diploma degree	60	17.9
Secondary and less	224	66.9
Age group		
Less than 20 years	39	11.6
20 – 29 years	137	40.9
30 – 39 years	87	26.0
40 years and more	72	21.5
Total	335	100.0
Mean age = 30.814 SD = 10.369 years		
Marital Status		
Married	283	84.5
Single	47	14.0
Divorced	5	1.5
Age at marriage		
Less than 20 years	212	63.3
20 years and more	76	22.7
Total	288	100.0
Mean age = 15.707 SD = 7.019 years		
Monthly income		
Less than 1000 NIS*	275	82.1
1000 NIS and more	60	17.9
Total	335	100.0
Number of family members		
4 and less	113	33.7
5 – 7	138	41.2
8 and more	84	25.1
Total	335	100.0

NIS= New Israeli Shekel

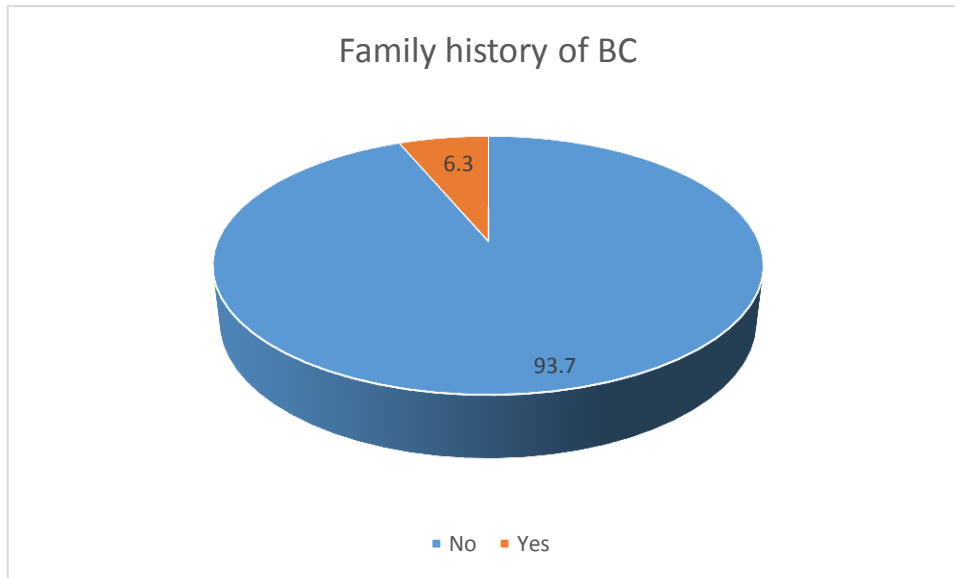


Figure (4.1): Family history of breast cancer (n= 335)

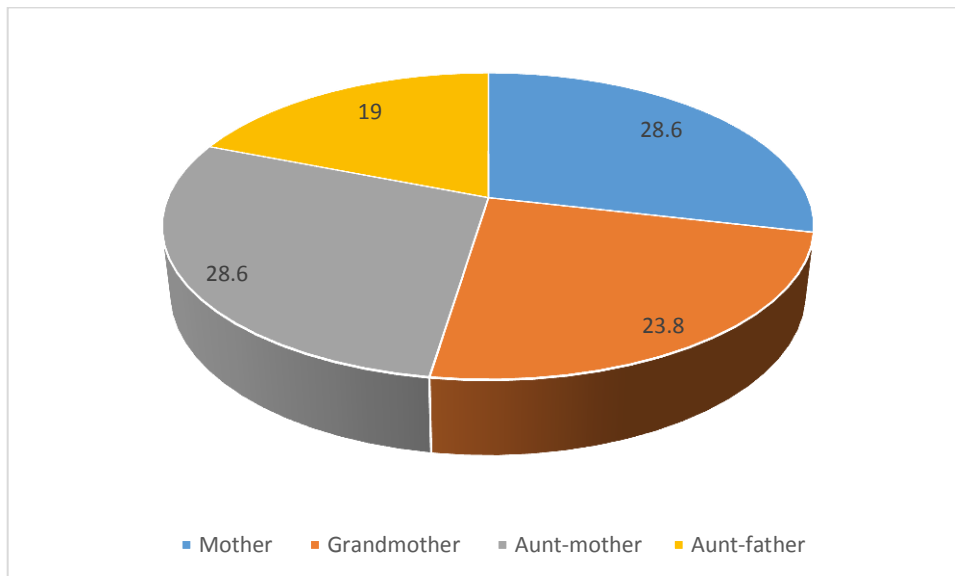


Figure (4.2): Relatives with breast cancer (n= 21)

Figures 1,2 showed that only 6.3% had positive family history of breast cancer, mother and aunt mother have same percentage (28.6%) followed by grand mother (23.8%). The results obtained by Amasha, (2013) indicated that more than half of the study participants are married, 47.3% worked for more than 5 years, 95.5% had no previous breast health problems, and family history of BC reported by 12.5% of participants.

4.2 Level of knowledge about risk factors of breast cancer

The level of knowledge about breast cancer was determined after calculating frequencies and percentage of correct and wrong answers and using the scoring system (Low: < 60%, Moderate: 60% – 80%, and High: > 80%).

Table (4.2): Knowledge of participants about risk factors of breast cancer, n= 335

No	Item	Correct answer		Wrong answer		Rank
		N	%	n	%	
1.	Previous BC or any other breast disease is a risk factor	246	73.4	89	26.6	3
2.	Long-term use of contraceptive pills	186	55.5	149	45.5	7
3.	Obesity & overweight	196	58.5	139	41.5	6
4.	Positive family history (Mother - Sister - Aunt-mother – Aunt-father)	274	81.8	61	18.2	1
5.	Age at first baby after thirties increase incidence of BC	115	34.3	220	65.7	11
6.	Infertility increases incidence of BC	139	41.5	196	58.5	8
7.	Early menarche (before 12 years old) increases incidence of BC	93	27.8	242	72.2	13
8.	Late menopause , after age 50	59	17.6	276	82.4	14
9.	Decrease of physical activity	116	34.6	219	65.4	10
10.	Breastfeeding decreases incidence of BC	271	80.9	64	19.1	2
11.	Women with large breast are more likely to develop BC	226	67.5	109	32.5	6
12.	Aging , more than 50 years	232	69.3	103	30.7	5
13.	Exposure / radiation therapy to the chest area increases the incidence of BC	271	80.9	64	19.1	2
14.	Having the first child before the age of 25 years reduces the incidence of BC	108	32.2	227	67.8	12
15.	women are more liable than men for BC	234	69.9	101	30.1	4
16.	Having four or more children reduces the risk of BC	122	36.4	213	61.6	9
Average		54.0		46.0		Low

As presented in Table (4.2), the overall average of knowledge about risk factors of breast cancer was 54%, which revealed low level of knowledge. The top five risk factors identified by the participants were (positive family history 81.8% , breast feeding decreases incidence of BC & exposure/radiation therapy to the chest area increase the incidence of BC with 80.9% for each , previous BC or any other breast disease is a risk factor 73.4% &

aging more than 50 years 69.3%). Consistent results obtained by Elshami et al. (2018) who found that about half of study participants knew the risk factors of BC. Inconsistent results obtained by Younis et al. (2016) who found that the overall knowledge about risk factors of BC was 43%, and the majority of study participants knew that BC is common and 45% knew that it affects ages above forty. In addition, Azubuike and Okwuokei (2013) found that the majority (90.5%) of the study participants knew about BC, but only about half of them (49.71%) knew up to three BC risk factors. Another study conducted by Marla et al. (2019) reflected strong believes about risk factors of BC, the main beliefs about the risk factors of BC were breast trauma (95%), use of underwear bra (58.5%), and a high number of sexual partners (55.5%). Furthermore, the results of Chowdhury (2011) revealed that two-thirds of respondents knew that BC was a common cancer in women and 94.29% stated that BC do not occur in old age.

Our results reflected low knowledge about risk factors of BC. In my opinion, ability to identify and recognize risk factors is very important for all the women, so they can avoid the exposure to some of these factors such as long-term use of contraceptives, controlling body weight, avoid exposure to radiation, and breastfeeding. Healthcare providers should these factors in order act towards increasing the awareness about risk factors and how to avoid exposure to decrease the possibility of having BC.

Table (4.3): Level of knowledge about risk factors of BC among study sample, n=335

Level of knowledge	Range of total score	n	%
Low	Less than 60%	195	58.2
Moderate	60 – 80%	99	29.6
High	More than 80%	41	12.2
Total		335	54.2

Table (4.3) showed that 195 (58.2%) of study participants have low level of knowledge about risk factors of breast cancer, 99 (29.6%) have moderate level of knowledge, while 41 (12.2%) have high level of knowledge. This result indicated that more than half of study participants have low knowledge about risk factors of breast cancer. The results of Kan'an,

(2018) showed that poor levels of awareness of BC accounted for 83%, general knowledge about BC scale accounted for 51%, and knowledge about risk factors of BC scale accounted for 90%. In addition, Godfrey et al. (2016) reported that two-thirds of the study participants had moderate level of knowledge about risk factors of BC, and Achille et al. (2015) found that 12.46% of the study participants had accurate knowledge about risk factors of BC.

4.3 Knowledge about symptoms of breast cancer

To determine the level of knowledge about symptoms of breast cancer, the researcher calculated frequencies and percentage of correct and wrong answers as illustrated in table(4.4).

Table (4.4): Knowledge of participants about symptoms of breast cancer, n= 335

No	Item	Correct answer		Wrong Answer		Rank
		N	%	N	%	
1.	A change in the position of your nipple could be a sign of breast cancer	137	51.6	162	48.4	8
2.	Pulling in of your nipple could be a sign of breast cancer	167	49.9	168	50.1	9
3.	Pain in one of your breasts could be a sign of breast cancer	179	53.4	156	46.6	7
4.	Puckering or dimpling of your breast skin could be a sign of breast cancer	216	64.5	119	35.5	5
5.	Abnormal discharge from your nipple could be a sign of breast cancer	227	67.8	108	32.2	4
6.	Bleeding from your nipple could be a sign of breast cancer	254	75.8	81	24.2	2
7.	A lump in your breast could be a sign of breast cancer	296	88.4	39	11.6	1
8.	change in breasts skin color, this could be a sign of breast cancer	216	64.5	119	35.5	5
9.	A lump under your armpit could be a sign of breast cancer	254	75.8	81	24.2	2
10.	Changes in the size of your breast could be signs of breast cancer	243	72.5	92	27.5	3
11.	Changes in the shape of your breast could be signs of breast cancer	180	53.7	155	46.3	6
Average		65.3		34.7		Moderate

As presented in Table (4.4), the overall average knowledge about symptoms of breast cancer was 65.3%, which revealed moderate level of knowledge. The highest top five S&S identified by the participants were, a lump in your breast could be a sign of breast cancer 88.4%, bleeding from your nipple could be a sign of breast cancer & a lump under your armpit could be a sign of breast cancer 75.8% for each, changes in the size of your breast could be signs of breast cancer 72.5%, abnormal discharge from your nipple could be a sign of breast cancer 67.8%, change in breasts skin color, this could be a sign of breast cancer & puckering or dimpling of your breast skin could be a sign of breast cancer 64.5% for each.

Inconsistent results obtained by Elshami et al. (2018) which showed that about half of study participants were aware of symptoms of BC, and one third of them were not confident to notice changes in their breasts. In addition, Abu-Shammala and Abed (2015) reported lack of breast screening knowledge among more than one third of the women. Another study found that the knowledge about signs and symptoms of BC was 53%, and more than half of study participants knew that the most common presenting sign is a breast lump (Younis et al. 2016). Moreover, Elobaid et al. (2013) reported that about one third of the participants interpreted the presence of a breast lump incorrectly and expressed low worries about the nature of the lump than would normally be expected. In addition, Chowdhury (2011) reported that two-thirds of study participants stated that spontaneous clear or bloody discharge from nipple often associated with a lump is a sign of BC. Higher results obtained by Godfrey et al. (2016) who found that the study participants expressed high awareness of BC.

Our results reflected that about two-thirds of women knew the symptoms and warning signs of BC. According to the researchers' opinion, all the women should know these symptoms, and should be able to recognize the symptoms early. Detection of BC at an early stage improves the prognosis and increases the chance for survival and cure of the disease. Therefore, more efforts have to be directed toward teaching the women about warning symptoms of BC through health education sessions at primary health care centers, community facilities, media and mobile apps on the internet.

Table (4.5): Level of knowledge about symptoms of BC among the study sample.

Level of knowledge	Range of total score	n	%
Low	Less than 60 %	131	39.1
Moderate	60 – 80 %	61	18.2
High	More than 80 %	143	42.7

Table (4.5) showed that 131 (39.1%) of study participants have a low level of knowledge about symptoms of breast cancer, 61 (18.2%) have a moderate level of knowledge, and 143 (42.7%) have a high level of knowledge. This result indicated that less than half of study participants have high knowledge about symptoms of BC. According to the researcher's opinion, this high level of knowledge about signs and symptoms of BC is because BC signs and symptoms are clear and visible for all women, such as the presence of a lump on the breast or secretions, especially blood from the nipple, thus it is easy for women to know about it. The results obtained by Kan'an (2018) indicated that knowledge about BC symptoms scale accounted for 56%. In addition, the results of Godfrey et al. (2016) reflected that two-thirds of the study participants had a moderate level of knowledge about signs and symptoms of BC.

4.4 Knowledge and Practice of Breast-Self Exam

Table (4.6): Participants' Knowledge and Practice of breast-self exam, n= 335

Knowledge and Practice of BSE	No. (%)
Knowledge of Appropriate time of performing BSE	
- At times of regular menstruation (right answers)	177 (52.8)
- At time menopause (right answers)	66 (19.7)
Performance of BSE	
- Performing BSE	104 (31.0)
- Performing regular BSE	96 (92.3)
Appropriate performance of BSE	27 (26.0)
- Performing BSE every month	66 (63.5)
- BSE last 1-2 minutes	63.5 (63.5)
- Using the tip of fingers	45 (43.3)
- Using 3 fingers	36 (34.6)
- Performing breast-self exam by using comfortable hand	7 (6.7)
- Looking at the mirror all the time during breast-self exam	

Table (4.6) showed that 177 (52.8%) of participants knew the suitable time to do breast-self exam at times of regular menstruation, and 66 (19.7%) knew the suitable time to do breast-self exam at times of menopause, 31% of participants stated that they perform BSE, 92.3% of them stated that they did regular BSE but they wasn't done regularly as needed , so only 26% of them perform BSE regularly every month .

This result was consistent with the results of Elobaid et al. (2013) which indicated lack of knowledge about BC screening as almost half of women never had breast exam. Higher results obtained by Godfrey et al. (2016) who found that 76.5% of the study participants expressed awareness of BSE practices. Another study showed that more than half of study participants knew that clinical breast examination is a screening method to detect BC but the vast majority of them did not practice clinical breast examination, and only 16.67% of the respondents did BSE regularly and among them 83.33% did not know the best time for BSE (Chowdhury, 2011). Another study carried out by Achille et al. (2015) found that

more than half of study participants stated that breast cancer screening was poorly organized, and systematic practice of clinical breasts exam was reported by 50.18% of the participants.

According to the researcher's opinion, low practice of BSE is related to misunderstanding of cultural beliefs and morals in a conservative society as Gaza Strip. The women generally are embarrassed and considering touching the breasts is a prohibited act, which puts constraints on either BSE and clinical breast exam. Increase awareness and understanding of the need for regular breast exam and its benefits for the women is very important. Therefore, to facilitate breast exam, different parties should collaborate including MoH, UNRWA health office, community organizations, high schools, universities, media, and use of mobile apps, and campaigns focusing on breast exam performance, and its benefits and role in early detection of BC or any abnormal changes in the breast.

Similar results obtained by Elshami et al. (2018) who found that two-thirds of the women rarely or never performed BSE. Another study carried out by Abu-Shammala and Abed (2015) found that more than three-fourths of the women had never undergone clinical breast examination and about two-thirds had never undergone mammography, whereas 62% performed BSE. Also, women who performed BSE had significantly higher knowledge about BC screening, and women who had clinical breast exam and mammography screening had significantly higher knowledge about BC. Furthermore, Ayed et al. (2015) reported that about three-fourths of study participants had positive attitude towards BSE, and 4.1% practice BSE always every month. Another study carried out by Younis et al. (2016) found that the majority of study participants knew that BC can be detected early, and that early diagnosis improves outcome. The total knowledge about screening methods of BC was 67%. Furthermore, Tam Truong Donnelly et al. (2014)

found that 13.9% of participants performed BSE monthly, 31.3% had a clinical breast exam once a year or once every two years,

And 26.9% of women 40 years of age or older had a mammogram once every year or two years. Another study conducted by Amasha (2013) found that 19.4% of the study participants performed BSE regularly. Furthermore, the results of SakineMemis (2009) showed that half of the study participants stated that they performed BSE at recommended times and intervals, but only one-fifth used recommended BSE positions and techniques, which revealed limited knowledge about BSE technique. Another study conducted by Godfrey et al. (2016) found low skills (43.6%) related to BSE practices. In addition, the results of Nizum (2011) showed that more than half of study participants heard about BSE but only 2.7% of them correctly performing BSE.

Our results reflected low knowledge about performing BSE. This result is alarming and more efforts should focus on proper ways of doing BSE. Performing BSE monthly is valuable for early detection of any abnormal changes in the breast. Therefore, all the women have to be trained on appropriate way of doing BSE, on regular basis monthly. Female nurses play a major role in this issue as they can meet with the women, give instructions, and demonstrate BSE in front of them, so the nurse is qualified to teach and train the women about BSE.

Level of practicing breast-self exam

On the other hand, the result in the below table was consistent with the results obtained by Ayed et al. (2015) who found that 15.5% of the study respondents had good overall knowledge about BSE. Another study carried out by Tam Truong Donnelly et al. (2014) reported that less than one-third of study participants practiced BSE appropriately, less than half of study participants are aware of practices related to BC (28.9% were aware of BSE and 41.8% aware of CBE, while 26.4% knew about mammography). Another study carried out by Elobaid et al. (2013) showed that 44.1% of women expressed lack of knowledge about the existence of screening techniques of breasts.

Table (4.7): Level of practicing breast-self exam:, n= 104

Level of BSE practice	N	%
Low Less than 60 %	87	83.7
Moderate 60 – 80 %	13	12.5
High More than 80 %	4	3.8

4.5 Barriers for early detection of breast cancer

Table (4.8): Barriers for early detection of BC as stated by the study sample, n= 335

No.	Barrier	Frequency		Rank
		n	%	
1.	Feeling embarrassed to go to a doctor	56	16.7	4
2.	Feeling anxiety and fear to go to a doctor	64	19.0	3
3.	It is difficult to make an appointment with the doctor	24	7.2	5
4.	I am too busy that I have no time to go to the doctor	83	24.8	2
5.	Going to the doctor cost much money that I cannot pay	85	25.4	1
6.	It is difficult for me to go to the doctor	23	6.9	6

As shown in Table (4.8), the most frequent barrier for early detection of BC was inability to pay to the doctor (25.4%), followed by being too busy (24.8%), and fear of going to the doctor (19%). The results of Elshami et al. (2018) indicated that the most reported barriers to breast exam included feeling scared and feeling embarrassed. In addition, a study conducted by SakineMemis (2009) found that the main barriers for performing BSE included not knowing how to perform it (57%), not having any history of problems in the breast (39%), and forgetfulness (18%) , Another studies have discussed the barriers that prevent women from doing breast self-examination, including a survey of 100 women living inside Gaza (WIG) and 55 Gaza women residing outside Gaza (WOG) wasconducted to investigate barriers and opportunities for breast cancer screening, and to better understand possible differences based on residency. The survey found that over 90% of both groups were willing to undergo a diagnostic mammogram for a breast complaint and 86% of WIG and 85% of WOG believed survival was increased with early detection. However, only 27% of WIG and 50% WOG were willing to undergo screening mammography. Religion and culture were not barriers to mammography for over 94%of WIG and 98% of WOG. Limited resources and lack of access to medical facilities were identified as barriers in up to 55% of WIG compared to 15% of WOG. Misconceptions about breast cancer were reported more frequently by WIG, including beliefs that breast cancer is not very common and that BC can be contagious,(Shaheen et al. 2011). According to the researcher's opinion, this barrier takes highest score due to the overall economic situation, the level of poverty among women in North Gaza Governorate, this poverty level considers an independent variable as explained in the conceptual framework, it affects knowledge,and practices of BSE.

4.6 Source of knowledge about breast cancer

Table (4.9): Participants Source of knowledge about breast cancer.

No.	Source of knowledge	Frequency		Rank
		n	%	
1.	Brochure from Primary Health Care Center	24	7.2	4
2.	The Internet	39	11.6	3
3.	Lecture outside the health care center	109	32.5	2
4.	From a friend / relative	154	64.0	1
5.	From nurses at MCH clinic	9	2.7	5

Table (4.9) showed that 64% of participants received information about breast cancer from friends and relatives, 32.5% from lectures outside the clinic, and 11.6% from the internet.

Different results obtained by Ayed et al. (2015) who found that the major source of information about BSE was mass media as reported by 57.6% of study participants. In addition, the study of Kan'an (2018) reflected that the main source of information about BC was health-care professionals, followed by internet and television. Moreover, the study of Izanloo et al. (2018) concluded that lack of knowledge of women from low socio-economic classes and inability to pay for physicians was the main barrier to BC screening. Another study carried out by Godfrey et al. (2016) showed that more than half of study participants received information about BC via mass media.

4.7 Role of nurses in health education about breast cancer from women perspective

Table (4.10): Role of the nurse in health education about BC and BSE from women perspective.

No.	Item	Yes		No	
		N	%	n	%
1.	The nurse give health education about breast cancer	80	23.9	255	76.1
2.	The nurse give appointments for health education	54	16.1	281	83.9
3.	The nurse trained you how to perform breast-self exam	55	16.4	280	83.6
4.	The nurse asked me to make a mammogram	34	10.1	301	89.9
5.	The nurse told me about risk factors of breast cancer	72	21.5	263	78.5
6.	The nurse told me about warning signs of breast cancer	72	21.5	263	78.5

As shown in Table (4.10), the study participants reported very low percentage of nurse's role in giving health education. In my opinion, the nurse should have adequate knowledge about risk factors and symptoms of BC. As a role model and educator, the nurse should fulfill her role in providing health education and train the women about the appropriate way of performing BSE on regular basis, and recognition of abnormal changes in the breasts.

4.8 Association between knowledge about breast cancer, practice of breast-self exam and selected variables

Table (4.11): Association between knowledge, practice and level of education.

Variable	Level of education			χ^2	P value ^a
	≤ Secondary n (%)	Diploma n (%)	Bachelor n (%)		
Knowledge about risk factors of breast cancer (N= 335)					
Low	141 (62.9)	31 (51.7)	23 (45.1)	8.220	0.084
Moderate	61 (27.3)	18 (30.0)	20 (39.2)		
High	22 (9.8)	11 (18.3)	8 (15.7)		
Total	224 (100.0)	60 (100.0)	51 (100.0)		
Knowledge about symptoms of breast cancer (N= 335)					
Low	94 (42.0)	22 (36.6)	15 (29.4)	13.535	0.009 *
Moderate	30 (13.4)	19 (31.7)	12 (23.5)		
High	100 (24.6)	19 (31.7)	24 (47.1)		
Total	224 (100.0)	45 (100.0)	24 (100.0)		
Practice of breast-self exam (N= 104)					
Low	55 (90.2)	17 (68.0)	15 (83.3)	7.716	0.064 †
Moderate	5 (8.2)	5 (20.0)	3 (16.7)		
High	1 (1.6)	3 (12.0)	0		
Total	61 (100.0)	25 (100.0)	18 (100.0)		

*Significant at 0.05 † Fisher's exact test^a Statistical testing using chi-square test

Table (4.11) indicated that there was statistically significant association between level of knowledge about symptoms of breast cancer and level of education (P= 0.009) in favor of participants who have bachelor degree, but the association was not statistically significant in knowledge about risk factors of breast cancer (P= 0.084), and practice of breast-self exam (P= 0.064). Inconsistent results obtained by Abu-Shammala and Abed (2015) who reported that there was statistically significant association between the practice of BSE and level of education. In addition, the results of Ayed et al. (2015) indicated significant association between level of education and overall knowledge and practice of BSE. Another study carried out by Tam Truong Donnelly et al. (2014) found that awareness of BC screening was significantly related to educational level. While Amasha, (2013)

reported no statistically significant association between practice of BSE and sociodemographic characteristics including level of education. Furthermore, the results of Izanloo et al. (2018) found that there was positive relationship between educational level and awareness of BC and its screening tests.

Table (4.12): Association between knowledge, practice and marital status.

Variable	Marital status			χ^2	P value
	Single n (%)	Married n (%)	Divorced n (%)		
Knowledge about risk factors of breast cancer (N= 335)					
Low	30 (63.8)	163 (57.6)	2 (40.0)	3.928	0.356 †
Moderate	14 (29.8)	83 (29.3)	2 (40.0)		
High	3 (6.4)	37 (13.1)	1 (20.0)		
Total	47 (100.0)	283 (100.0)	5 (100.0)		
Knowledge about symptoms of breast cancer(N= 335)					
Low	23 (48.9)	106 (37.5)	4 (40.0)	1.181	1.000 †
Moderate	8 (17.01)	53 (18.7)	0		
High	16 (34.0)	124 (43.8)	3 (60.0)		
Total	47 (100.0)	283 (100.0)	5 (100.0)		
Practice of breast-self exam (N= 104)					
Low	7 (87.5)	78 (83.0)	2 (100.0)	1.513	1.000 †
Moderate	1 (12.5)	12 (12.7)	0		
High	0	4 (4.3)	0		
Total	8 (100.0)	94 (100.0)	2 (100.0)		

† Fisher's exact test

Table (4.12) indicated that there were statistically no significant association between marital status and level of knowledge about risk factors of breast cancer (P= 0.356), knowledge about symptoms of breast cancer (P= 1.000), and practice of breast-self exam (P= 1.000). This result was consistent with the results of Amasha, (2013) which indicated no significant association between BSE and marital status. In addition, the results of Izanloo et al. (2018) indicated that there was no significant differences in knowledge about BC screening related to marital status.

Table (4.13): Association between knowledge, practice and current age.

Variable	Current age				χ^2	P value ^a
	< 20 years n (%)	20-29 years n (%)	30-39 years n (%)	> 40 years n(%)		
Knowledge about risk factors of breast cancer (N= 335)						
Low	31 (79.5)	93 (67.9)	42 (48.3)	29 (40.3)	28.871	0.000 *
Moderate	8 (20.5)	33 (24.1)	30 (34.5)	28 (38.9)		
High	0	11 (8.0)	15 (17.2)	15 (20.8)		
Total	39 (100.0)	137 (100.0)	87 (100.0)	72 (100.0)		
Knowledge about symptoms of breast cancer(N= 335)						
Low	21 (53.8)	53 (38.7)	32 (36.8)	25 (34.7)	6.911	0.329
Moderate	8 (20.5)	21 (15.3)	18 (20.7)	14 (19.4)		
High	10 (25.6)	63 (46.0)	37 (42.5)	33 (45.8)		
Total	39 (100.0)	137 (100.0)	87 (100.0)	72 (100.0)		
Practice of breast-self exam (N= 104)						
Low	4 (100.0)	29 (80.6)	27 (79.4)	27 (90.0)	11.317	0.043* †
Moderate	0	7 (19.4)	6 (17.6)	0		
High	0	0	1 (2.9)	3 (10.0)		
Total	4 (100.0)	36 (100.0)	34 (100.0)	30 (100.0)		

*Significant at 0.05 † Fisher's exact test^a Statistical testing using chi-square test

Table (4.13) indicated that there was no statistically significant association between level of knowledge about risk factors of breast cancer, practice of breast-self exam, and current age (P= 0.000 and 0.043 respectively) in favor of participants who are more than 40 years old, but the association was not significant in knowledge about symptoms of breast cancer (P= 0.329). This result reflected that older age women have significantly higher knowledge about risk factors of BC and higher practice of BSE compared to younger women.

These results were consistent with the results of Abu-Shammala and Abed (2015) who found that the older women demonstrated higher performance rates of breast screening methods compared to the younger women. In addition, the results of Ayed et al. (2015) indicated significant association between age and overall knowledge and practice of BSE. While Amasha, (2013) found no significant association between BSE and age. The results

of Marla et al. (2019) revealed that younger age women had higher beliefs about risk factors of BC than older age women did.

Table (4.14): Association between knowledge, practice and family history of BC.

Variable	Family history		χ^2	P value ^a
	No n (%)	Yes n (%)		
Knowledge about risk factors of breast cancer (N= 335)				
Low	184 (58.6)	11 (52.4)	0.316	0.854
Moderate	92 (29.3)	7 (33.3)		
High	38 (12.1)	3 (14.3)		
Total	314 (100.0)	21 (100.0)		
Knowledge about symptoms of breast cancer(N= 335)				
Low	125 (39.8)	6 (28.6)	1.149	0.563
Moderate	56 (17.8)	5 (23.8)		
High	133 (42.4)	10 (47.6)		
Total	314 (100.0)	21 (100.0)		
Practice of breast-self exam (N= 104)				
Low	79 (83.2)	8 (88.9)	0.198	1.000 †
Moderate	12 (12.6)	1 (11.1)		
High	4 (4.2)	0		
Total	95 (100.0)	9 (100.0)		

† Fisher's exact test^a Statistical testing using chi-square test

Table (4.14) indicated that there was no statistically significant association between family history of breast cancer and level of knowledge about risk factors of breast cancer (P= 0.854), knowledge about symptoms of breast cancer (P= 0.563), and practice of breast-self exam (P= 1.000).

Inconsistent results obtained by Abu-Shammala and Abed (2015) who found that there were significant associations between the practice of BSE and presence of positive family history of BC. While Amasha, (2013) reported that there were no significant association between BSE and sociodemographic characteristics including family history of BC. Furthermore, the results of Izanloo et al. (2018) found that there was positive relationship between family history of BC and awareness of BC and its screening tests. While the

results of Chowdhury (2011) found that half of the respondents said that BC is not an inherited disease.

According to the researcher's opinion, this result is logical, because BC is not an inherited disease, even though family history is a risk factor, but this does not mean that every mother who had BC, her daughters will have BC. It is assumed that family history is a risk factor, but it is not definite that all the females in the family will have BC.

Table (4.15): Association between knowledge, practice and family income.

Variable	Family income		χ^2	P value ^a
	< 1000 NIS n (%)	≥ 1000 NIS n (%)		
Knowledge about risk factors of breast cancer (N= 335)				
Low	167 (60.7)	28 (46.7)	7.092	0.029 *
Moderate	80 (29.1)	19 (31.6)		
High	28 (10.2)	13 (21.7)		
Total	275 (100.0)	60 (100.0)		
Knowledge about symptoms of breast cancer (N= 335)				
Low	111 (40.4)	20 (33.3)	2.492	0.288
Moderate	46 (16.7)	15 (25.0)		
High	118 (42.9)	25 (41.7)		
Total	275 (100.0)	60 (100.0)		
Practice of breast-self exam (N= 104)				
Low	69 (87.3)	18 (72.0)	5.761	0.052 †
Moderate	9 (11.4)	4 (16.0)		
High	1 (1.3)	3 (12.0)		
Total	79 (100.0)	25 (100.0)		

*Significant at 0.05 † Fisher's exact test^a Statistical testing using chi-square test

Table (4.15) showed that there was a statistically significant association between family income and level of knowledge about risk factors of breast cancer (P= 0.029) in favor of participants with income of more than 1000 NIS, while the association was not significant in knowledge about symptoms of breast cancer (P= 0.288) and practice of breast-self exam (P= 0.052). Inconsistent results obtained by Amasha, (2013) who found no significant

association between performing BSE and sociodemographic characteristics including family income. Furthermore, the results of Izanloo et al. (2018) found that there was no significant differences in knowledge about BC screening and income level.

According the researcher's opinion, this result is logic because performing BSE does not cost money. Also, health services and health education is free of charge at PHCCs and UNRWA health centers. Therefore economic status of the woman is not a barrier to perform BSE, but the women need to have the knowledge and skill, and overall, the willingness to perform BSE regularly.

Table (4.16): Association between knowledge about breast self-exam and practice of breast self-exam

Variable	Level	Knowledge about breast self-exam			χ^2	P value
		Low	Moderate	High		
Practice of breast self-exam	Low	30(93.8)	39(83.0)	18(72.0)	9.374	0.027* †
	Moderate	1(3.1)	8(17.0)	4(16.0)		
	High	1(3.1)	0	3(12.0)		
	Total	32(100.0)	47(100.0)	25(100.0)		

*Significant at 0.05 † Fisher's exact test

Table (4.16) indicated that there was statistically significant association between knowledge about breast self-exam and practice of breast-self exam (P= 0.027). This result reflected that having higher knowledge about breast self-exam is associated with higher practice of breast self-exam.

Table (4.17): Association between knowledge about risk factors of breast cancer and practice of breast self-exam

Variable	Level	Knowledge about risk factors of breast cancer			χ^2	P value
		Low	Moderate	High		
Practice of breast self-exam	Low	50(92.6)	24(75.0)	13(72.2)	11.421	0.009* †
	Moderate	4(7.4)	7(21.9)	2(11.1)		
	High	0	1(3.1)	3(16.7)		
	Total	54(100.0)	32(100.0)	18(100.0)		

*Significant at 0.05 † Fisher's exact test

Table (4.17) indicated that there was statistically significant association between knowledge about risk factors of breast cancer and practice of breast-self exam (P= 0.009). This result reflected that having higher knowledge about risk factors of breast cancer is associated with higher practice of breast self-exam.

Table (4.18): Association between knowledge about signs of breast cancer and practice of breast self-exam

Variable	Level	Knowledge about signs of breast cancer			χ^2	P value
		Low	Moderate	High		
Practice of breast self-exam	Low	24(80.0)	18(75.0)	45(90.0)	7.118	0.085 †
	Moderate	6(20.0)	3(12.5)	4(8.0)		
	High	0	3(12.5)	1(2.0)		
	Total	30(100.0)	24(100.0)	50(100.0)		

† Fisher's exact test

Table (4.18) indicated that there was no statistically significant association between knowledge about signs of breast cancer and practice of breast-self exam (P= 0.085). This result reflected that having higher knowledge about signs of breast cancer is not associated with higher practice of breast self-exam.

Chapter Five

Conclusion and Recommendations

In this chapter, the major findings of current study reviewed and answers to research questions will be given, in addition, recommendations will be provided.

5.1 Conclusion

The study findings showed that participants had a low knowledge score about risk factors of BC with average score 54%, while score of knowledge about symptoms of BC was 65.3%. The majority of study participants 83.7% expressed low performance of BSE, friends and relatives were the main source (64%) of participants knowledge about BC. The most frequent barrier to BSE identified was inability to pay to the doctor (25.4%), The study results show that 18.2% of nurses in PHCC giving health education to the women about BC. Therefore, there is a need to increase health education programs to increase women's access to information about breast cancer & BSE.

5.2 Recommendation

Based on the finding of the study, the following recommendation has been made:

1. Awareness raising for women to practice BSE by conducting meetings that join women who have been cured from BC due to early BSE with other women free from BC.
2. Encourage women to do CBE at primary health care centers.
3. Using social media for campaigns about the benefit of screening and clinical examination process within the local community, universities and schools.
4. Need for reality study about the role of PHC nurses in educating women on BC and BSE.

5. School health program should include health education on BC & BSE so that those health educations on BSE start as early as 12 years of age to become familiar with her breasts.

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Annexes

Annex (1): Participants consent form

Consent Form

Questionnaire for data collection on Knowledge of Breast Cancer and Practices of Breast Self-Exam among Women attending Governmental Primary Health Care Centers in North Gaza Governorate .

Greeting :

This research is an essential part of my master program in mother and child health nursing at Al-Quds University. you have been chosen to be one member of the study sample , your participation is not obligatory , but your involvement is highly appreciated . The objective of this study is to assess the level of knowledge about breast cancer and practices of breast self-exam among women in north Gaza governorate as well as the nurses' role. Your cooperation for completing the questionnaire is helpful in assessing the knowledge and practice of breast self-exam . your name will not be written in this form . all information that you give will be kept strictly confidential . The time that you need for filling the questionnaire 20 minutes if you have any other clarification contact with me

AreejHamouda

Jawwal , 0594307433

Email , areejhamoda12@gmail.com

Annex (2): List of experts

1. Assist. Prof. Dr. Hamza Abdeljawad.	Program Coordinators Faculty of Health Professions, Al-Quds University –Gaza, Palestine.
2. Assist. Prof. Dr. Ahmed A. Najim	Head of Nursing Department, AL Azhar University –Gaza, Palestine
3. Assist. Prof. Dr. Yousef Awad	Head of Nursing and Medical Secretary Departments, University of Palestine, Intermediate College- Gaza, Palestine
4. Assist. Prof. Dr. Mohamed Al-Jerjawy	Head of Practical Training , Palestine College of Nursing – Gaza, Palestine.
5. Assist. Prof. Dr. Abed-Rahman Hamss	Head of Nursing programs Palestine College of Nursing – Gaza, Palestine.

Annex (3): Questionnaire in Arabic



عزيزتي المشاركة

السلام عليكم ورحمة الله وبركاته:

انا الطالبة اريج ابراهيم حمودة أهديكم أطيب التحيات، يطيب لي أن أضع بين أيديكم الاستبانة المرفقة التي تم تصميمها بهدف دراسة

المعرفة بسرطان الثدي وممارسات فحص الثدي الذاتي لدى السيدات المترددات على مراكز الرعاية الأولية في محافظة شمال غزة

Knowledge of Breast Cancer and Practices of Breast Self-Exam among Women attending Governmental Primary Health Care Centers in North Gaza Governorate

وذلك استكمالاً لمتطلبات الحصول على درجة الماجستير في تريض صحة الام والطفل من جامعة القدس. لذلك نأمل منكم التكرم بتعبئة الاستبانة بالإجابة على فقراتها بكل صراحة وموضوعية، علماً بأن آراءكم والمعلومات التي ستدلون بها ستكون محل اهتمام وعناية وستستخدم لأغراض الدراسة والبحث العلمي فقط، وسيتم التعامل معها بكل سرية وعناية للتوصل إلى نتائج تهدف إلى تطوير الخدمات الصحية المقدمة في مراكز الرعاية الأولية الحكومية في قطاع غزة. الوقت الذي تستغرقه تعبئة الاستبانة لا يتجاوز 20 دقيقة، وفي حال الاستفسار عن أي أسئلة يرجى التواصل على جوال رقم 0594307433

الباحثة: أريج إبراهيم حمودة

areejhamoda12@gmail.com

البيانات الشخصية

1. الدرجة العلمية: ثانوية فما دون دبلوم بكالوريوس ماجستير دكتوراه
2. الحالة الاجتماعية: أنسة متزوجة مطلقة أرملة
3. معدل دخل الأسرة الشهري بالشيكل: لا يوجد دخل أقل من 1000 شيكل
4. من 1000-2000 أكثر من 2000
العمر عند الزواج: _____ سنة.
5. العمر: _____ سنة .
6. عدد أفراد الأسرة: _____ فرد .
7. هل أصيبت أحد أقربائك بسرطان الثدي: نعم لا، إذا كانت الإجابة بنعم حددي
 الام الأخت الجدة الخالة العممة

م	المحور الاول: المعرفة بعوامل الخطر للإصابة بسرطان الثدي (اختاري ما تريه مناسباً)	نعم	لا
1	هل الإصابة السابقة بسرطان الثدي أو أي امراض ثدي أخرى من عوامل الخطر		
2	هل استخدام حبوب منع الحمل يزيد من خطورة الإصابة بسرطان الثدي		
3	هل السمنة وزيادة الوزن تزيدان من عوامل الخطر لسرطان الثدي		
4	هل يعتبر التاريخ العائلي للمرض (الام – الأخت – الحالة - العممة) من عوامل الخطر		
5	هل يعتبر إنجاب اول طفل بعد سن ال 30 سنة عامل خطر للإصابة بسرطان الثدي		
6	هل عدم الانجاب من عوامل خطر الإصابة بسرطان الثدي		
7	تعتبر الدورة الشهرية المبكرة (قبل سن 12 عام) من عوامل خطر الإصابة بسرطان الثدي		
8	الانقطاع المتأخر للدورة الشهرية (بعد عمر ال 50 سنة)		
9	هل عدم ممارسة/قلة النشاط البدني يزيد من فرصة الإصابة بسرطان الثدي		
10	هل الرضاعة الطبيعية تقلل من خطر الإصابة بسرطان الثدي		
11	السيدات ذوات الثدي الكبير عرضة أكثر للإصابة بسرطان الثدي		
12	هل تزيد خطورة الإصابة بسرطان الثدي مع التقدم بالعمر (أكثر من 50 سنة)		
13	هل التعرض/العلاج بالإشعاع لمنطقة الصدر يزيد من فرصة الإصابة بسرطان الثدي		
14	هل إنجاب الطفل الاول في عمر أقل من 25 سنة يقلل من خطورة الإصابة بسرطان الثدي		
15	هل كونك امرأة يعتبر ذلك عامل شديد الخطورة للإصابة بسرطان الثدي		
16	هل إنجاب 4 اطفال أو أكثر يقلل من خطورة الإصابة بسرطان الثدي		
	المحور الثاني: المعرفة بأعراض سرطان الثدي لدى السيدات (اختاري ما تريه مناسباً)	نعم	لا
1	وجود تغير في موضع حلمة الثدي علامة من علامات سرطان الثدي؟		
2	انغراس الحلمة لداخل الثدي وعدم بروزها بالشكل الطبيعي هي علامة من علامات سرطان الثدي؟		
3	وجود ألم في ثدي واحد فقط هي علامة من علامات سرطان الثدي؟		
4	وجود تجاعيد مثل قشر البرتقال في الثدي علامة من علامات سرطان الثدي؟		
5	خروج افرازات غير طبيعية من حلمة الثدي علامة من علامات سرطان الثدي؟		
6	النزيف من حلمة الثدي علامة من علامات سرطان الثدي؟		
7	وجود كتلة في الثدي علامة من علامات سرطان الثدي؟		

8	إذا حدث تغير في لون الجلد للثدي هي علامة من علامات سرطان الثدي ؟
9	وجود كتلة تحت الابط هي علامة من علامات سرطان الثدي ؟
10	حدوث تغير في حجم الثدي هي علامة من علامات سرطان الثدي ؟
11	عدم تماثل شكل الثديين هي علامة من علامات سرطان الثدي ؟

المحور الثالث: المعرفة ب / وممارسات فحص الثدي الذاتي (اختاري الاجابة المناسبة)	
1	ما هو الموعد المناسب لعمل الفحص الذاتي للكشف المبكر عن سرطان الثدي أولاً في حال انتظام الدورة الشهرية لديك 1. في أول أيام الدورة الشهرية 2. من اليوم السادس الى العاشر من بداية دورتك الشهرية عندما لا يكون الثدي منتفخاً 3. قبل توقع حدوث الدورة الشهرية بثلاثة أيام 4. غير ذلك ثانياً في حال توقفت الدورة الشهرية لديك نهائياً 1. كل شهر مرة في نفس الموعد 2. في أي يوم تتذكرين الفحص المبكر خلال الشهر 3. لا تقومي بالفحص، لأنه بمجرد انتهاء الدورة الشهرية لا يمكن حدوث سرطان الثدي
2	هل تقومين بعمل الفحص الذاتي للثدي؟ (إذا كانت الاجابة لا انتقلي الى المحور الرابع) 1. نعم 2. لا
3	خلال السنة الماضية هل قمتي بعمل فحص ذاتي منتظم للثدي للكشف المبكر عن سرطان الثدي ؟ 1. نعم 2. لا
4	كم مرة قمت بعمل الفحص الذاتي للثدي خلال العام الماضي؟ 1. كل شهر 2. كل شهرين 3. كل 3 اشهر 4. غير ذلك
5	كم المدة التي تستغرقينها في فحص كل ثدي ؟ من 1-2 دقيقة 2. من 5-10 دقيقة 3. غير ذلك
6	عندما تقومين بعمل الفحص الذاتي للثدي ، كيف تقومين بفحص ثديك ؟ 1. بالجزء المسطح العلوي من طرف الاصبع 2. بكفة اليد 3. غير ذلك
7	عندما تقومين بعمل الفحص الذاتي للثدي ، كم عدد الأصابع التي تستخدمها للقيام بالفحص ؟ 1. ثلاثة أصابع 2. خمسة أصابع 3. غير ذلك
8	ما هي اليد التي تستخدمها للفحص الذاتي للكشف المبكر عن سرطان الثدي ؟ 1. اليد اليمنى 2. اليد اليسرى 3. اليد التي تجديها ملائمة ومريحة للفحص
9	عندما تقومين بالفحص الذاتي للثدي ، متى تنتظرين للمرأة ؟ 1. بشكل مستمر طوال عملية الفحص 2. بشكل متقطع 3. لا تنتظرين ابداً
المحور الرابع: معيقات عملية الكشف المبكر عن سرطان الثدي (اختاري ما ترينه مناسباً)	
	1. أنا محرجة من الذهاب الى الطبيب 2. أنا قلقة/خائفة جداً من الذهاب لرؤية الطبيب 3. من الصعب للغاية تحديد موعد مع الطبيب 4. أنا مشغولة للغاية لتوفير الوقت للذهاب الى الطبيب 5. زيارة الطبيب باهظة الثمن وليس لدي ما يكفي من المال 6. لدي صعوبة في ترتيب الوصول الى عيادة الطبيب 7. عدم الشعور بالثقة عند التحدث عن أعراضك مع الطبيب من شأنه ان يمنعك من رؤية الطبيب 8. الأشخاص المهمون في حياتك مثل (الزوج ، الأخ ، الأقارب ، أو الأصدقاء) لا يوافقون على رؤية الطبيب او الممرضة؟ 9. غير ذلك

<p>المحور الخامس: من أين حصلتِ على المعلومات الخاصة بسرطان الثدي (اختاري ما تريه مناسباً)</p>	
<p>1. كتيب من مركز الرعاية الأولية 2. الانترنت 3. محاضرة تثقيفية لم تكن في مراكز الرعاية الأولية الصحية 4. من احدى الأصدقاء او الأقارب 5. من تريض الرعاية الأولية قسم صحة الأم والطفل</p>	
<p>المحور السادس: دور الممرضة في عملية التثقيف الصحي لسرطان الثدي</p>	
<p>1. هل تلقيت تثقيفا صحيا خاصا من ممرضة الرعاية الاولية / صحة الام والطفل حول سرطان الثدي 1. نعم 2. لا 2. هل تقوم الممرضة بتحديد مواعيد للتثقيف الصحي بشكل عام 1. نعم 2. لا 3. هل قامت الممرضة بتدريبك على الفحص الذاتي للثدي 1. نعم 2. لا 4. هل قامت الممرضة بإرشادك لعمل صورة ماموجرام للثدي 1. نعم 2. لا 5. هل قامت الممرضة بتعريفك بعوامل الخطر لسرطان الثدي 1. نعم 2. لا 6. هل قامت الممرضة بتعريفك بعلامات الانذار الخاصة بسرطان الثدي 1. نعم 2. لا</p>	

شكراً على حسن تعاونكم معنا

i. Socio demographic characteristics of the participant

1. Educational Level Secondary school or less Diploma BA M.A.
2. Marital Status Singles Married Divorced
 Widow
3. Average monthly household income in NIS There's no income Less than 1000 NIS
 From 1000 to 2000 NIC More than 2000 NIC
4. Age at marriage Year
5. Age Year
6. Number of family members
7. Did any of your family members suffer from breast cancer?
 Yes No
 If the answer is yes, specify
 Mother Sister Grandma Aunt Mother Aunt Father

ii. Knowledge of risk factors for developing Breast Cancer (Choose the appropriate answer)		Yes	No
1	Previous BC or any other breast disease is a risk factor		
2	Long-term use of contraceptive pills		
3	Obesity & overweight		
4	Positive family history (Mother - Sister - Aunt-mother – Aunt-father)		
5	Age at first baby after thirties increase incidence of BC		
6	Infertility increases incidence of BC		
7	Early menarche (before 12 years old) increases incidence of BC		
8	Late menopause , after age 50		
9	Decrease of physical activity		
10	Breastfeeding decreases incidence of BC		
11	Women with large breast are more likely to develop BC		
12	Aging , more than 50 years		
13	Exposure / radiation therapy to the chest area increases the incidence of BC		
14	Having the first child before the age of 25 years reduces the incidence of BC		
15	women are more liable than men for BC		
16	Having four or more children reduces the risk of BC		

iii. Knowledge of breast Cancer symptoms		Yes	No
1	A change in the position of your nipple could be a sign of breast cancer		
2	Pulling in of your nipple could be a sign of breast cancer		
3	Pain in one of your breasts could be a sign of breast cancer		
4	Puckering or dimpling of your breast skin could be a sign of breast cancer		
5	Abnormal discharge from your nipple could be a sign of breast cancer		
6	Bleeding from your nipple could be a sign of breast cancer		
7	A lump in your breast could be a sign of breast cancer		
8	change in breasts skin color, this could be a sign of breast cancer		
9	A lump under your armpit could be a sign of breast cancer		
10	Changes in the size of your breast could be signs of breast cancer		
11	Changes in the shape of your breast could be signs of breast cancer		

iv. Knowledge and Practice of BSE (Choose the appropriate answer)	
<p>Knowledge of Appropriate time of performing BSE</p> <p>Firstly, At times of regular menstruation:</p> <ol style="list-style-type: none"> 1. The first days of the menstrual cycle 2. From the sixth to tenth day 3. Before expecting the period 4. Others <p>Secondly , At time of menopause :</p> <ol style="list-style-type: none"> 1. Once every month at the same date 2. Any day you remember the examination during the month 3. Don't check up because once the menstrual cycle ends, breast cancer doesn't occur 	
<p>Performance of BSE ? If the answer No go to the fourth axis</p> <ol style="list-style-type: none"> 1. Yes 2. No 	
<p>During the past year, did you perform BSE regularly?</p> <ol style="list-style-type: none"> 1. Yes 2. No 	
<p>How long it takes to examine each breast?</p> <p>From 1-2minutes from 5-10 minutes Others</p>	
<p>How do you perform BSE?</p> <ol style="list-style-type: none"> 1. Using the tip of fingers 2. Palm of hand 3. Others 	
<p>How many fingers are used during BSE?</p> <ol style="list-style-type: none"> 1. Using three fingers 2. Five fingers 3. Others 	
<p>The hand used for BSE is?</p> <ol style="list-style-type: none"> 1. Right hand 	

2. Left hand 3. Performing breast-self exam by using comfortable hand	
When you do BSE you look to the mirror, which time : 1. Looking at the mirror all the time during breast-self exam 2. Interrupted form 3. Never look	
v. Barriers for early detection of breast cancer (Choose the appropriate answer)	
1. Feeling embarrassed to go to a doctor 2. Feeling anxiety and fear to go to a doctor 3. It is difficult to make an appointment with the doctor 4. I am too busy that I have no time to go to the doctor 5. Going to the doctor cost much money that I cannot pay 6. It is difficult for me to go to the doctor 7. Not feeling confident when talking about your symptoms with the doctor 8. The important people in your life prevent you from seeing the doctor 9. Others	

vi. Source about breast cancer information (Choose the appropriate answer)	
1. Brochure from Primary Health Care Center 2. The Internet 3. Lecture outside the health care center 4. From a friend / relative 5. From nurses at MCH clinic	
vii. Role of the nurse in health education about breast cancer	Yes No
1. The nurse give health education about breast cancer 2. The nurse give appointments for health education 3. The nurse trained you how to perform breast-self exam 4. The nurse asked you to make a mammogram 5. The nurse told you about risk factors of breast cancer 6. The nurse told you about special warning signs of breast cancer	

Thank you for your cooperation

Annex (4): Helsinki



المجلس الفلسطيني للبحوث الصحي Palestinian Health Research Council

تعزيز النظام الصحي الفلسطيني من خلال مأسسة استخدام المعلومات البحثية في صنع القرار
Developing the Palestinian health system through institutionalizing the use of information in decision making

Helsinki Committee For Ethical Approval

Date: 2019/10/7

Number: PHRC/HC/610/19

Name: Areej Ibrahim Hamoda

الاسم:

We would like to inform you that the committee had discussed the proposal of your study about:

نفيدكم علماً بأن اللجنة قد ناقشت مقترح دراستكم حول:

Knowledge of Breast Cancer and Practices of Breast Self-Exam among Women attending Governmental Primary Health Care Centers in North Gaza Governorate

The committee has decided to approve the above mentioned research. Approval number PHRC/HC/610/19 in its meeting on 2019/10/7

وقد قررت الموافقة على البحث المذكور عاليه بالرقم والتاريخ المذكوران عاليه

Signature

Member
Areej Ibrahim Hamoda

Chairman
Dr. Yusef

Member
Dr. Amal

General Conditions:-

1. Valid for 2 years from the date of approval.
2. It is necessary to notify the committee of any change in the approved study protocol.
3. The committee appreciates receiving a copy of your final research when completed.

Specific Conditions:-



E-Mail: pal.phrc@gmail.com

Gaza - Palestine

غزة - فلسطين
شارع النصر - مفترق العيون

Annex (5): MoH

State of Palestine
Ministry of health



دولة فلسطين
وزارة الصحة

التاريخ: 15/10/2019
رقم المراسلة 380443

السيد : رامي عبد سليمان العبادله المحترم

مدير عام بالوزارة /الإدارة العامة لتنمية القوى البشرية - /وزارة الصحة

السلام عليكم ،،،

الموضوع/ تسهيل مهمة الباحثة// اريج حمودة

التفاصيل //

بخصوص الموضوع أعلاه، يرجى تسهيل مهمة الباحثة/ أريج إبراهيم حمودة
الملتحقه ببرنامج ماجستير التمريض - تخصص صحة الأم والطفل - جامعة القدس أبوديس في إجراء بحث بعنوان:-
"Knowledge of Breast Cancer and Practices of Breast Self-Exam among Women attending
"Governmental Primary Health Care Centers in North Gaza Governorate
حيث الباحثة بحاجة لتعبئة استبانة من السيدات المترددات على مراكز الرعاية الصحية الأولية في منطقة شمال القطاع،
نأمل توجيهاتكم لذوي الاختصاص بضرورة الحصول على الموافقة المستنيرة من النساء اللاتي لديهن استعداد للمشاركة
في الدراسة ومن ثم تمكين الباحثة من التواصل معهن، بما لا يتعارض مع مصلحة العمل وضمن أخلاقيات البحث
العلمي، ودون تحمل الوزارة أي أعباء أو مسئولية.
وتفضلوا بقبول التحية والتقدير،،،
ملاحظة /

● البحث المذكور حصل على موافقة لجنة أخلاقيات البحث الصحي (لجنة هلستكي)
تسهيل المهمة الخاص بالدراسة أعلاه صالح لمدة 3 أشهر من تاريخه.

محمد إبراهيم محمد السرساوي

مدير دائرة/الإدارة العامة لتنمية القوى البشرية -



التحويلات

إجراءانكم بالخصوص(15/10/2019)	← راعي عبد سليمان العبادله(مدير عام بالوزارة)	■ محمد ابراهيم محمد السرساوي(مدير دائرة)
إجراءانكم بالخصوص(15/10/2019)	← مدحت عباس خضر حسن(مدير عام بالوزارة)	■ راعي عبد سليمان العبادله(مدير عام بالوزارة)
لعمل اللازم(15/10/2019)	← عبد الكريم سعيد العبد النجار(مدير دائرة)	■ مدحت عباس خضر حسن(مدير عام بالوزارة)

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غزة

عنوان الدراسة: المعرفة بسرطان الثدي وممارسات فحص الثدي الذاتي لدى السيدات المترددات على مراكز الرعاية الأولية في محافظة شمال غزة.

إعداد الباحثة: أريج إبراهيم حمودة

إشراف: د. حاتم سليمان الدباكة

الملخص

يعتبر سرطان الثدي من أكثر أنواع السرطانات شيوعاً بين السيدات في العالم وفي فلسطين على وجه الخصوص. وقد أكدت الدراسات والأبحاث على أن الكشف المبكر عن سرطان الثدي يزيد من نسبة الشفاء من المرض. هدف الدراسة هو تقييم مستوى المعرفة بسرطان الثدي وممارسات الفحص الذاتي للكشف المبكر عنه لدى السيدات المترددات على مراكز الرعاية الأولية الحكومية في محافظة شمال غزة (عيادة الشيماء-عيادة أبو شباك-عيادة جباليا) وأيضاً التعرف على دور الممرضين في زيادة وعي السيدات بسرطان الثدي وممارسات الفحص الذاتي للكشف المبكر عنه في الفترة ما بين يوليو حتى نوفمبر (2019). أجريت دراسة وصفية لتحقيق هدف البحث. والتي تضمنت عينة تتألف من 335 سيدة من ضمن السيدات المترددات على مراكز الرعاية الأولية الحكومية في شمال قطاع غزة، والتي تم اختيارهن بطريقة العينة المتاحة. وبعد التحليل الإحصائي أشارت نتائج الدراسة إلى أن المشاركات لديهم مستوى منخفض من المعرفة حول عوامل خطر الإصابة بسرطان الثدي حيث إن معدل المعرفة 58.2%، و أيضاً مستوى منخفض من المعرفة حول علامات وأعراض سرطان الثدي حيث شكلت 39.1%، ومن ضمن النتائج التي كشفت عنها الدراسة هي بعض العوائق التي تمنعهن من الفحص الذاتي ومن أهمها عدم القدرة على الدفع للطبيب مقابل الفحص الإكلينيكي حيث شكلت نسبة 25.4% من نسبة العوائق الأخرى.

واستناداً إلى النتائج، فإن المشاركات في الدراسة كانوا على مستوى منخفض من المعرفة والممارسات فيما يتعلق بسرطان الثدي. وقد أوصت الدراسة بتفعيل دور التمريض داخل مراكز الرعاية الأولية في محافظات شمال قطاع غزة لزيادة وعي السيدات حول سرطان الثدي وكيفية الكشف المبكر عنه.