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Knowledge and Practices of Breast Cancer Early Detection among Female Nurses at Governmental Primary Health Clinics in Gaza Strip-Palestine

Fatma Ahmed Shallouf

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Knowledge and Practice of Breast Cancer Early Detection among Female Nurses at Governmental Primary Health Clinics in Gaza Strip

Prepared by:

Fatma Ahmed Shallouf

Bachelor Sc. in Midwifery - Palestine College of Nursing

Supervisor: Dr. Ahmed A. Najim

Ph.D., Assistant Prof. AL-Azhar University – Gaza

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Prepared by: Fatma Ahmed Shallouf
Registration No: 21711116

Supervisor: Dr. Ahmed A. Najim

Master thesis submitted and accepted. Date:15/6/ 2020
The names of signatures of the examining committee members are as follows:

1. Head of Committee: Dr. Ahmed Najim Signature
2. Internal Examiner: Dr. Hamza Abdeljawad Signature
3. External Examiner: Dr. Afeefa Al-Kaseeh Signature

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Dedication

I dedicate this work to Palestine my homeland.

To my great father, Ahmed, and my beautiful mother to whom I owe my life and success, Fathiya and my grandmother, Fatma.

To my brothers (Majed, Mahdy, Ameir) and my sisters (Majda, Eslah, Samar, Asmaa, Samah, Islam) who has shown love and support from the beginning to end and encourages me to accomplish my work.

To my friends and colleagues everywhere,

I thank them a lot and ask the Almighty Allah to give me the strength to be helpful to them in their lives.

Heartfelt thanks and appreciations to all those who contributed to the completion of this thesis… without their support, this work would not see the light.

Fatma Ahmed Shallouf

Declaration

I certify that this thesis submitted for the degree of Master in Maternal and Child Health Nursing, is the result of my research, except where otherwise acknowledged, and that this thesis (or any part of the same) has not been submitted for a higher degree to any other university or institution.

Signed:

Fatma Ahmed Shallouf

15/6/2020

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With respect

Fatma Ahmed Shallouf

Abstract

Cancer is one of the leading causes of mortality among adults all over the world. Breast cancer (BC) is the most frequent cancer among women, affecting women each year, and causes the greatest number of cancer-related deaths among women.

Breast Cancer early detection is very important to detect cancer at an early stage to prevent morbidity and mortality. Female nurses play a vital role in increasing women's awareness of early detection and providing adequate information about breast cancer. This study aimed to assess the knowledge and practices regarding breast cancer early detection among female nurses at governmental primary health clinics in the Gaza Strip. Descriptive, cross-sectional study design was utilized. Census sample was applied; include all Female nurses who were employee and currently working at governmental PHCCs during the data collection period from the different levels of centers, the study exclude nurses who have vacations and voluntaries. Which consists of 152 female nurses in 26 clinics which directed by the Ministry of Health in the Gaza Strip with a response rate of 98%. Data collection was performed by using A structured self-administer questionnaire and statistical analyses were performed by using (SPSS version 23.0), from February 2019 to March 2020. Administrative and ethical approvals were obtained from Al-Quds University, Ministry of Health, and a Helsinki Committee respectively. A reliability coefficient of the study instrument was reported as good reliability (Chronbach's alpha 0.717). The results showed that (53.3%) of the study participants have fair knowledge about breast cancer early detection methods, (32.9%) of them is good, only (15.8%) of them have poor knowledge. Half of the study participants have good practices regarding early detection methods of breast cancer, and (34%) have fair practices. About 16% have poor practices. There is a positive relationship between practicing breast self- examination and the variables related to knowledge (early detection, risk factors, signs, and symptoms). There is a difference in the knowledge mean score of the study participants; the highest level is for the employees working at the antenatal care departments. Employees who had previous training about clinical breast examination have better knowledge (mean= 77.5) than those who have not (mean= 69.7) and the difference is statistically significant (t= 3.5; p-value 0.000). There are no statistically significant differences in practicing breast self-examination regarding the presence of family history or previous training of clinical breast examination. Nurses who previously performed mammography have a knowledge score (78.1) more than those who did not perform it (72.5), however, the difference is not statistically significant (t= 1.8; p- value= 0.06) but, there is a positive trend. No statistically significant association between practicing breast self- examination and participant's age however, married women practicing more than those are not. The study concluded that the nurses retain a good knowledge and practices of breast cancer early detection. Previous education sessions affect the knowledge about breast cancer early detection methods positively. The study recommended that there is a need to provide protocols and give many courses in their work about breast cancer early detection in these clinics to support those nurses and breast awareness campaigns must be done every month not only in October which is the breast cancer awareness month.

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List of abbreviations

ANOVA	Analysis of Variance
BC	Breast Cancer
BSE	Breast Self-Examination
CBE	Clinical Breast Examination
DNA	Deoxyribonucleic acid
HR+	Hormone receptor-positive
MMG	Mammography
MoH	Ministry of Health
NGOs	Non-Governmental Organizations
PCBS	Palestinian Central Bureau of Statistics
PHCCs	Primary Health Care Clinics
SPSS	Statistical Package for Social Sciences
UNRWA	United Nations Relief and Works Agency
WHO	World Health Organization

Chapter One
Introduction

1.1 Overview and Background

Cancer is one of the leading causes of mortality among adults all over the world. Breast cancer (BC) is the most frequent cancer among women, affecting 2.1 million women each year, and causes the greatest number of cancer-related deaths among women. In 2018, it is estimated that 627,000 women died from BC that is approximately 15% of all cancer deaths among women. While BC rates are higher among women in more developed regions, rates are increasing in nearly every region globally (WHO, 2018). BC is the second most commonly diagnosed cancer throughout the world, next to lung cancer. However, BC is the most commonly diagnosed cancer among female subjects (Santhanakrishnan et al., 2016).

In Eritrea, BC is a major, life-threatening, public health concern. A long-term increase in the incidence of the disease has been observed in both developed and developing countries. It is the most common cause of cancer mortality among women, accounting for 16% of cancer deaths in adult women, 370 women died from BC in 2014 accounting for 1.03% of total deaths in that year giving an age-adjusted death rate of 21.40 per 100,000 of the population (Andegiorgish et al., 2018). In Tunisia, it is important to underline that the BC remains the feminine most frequent cancer; it represents 33% of all the new cases of cancer of the woman (Selma, 2018). Female nurses play a vital role in increasing women's awareness of early detection and providing adequate information about BC. Therefore, it is important to underline that the early detection of the breast cancer by breast self-exam (BSE), Clinical Breast Exam (CBE) and mammography, is essential to reduce the morbidity and the mortality bound to this cancer (Alkhasawneh, 2014).

1.2 Research problem

BC is the most prevalent disease in the Gaza Strip (GS), among the five prevalent diseases in the world. The World Health Organization (WHO) recorded 1.6 million new cases each year in the world among women. In GS, the number of BC cases was 20.5% of the total cancer patients. (Annual report MoH, 2017). Reports certify that female nurses have a low level of knowledge and practice toward breast cancer early detection and screening test.

(WHO, 2018). Therefore, female nurses need to organize a series of health education programs and update their knowledge of breast cancer and screening practices; in turn, they can educate, disseminate and transfer their knowledge to the community. Therefore, the researcher is interested in promoting and assessing the awareness of knowledge and practices of female nurses toward BC early detection at clinics in the GS. To improve breast cancer outcomes and survival, early detection is critical. There are two early detection strategies for breast cancer: early diagnosis and screening. Limited resource settings with weak health systems where the majority of women are diagnosed in late stages should prioritize early diagnosis programmers based on awareness of early signs and symptoms and prompt referral to diagnosis and treatment (WHO, 2018).

1.3 Justification of the study

All the health-care personnel should have adequate knowledge regarding BC early detection, and they should be the role models. If the health-care personnel's knowledge is poor, then, it is not possible to educate the community through them. Hence, it is essential to assess their knowledge regarding BC and its screening methods (Santhanakrishnan et al., 2016). Health workers themselves need to be health-aware for them to motivate their patients to also be aware Therefore, health workers should be the change they hope to see. They must be the first to change (Thaker et al., 2015). The studies on this issue are limited because there are no previous published studies on the knowledge and practices of BC early detection among female nurses at governmental primary health care clinics (PHCCs). Therefore, this study aimed to assess the knowledge and practices regarding BC early detection among female nurses at Governmental PHCCs in GS.

1.4 General objective

This study aimed to assess the knowledge and practices regarding breast cancer early detection among female nurses' at governmental primary health clinics in the Gaza Strip**.**

1.4.1 Specific objectives

The study aims to fulfill the following specific objectives:

1. To assess the knowledge level of female nurses about early detection of breast cancer.
2. To assess the practice level of female nurses about early detection of breast cancer.

3. To identify the relationship between knowledge and practice toward early detection of breast cancer.
4. To identify the relationship between nurses' knowledge about early detection of breast cancer according to demographic characteristics and medical history (profession, qualifications, marital status, clinic level, department, place, presence of a family history of breast cancer and previous training about CBE).
5. To identify the relationship between nurses' practice about early detection of breast cancer according to demographic characteristics (profession, qualifications, marital status, clinic level, department, place).

1.5 Research questions

1. What is the knowledge level of female nurses about early detection of breast cancer?
2. What is the practice level of female nurses about early detection of breast cancer?
3. What is the relationship between knowledge and practice toward the early detection of breast cancer?
4. What is the level of female nurses' practice about SBE, CBE, and mammography?
5. Is there any relationship between knowledge and practice about early detection of breast cancer?
6. Is there any relationship between nurses' knowledge about early detection of breast cancer according to demographic characteristics and medical history (profession, qualifications, marital status, clinic level, department, place, presence of a family history of breast cancer, and previous training about CBE)?
7. Is there any relationship between nurses' practice about early detection of breast cancer according to demographic characteristics (profession, qualifications, marital status, clinic level, department, and place)?

1.6 Definition of terms

1.6.1 Breast Cancer

BC starts when cells in the breast begin to grow out of control. These cells usually form a tumor that can often be seen on an x-ray or felt as a lump. The tumor is malignant (cancer) if the cells can grow into (invade) surrounding tissues or spread (metastasize) to distant

areas of the body. Early detection is key in the treatment of breast cancer (American Cancer Society, 2017).

1.6.1.1 Early Detection

Breast cancer early detection refers to testing otherwise-healthy women for breast cancer in an attempt to achieve an earlier diagnosis under the assumption that early detection will improve outcomes. Several screening tests have been employed including clinical and self-breast exams, mammography, genetic screening, ultrasound, and magnetic resonance imaging (CDC, 2018).

1.6.2 Knowledge

This refers to the facts, information, and skills acquired through experience or education the theoretical or practical understanding of a subject (Oxford Dictionary, 2017).

1.6.3 Practice

- The actual application or use of an idea, belief, or method, as opposed to theories relating to it (Oxford Dictionary, 2017).

1.6.4 Nurse

The nurse who has graduated from a nursing program and met the requirements outlined by a country, state, province or similar licensing body to obtain a nursing license (Oxford dictionary, 2012).

1.6.5 The Primary Health Clinics (PHCCs)

PHCCs were established to provide accessible, affordable, and available primary health care to people, by the Alma Ata Declaration, 1978 by the member nations of WHO (Alma Ata, 1978).

1.7 Operational Definitions

1.7.1 Early detection of BC

The act of discovering breast cancer and identify any changes in the breast before it has fully developed according to global policies and guidelines.

1.7.2 Knowledge

In this study, the researcher assesses the level of female nurses' knowledge about breast cancer early detection by questionnaire. The level of knowledge divided into three levels:

- Poor level of knowledge (total score of less than 60%).
- A fair level of knowledge (total score of 60 – 80%).
- Good level of knowledge (total score of more than 80%).

1.7.3 Practice

Methods, application, and techniques used by female nurses to correct the early detection of breast cancer. In this study, the researcher assesses the level of female nurses' practice about breast cancer early detection, which was measured by a questionnaire about practicing BSE, CBE, and mammography. The level of practice divided into three levels:

- Poor level of practice (total score of less than 60%).
- A fair level of practice (total score of 60 – 80%).
- Good level of practice (total score of more than 80%).

1.7.4 Nurse

An employee who has graduated from a nursing program and currently working at governmental PHCCs during the data collection period from the different categories of centres.

1.7.5 The Primary Health Clinics (PHCCs)

It is a structural & functional unit at Palestinian MoH, Primary Health Care, and Public health facilities are classified into four levels according to the type of services provided. The classification is based on the following factors:

• Population size benefiting of the PHC facility

•Distance to a nearest PHC facility

• Availability and type of health services in the nearest facility.

1.8 Context of the study

1.8.1 Demography of Palestine

Palestine lies within an area of 27,000 square kilometers (Km2), expanding from Ras Al-Nakoura in the north to Rafah in the south. The population is mainly concentrated in the cities, small villages, and eight refugee camps that contain two-thirds of the population of the Gaza Strip. In the Gaza Strip, the population density is estimated at about 4,100 inhabitants / km2. It comprises five governorates: North Gaza, Gaza, Mid Zone, Khan Younis, and Rafah. 41.1 of the population in the state of Palestine was refugees, about 2.1 million refugees in West Bank and Gaza Strip, In GS the population density in the refugees‘ camps is one of the highest in the world. Population distribution by sex shows that 50.9% of the population is male and 49.1% is female, Palestinian society remains a young society, the population of the age under 15 years was 38.6% of the total population in Palestine, 36.5% in West Bank and 41.7 in GS (PCBS, 2018).

1.8.1.1 Gaza Strip

GS is a narrow piece of land lying on the GS lies on the Eastern coast of the Mediterranean Sea. It borders Egypt on the south and the Mediterranean Sea on the west and Israel on the east and north. Its position on the crossroads from Africa to Asia continents, for their location, made it a target for occupiers and conquerors over the centuries. The last of these was Israel who occupied the GS in 1967. Gaza strip is a very crowded place with an area of 365 Km2 and constitutes only 1.3% of the total area of the Palestinian land. In the year 2016, the total population in GS was 2 million, mainly concentrated in the cities, a small village, and eight refugee camps that contain two-thirds of the population of GS (PCBS, 2016).

1.8.1.2 Population of Palestine

In 2017, according to the Palestinian Central Bureau of Statistics (PCBS) census, the population of Palestine was 4,705,601 of whom 2.4 million were males compared to 2.3 million females, While West Bank had 2.8 million inhabitants, 60.1% compared to 1.38 million females, while the population of Gaza Strip was 1.87 million, 39.9% of the total population of Palestine, of which about 950 thousand were females.

1.8.2 Ministry of Health (MoH)

1.8.2.1 Palestinian Health System (PHCS)

PHCS since the MoH assumed its responsibilities at the end of 1994, the Ministry has emphasized the importance of implementing the principles of PHCCs.

Various health service providers including the MoH, non-governmental organizations (NGOs), the United Nations Relief and Works Agency for Palestine Refugees (UNRWA), and military medical services provide primary health care. The centers of the Ministry of Health constitute 63.9% of the total centers working in the field of primary health care in Palestine (Annual report, MoH 2018).

1.8.2.2 Primary Health Care Services in Palestine

The primary health care system is a major component of the Palestinian health care system; this system has provided health care to all Palestinian people especially for children and other vulnerable groups. Primary health care centers in Palestine provide primary and secondary health care services as well as tertiary services.

The MoH is working with other health sectors in providing primary health services mainly with UNRWA, and the NGOs sector. In 2017, there were 743 PHCCs in Palestine; (147 centers in Gaza and 583 centers in West Bank). Classification of PHC according to providers shows that the MoH is considered the main provider with 62.7% of the total PHC centers, followed by the NGOs with 25.8%, then UNRWA with 8.1%. It is worth mentioning that, the private sector plays an important role in providing PHC services to Palestinian people but there is limited information about these centers.

The average ratio of persons per canter was 5,984 (11,725 in GS and 4,408 in West Bank). The number of PHC centers expanded from 454 in 1994 to 743 in 2017, with an increase of 63.7% since 1994 (MoH, 2017)

1.8.2.3 Classification of PHCCs

Classification of PHCCs according to center level illustrated that 30 centers are classified as level II, 19 centers as level III, and 7 as level IV. In general, 6 centers are working 3 shifts (24 hours), 12 centers working 2 shifts, and 38 centers working only one shift, one of which has a delivery unit in Gaza City. The PHCCs provide special health care services in different aspects; 42 centers provide immunization and antenatal care and family planning

services, in addition to 107 specialized clinics and 30 dental and oral clinics. About 35 centers have laboratories and 13 centers have x-Ray units.

The annual report of the Directorate General of primary health care for the year 2009 that the health services received 2,642,907 cases. The highest was in the Gaza governorate with 38% followed by Khanyounis governorate 20%, the North Gaza 18%, Middle Zone 15%, and Rafah with 10%. The report said that the number of visitors to specialized clinics amounted to 180,012 visitors; the highest in the Sourani center by 44,017 and the health Alsalam center was least with 350 clients throughout the year (GAPHC, 2009).

Chapter Two

Conceptual Framework and Literature Review

2.1 Conceptual framework

The conceptual framework consists of three categories, show knowledge and practices regarding BC early detection among female nurses the first category includes socio-demographic characteristics, which measured by the female nurse's feedback on the questionnaire. This domain could discuss many variables that affect the knowledge and practice of female nurses toward BC early detection, such as age, marital status, clinic address, qualifications, and experience.

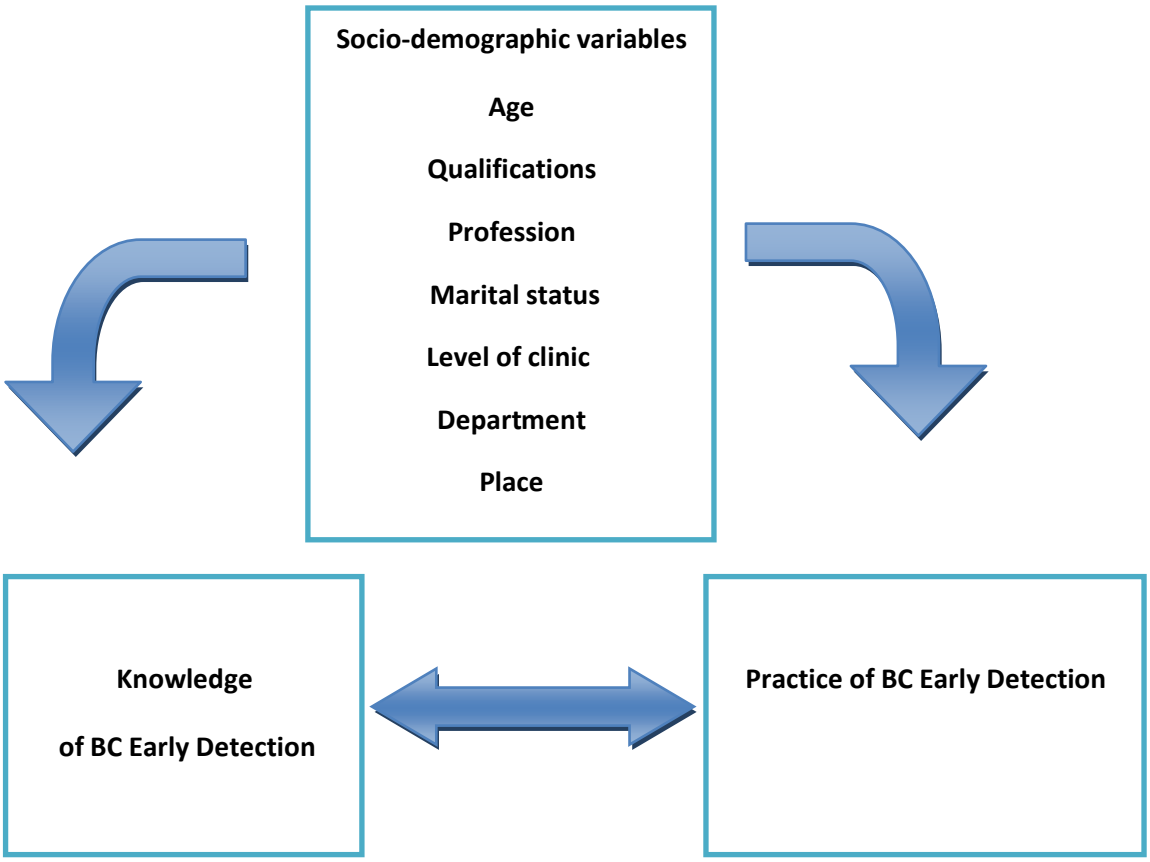


Figure (2.1): Diagram of the conceptual framework (Self-developed)

2.2 Literature review

2.2.1 Background

Nurses play an important role within the healthcare system, in most cases, female healthcare providers are the preferred source of information about breast cancer because women feel more comfortable asking them questions. Typically, their work is health education and counselling demanding (Alkhasawneh, 2014).

Empowering nurses with information about BC and early detection methods and their related benefits could help in advancing their skills in performing breast self-examination and expanding their role as client educators. Education and awareness need to be culturally appropriate and targeted towards the relevant population, because this may contribute towards an increased early presentation so that the highest benefit can be gained. Health care providers, especially those who come in regular contact with women, can play an important role in providing information regarding BC (Andegiorgish et al., 2018).

2.2.2 Breast Cancer

Cancer is a group of diseases that cause cells in the body to change and spread out of control. Most types of cancer cells eventually form a lump or mass called a tumors and are named after the part of the body where the tumors originates. Most breast cancers begin either in the breast tissue made up of glands for milk production, called lobules or in the ducts that connect the lobules to the nipple. The remainder of the breast is made up of fatty, connective, and lymphatic tissues. (American Cancer Society, 2018). Cancer is the leading cause of death due to non-transmitted diseases worldwide and thus an important public health problem both in developed countries and in underdeveloped or developing countries. BC is the most frequent type of cancer in women and the second cause of death in this population group worldwide (Maria et al., 2015).

The incidence of BC is rising even in developing countries like India. Reports from different cancer registries in India show rising trends in breast cancer incidence. Differences in known risk factors, availability of screening programs, and access to effective and affordable treatment modalities are responsible for global variations in incidence and mortality due to the disease. Fatality rates are found to be higher in low resource countries. Early diagnosis is the key to effective treatment and prevention of the disease (Madhuri Taranikanti et al., 2014).

Studies have shown BC is the commonest cancer among women worldwide, in Pakistani women breast cancer is the most common cancer modality. The African and Asian countries showed an increasing annual incidence rate than the European and North American countries. Furthermore, Pakistan has a higher incidence of the disease than the neighbouring countries. In Pakistan, breast cancer is noted to metastasize earlier and is more aggressive. Early detection and prompt treatment is a major prognostic factor in breast cancer. In Pakistan, late presentation, more often in the third and fourth stage is very common. Screening practices like breast self-examination (BSE), clinical breast examination (CBE), and Mammography can downgrade the cancer presentation. The best approach to lessen the burden of breast cancer morbidity is in prevention. A nurse is best suited for discussing a private issue like breast cancer in our society provided she is knowledgeable herself (Khokher, S. et al., 2014).

In Egypt, it is the most common cancer among women. Accounts for 38% of all types of cancer in females with the majority often present at advanced stages. This might be attributed to defective health education programs and poor awareness. So adequate knowledge about the signs and symptoms and early breast cancer detection through breast self-examination (BSE) or clinical breast examination (CBE) or mammogram, is crucial to reducing breast cancer-related morbidity and mortality (Selma, 2018).

2.2.3 Signs and Symptoms of BC

Breast cancer typically produces no symptoms when the tumors is small and most easily treated, which is why screening is important for early detection. The most common physical sign is a painless lump. Sometimes breast cancer spreads to underarm lymph nodes and causes a lump or swelling, even before the original breast tumors is large enough to be felt. Less common signs and symptoms include breast pain or heaviness; persistent changes, such as swelling, thickening, or redness of the skin; and nipple abnormalities such as spontaneous discharge (especially if bloody), erosion, or retraction. Therefore, a physician as soon as possible should evaluate any persistent change in the breast (American Cancer Society, 2018).

2.2.4 Breast Cancer Risk Factors

Risk factors for breast cancer are multiple and synergistic. Family history of breast cancer and genetic factors are important risk factors. Reproductive factors such as early menarche, late menopause, and late age at first childbirth are associated with breast cancer. People who are using oral contraceptive pills and hormone replacement therapy are more at risk than others are. Lack of breastfeeding is also associated with it. Lifestyle factors such as diet, physical activity, overweight, and obesity also determine the occurrence of breast cancer. The risk of breast cancer could be reduced by changing modifiable lifestyle factors. However, the scope of prevention of breast cancer is minimal because many important risk factors are no modifiable. Therefore, it is essential to promote breast cancer screening among high-risk groups. By screening, BC can be diagnosed and treated at an early stage. This will increase the survival rate among patients. Hormones are thought to influence breast cancer risk by increasing cell proliferation, thereby increasing the likelihood of Deoxyribonucleic acid (DNA) damage, as well as promoting cancer growth. Although exposures that influence risk accumulate throughout a woman's life, research suggests that the time between menarche and first pregnancy may be particularly critical (Santhanakrishnan et al., 2016).

2.2.4.1 Family history

Women with a family history of breast cancer, especially in a first-degree relative (parent, child, or sibling), are at increased risk for the disease. Compared to women without a family history, the risk of breast cancer is about 2 times higher for women with one affected first-degree female relative and 3-4 times higher for women with more than one first-degree relative. Risk is further increased when the affected relative was diagnosed at a young age or if the cancer was diagnosed in both breasts. It is important to note that the majority of women with one or more affected first-degree relatives will never develop breast cancer and that most women who develop breast cancer do not have a family history of the disease (American Cancer Society, 2018).

2.2.4.2 Menstrual cycles

Breast cancer risk increases slightly for each year earlier menstruation begins (by about 5%) and for each year later menopause begins (by about 3%). For example, breast cancer risk is about 20% higher among girls who begin menstruating before age 11 compared to those who begin at age 13. Likewise, women who experience menopause at age 55 or

older have about a 12% higher risk compared to those who do so between ages 50-54. The increased risk may be due to longer lifetime exposure to reproductive hormones (American Cancer Society, 2018).

2.2.4.3 Bone mineral density

High bone mineral density in postmenopausal women has been associated with a 60% to 80% increased risk for breast cancer compared to low bone density; risk appears to be most strongly related to HR+ disease. Bone density is not thought to be an independent risk factor for breast cancer, but a marker of cumulative estragon exposure. However, because bone density is routinely measured to identify women at increased risk for osteoporosis (high bone density indicates the absence of osteoporosis), it also may help identify women at increased risk for breast cancer (American Cancer Society, 2018).

2.2.4.4 Endogenous hormone levels

Postmenopausal women with naturally high levels of certain endogenous sex hormones have about twice the risk of developing breast cancer compared to women with the lowest levels, with the strongest relationships found for HR+ tumors. High circulating hormone levels are associated with and may reflect, the effects of other breast cancer risk factors, such as postmenopausal obesity and alcohol use. Although it is challenging to study the relationship of hormones in premenopausal women because levels vary across the menstrual cycle, a recent large review found that high levels of circulating estrogens and androgens are associated with a small increased risk of breast cancer in premenopausal women (American Cancer Society, 2018).

2.2.4.5 Reproductive factors according (American Cancer Society, 2018).

- **Pregnancy**

Having a first child before age 35 and having a greater number of children is associated with decreased risk of HR+ breast cancer. In contrast, there appears to be a transient increase in HR- breast cancer risk (lasting about 10 years) following a full-term pregnancy, particularly among women who are older at first birth.

- **Fertility drugs**

More research is needed on the relationship between breast cancer risk and the long-term effects of ovulation-stimulating drugs. A long-term follow-up study of women seen at 5

US fertility clinics found no association with ever use of clomiphene or gonadotropins; however, the risk of invasive breast cancer was increased among women who underwent more than 12 clomiphene treatment cycles compared to women who had never used fertility drugs. Recently published results of a long-term follow-up study of Dutch women who used fertility drugs for in vitro fertilization (IVF), found no overall association of breast cancer risk with IVF and a significantly reduced risk of breast cancer among women who had undergone seven or more IVF cycles.

- **Breastfeeding**

Most studies suggest that breastfeeding for a year or more slightly reduces a woman's overall risk of breast cancer, with a longer duration associated with greater risk reduction. In a review of 47 studies in 30 countries, the risk of breast cancer was reduced by 4% for every 12 months of breastfeeding. One possible explanation for this effect may be that breastfeeding inhibits menstruation, thus reducing the lifetime number of menstrual cycles. Another possible explanation relates to structural changes that occur in the breast following lactation and weaning. The protective effect may be stronger for or even limited to triple-negative cancers.

- **Hormonal birth control**

Studies suggest that the recent use of oral contraceptives (combined estrogen and progesterone) is associated with a small increase in breast cancer risk, particularly among women who begin use before 20 years of age or before the first pregnancy. The risk appears to diminish when women stop use, and after about 10 years, is similar to those who have never taken oral contraceptives. Most of this research considered high-dose estrogen formulations, which were more common in the past. It is unclear if newer, low-dose estrogen formulations increase breast cancer risk. Some, but not all, studies have found recent use of the injectable progestin-only contraceptive depot-medroxyprogesterone acetate (Depo-Provera) to be associated with increased risk of breast cancer; however, no association has been found with prior use (5 or more years ago). Studies of the levonorgestrel-releasing intrauterine device (Mirena) have also produced conflicting results.95-98 Depo-Provera and Mirena only be in use since the 1990s, thus studies with additional years of follow-up data are needed. Importantly, overall breast cancer risk is low in young women, and most studies suggest that any elevation in risk is temporary.

- **Postmenopausal hormones**

Recent use of menopausal hormones (also referred to as hormone therapy or hormone replacement therapy) with combined estrogen and progestin increases the risk of breast cancer, with higher risk associated with longer use. Risk is also greater for women who start hormone therapy soon after the onset of menopause compared to those who begin later. Although discontinuation of hormone use diminishes breast cancer risk, some increase in risk seems to persist. The increased risk associated with estrogen and progestin therapy may be largely due to increased mammographic density.

Postmenopausal estrogen-only therapy has been associated with uterine problems (including endometrial cancer) and is therefore only given to women who have previously undergone a hysterectomy. The effects of estrogen-only therapy on breast cancer risk is less clear. The US Preventive Services Task Force has concluded that the use of estrogen alone is associated with reduced risk of breast cancer based on results from the Women's Health Initiative randomized trial, which found that women who used estrogen-only therapy for an average of 6 years had a 23% lower risk of developing breast cancer. It should be noted, however, that some observational studies have found a slight increase in breast cancer risk among estrogen therapy users, particularly among lean women and those who begin therapy soon after menopause. Conflicting results may reflect higher rates of screening in menopausal hormone users, which were not controlled for in the observational studies.

2.2.4.6 Obesity, physical activity, and diet according to (American Cancer Society, 2018).

- **Obesity and weight gain**

Postmenopausal breast cancer risk is about 1.5 times higher in overweight women and about two times higher in obese women than in lean women. This is likely due, in part, to higher estrogen levels because fat tissue is the largest source of estrogen in postmenopausal women, but may also be related to other mechanisms, including the higher levels of insulin among obese women. Obesity is a risk factor for type II diabetes, which has also been linked to increased risk for postmenopausal breast cancer. A review of 40 studies concluded that breast cancer risk was 16% higher in women with type II diabetes independent of obesity.

Weight gain also increases the risk of postmenopausal breast cancer. A large meta-analysis recently concluded that each 5 kg (about 11 pounds) gained during adulthood increases the risk of postmenopausal breast cancer by 11%. Notably, the increased risk was only observed among women who did not use menopausal hormones. Although some studies have found weight loss to be associated with reduced risk, results are inconsistent. It is more difficult to examine the effect of weight loss because it is often not sustained.

In contrast, studies have found that obesity protects against premenopausal breast cancer. A large meta-analysis found that among women between 40 and 49 years of age, the risk for developing breast cancer was about 14% lower in overweight women and 26% lower in obese women compared to women who were normal weight. The underlying mechanisms for this inverse relationship are not well understood, but the protective effect may be limited to HR+/luminal breast cancers.

- **Physical activity**

Women who get regular physical activity have a 10%-20% lower risk of breast cancer compared to inactive women. The protective effect is independent of BMI and may be limited to women who have never used menopausal hormone therapy. A greater reduction in risk is associated with increasing amounts of exercise and activity that is more vigorous; however, even smaller amounts of exercise, including walking, appear beneficial. An American Cancer Society study that included more than 73,000 postmenopausal women found that breast cancer risk was 14% lower among women who reported walking 7 or more hours per week compared to women who walked 3 or fewer hours per week. The benefit may be due to the effects of physical activity on systemic inflammation, hormones, and energy balance.

- **Diet**

Numerous studies have examined the relationship between food consumption (including fat, fiber, soy, dairy, meat, and fruits and vegetables) and breast cancer with mixed results. Although early diet and breast cancer studies focused on fat intake, a recent meta-analysis concluded there was no association. It has been suggested that soy consumption may reduce breast cancer risk, in part because of historically low breast cancer rates among Asian women. A meta-analysis showed that soy intake was inversely associated with

breast cancer risk in Asian but not Western populations, perhaps because Asian women generally consume more soy products beginning at an earlier age than Western women do.

There is growing evidence that high levels of fruit and/or vegetable consumption may reduce the risk of HR- breast cancer. These findings are supported by studies linking lower breast cancer risk to higher blood levels of carotenoids (micronutrients found in fruit and vegetables). The effect of diet on breast cancer risk remains an active area of research, with studies particularly focused on the timing of exposure, specific dietary components, and risk differences by tumors hormone receptor status.

2.2.4.7 Environmental and other risk factors according to (American Cancer Society, 2018).

- **Radiation**

Radiation exposure has been shown to increase breast cancer risk in studies of atomic bomb survivors and females treated with high-dose radiation therapy to the chest between 10 and 30 years of age, such as for Hodgkin lymphoma. This may be because breast tissue is most susceptible to carcinogens before it is fully differentiated, which occurs with first childbirth. Breast cancer risk starts to rise about 8 years after radiation treatment and continues to be elevated for more than 35 years. Although radiation treatments have evolved to include lower doses given over smaller areas, recent studies suggest that elevated breast cancer risk persists.

- **Bras**

Although internet rumors have suggested that bras cause breast cancer by obstructing lymph flow, there is no scientific basis or evidence to support this claim. A recent population-based study of more than 1,500 women found no association between wearing a bra and breast cancer.

- **Breast implants**

No association has been found between breast implants and the risk of breast cancer; however, there is evidence that women with implants are at increased risk of a rare type of lymphoma. Breast implants can also obstruct the view of breast tissue during mammography. A woman with breast implants should inform the mammography facility

about the implants during scheduling so that additional x-ray pictures (called implant displacement views) may be used to allow for more complete breast imaging.

- **Hair dyes, relaxers, and antiperspirants**

Although one recent study suggested that selected hair products may be associated with breast cancer, most studies have failed to reveal any correlation. A combined analysis of 14 studies found no association between the use of permanent hair dyes and breast cancer. A study of more than 48,000 black women found no link to breast cancer with the use of hair relaxers. Although antiperspirant use has been less well studied, there is presently no convincing scientific evidence of an association with breast cancer.

- **Night shift work**

Most studies of nurses who work night shifts and flight attendants who experience circadian rhythm disruption caused by crossing multiple time zones have found increased risks of breast cancer associated with long-term employment. The elevated risk appears to be most strongly associated with shift working during early adulthood. Exposure to light at night disrupts the production of melatonin, a hormone that regulates sleep. Experimental evidence suggests that melatonin may also inhibit the growth of small, established tumors and prevent new tumors from developing. Based on the results of studies in humans and animals, the International Agency for Research on Cancer concluded in 2007 that shift work, particularly at night, was probably carcinogenic to humans. Shift work at night is a common exposure, involving about 15% to 20% of workers in the US and Europe, and much of the population in industrialized countries is exposed to artificial light at night.

Nurses have a central role in the multidisciplinary team involved in the care of patients with breast cancer, as well as those at increased risk for the disease. Therefore, it is essential to invest in the education and training of nurses, both in the recognition of risk factors and in criteria for referral of patients to maximize risk-reducing practices, especially in high-risk individuals. Knowledge and identification of risk factors for sporadic breast cancer and focus on risk assessment for the genetic aspects of hereditary breast cancers are key challenges for health promotion and cancer prevention within the nursing practice (Maria, Prolla, Santos, et al., 2015).

Unfortunately, there is scarce information about the knowledge of breast cancer risk factors among nurses and midwives in Ghana. A study among nurses in Ethiopia showed

that 241 (89.3%) of participants were aware of the fact that risk factors are involved in developing breast cancer (Annals of Oncology, 2018).

2.2.5 Screening Methods for BC

Screening is defined as the presumptive identification of unrecognized disease in a healthy, asymptomatic population using tests, examinations, or other procedures that can be applied rapidly and easily to the target population (WHO, 2018).

A screening programmer must include all the core components in the screening process from inviting the target population to accessing effective treatment for individuals diagnosed with the disease (WHO, 2018). The essence of screening is to diagnose cases earlier than they would have presented if symptoms were waited to develop. The main screening strategies employed in BC screening are Breast Self- Examination, Clinical Breast Examination, and Mammography.

2.2.5.1 Breast Self-Examination (BSE)

A screening method used in an attempt to detect early BC. The method involves the woman herself looking at and feeling each breast for possible lumps, distortions, or swelling (WHO, 2018).

BSE is a monthly examination of one's breast, done at the same time of each month. In previous years, the American Cancer Society and other international medical and BC associations recommended BSE as a screening tool. Currently, it is considered optional by these associations. However, though BSE continues to be a topic of debate because its effects on reducing deaths from breast cancer have not yet been proven by research, its practice remains very significant in early detection of BC especially in resource-limited countries where MMG is not readily available. It is noteworthy, that all the screening modalities have some possible side effects. These include false positives, which may result in needless further laboratory tests, thus causing anxiety. It may also produce false-negative results, causing false reassurance when cancer is present, leading to a possible delay in diagnosis and treatment (Brennan, 2016).

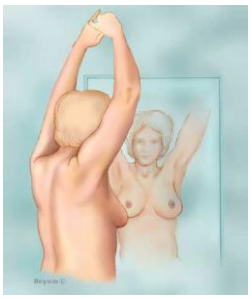
Conducting of BSE (Source: Breastcancer.org.2016)

Step 1: The woman stands in front of a mirror, pressing her hands firmly down on her hips. This position helps to contract the chest wall muscles and enables visualization of any breast changes. She will be looking at the size, shape, color, and contour noting any dimpling, redness, the scariness of the nipple or breast skin.

BSE (step 1)

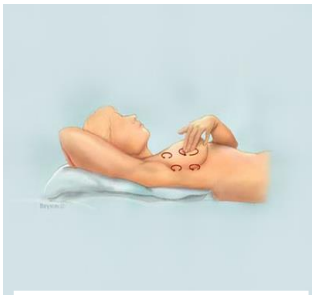
Step 2: The woman raises her arms and looks for the same changes as mentioned above. The woman must examine both underarms while sitting up or standing with her arms slightly raised.

Step 3: While in the mirror, the woman looks for any discharge coming from the nipples; for example, watery, milky, or yellow fluid or blood.



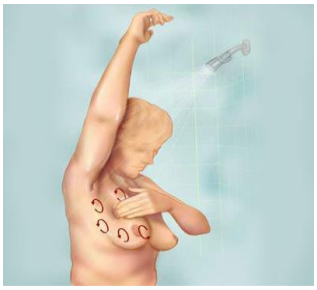
BSE step (2+3)

Step 4: The woman lies down with her right arm behind her head. This position spreads the breast tissue evenly over the chest wall, making it easier to feel. The woman uses the three middle finger pads of her left hand to feel for any right breast lumps. The woman needs to apply light pressure to feel the tissue closest to the skin medium pressure to feel deeper and firm pressure to feel the tissue close to the chest and ribs.The woman examines her left breast by putting her left arm behind her head and using her right-hand finger pads to do the examination.



BSE (step 4)

Step 5: Finally, the woman feels her breasts while she is standing or sitting. Most women find that the easiest way to feel their breasts is when their skin is wet and slippery, so they like to do this in the shower. The woman has to cover her entire breast, using the same hand movements described in step 4. Finally, the woman feels her breasts while she is standing or sitting.



BSE (step 5)

2.2.5.2 Clinical Breast Examination (CBE)

CBE is the physical examination of the breast by a doctor or other health practitioner to detect occult masses. The most preferred technique for examination is the mammography technique. It involves palpation over the breast in a circular motion using the flat of the hands, exerting varying pressures to help detect lumps at different depths (Brennan, 2016).

National Comprehensive Cancer Network does not recommend clinical breast examination; however, recognize the potential benefit it may offer women who do not participate in mammography. Also, the WHO does not recommend CBE in developed countries but recommends it be considered in women 50–69 years in "limited resource settings with weak health systems" (Brennan, 2016).

CBE and annual mammography have been suggested from the age of 35 years, but different protocols are usually recommended according to the specific cause of risk. There is no evidence to support breast self-examination as an isolated strategy for early detection of BC (Maria, 2015).

2.2.5.3 Mammography

Mammography is a low-dose x-ray procedure that allows visualization of the internal structure of the breast. There are three main types of mammography: screen-film, digital, and digital breast chemosynthesis. Screen-film mammography uses x-ray equipment to record images. Digital mammography, which uses more specialized computerized equipment to capture a digital image of the breast and delivers lower doses of radiation, has largely replaced film mammography. Studies have shown that digital mammograms are more accurate for women under the age of 50 and those with dense breast tissue (American Cancer Society, 2018).

Screening mammography is the gold standard for the timely detection of BC. It is a radiological examination of a woman's breasts, which aids in the detection of BC before it becomes clinically apparent. The overall benefit of screening mammography is to decrease mortality from BC. A study conducted in South Australia estimated that participation in screening mammography reduced cancer mortality by 30–41%. Another study in Western Australia showed a 52% reduction in mortality from breast cancer (Okoh, 2018).

For women at average risk of breast cancer, the American Cancer Society recommends that those 40 to 44 years of age have the option to begin annual mammography; those 45 to 54

years should undergo annual mammography, and those 55 years of age or older may transition to biennial mammography or continue with annual mammograms. Women should continue screening as long as their overall health is good and they have a life expectancy of 10 years or more. Women must be regularly screened to increase the chance that breast cancer is detected early before it has spread. Recommended screening intervals are based on the duration of time breast cancer is detectable before symptoms develop. Combined results from randomized controlled screening trials suggest that mammography reduces the risk of dying from breast cancer by about 20%, whereas studies of modern mammography screening programs in Europe and Canada found that the risk of breast cancer death among women exposed to screening was reduced by more than 40%. Early detection of breast cancer by mammography also leads to a greater range of treatment options, including less-extensive surgery (e.g., breast-conserving surgery like lumpectomy versus mastectomy) and the use of chemotherapy with fewer serious side effects, or sometimes, the option to forgo chemotherapy(American Cancer Society, 2018).

Chapter Three

Materials and Methods

This chapter described the materials and methods of the study. It is defined as how relevant information is gathered to answer the research questions or analyze the research problem including research approach, research design, instrument modifications, recruitment sample, study population, eligibility criteria, pilot study, data collection procedure and plan for data analysis, ethical and administrative approval. Finally, it described the limitation of the study.

3.1 Study design

The design of the study is descriptive; cross-sectional was used to assess the level of the knowledge and practices regarding breast cancer early detection among female nurses working at governmental PHCCs in GS. This design is chosen because it is one of the best designs. After all, it is cost-effective and enables the researcher to meet the study objectives in a short period. Moreover, it is practical and manageable and this design was appropriate for describing the status of phenomena or for describing relationships among phenomena testing relationships among variables and involving the collection of data during a single period of data collection (Polit & Beck, 2012).

3.2 Study population

The study population consists of all female nurses who were currently working in PHCCs in Gaza. The total number of PHCCs nurses at Gaza governmental clinics was 385 nurses (Male and Female). The total number of female nurses at Gaza governmental clinics was 256 nurses. The total number of female nurses at Gaza governmental clinics at level (III, IV) was 152 nurses.

Table (3.1) Distribution of Study Population According to Place of PHCCs.

Residency	Study Population
North Gaza	35
Gaza	66
Middle zone	14
Khan Younis	19
Rafah	18
Total	**152**

3.3 Sample size and sampling process

The sample of this study was a census, which consists of all target female nurses who are currently working at the governmental PHCCs (III, IV), there were 152 nurses. PHCCs in the Gaza governorates, (III, and IV) at different geographical areas along the Gaza Strip, the PHCCs will choose by census sample technique and only the female nurses were recruited from the target population to meet the study objectives. Census refers to the quantitative research method, in which all the members of the population are units of research, it is a time-consuming process, reliable and accurate, not a present error (Key Difference, 2016).

3.4 Study Setting

The study has been conducted at all the governmental PHCCs in the Gaza strip, at two different levels (III and IV) in the five governorates of the Gaza strip (North Gaza, Gaza, Mid-zone, Khan Younis, and Rafah).

Table (3.2) Distribution of Study setting according to Place of PHCCs (III, IV).

Residency	Study setting No.
North Gaza	8
Gaza	9
Middle zone	3
Khan Younis	3
Rafah	3
Total	**26**

3.5 Eligibility criteria

3.5.1 Inclusion criteria

Female nurses who were currently working at governmental PHCCs during the data collection period from the different categories of centers. The centers, which met the following criteria, were included in the study:

- Primary health care centers of the MoH.
- All governmental Primary health care centers in Gaza Strip, levels (III and IV).

3.5.2 Exclusion criteria

- Those who refuse participation.
- Students and volunteers.
- Nurses in leaves (vacation).

3.6 Period of the study

The study has been conducted during the period between February 2019 and March 2020.

3.7 Ethical and administrative considerations and procedures

Before starting the study, the researcher was committed to all ethical considerations required to conduct research. First, ethical approval was obtained from a Helsinki Committee (Annex 9), MoH represented by Human Resources Development (Annex10), and Al-Quds University (Annex 11). Additionally, all welling participants signed a written consent form voluntary with the assurance of confidentiality of obtained data (Annex6).

3.8 Instrument of the study

The researcher was developed her tool to collect the required data. Self-administer questionnaire was developed to assess the level of knowledge and practices regarding breast cancer early detection among female nurses working at governmental PHCCs based on the conducted research literature international and locally that formulated in both English and Arabic versions (Annex 4 & 7). Guidance from researchers worked before in this field will perform. Moreover, an expert panel team of researchers was consulted to assess the clarity and relevance of the newly developed questionnaire to the objectives of the study in terms of content validity.

3.8.1 Questionnaire design

A structured self-administer questionnaire was distributed to (152) female nurses were working at governmental PHCCs. The researcher herself to avoid any possible bias collected the data. The participants collected the data herself.

The questionnaire was designed in the English language then translated to the Arabic language and was revised by those experienced people in English and Arabic language. **(Annex7), (Annex4).** The questionnaire was developed with closed-ended questions (yes or no). In addition, three-point Likert scale also used (1= disagree, 2= neutral, 3= agree).

The questionnaire is divided into six parts: **first part** questions were be related to demographic characteristics and medical history such as age, qualification, Marital Status, Profession, experience years and has anyone in your family been diagnosed with breast cancer. The **second part** questions were measured knowledge of risk factors of breast cancer. The **third part** questions were measured knowledge of early detection of breast cancer. The **fourth part** questions were measured knowledge, the practice of BSE, the Fifth part questions were measured knowledge, and practice of CBE and the Sixth part questions were measure knowledge and practice of Mammography.

3.8.2 Validity & Reliability

3.8.2.1 Validity

The study instrument was constructed after reviewing the literature, which related to the study then was been sent with the objectives of the study in an enclosed covering letter to 7 experts working in the maternal health, to give their views on the dimension of statements of the questionnaire.

The questionnaire has been evaluated by a panel of experts **(Annex 8)** in the field of Mother and Child Health (MCH), midwifery and research methodology to evaluate the adequacy of the instrument (both English and Arabic version) to measure knowledge and practice of breast cancer early detection among female Nurses at governmental primary health clinics in Gaza Strip, which was ultimately given an instrument more confidence upon it.

3.8.2.2 Reliability of the instrument

The reliability of an instrument is the degree of consistency of the questionnaire. For this purpose, the reliability coefficient for the pilot sample as well as for the actual study has been measured. Chronbach's coefficient alpha above 0.717 considered accepted reliability of questionnaire as recommended by Polit, and Beck (2012). The researcher used Cronbach's alpha method to examine the reliability of the questionnaire as presented in table (3.3).

Table (3.3) Reliability analysis

Item	Value of Chronbach's alpha	Number of questions
Knowledge	0.724	13
Practice	0.710	8
Overall	**0.717**	**21**

The researcher calculated the reliability of the knowledge questionnaire by using Chronbach's alpha method, as the value of alpha for the domains and the total scores of the items was 0.724, which means that the questionnaire has good reliability. The researcher calculates the reliability of the practices questionnaire by using the Cronbach's alpha method, as the value of alpha for the domains and the total scores of the items was above 0.710, which means that the questionnaire has good reliability.

3.9 Pilot Study

A pilot study was conducted at 10% from the study sample (10 eligible female nurses) before starting the actual data collection as a pretest to point out the weaknesses in wording, predict response rate, determine the real-time needed to fill the questionnaire and identify areas of vagueness and to test the reliability, practicality, and suitability of the questionnaire, that modifications were done accordingly. Also, after the pilot study and modifications were done to some of the questions before data collection started.

3.10 Data collection procedure

The researcher collected the data. The average time for each questionnaire was 20 minutes; the data were collected on the same day for each clinic from February 2019 and March 2020. The number of respondents was 149 participants out of 152 participants so; the response rate was 98%.

3.11 Data entry and statistical analysis

The researcher used Excel (Microsoft, Redmond, Wash, USA) and Statistical Package for Social Sciences (SPSS), version 23.0 (SPSS Inc, Chicago, Ill, USA) for statistical analysis. The first stage of data entry was through constructing the entry base and coding of variables, followed by actual data entry and performed at the time of data collection. At the analysis stage, data cleaning and data management for the variables of interest were performed. The expectation-maximization method was used to analyze the missing data in the quantitative variables (age, experience) after ensuring that it is missed at completely random, as the MCAR test was not statistically significant for all (< 0.05). Descriptive analysis including figures, frequency tables, and cross-tabulation were used to describe the main features of the data. Inferential analysis including; Pearson correlation, t-test, and one-way analysis of variance (ANOVA) test were used to examine the relationship between knowledge, and practices and the demographic factors. Besides, the Person

correlation coefficient was used to examine the relationship between the four outcome variables (knowledge about methods of breast cancer early detection, knowledge about breast cancer risk factors, knowledge about breast cancer signs and symptoms, and practicing BSE). We used multiple linear regression to predict factors affecting participants' knowledge about breast cancer early detection and practicing BSE. The confidence interval was considered at 95% and p-value ≤ 0.05 is statistically significant. Knowledge score about breast cancer early detection methods was calculated by the summation of thirteen questions. Every correct answer was scored one point, then the figure was multiplied by 100 and divided over 13 to reveal a score of 100. Practices scores about BSE were calculated by the summation of eight questions. Regarding knowledge about risk factors, every risk factor question was scored one point, and then the summation of the points for the 10 factors multiplied by 100 over 10. Regarding knowledge about signs and symptoms, every question was scored one point, and then the summation of the points for the 11 signs and symptoms multiplied by 100 over 11.

Regarding practicing BSE, every correct answer was scored one point for the eight questions. Then, the figure was multiplied by100 and divided over 8 to reveal a score of 100. Scores for knowledge about breast cancer early detection and practices were categorized under Poor < (60%), Fair (60-80%), Good (>80%).

3.12 Limitations of the study

- Time limitation because of the nature of researcher work and life condition.
- Data regarding practices of the study participants was collected subjectively from them rather than measured by observation.
- Financial costs.
- Transportation problems.

Chapter Four

Results and discussion

This chapter illustrates the main findings of the study and discusses them.

4.1 Descriptive analysis

4.1.1 Descriptive analysis of demographic and organization characteristics

Table (4.1): Distribution of study participants according to their PHC centers

Governorates	PHC centers	Frequency (%)
North Gaza	Abo shbak clinic	9 (25.7)
	Al atatrah clinic	2 (5.7)
	Bait Hanon clinic	4 (11.4)
	Bait Lahia Alshaema' clinic	10 (28.6)
	Jabalia martyrs clinic	10 (28.6)
	Total	**35 (100)**
Gaza	Al Sorani Clinic	18 (27.3)
	Alfalah clinic	1 (1.5)
	Alsalam clinic	3 (4.5)
	Alshiekh Radwan clinic	8 (12.1)
	Goba clinic	1 (1.5)
	Sabha Alharazeen clinic	6 (9.1)
	Al-Zaytoun Clinic	13 (19.7)
	Aldaraj clinic	6 (9.1)
	Alremal clinic	10 (15.2)
	Total	**66 (100)**
Middle zone	Alnosairat central clinic	2 (14.3)
	Dier Albalah clinic	9 (64.3)
	Alnosairat martyrs clinic	3 (21.4)
	Total	**14 (100)**
Khan Younis	Abasan Alkabeera Clinic	5 (26.3)
	Khan Younis clinic	5 (26.3)
	Bani Sohaila clinic	9 (47.4)
	Total	**19 (100)**
Rafah	Rafah clinic	10 (55.6)
	Alshaboura clinic	2 (11.1)
	Tal El Soltan clinic	6 (33.3)
	Total	**18 (100)**

The study included eight clinics in the North (35 participants), nine clinics in Gaza city (66 participants), three clinics in the middle zone (14 participants), three clinics in Khanyounis city (9 participants), and three clinics in Rafah (18 participants). The names of the participated clinics and their percentages are clarified at the table (4.1).

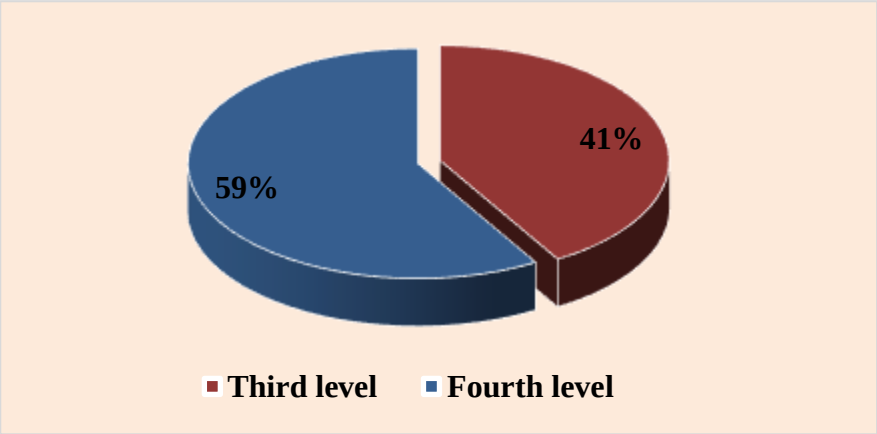


Figure (4.1): Distribution of study participants by the level of their PHC centers

Eighty- nine participants (59%) are working at level IV clinics. While, sixty- three participants (41%) are working at level III clinics as shown in Figure (4.1).

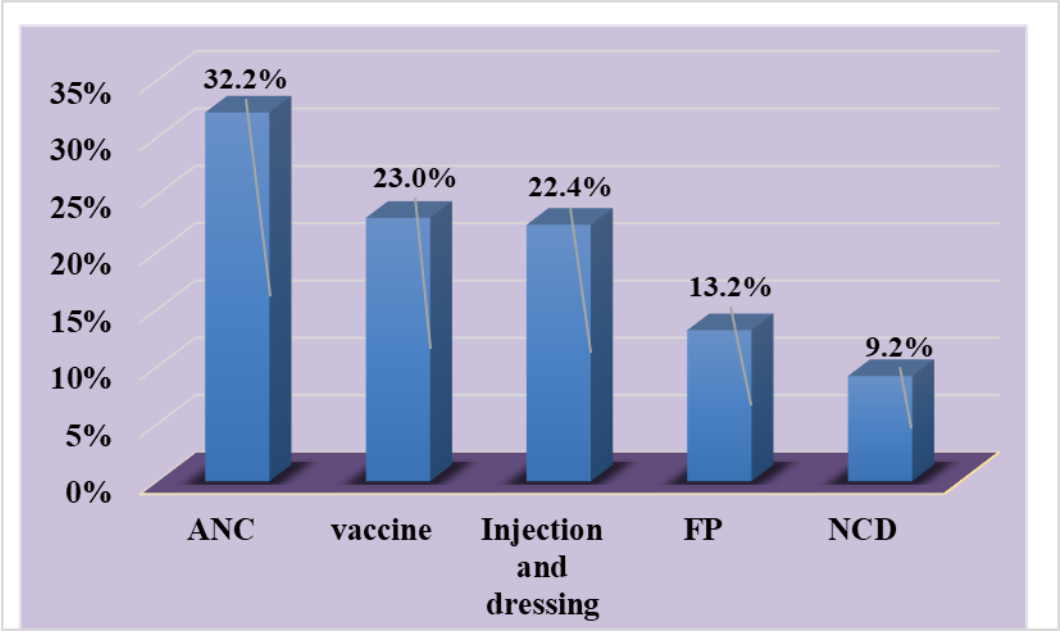


Figure (4.2): Distribution of study participants according to their departments

Thirty- two percent are working at the ANC department, 23% are working at the vaccine department. Also, 22.4%, 13.2%, 13.2% are working at other departments; injection and dressing, family planning, and NCD respectively as shown in figure 4.2. The majority of the participants are working at the ANC and vaccine department. It was reported that female health concerns related to reproductive or sexual issues, pregnancy, childbirth, and breastfeeding – it is common for a woman to prefer a female health care provider (Save the children, 2010). Ministry of Health interested in recruitment female health providers particularly in services provided for children and mothers. A gender base analysis for the public health service in Palestine showed that 15% of the employees are working in the maternal and health sector, tumors 14% are females and 1% are males (Abu-Zaineh, 2013). This could be attributed to the nature of the primary health services provided by antenatal care services where most of the clients are mothers and children. In addition to that, the presence of female health care providers is an important issue in follow up women, especially in situations related to pregnancy and mother care, which is culturally more accepted.

Table (4.2): Distribution of study participants by their demographic characteristics

Variables	Categories	N (%)
Profession (n=148)	General nurse	116 (78.4)
	Midwife	32 (21.6)
Age (n=152)	35 years and less	29 (19.1)
	36-45 years	86 (56.6)
	Above 45 years	37 (24.3)
Qualifications (n=152)	Diploma	65 (42.8)
	Bachelor degree	80 (52.6)
	Master degree	7 (4.6)
Experience (n=152)	15 years and less	71 (46.7)
	15- 20 years	41 (27)
	more than 20 years	40 (26.3)
Marital status (n=150)	Single	4 (2.7)
	Married	142 (94.6)
	Others	4 (2.7)

Seventy-eight percent of the study participants are general nurses and 21% are midwives. More than half lie within the age group 36- 45 years. Regarding their qualifications, the study participants holding a diploma, bachelor's degree, and a master's degree in percentages 42.8%, 52.6%, and 4.6% respectively. About forty- seven having experience 15 years and less. The majority of them (94.6%) are married as illustrated in the table (4.2).

4.1.2 Descriptive analysis of study participants by a family history of breast cancer

Table (4.3): Distribution of study participants by their family history of breast cancer

Variables	**Categories**	**N (%)**
Family history of breast cancer	Yes	32 (21.1)
	No	120 (78.9)
Mother	Yes	3 (2)
	No	149 (98)
Sister	Yes	1 (0.7)
	No	151 (99.3)
Aunt	Yes	15 (9.9)
	No	137 (90.1)
grandmother	Yes	5 (3.3)
	No	147 (96.7)
Second-degree relative	Yes	9 (5.9)
	No	143 (94.1)

Table (4.3) demonstrates the distribution of study participants by their family history of breast cancer. Twenty- one percent of study participants have a family history of breast cancer from mother, sister, aunt, grandmother, and second-degree relatives.

4.1.3 Knowledge about risk factors, signs and symptoms of breast cancer

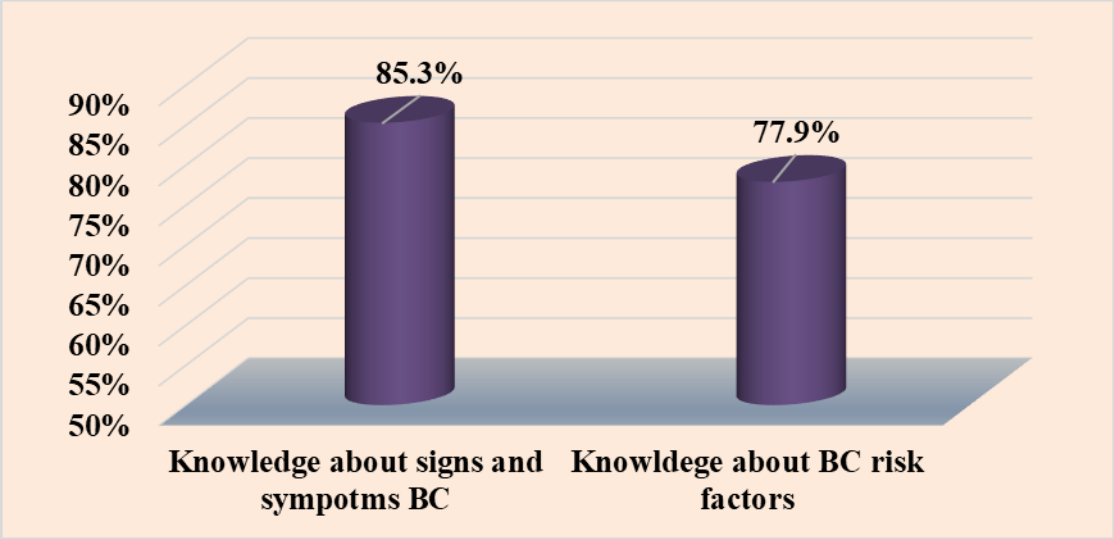


Figure (4.3) Participants' knowledge about breast cancer risk factors, signs, and symptoms

A good knowledge score was shown regarding knowledge about breast cancer signs and symptoms (knowledge score 85.3%) and risk factors (knowledge score 77.9%) as a figure

Table (4.4): Distribution of study participants according to their responses about risk factors of breast cancer (n=152)

Factors	Yes	No	Mean%
The family antecedent of breast cancer (Hereditary)	150 (98.7)	2 (1.3)	98.7
Hormone replacement therapy (HRT) for menopause	141 (92.8)	11 (7.2)	92.8
Use of oral contraceptives	132 (86.8)	20 (13.2)	86.8
Nulliparous	131 (86.2)	21 (13.8)	86.2
Risk increases with age	124 (81.6)	28 (18.4)	81.6
Stress	112 (73.7)	40 (26.3)	73.7
Late menopause (age ≥ 55 years)	105 (69.1)	47 (30.9)	69.1
Age at first pregnancy ≥ 30 years	102 (67.1)	50 (32.9)	67.1
Early age at menarche (≤ 12 years)	96 (63.2)	56 (36.8)	63.2
Overweight	91 (59.9)	61 (40.1)	59.9
Total response			**77.91**

Table (4.4) presents the participants' responses to breast cancer risk factors. The well-known breast cancer risk factors are family history (98.7%), hormonal replacement therapy (92.8%), contraceptive pills usage (86.8%), nulliparous (86.2%), and age (81.6%). The score of these items is much higher than that of (Ahmad et al., 2011) which showed the knowledge scores of most of these items are no more than 61%. In another study, all these items have a score of less than 68% (Andegiorgish et al., 2018). Low scored risk factors in the current study (stress, late menopause, age at first pregnancy, early age at menarche, and overweight. These factors also have much lower scores in other studies (Ahmad et al., 2011; Andegiorgish et al., 2018).

The overall response score about the risk factors of breast cancer is 77.9%. Consistent with our findings, Yousuf et al. 2012 reported more than 75% of Saudi nurses knew more than 50% of the questions related to risk factors. Also, the Jordanian participated nurses in other studies showed that the nurses have good knowledge about the items related to risk factors of breast cancer (Alkhasawneh, 2014; Amasha, 2014). Inconsistent with other studies, Taranikanti et al., (2014) showed that knowledge about risk factors of breast cancer among nurses in the study participants is poor that the entire item has scores of less than 50% (except for the use of contraceptive pills). Besides, the same results were presented in other studies that showed unsatisfactory knowledge about risk factors of breast cancer with a mean score of less than 50% (Ghanem et al., 2011; Fotedar et al., 2013). In some studies elsewhere, nurses' knowledge about the risk factors of breast cancer is low (Lemlem et al., 2013; Yousuf et al., 2012) while other studies have reported nurses' knowledge about risk factors of breast cancer to be high (Awodele et al., 2014). This is because there are many risk factors of breast cancer (CDC, 2015) and new factors that have been found to be associated with breast cancer might have affected the knowledge of the nurses. As far as the researcher believes, knowledge about breast cancer risk factors is essential to aid nurses and midwives give appropriate counseling and recommendations to their clients. Particularly, those at high risk of developing breast cancer, and especially due to the absence of a well-organized breast cancer- screening program in the Gaza Strip.

Table (4.5): Distribution of study participants according to their responses about signs and symptoms of breast cancer (n=152)

Signs and symptoms	Yes	No	Mean%
Change in the size of the breast	147 (96.7)	5 (3.3)	96.7
Swelling or enlarged lymph nodes in the axilla	146 (96.1)	6 (3.9)	96.1
Lump under armpit	146 (96.1)	6 (3.9)	96.1
Changes in the shape of the breast	144 (94.7)	8 (5.3)	94.7
Lump in the breast	141 (92.8)	11 (7.2)	92.8
Discharge from the breast	140 (92.1)	12 (7.9)	92.1
Discoloration/dimpling of the breast	131 (86.2)	21 (13.8)	86.2
Ulceration of the breast	119 (78.3)	33 (21.7)	78.3
Inversion/ pulling in of nipple	110 (72.4)	42 (27.6)	72.4
Scaling / dry skin on nipple region	109 (71.7)	42 (27.6)	72.2
in or Soreness in the breast	93 (61.2)	59 (38.8)	61.2
Total response			**85.3**

Table (4.5) shows participants' knowledge about the signs and symptoms of breast cancer. The results reveal an excellent knowledge about the change in the size of the breast swelling or enlarged lymph nodes in axillae, lump under the armpit, changes in the shape of the breast, lump in the breast, and discharge as all the percentages are above 90% for these items. This result is consistent with another study regarding the lump in the breast as 93.6% responded correctly (Odusanya et al., 2013).

Also, good knowledge is shown about the rest of breast cancer signs and symptoms. Other studies (Diarra et al., 2016) which found that nurses have good knowledge about breast cancer signs and symptoms. The majority of our participants are nurses that working at ANC and family planning departments who are trained well about breast cancer and related risk factors. There is an international interest and from the MoH in the Gaza Strip

in educating the nurses about signs and symptoms of breast cancer and methods of early detection especially in PHC centers, as they are the first line in breast cancer early detection methods. Also, the frequent campaigns and awareness about the early detection methods of breast cancer may affect their knowledge about the disease and its related risk factors, signs, and symptoms.

4.1.4 Knowledge about breast self -examinations

Table (4.6): Descriptive analysis of questions related to knowledge of BSE

Variables	Responses	N (%)
What do you understand by the term breast self-examination?	The assessment made on the breast by an individual to check for breast lumps	143 (94.1)
	The assessment made on the breast by a doctor or nurse to check for breast lump	7 (4.6)
	The use of X-rays to assess breast cancer	2 (1.3)
How often should breast self-examination be performed? n=148	Monthly 1-7 days after menstruation	124 (83.8)
	Once every 4th month	21 (14.2)
	When one suspects something abnormal is developing in the breast	3 (2.0)
When breast self-examination should be done? n=149)	As soon as menstruation start	49 (32.9)
	At the age of 20 years	64 (43.0)
	At the age of 40 years	34 (22.8)
	When diagnosed with breast cancer	2 (1.3)
What do you inspect for during breast self-examination (multiple responses)	Fluid coming from the nipple in a non-lactating mother	11 (6.6)
	Shape and size of the breast	96 (57.1)
	Skin for changes in the contour, any swelling and nipple appearance	61 (36.3)

Table (4.6) shows the distribution of study participants about their knowledge about BSE. The majority of the participants correctly define the BSE and know the frequency to do it in percentages 94.1%, 83.8% respectively. Only 43% of them know the time at which

women should start doing BSE. Also, more than half of them inspect the shape and size of the breast during performing BSE.

4.1.5 Practice of Brest self- examination

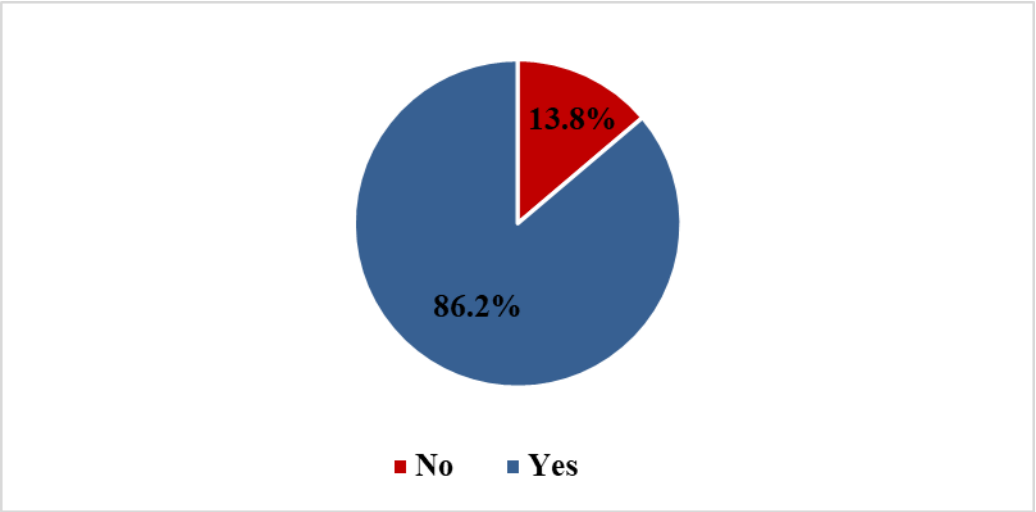


Figure (4.4): Distribution of study participants by practicing BSE

Figure (4.4) demonstrates the distribution of participants according to their practicing BSE, the majority of the participants are practicing BSE (86.2%), and only (13.8%) are not practicing it. The result is much higher than another study that showed practicing BSE among health workers is only 65.3% (Sani and Yau, 2018). In another study, it was reported to be 77.5% (Nguefack et al., 2018). About 94% of nurses in Singapore had reported practicing BSE (Chong et al., 2015), 90.6% by (Zeru et al., 2019), 77.5% in Cameron (Nguefack et al., 2018), 70.4% among Turkish nurses (Erbil, 2014). Fifty-percent in Malasia (Khokher et al., 2014). These results along with ours are higher than that of other studies reported it 28.5% (Ahmad et al., 2017) and 21.4% by (Getu et al., 2019).

Table (4.7): Descriptive analysis of statements related to practice Brest self-examination

Variables	Responses	N (%)
When did you start practicing breast self-examination? n=131	As soon as started menstruating	27 (20.6)
	When diagnosed with breast cancer	2 (1.5)
	When my close relative was diagnosed with breast cancer	11 (8.4)
	At age 20 years	86 (65.6)
At what period of menstruation cycle do you perform breast Self-examination? n=131	Before menstruation	1 (0.8)
	After menstruation	120 (91.6)
	At any time	10 (7.6)
If yes, when do you practice it? n=131	Monthly 1-7 days after menstruation	82 (62.6)
	When I remember but not regularly	41 (31.3)
	I may remember and do it twice per year	8 (6.1)

Table (4.7) demonstrates the distribution of study participants according to their knowledge of practicing BSE.

The participants started correctly practicing BSE at 20 years old (65.6%), and this is similar to another study (Getu et al., 2019). Despite practicing BSE among the nurses in this study is good in general, they practicing it in an irregular base as only 62.6% practice BSE every month 1-7 days after the menstruation period. This is a higher percentage than that of another study showed that 34.8% of the participated females practiced BSE at the correct timing about menstruation (Al-Sharbatti et al., 2013).

It was previously reported that health care professionals practice BSE regularly at low percentages in some other studies; 27.3% by (Akpınar et al., 2011), forty percent by (Zeru et al., 2019), 43.3% by (Nguefack et al., 2018), and 51.7% by (Getu et al., 2019).

Table (4.8) Knowledge about steps of performing BSE

Steps	N	Disagree	Neutral	Agree	Mean	mean%
In the Path	152	11 (7.2)	2 (1.3)	139 (91.4)	2.8421	94.74
In front of mirror	152	6 (3.9)	7 (4.6)	139 (91.4)	2.8750	95.83
Lying down	152	11 (7.2)	17 (11.2)	124 (81.6)	2.7434	91.45
Visiting the doctor	152	8 (5.3)	6 (3.9)	138 (90.8)	2.8553	95.18

Table (4.8) presents the distribution of the participants' responses to the steps of practicing BSE. All the steps are well recognized by the majority of the study participants as their responses are agreed most of the time and the mean for their responses is more than 2.7 for the four steps. Despite the participants' knowledge about the steps of performing the BSE, they are not performing it regularly. The gap between their awareness about the steps of practicing BSE and not practicing was previously reported, and the women in the literature gave some reasons for that. Carelessness, forgetfulness, fear of being diagnosed with breast cancer have no breast problem, not comfortable, lack of privacy (Dagne et al., 2019; Asiri and Rashad, 2019; Getu et al., 2019; Alomair, 2020).

4.1.6 Knowledge and performing CBE

Table (4.9): Distribution of participants' according to their knowledge and performing breast clinical examination

Variables	Responses	N (%)
Did you get any education sessions about BCE? n=152	Yes	73 (48)
	No	79 (52)
Clinical breast examination is a useful tool for detection of breast cancer=151	Yes	148 (98.0)
	No	3 (2.0)
Clinical breast examination is done using n=150	Ultrasound	8 (5.3)
	Hand	126 (84.0)
	Mammography	12 (8.0)
	All	4 (2.7)
Clinical breast examination should be done by (Multiple responses)	Doctor	101 (27.8)
	Trained nurse	120 (32.8)
	Trained midwife	98 (26.8)
	The individual	46 (12.6)

Table (4.9) distributes the study participants according to their knowledge and doing CBE. Only, half of the participants (48%) had previous training about doing CBE. However, the majority (98%) claimed that CBE is a useful tool to detect breast cancer, and it is done using the hand (84%). They either answered that the doctor, trained nurse, performs CBE or trained midwife 27.8%, 32.8%, 26.8% respectively. In addition to 12.6% of them answered incorrectly, that it is done by the individual herself. The literature showed that breast cancer could be detected more accurately when CBE is performed in adjacent to mammography as screening tools (Provencher et al., 2016). Besides, health professionals can be taught successfully to improve their clinical breast examination accuracy and skills (Pace et al., 2018). There is a need for continuing professional education programs for nurses, as they are always involved in patient care and education. We advised that nurses should systematically practice breast examination of their patients especially in developing countries like Palestine, where screening programs by mammography are not well organized.

4.1.7 Knowledge and practice mammography

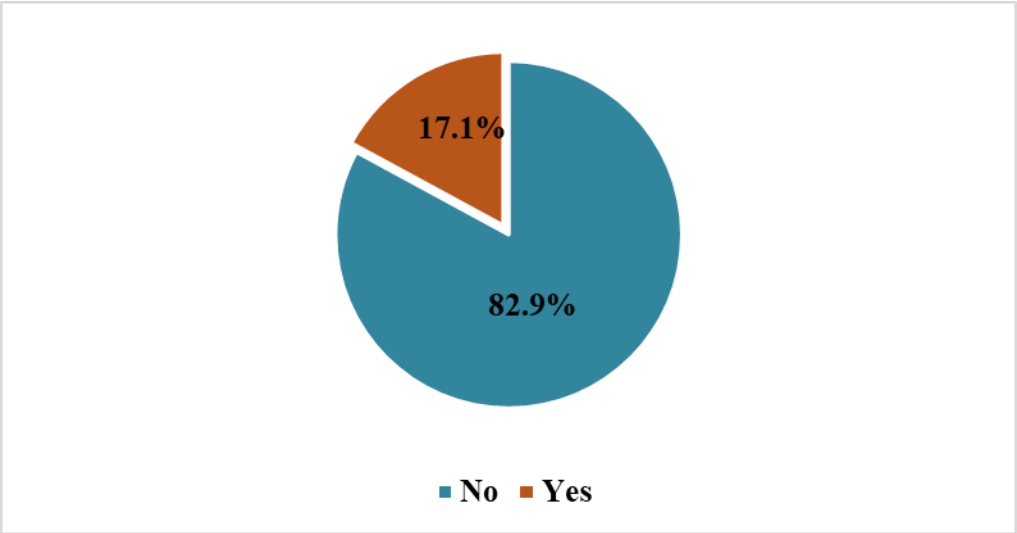


Figure (4.5): Distribution of participants concerning their practicing mammography

Only 17.2% had previously done the mammography as shown in the table (4.11). The literature showed that health care workers underutilize screening mammography. Among Turkish health care workers is found to be 12.5%, among Indian 7%, Nigeria 3.1%, 15.5% in Cameron (Canbulat, and Uzun, 2015; Akhigbe and Omuemu, 2015; Fotedar et al., 2016; Nguefack et al., 2018). Also, in a study conducted in the Gaza Strip showed that the

teachers underutilize the screening mammography even after an invitation from the MoH (Abu-Shammala and Abed, 2015).

Table (4.10): Distribution of study participants' regarding knowledge and practice mammography

Statement	Responses	N (%)
Is there mammography in your workplace? n=150	Yes	10 (6.6)
	No	140 (93.4)
Is mammography a useful tool for the early detection of breast cancer? n=150	Yes	139 (92.7)
	No	5 (3.9)
	I don't know	6 (4.1)
At what age should mammography be started? n=150	From puberty	3 (2.0)
	From 20 years	5 (3.3)
	From 40 years	134 (89.4)
	No idea	8 (5.3)
How often should mammography be done? Multiple response analysis (Yes responses) n=151	Weekly	1 (0.7)
	Monthly	8 (5.5)
	Yearly	114 (78.6)
	When a lump is found on BSE or CBE	22 (15.2)

Table (4.10) shows ten of the participants said that there is mammography in their workplace. Regarding the participants' knowledge about mammography, the majority of the participants considered mammography a useful tool for the early detection of breast cancer (92.7%) and the percentage is in a line with another study (Taranikanti et al., 2014). Roughly, 90% know the best age to perform mammography. Also, 78.6% answered that mammography is performed yearly, 15.2% said that it is done when a lump is found on BSE or CBE. The participants of the current study gave explanations about not performing mammography. The most recognized explanations are; not old enough to do mammography (37%), don't have a breast problem (17%), mammography is not available

(8%), fear of results (8%), financial constraints (8%) and not thinking about it (8%). Other reasons recognized among a few participants (10%) are presented in Figure (4.4).

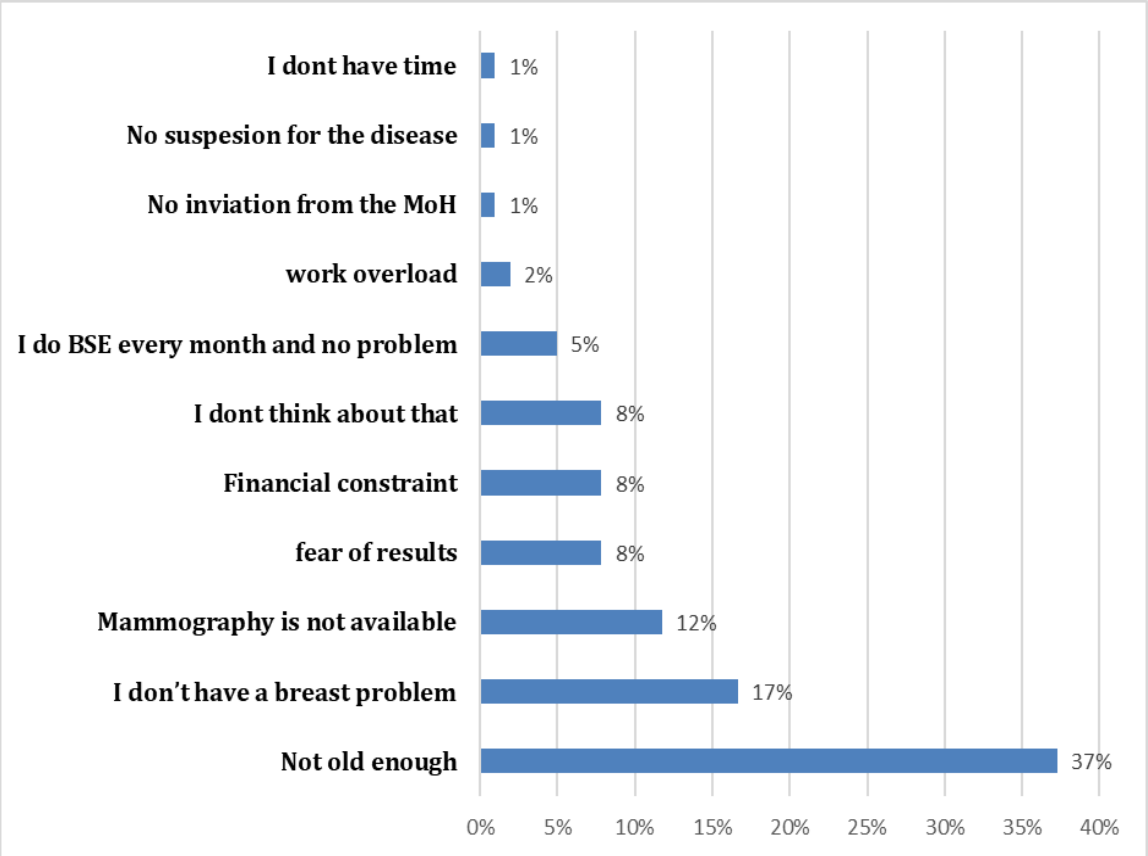


Figure (4.6): Reasons for not performing mammography

In another study conducted in Palestine, showed that barriers to conducting screening mammography among health care providers are being busy 46.7%, don't think to have breast cancer (41.5%), health and sickness are determined by God (34.8%), don't have symptoms (31.9%), don't want to know whether having breast cancer or not (26.7%). Besides, other reasons; very shy to expose breasts, mammography is painful, and mammography causes adverse effects were identified by another study (Nazzal et al., 2016).

4.1.8 Knowledge and practice scores about methods of breast cancer early detection

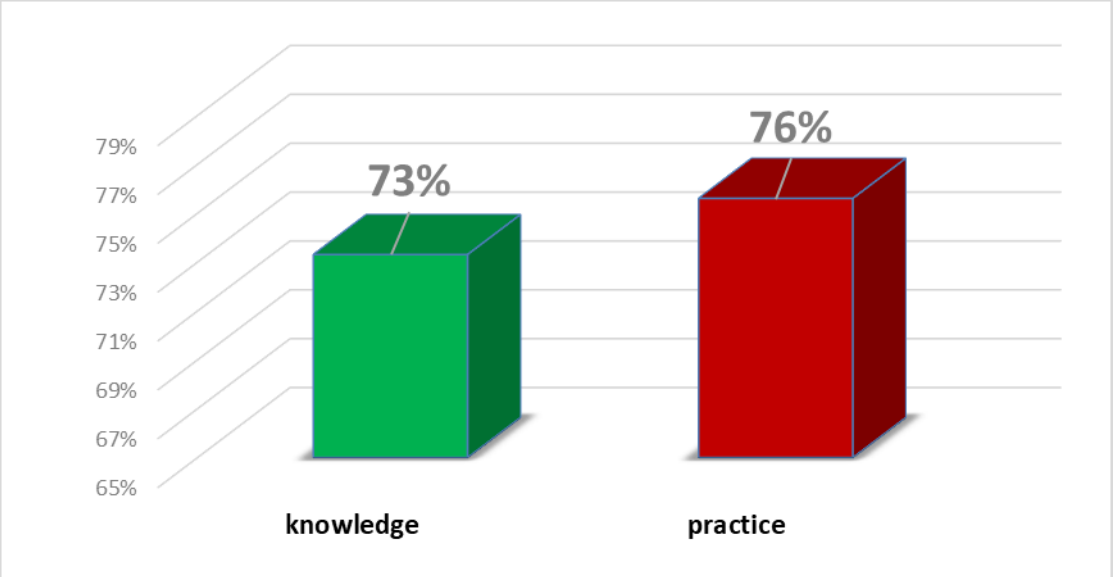


Figure (4.7): Knowledge and practice scores among study participants

Figure (4.7) shows the knowledge scores regarding breast self-examination, clinical examination, and mammography, and the score of practicing BSE among the study participants. The score of knowledge and practice is 73%, 76% respectively.

4.1.9 Knowledge of early detection methods for breast cancer

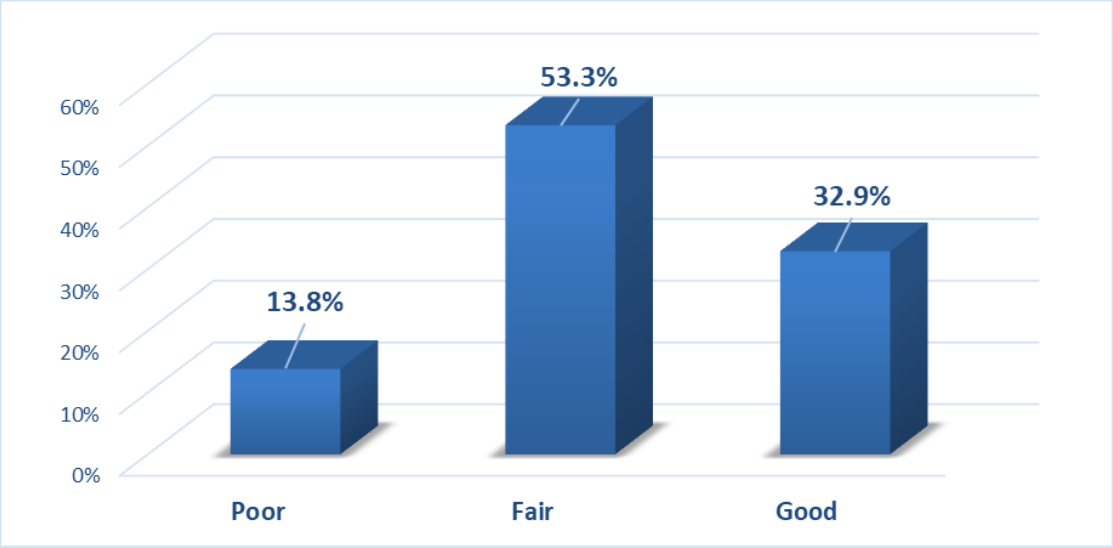


Figure (4.8): Knowledge scores of study participants

The study shows more than a third of the participants have good knowledge about breast cancer early detection methods, about half of them have fair knowledge. On the other hand, only 15.8% have poor knowledge as shown in figure (4.8). This result is in a line with another study that showed 37.2% of the nurses had good knowledge about breast cancer early detection methods and only 2.9% are excellent (Nguefack et al., 2018). Inconsistent with the findings of the current study, a study of Taranikanti et al. (2014) showed that only 14.03% of Saudi Arabians' nurses were in a good category and 49.12% of nurses fell in the fair category, and about 37% have poor knowledge.

4.1.10 Practice of early detection methods for breast cancer

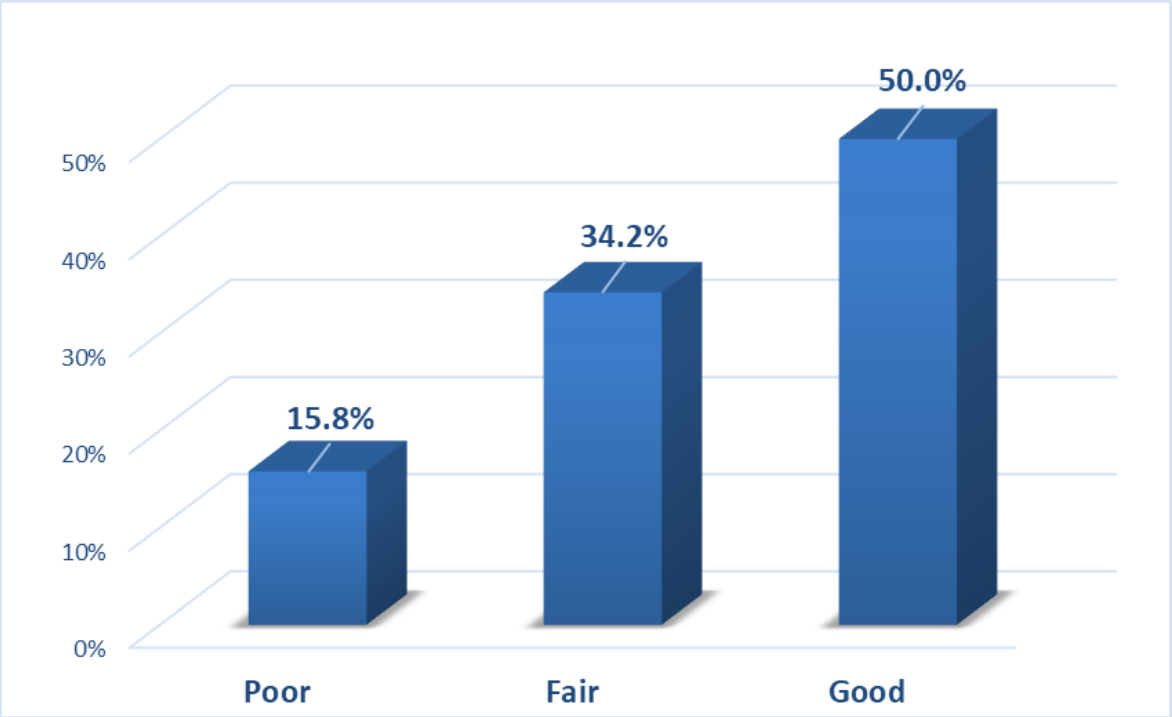


Figure (4.9): Practice scores of study participants

Half of the participants have good practice regarding early detection methods of breast cancer, 34% have fair practice. About 16% have poor practice as shown in figure (4.9). Nurses got the opportunity of training on breast cancer screening methods, and educational campaign regarding early detection of breast cancer, this makes the nurses have a better awareness of how to perform BSE. The practice of breast self-examination was good in this study. However, the practice of preventive breast healthcare to prevent cancer such as mammography is inadequate. Only 17.2% of the participants had carried out mammography at least once in their lifetime. Out of the 78 participants who were 40 years

and above, only 13 had ever received a mammogram. These results are similar to a study done in Morocco where only 15% had received mammography at least once (Ghanem et al., 2011). Another study done among nurses in Kumasi saw similar results in that 10% of participants had received mammography in the previous four years (Adofo and Akpaloo, 2013). Clinical breast examination is a low-cost screening procedure that can improve the detection of breast cancer when performed by a trained health worker. Research has shown that many aggressive breast cancers are detected by Clinical breast examination (Provencher et al., 2016). The literature showed a reduction of mortality from breast cancer by 25 to 30% using mammograms (Marmot et al., 2013).

4.2 Univariate analysis

4.2.1 Relationship between knowledge and practice

Table (4.11): Correlation between knowledge of early detection methods, knowledge about signs and symptoms, risk factors, and practice.

Variable		Knowledge About Early detection	Practice	Knowledge about risk factors	Knowledge about signs and symptoms
Knowledge	Pearson coefficient P- value	1	0.274** 0.001	0.052 0.524	0.118 0.148
Practice	Pearson coefficient P- value	0.274** 0.001	1	0.339** 0.000	0.236** 0.003
Knowledge about risk factors	Pearson coefficient P- value	0.052 0.524	0.339** 0.000	1	0.463** 0.000
Knowledge about signs and symptoms	Pearson coefficient P- value	0.118 0.148	0.236** 0.003	0.463** 0.000	1

**** Correlation is significant at the 0.01 level (2-tailed).**

Table (4.11) illustrates, there is a positive relationship between practicing BSE and the other three variables related to knowledge (knowledge about breast cancer early detection methods, knowledge about risk factors, and knowledge about signs and symptoms).

A relationship was shown between participants' breast cancer early detection methods and practicing BSE. Pearson correlation test shows a weak positive statistically significant

relationship (r= 0.274, p- value= 0.001). Consistent with our findings, a weak significant positive relationship (r=0.242, P = 0.001) was shown between the knowledge and the practice in another study (Sani and Yau, 2018). Also, Getu et al. (2019) gave the same result.

A significant moderate positive correlation between practice score and knowledge about breast cancer risk factors and signs and symptoms (r= 0.339, 0.236; P- values= 0.000, 0.003) respectively. Another statistically significant correlation was between knowledge about breast cancer risk factors, and knowledge about breast signs and symptoms (0.463, P-value= 0.000). Consistent with this finding, (Akhtari-Zavare et al., 2014) showed a significant positive correlation between knowledge about breast cancer and practicing BSE.

The findings of this study reveal a significant positive relationship between the knowledge of methods of early detection of breast cancer and the practice of BSE. This finding is not surprising because the study found that 53.3% and 32.9% have fair and good knowledge respectively. Also, 34.2% and 50% have fair and good practice respectively. This finding is in concurrent with findings of other studies (Al-Azmy et al., 2013; Sani and Yau, 2018). These studies reported that women who had adequate knowledge of BSE are more likely to practice than women who have not. Therefore, it can be concluded that women cannot practice BSE if they do not have adequate knowledge about it.

Finally, the study does not reveal a statistically significant correlation between participants' knowledge about breast cancer early detection methods and each of risk factors, and breast cancer signs and symptoms (P- values > 0.05).

4.2.2 Factors affecting the participants' knowledge scores

Table (4.12): Differences between knowledge scores and some characteristics variables

Variables	Categories	N	Mean ± SD	F/t	p-value
Profession	General nurse	116	73.5±13	0.540	0.592
	Midwife	32	71.9±16.1		
Qualifications	Diploma	65	71.7±16.8	0.761	0.469
	Bachelor degree	80	74.3±11.3		
	Master degree	7	75.8±9.3		
Marital status	Single	4	75±7.4	0.057	0.945
	Married	142	73.3±14.1		
	others	4	75±11.5		
Level of the clinic	Third level	63	72.5±14.4	-.563	0.574
	Fourth level	89	73.8±13.5		
Department	ANC	49	76.8±12.7	2.468	0.047*
	FP	20	68.1±15.8		
	vaccine	35	73.6±11.4		
	Dressing and	34	74.4±14.8		
	NCD	14	66.5±16.1		
Place	North Gaza	45	74±14	1.314	0.268
	Gaza	56	74±11.9		
	Middle zone	14	78±12.7		
	Khan Younis	19	68±17.3		
	Rafah	18	70.9±15.3		

*Statistically significant at $P \leq 0.05$

Table (4.12) shows the differences in the level of knowledge and some characteristics variables. t-Test was used in the case of categorical variables with two groups and ANOVA was used for categorical variables with three groups or more. The study reveals a significant difference in the level of knowledge about the participants' department. LSD Post hoc test shows a difference in the level of knowledge between groups that the highest

level for those working at the ANC department (mean= 76.8) and the lowest for those working at the NCD department. The difference is statistically significant (F= 2.468; p-value= 0.047).

The other examined demographic variables (Profession, qualifications, marital status, level of the clinic, and place) show no difference in the score of participants' knowledge. Inconsistent with this result, a master thesis study at the University of Ghana showed that marital status and qualification have a positive effect on the knowledge about breast cancer early detection methods (Okoh, 2018).

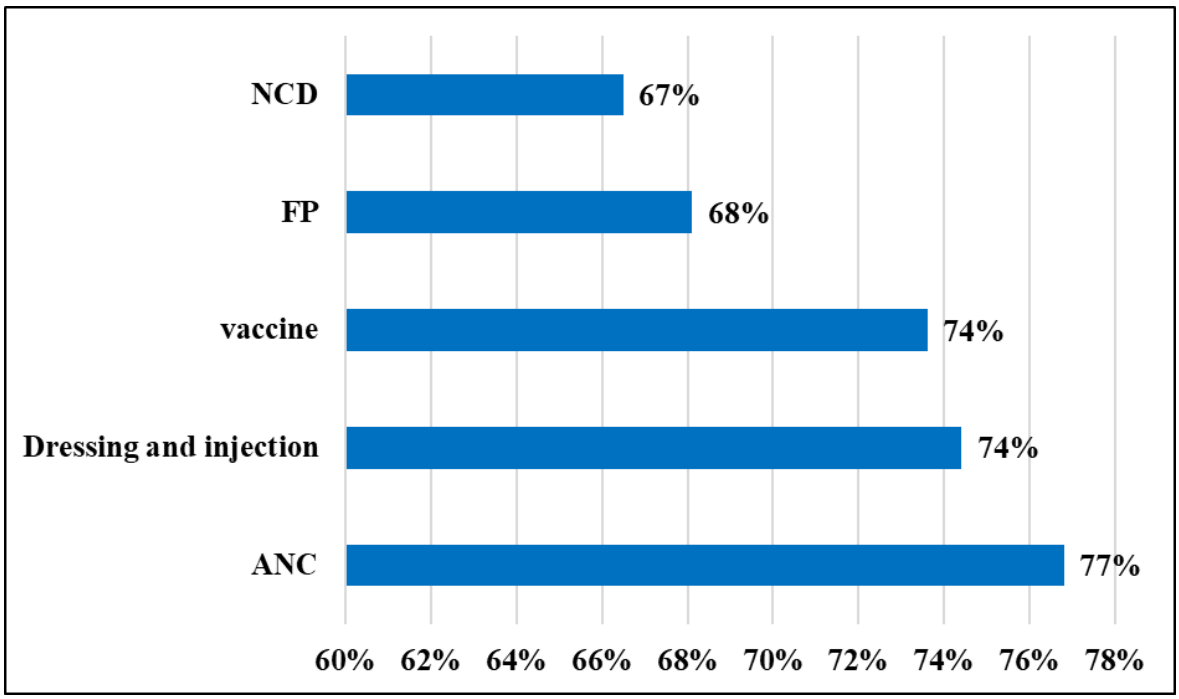


Figure (4.10): Differences in knowledge scores according to participants' working department

The Figure shows a difference in the knowledge score of the study participants, the highest level is for the employees working at the ANC department (Figure 4.10).

Table (4.13): Differences between knowledge scores and some variables

Variables	Responses	N	Mean ± SD	F/t value	p-value
Presence of family history of breast cancer	Yes	32	74.8±11.9	-.337	0.150
	No	120	73.1±14.5		
Previous training about CBE	Yes	73	77.5±12.6	3.5	0.000*
	No	79	69.7±14.1		
Have you ever done mammography?	Yes	26	78.1±12.8	1.8	0.06
	No	126	72.5±14		

*Statistically significant at $P \leq 0.05$

Table (4.13) demonstrates that the presence of family history does not affect the knowledge of breast cancer, (t= 0.337, P- value= 0.150). Consistent with this, Ayed et al. (2015) show the same result among nursing University students in Jenin- Palestine. Besides, the same results were revealed in another study (Al-Sharbatti et al., 2013).

Employees who had previous training about BCE have better knowledge (mean= 77.5) than those have not (mean= 69.7) and the difference is statistically significant (t= 3.5; p-value 0.001).

Nurses that previously performed mammography have a knowledge score (78.1) more than those did not perform (72.5), however, the difference is not statistically significant (t= 1.8; p- value= 0.06).

4.2.3 Factors affecting practicing BSE

Table (4.14): Differences between practice score and some characteristics variables (n=152)

Variables	Categories	N	Mean ± SD	F/t value	p-value
Profession	General	116	74.8±17.8	-0.700	0.485
	Midwife	32	77.3±19.9		
Qualifications	Diploma	65	72.9±20.9	1.255	0.288
	Bachelor	80	77.5±16.1		
	Master	7	78.6±11.9		
Marital status	Single	4	73.4±13.8	0.644	0.526
	Married	142	78.1±27.7		
	others	4	75.9±18.2		
level of clinic	Third level	63	75±18.1	-.327	0.150
	Fourth	89	76±18.4		
Department	ANC	49	78.8±19.3	1.242	0.296
	FP	20	79.4±15.3		
	vaccine	35	73.6±16.5		
	Dressing	34	73.2±18		
	NCD	14	69.6±21.8		
Place of the clinic	North Gaza	45	76.9±18.8	1.902	0.113
	Gaza	56	74.6±17		
	Middle	14	77.7±18.5		
	Khan	19	67.1±20.9		
	Rafah	18	82.6±14.9		

The study examined the effect of some variables (Profession, qualifications, marital status, level of the clinic, department, place tumors, and presence of a family history of breast cancer) on the practice score. The tests show no differences in the score of participants' practice concerning these independent variables (p- values > 0.05). These results are demonstrated in the table (4.14). In a line with these results (Al-Sharbatti et al., 2013)

showed no significant association between Practicing BSE and age, however, married women practicing more than those are not.

Table (4.15): Differences between practice scores and some variables

Variables	**Categories**	**N**	**Mean ±**	**F/t**	**p-value**
Presence of family history of breast cancer	**Yes**	32	74.6±18.6	-.337	0.150
	No	120	75.8±18.2		
Did you get any education sessions about breast clinical examination before?	**Yes**	73	76.4±17.4	0.51	0.6
	No	79	74.8±19		
Have you ever done Mammography?	**Yes**	26	82.7±11.8	3.0	0.004*
	No	126	74.1±19		

*Statistically significant at $P \leq 0.05$

Table (4.15) shows that there are no statistically significant differences between practicing BSE among the study participants about two factors (presence of family history or previous training about CBE) as p- vales > 0.05. However, the literature showed that the presence of family history affects the practicing BSE in another study (Getu et al., 2019). On the other hand, a statistically significant difference was seen between participants' practicing BSE and performing mammography (t= 3.0, P- value= 0.004).

The researcher believes that

4.3 Multivariate analysis

Table (4.16): Factors affecting participants' about breast cancer early detection methods

Variable	B	T	p-value	CI	
				UB	LB
(Constant)	49.985	7.704	.000	37.161	62.809
Do you practice breast self-examination?	5.432	1.753	.082	-.693	11.557
Did you get any education sessions about breast clinical examination before?	8.938	4.234	0.000	4.765	13.110
Knowledge about breast cancer signs and symptoms	0.148	2.116	0.036	0.010	0.286
Knowledge about breast cancer risk factors	.052	0.930	0.354	-0.059	0.163
Department	-1.091	-1.391	0.166	-2.641	0.459
Have you ever done mammography?	3.996	1.433	0.154	-1.514	9.506

*Statistically significant at $P \leq 0.05$

Table (4.16) shows multiple linear regression analysis, the model consists of six important variables has a significant effect on participants' knowledge about breast cancer early detection methods (B= 49.9, p-value=0.001). The test reveals two predictors affecting the knowledge score; previous education sessions, and knowledge about breast cancer signs and symptoms. Previous education sessions affect the knowledge about breast cancer early detection methods positively. Those having previous training have a knowledge score of 8.9 times more than those have not held other variables constant (t= 4.2, P- value= 0.001). Also, A one-unit increase in practicing BSE will increase the knowledge by 5.4 holding other variables constant (t= 2.11, p- value= 0.036). This study finding was nearly in agreement with previous research finding of Akhtari-Zavare et al. (2014) which showed a significant positive correlation between knowledge about breast cancer and practicing BSE. The researcher believed that it could be related to training and education sessions about breast clinical examination which given before practice, its great role to make better change toward quality of care and safety motherhood.

Table (4.17): Factors affecting participants' practice BSE

Variable	B	T	p-value	CI	
				UB	LB
(Constant)	30.492	3.303	0.001	12.247	48.737
Did you get any education session about Breast clinical examination before?	1.138	.390	0.697	-4.626	6.902
Knowledge about breast cancer signs and symptoms	0.061	0.663	0.508	-0.121	0.243
Knowledge about breast cancer risk factors	0.222	3.035	0.003	0.077	0.366
Have you ever done mammography?	6.572	1.803	0.073	-0.632	13.775
Knowledge about breast cancer early detection methods	0.285	2.669	0.008	0.074	0.496

*Statistically significant at $P \leq 0.05$

Table (4.17) shows multiple linear regression analysis, the model consists of five important variables has a significant effect on participants' practice score of BSE (B= 30.4, p-value=.0001). The test reveals two predictors affecting the practice score; knowledge about breast cancer risk factors will increase the practicing score by a factor of 0.22 holding other variables constant (t= 3.0, P- value= 0.003). Also, the knowledge score affects the practice positively in that a one-unit increase in knowledge score will increase the practice score by a factor 0.28 holding other variables constant (t= 2.66, p- value= 0.008).

The study finding was in agreement with findings of other studies as (Al-Azmy et al., 2013; Sani and Yau, 2018). These studies reported that women who had adequate knowledge of BSE were more likely to practice than women who have not. Therefore, from my point of view and my experience that the women could not practice BSE if they do not have adequate knowledge about it.

Chapter Five

Conclusion and Recommendations

5.1 Conclusion

This study is important to assess the knowledge and practices of breast cancer early detection among female nurses. Moreover, this study leads and guides further studies on the effect of breast cancer early detection. However, in this study, the participants were shown a good score of knowledge about breast cancer signs and symptoms (knowledge score 85.3%) and risk factors (knowledge score 77.9%), more than third of them have good knowledge about the breast cancer early detection methods; about half of them have fair knowledge. On the other hand, only 15.8% have poor knowledge. Half of the participants have good practices regarding early detection methods of breast cancer, 34% have fair practices. About 16% have poor practices. Nurses got the opportunity of training on breast cancer screening methods, and educational campaign regarding early detection of breast cancer, this makes the nurses have a better awareness of how to perform BSE. The nurses should be knowledgeable and aware of the early detection of breast cancer by breast self-exam (BSE), clinical breast exam (CBE), and mammography. Also, nurses should be encouraged to ready access to reliable, up-to-date information, which is useful and nurses continuing courses programs concerning breast cancer early detection.

5.2 5.2 Recommendations

In light of the study results, the researcher recommends the following:

5.2.1 For the Ministry of Health

1. Provide regular programs training toward breast cancer early detection should be conducted for all primary health care providers.
2. Activate early detection services of mammograms in the main primary care centers in Gaza Strip.
3. Pay more supervision and follow-up of the breast cancer early detection protocols.
4. The governmental health media should be more influential than other media on people and should represent the view of science about the problem of breast cancer and direct people to good ways of dealing with such a problem.

5.2.2 Recommendations for the health care providers

1. Update information about breast cancer early detection to improve the level of knowledge and practices.
2. Organize seminars for health care providers to effectively educate the general population on programs for healthful primary care.
3. Training on mammography protocol yearly as WHO and MoH recommendations.

5.2.3 Recommendations for future researches

1. Studying the reason for health care provider attitude about noncompliance with performing mammography.
2. Studying knowledge, practices of all health care providers about breast cancer early detection.
3. Comparison of knowledge and practices of nurses toward breast cancer early detection in primary health care in Governmental and UNRWA clinics.
4. Studying knowledge and practices among nurses toward breast cancer early detection of health care providers at hospitals.

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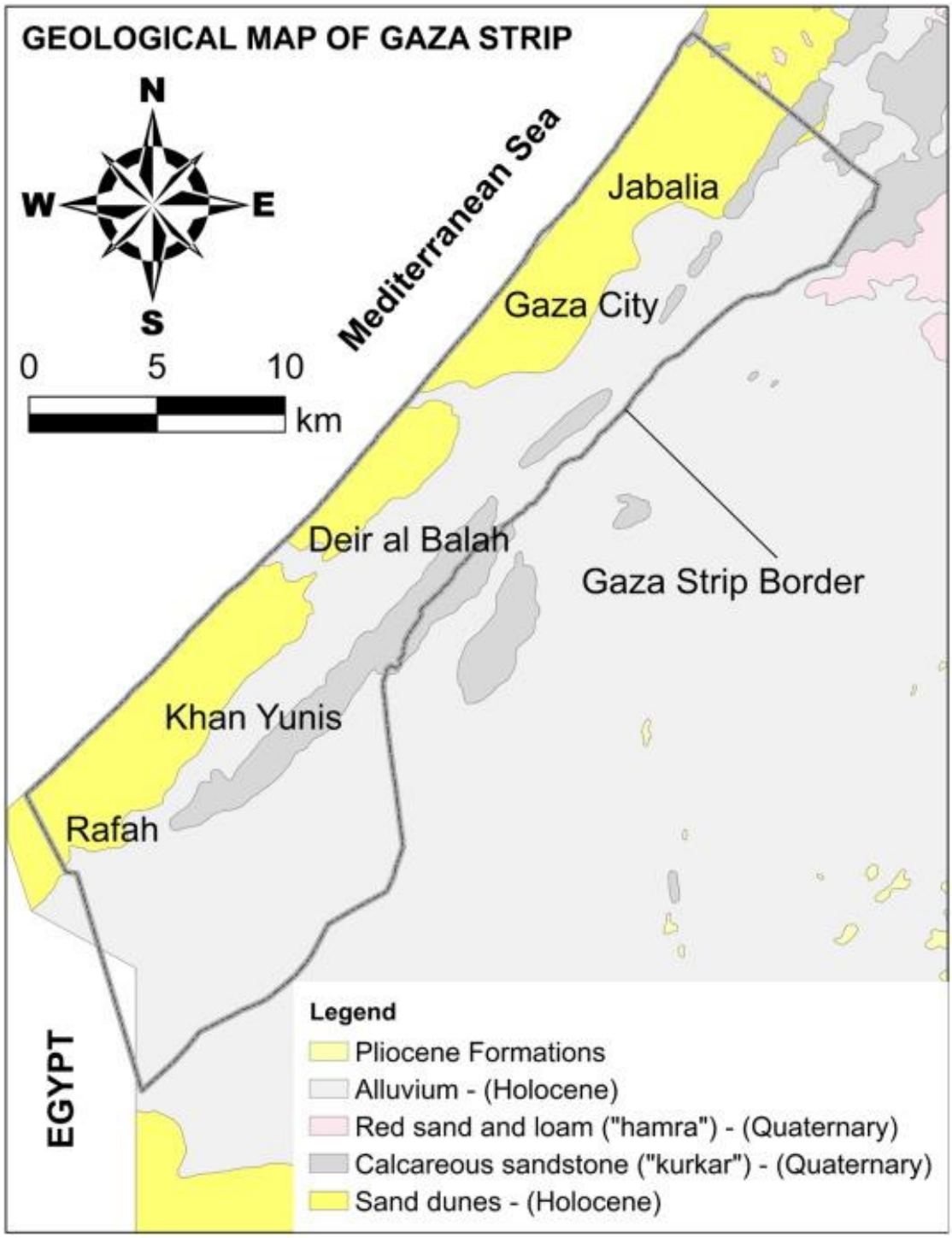
Annexes

Annex (1) Map of Palestine

Annex (2) Map of Gaza Strip



Annex (3) Arabic consent form

عزيزتي المشاركة انا الطالبة فاطمة شلوف اقوم بعمل هذه الاستبانة التي تشكل جزء ضروري من دراستي للحصول على درجة الماجستير في المهن الصحية مسار (تمريض صحة الام والطفل-كلية المهن الصحية بجامعة القدس- القدس ابو ديس) ويسعدني مشاركتك الفاعلة في بحث بعنوان:

Knowledge and Practice of Breast Cancer Early Detection among Female Nurses at Governmental Primary Health Clinics in Gaza Strip

(المعرفة بالكشف المبكر عن سرطان الثدي وممارسته بين ممرضات عيادات الصحة الأولية الحكومية في قطاع غزة)

وقد تم اختياركم ضمن مجموعة العاملين في عيادات الرعاية الصحية الأولية للإجابة على العبارات الواردة فيها. إذا كنت توافق على المشاركة في هذه الدراسة، يرجى التكرم بقراءة العبارات التالية بدّقة والإجابة عنها بموضوعية لما في ذلك من أثرٍ كبير على صحة النتائج والنصائح التي سوف يتوصل إليها الباحث .مع التأكيد بأن هذه البيانات سوف تستخدم لأغراض البحث العلمي فقط، وسيتم التعامل معها بسرية تامة.

ملاحظة / يحق للمشاركة الامتناع على إجابة أي من الأسئلة أو رفض المشاركة في الاستبانة.

على حسن تعاونكم معي أشكركم

الباحثة: فاطمة احمد شلوف

جوال 0597071663

اسم العيادة						
مكان العيادة	شمال غزة	غزة	الوسطى	خانيونس	رفح	
مستوى العيادة	الثالث			الرابع		
القسم						

Annex (4) Arabic Questionnaire

استبانة

1. الخصائص الديموغرافية والتاريخ الطبي		
1.1	العمر	..... سنة
1.2	المؤهل العلمي	☐ دبلوم ☐بكالوريوس ☐ ماجستير
1.3	الحالة الاجتماعية	☐آنسة ☐ متزوجة ☐ غير ذلك
1.4	التخصص	☐ ممرض عام ☐ قابلة
1.5	عدد سنوات الخبرة	..... سنة.
1.6	هل فرد من عائلتك أصيب بسرطان الثدي في السابق؟	☐لا ☐نعم إذا كانت الإجابة نعم، ما هي صلة القرابة **أكثر من إجابة واحدة ممكنة** ☐ أم ☐ أخت ☐ خالة أو عمة ☐ جدة ☐ قرابة من الدرجة الثانية
2. المعرفة حول عوامل خطر الإصابة بسرطان الثدي		
2.1	**أي من العوامل التالية يمكن أن تكون عوامل خطر الإصابة بسرطان الثدي؟**	
	العامل	**نعم** / **لا**

2.1.1	يزيد الخطر مع تقدم العمر		
2.1.2	الوراثة		
2.1.3	السن المبكر عند الحيض (الدورة الشهرية) 12 سنة وأقل		
2.1.4	انقطاع الطمث المتأخر (سن 55 سنة فأكثر)		
2.1.5	العمر عند الحمل الأول 30 سنة فأكثر		
2.1.6	استخدام موانع الحمل		
2.1.7	العلاج بالهرمونات لانقطاع الطمث		
2.1.8	عديمة الولادة		
2.1.9	الضغط العصبي		
2.1.10	الوزن الزائد		
3. معرفة علامات وأعراض الإنذار المبكر بسرطان الثدي			
3.1	**أي من الأعراض التالية يمكن أن تكون علامات الإنذار المبكر وأعراض سرطان الثدي؟**		
	الأعراض	**نعم**	**لا**
3.1.1	نتوء في الثدي		
3.1.2	إفرازات من الثدي		
3.1.3	ألم أو وجع في الثدي		
3.1.4	تغير في حجم الثدي		
3.1.5	تغير لون الثدي وظهور تشققات		
3.1.6	تقرح الثدي		
3.1.7	التغييرات في شكل الثدي		
3.1.8	انقلاب / سحب في الحلمة		
3.1.9	تورم أو تضخم الغدد الليمفاوية في الإبط		
3.1.10	نتوء تحت الإبط		
3.1.11	جفاف الجلد في منطقة الحلمة		
4. معرفة الفحص الذاتي للثدي			
4.1	**ما هو مفهومك لمصطلح الفحص الذاتي للثدي؟**		
4.1.1	التقييم التي تقوم به السيدة للتحقق من وجود اي نتوء او كتل في الثدي		
4.1.2	التقييم الذي يقوم به الطبيب أو الممرضة على الثدي للتحقق من وجود نتوء في الثدي		
4.1.3	استخدام الأشعة السينية لتقييم سرطان الثدي		
4.2	**ما الذي تبحث عنه أثناء الفحص الذاتي للثدي؟ (أكثر من إجابة واحدة ممكنة)**		

4.2.1	السوائل القادمة من الحلمة
4.2.2	شكل وحجم الثدي
4.2.3	التغييرات في الجلد المحيط للثدي، أي تورم ومظهر الحلمة
4.3	**متى يجب إجراء الفحص الذاتي للثدي؟**
4.3.1	بمجرد بدء الحيض (الدورة الشهرية)
4.3.2	في سن الأربعين
4.3.3	في سن 20 سنة
4.3.4	عند تشخيص سرطان الثدي
4.4	**كم مرة يجب إجراء الفحص الذاتي للثدي؟**
4.4.1	شهريا 1-7 أيام بعد الحيض
4.4.2	مرة كل 4 أشهر
4.4.3	عندما يشتبه المرء في حدوث شيء غير طبيعي في الثدي
5. مستوى ممارسات الفحص الذاتي للثدي	
5.1	**هل تمارسين الفحص الذاتي للثدي؟**
5.1.1	نعم
5.1.2	لا
5.2	**إذا كانت إجابتك "نعم" على السؤال (5.1) ، متى تمارسها؟**
5.2.1	شهريا 1-7 أيام بعد الحيض
5.2.2	عندما أتذكر لكن ليس بانتظام
5.2.3	قد أتذكر وأقوم بذلك مرتين في السنة
5.3	**إذا أجبت بـ "لا" على السؤال (5.1)، ما الطريقة التي تستخدمها لفحص الثدي**
5.3.1	الماموجرام
5.3.2	الموجات الفوق صوتية (ألتراساوند)
5.3.3	لا شيء
5.4	**في أي فترة من الدورة الشهرية (الحيض) تقوم بالفحص الذاتي للثدي؟**
5.4.1	قبل الدورة الشهرية
5.4.2	بعد الدورة الشهرية
5.4.3	في أي وقت
5.5	**متى بدأت الفحص الذاتي للثدي؟**
5.5.1	بمجرد بدء الحيض
5.5.2	عند تشخيص سرطان الثدي
5.5.3	عندما تم تشخيص قريب لي مع سرطان الثدي
5.5.4	على عمر 20 سنة
5.6	**كيف يتم عمل الفحص الذاتي للثدي؟**

	الخطوات	لا أوافق	محايد	موافق
5.6.1	في الحمام: استخدم طرف الأصابع، ثم حرك حول الثدي بالكامل بطريقة دائرية تتحرك من الخارج إلى الوسط، والتحقق من منطقة الثدي والإبط بأكملها.			
5.6.2	أمام المرآة: فحص بصريًا للثديين باستخدام الذراعين على الجانبين، ثم رفع الذراعين عالياً، وابحث عن أي تغييرات في محيطها، أو أي تورم، أو تقشير في الجلد، أو تغييرات على الحلمة.			
5.6.3	الاستلقاء: عند الاستلقاء، تنتشر أنسجة الثدي بشكل متساوٍ على طول جدار الصدر وتضع الوسادة أسفل الكتف الأيسر والذراع الأيسر خلف الرأس. -باستخدام اليد اليمنى ، تحريك منصات الأصابع حول الثدي الأيسر برفق في حركات دائرية تغطي كامل منطقة الثدي والإبط . -الضغط على الحلمة ، والتحقق من خروج سوائل او الكتل. - الخطوات يجب أن تتكرر للثدي الأيمن.			
5.6.4	زيارة الطبيب لمعرفة أي تغييرات تم اكتشافها.			
6. معرفة وممارسة فحص الثدي السريري				
6.1	**هل سبق لك أن تلقيت أي محاضرات أو دورات تدريبية حول الفحص السريري للثدي؟**			
6.1.1	نعم			
6.1.2	لا			
6.2	**فحص الثدي السريري هو أداة مفيدة للكشف عن سرطان الثدي؟**			
6.2.1	نعم			
6.2.2	لا			
6.3	**يجب إجراء الفحص السريري للثدي من خلال: (أكثر من إجابة واحدة ممكنة)**			
6.3.1	الطبيب/ة			
6.3.2	ممرضة مدربة			
6.3.3	قابلة مدربة			
6.3.4	السيدة نفسها			
6.4	**يتم الفحص السريري للثدي باستخدام**			
6.4.1	الموجات الفوق صوتية (الترا ساوند)			
6.4.2	اليد			
6.4.3	تصوير الثدي بالأشعة (الماموجرافي)			
6.4.4	أخري.....			
7. المعرفة وممارسة التصوير الشعاعي (الماموجرافي) للثدي				

7.1	**هل يوجد جهاز ماموجرافي في مكان عملك؟**
7.1.1	نعم
7.1.2	لا
7.1.3	لا أعرف
7.2	**هل التصوير الشعاعي للثدي أداة مفيدة للكشف المبكر عن سرطان الثدي؟**
7.2.1	نعم
7.2.2	لا
7.2.3	لا أعرف
7.3	**في أي عمر يجب أن تبدأ التصوير الشعاعي للثدي؟**
7.3.1	من سن البلوغ
7.3.2	من 20 سنة
7.3.3	من 40 سنة
7.3.4	لا فكرة لدي
7.4	**كم مرة يجب أن يتم التصوير الشعاعي للثدي؟ (أكثر من إجابة واحدة ممكنة)**
7.4.1	أسبوعيا
7.4.2	شهريا
7.4.3	سنويا
7.4.4	عندما يتم العثور على كتلة في الفحص الذاتي او الفحص السريري للثدي
7.4.5	لا فكرة لدي
7.5	**هل سبق لك إجراء تصوير الثدي بالأشعة؟**
7.5.1	نعم
7.5.2	لا **إذا كان الجواب بالنفي ، فيرجى الإجابة على السؤال 7.6**
7.6	**لما لا؟**
7.6.1	لم اتجاوز العمر
7.6.2	القيود المالية
7.6.3	التصوير الشعاعي للثدي غير متوفر
7.6.4	أخري .....

شكـــــرا جزيلا على وقـــــتك ومشـــــــاركتك

Annex (5) consent form to scientific advice

السـيد/ة الدكتور/ة: ______________________ المحترم/ة

أقدم لسيادتكم الاستبانة المرفق للتحكيم من قبلكم عن مدي ملائمة الأسئلة الموضوعة بهدف جمع البيانات اللازمة لإنجاز البحث العلمي والذي أقوم به كمتطلب للحصول على درجة الماجستير في تمريض صحة الام والطفل من جامعة القدس ابو ديس – فلسطين التي بعنوان

Knowledge and Practice of Breast Cancer Early Detection among Female Nurses at Governmental Primary Health Clinics in Gaza Strip

General objective : This study aims to assess the knowledge and practices regarding breast cancer early detection among female nurses' at governmental primary health clinics in the Gaza Strip**.**

شكرا لكم على مساعدتي

Researcher:
Fatma Ahmed Shallouf
Mobile 0597071663

Supervisor :
Dr. Ahmed Najem

Annex (6) English consent form

Dear participant

I'm Fatma Shallouf I make this questionnaire as a requirement to obtain a master's degree (MCH program) at Al Quds University, and I'm pleased for your message effectively in a research entitled

Knowledge and Practice of Breast Cancer Early Detection among Female Nurses at Governmental Primary Health Clinics in Gaza Strip

This study carried out by the researcher that your participation contributes to the success of the study aimed to assess Knowledge and Practice of Breast Cancer Early Detection among Female Nurses at Governmental Primary Health Clinics in Gaza Strip.

The researcher wishes to emphasize that the information will remain confidential and for scientific research that does not need to mention names

Note that the participant has the right to refrain from answer any questions or refused to participate.

Thank you for your participation

Researcher

Fatma Ahmed Shallouf

Mobile 0597071663

Name of the clinic					
Clinical address	Northern Gaza	Gaza	Middle zone	Khan Younis	Rafah
Clinic level	III		IV		
Department					

Annex (7) English Questionnaire

Demographic characteristics and medical history			
	Age	……..years	
	Qualification	□Diploma □ Bachelor degree □ Master degree	
	Marital Status	□Single □Married □ Others	
	Profession	□ General nurse □ Midwife	
	Years of experience	……..years	
	Has anyone in your family been diagnosed with breast cancer?	□No □Yes If yes, what is the relation? **More than one option is possible** □Mother □Sister □Aunt □Grandmother Second-degree relative	
	Which of the following features could be risk factors of breast cancer?		
		Yes	**No**
	Risk increases with age		
	The family antecedent of breast cancer (Hereditary)		
	Early age at menarche (≤ 12 years)		
	Late menopause (age ≥ 55 years)		
	Age at first pregnancy ≥ 30 years		

	Use of oral contraceptives		
	Hormone replacement therapy (HRT) for menopause		
	Nulliparous		
	Stress		
	Overweight		
	Which of the following features could be early warning signs and symptoms of breast cancer?		
		Yes	**No**
	Lump in the breast		
	Discharge from the breast		
	Pain or Soreness in the breast		
	Change in the size of the breast		
	Discoloration/dimpling of the breast		
	Ulceration of the breast		
	Changes in the shape of the breast		
	Inversion/ pulling in of the nipple		
	Swelling or enlarged lymph nodes in axillae		
	Lump under armpit		
	Scaling / dry skin on nipple region		
	What do you understand by the term breast self-examination?		
	□ The assessment made on the breast by an individual to check for breast lump		
	□ The assessment made on the breast by a doctor or nurse to check for breast lump		
	□ The use of X-rays to assess breast cancer		
	What do you inspect for during breast self-examination? (more than one answer is possible)		
	□ Fluid coming from the nipple		
	□ Shape and size of the breast		
	□ Skin for changes in the contour, any swelling and nipple appearance		
	When breast self-examination should be done?		
	□ As soon as menstruation starts		
	□ At the age of 20 years		
	□ At the age of 40 years		

	□ When breast cancer is suspected			
	How often should breast self-examination be performed?			
	□ Monthly 1-7 days after menstruation			
	□ Once every 4th months			
	□ When one suspects something abnormal is developing in the breast			
	Do you practice breast self-examination?			
	□ Yes			
	□ No			
	If you answered "Yes" to question (5.1), when do you practice it?			
	□ Monthly 1-7 days after menstruation			
	□ When I remember but not regularly			
	□ I may remember and do it twice per year □ □			
	If you answered "No" to question (5.1), which method do you use to examine the breast?			
	□ Mammogram			
	□ Ultrasound			
	□ Nothing			
	At what period of menstruation cycle do you perform breast self-examination?			
	□ Before menstruation			
	□ After menstruation			
	□ At any time			
	When did you start doing breast self-examination?			
	□ As soon as started menstruating			
	□ When diagnosed with breast cancer			
	□ When my close relative was diagnosed with breast cancer			
	□ At age 20 years □			
	How breast self- examination is be performed?			
	Steps	**Disagree**	**Neutral**	**Agree**
	In the shower or bath: using the pads of fingers, then circularly move around entire breast moving from the outside to the center, checking the whole breast and armpit area.			

	In front of a mirror: visually inspect of breasts with use the arms at sides, next raise the arms high overhead, look for any changes in the contour, any swelling, or dimpling of the skin, or changes on the nipple.			
	Lying down: when lying down, the breast tissue spreads out evenly along the chest wall, the place a pillow under the left shoulder and the left arm behind the head. -Using the right-hand، moves the pads of the fingers around the left breast gently in circular motions covering the entire breast area and armpit. -Squeeze the nipple، check for discharge and lumps. -The steps are to be repeated for the right breast.			
	Visit the doctor for any changes detected.			
	Did you get any education sessions about breast clinical examination before?			
	□ Yes			
	□ No			
	A clinical breast examination is a useful tool for the detection of breast cancer			
	□ Yes			
	□ No			
	Clinical breast examination should be done by (More than one answer is possible)			
	□ Doctor			
	□ Trained nurse			
	□ Trained midwife □			
	□ The individual			
	Clinical breast examination is done using			
	□ Ultrasound □			
	□ Mammography			
	□ Hand			
	□ Others (specify)……			
	Is there mammography in your workplace?			
	□ Yes			
	□ No			
	□ I don’t know			

	Is mammography a useful tool for the early detection of breast cancer?
	□ Yes
	□ No
	□ I don't know
	At what age should mammography be started?
	□ From puberty
	□ From 20 years
	□ From 40 years
	□ After menopause
	□ No idea
	How often should mammography be done? (More than one answer is possible)
	□ Weekly
	□ Monthly
	□ Yearly
	□ When a lump is found on BSE or CBE
	Have you ever done mammography؟
	□ Yes
	□ No, if no, please answer q7.6
	Why not?
	□ Not old enough
	□ Financial constraint
	□ Mammography is not available
	□ I don't have a breast problem
	□ Others (please specify)

Thank you very much for your time and participation

Annex (8) Panel of experts

Name of experts	Place of work
Dr. Arefa Alkaseeh	The Islamic University – Gaza
Dr. Hamza Abdeljawad	Palestine College of Nursing -Gaza
Dr. Yousef Fahajan	Palestinian Ministry of Health
Dr. Yousef Awwad	Palestinian Ministry of Health
Dr. Motasem Salah	Palestinian Ministry of Health
Mr. Abed Elraheem Shagora	Palestinian Ministry of Health
Mr. Ibraheem Mansour	Nursing director Palestinian Ministry of Health

Annex (9) Helsinki Committee Approval

المجلس الفلسطيني للبحث 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/609/19

الاسم:
Name: Fatma Ahmed Aiad Shallouf

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

نفيدكم علماً بان اللجنة قد ناقشت مقترح دراستكم حول:

Knowledge and Practice of Breast Cancer Early Detection Among Female Nurses at Governmental Primary Health Clinics in Gaza Strip

The committee has decided to approve the above mentioned research. Approval number PHRC/HC/609/19 in its meeting on 2019/10/7

و قد قررت الموافقة على البحث المذكور عاليه بالرقم والتاريخ المذكوران عاليه

Signature

Member

Member

Chairman

Genral 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 (10) MoH Approval

State of Palestine
Ministry of health

دولة فلسطين
وزارة الصحة

السيد : رامي عبد سليمان العبادله المحترم

التاريخ:13/10/2019
رقم المراسلة 378722

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

السلام عليكم ,,,

الموضوع/ تسهيل مهمة الباحثة// فاطمة شلوف

التفاصيل //
بخصوص الموضوع أعلاه، يرجي تسهيل مهمة الباحثة/ فاطمة أحمد شلوف
الملتحقة ببرنامج ماجستير التمريض – تخصص صحة الأم والطفل – كلية الصحة العامة- جامعة القدس أبوديس في إجراء بحث بعنوان:-

Knowledge and Practice of Breast Cancer Early Detection among Female Nurses at "Governmental Primary Health Clinics in Gaza Strip"

حيث الباحثة بحاجة لتعبئة استبانة من عدد الممرضات والقابلات العاملات في مراكز الرعاية الصحية الاولية، بما لا يتعارض مع مصلحة العمل وضمن أخلاقيات البحث العلمي، ودون تحمل الوزارة أي أعباء أو مسئولية.
وتفضلوا بقبول التحية والتقدير،،،

ملاحظة /
1. تسهيل المهمة الخاص بالدراسة أعلاه صالح لمدة 4 أشهر من تاريخه.
2. البحث المذكور حصل على موافقة لجنه اخلاقيات البحث الصحي (لجنة هلسنكي)

محمد ابراهيم محمد السرساوي
مدير دائرة/الإدارة العامة لتنمية القوى البشرية ـ

24-10-2019

التحويلات

■ محمد ابراهيم محمد السرساوي(مدير دائرة)	← رامي عبد سليمان العبادله(مدير عام بالوزارة)	إجراءاتكم بالخصوص(13/10/2019)
■ رامي عبد سليمان العبادله(مدير عام بالوزارة)	← منحت عباس خضر حسن(مدير عام بالوزارة)	إجراءاتكم بالخصوص(13/10/2019)
■ منحت عباس خضر حسن(مدير عام بالوزارة)	← معتصم سعيد زهدي صلاح(مستشار)	لعمل اللازم(13/10/2019)
■ منحت عباس خضر حسن(مدير عام بالوزارة)	← صلاح الدين علي عبد الحفيظ الرئيسي(مدير دائرة)	لعمل اللازم(13/10/2019)
■ منحت عباس خضر حسن(مدير عام بالوزارة)	← عبد الكريم سعيد العبد النجار(مدير دائرة)	لعمل اللازم(13/10/2019)
■ منحت عباس خضر حسن(مدير عام بالوزارة)	← فواز ادريس محمد ابو زيادة(طبيب مدير)	لعمل اللازم(13/10/2019)
■ منحت عباس خضر حسن(مدير عام بالوزارة)	← ناهض عبد حسن جودة(مدير دائرة)	لعمل اللازم(13/10/2019)
■ منحت عباس خضر حسن(مدير عام بالوزارة)	← خليل محمد محمود صيام(مدير دائرة)	لعمل اللازم(13/10/2019)
■ ناهض عبد حسن جودة(مدير دائرة)	← خليل ابراهيم مطر ابو قاسميه(مدير دائرة)	للعلم(14/10/2019)

Gaza
Tel. (+970) 8-2846949
Fax. (+970) 8-2826295

غزة
تلفون. (+970) 8-2846949
فاكس. (+970) 8-2826295

Annex (11) Approval from Al-Quds University

Al Quds University
Faculty of Health Professions
Nursing Dept. -Gaza

جامعة القدس
كلية العلوم الصحية
دائرة التمريض- غزة

حضرة الأخ/ د. رامي العمادلة حفظه الله
مدير عام الادارة العامة لتنمية القوى البشرية
السلام عليكم ورحمة الله وبركاته

الموضوع: تسهيل مهمة الطالبة فاطمة أحمد عياد شنوف

تهديكم كلية المهن الصحية بجامعة القدس أطيب التحيات، وترجو من حضرتكم مساعدة الطالبة المذكورة بخصوص جمع معلومات خاصة بموضوع:

Knowledge and Practice of Breast Cancer Early Detection among Female Nurses at Governmental Primary Health Care Clinics in Gaza Strip

وذلك من العاملات في مراكز الرعاية الأولية بوزارة الصحة من ممرضات وقابلات وذلك ضمن رسالة الماجستير الخاصة بها لبرنامج تمريض صحة الأم والطفل.

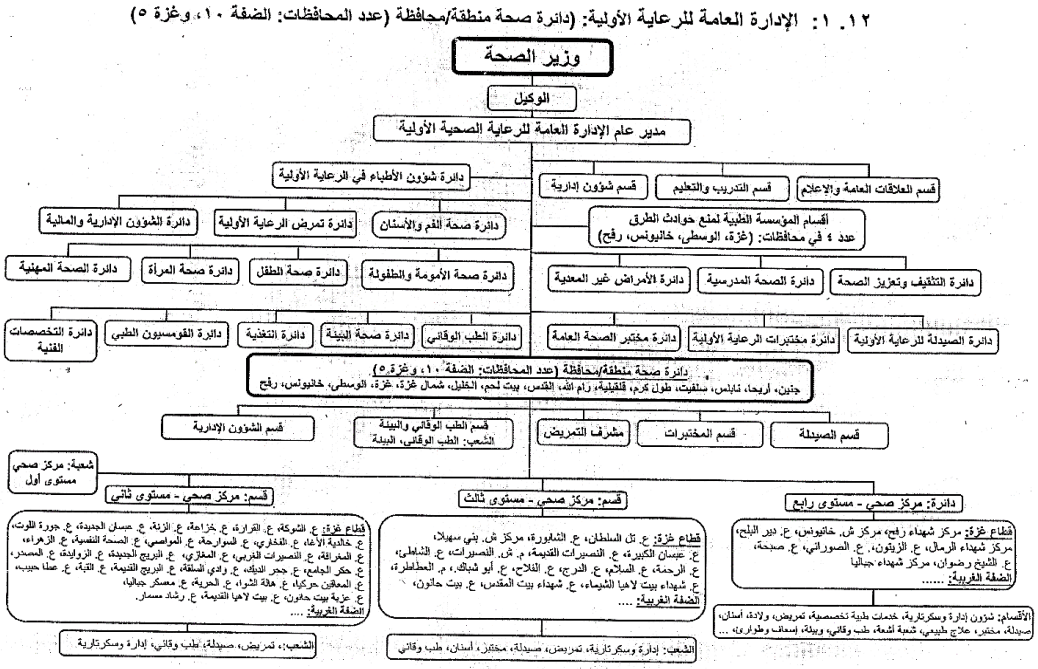
وتفضلوا بقبول وافر الاحترام والتقدير

دائرة التمريض
Nursing Department

د. حمزة محمد عبد الجواد
أستاذ مساعد في علوم التمريض
منسق برامج ماجستير التمريض بغزة
كلية المهن الصحية - جامعة القدس
hamjawad1@gmail.com
تلفاكس: +972 8 2644220
خلوي: +972 599 852755

Annex (12) PHC Hierarch

Annexes (12) PHC Hierarchy .



الْعُنْوَان: الْمَعْرِفَة والممارسات بِالْكَشْف الْمُبَكِّر لسرطان الثَّدْي بَيْن ممرضات مراكز الرعاية الصِّحَّية الْأَوَّلِيَّة الحُكُومِيَّة فِي قُطَّاعِ غزة–فلسطين.

إعداد: فاطمة أحمد شلوف

إشراف: د. أحمد عبد المنعم نجم

الملخص

تبرز الأهمية البالغة للكشف المبكر عن سرطان الثدي في الكشف عنه في مرحلة مبكرة للوقاية من الإصابة بالمرض والوفاه؛ وفي هذا السياق، تؤدي الممرضات دورًا حيويًا في رفع وعي النساء بالكشف المبكر وتوفير المعلومات الكافية والفحص لسرطان الثدي.

هدفت هذه الدراسة إلى تقييم المعرفة والممارسات الخاصة بالكشف المبكر عن سرطان الثدي بين الممرضات العاملات في عيادات الرعاية الصحية الأولية الحكومية في قطاع غزة. اتبعت الدراسة المنهج الوصفي. وقد شملت العينة جميع الممرضات العاملات في مراكز الرعاية الأولية والبالغ عددهن 152 ممرضة في 26 عيادة تابعة لوزارة الصحة في قطاع غزة وبمعدل استجابة 98٪، وتم استثناء الممرضات المجازات والمتطوعات في فترة الدراسة وجمعت البيانات باستخدام استبانة في الفترة ما بين فبراير 2019 إلى مارس 2020، وتم تحليل البيانات باستخدام برنامج الحزم الإحصائية SPSS version 23.

أظهرت نتائج الدراسة أن (53.3٪) من المشاركات يتميزن بمستوى معرفة جيدة جداً لطرق الكشف المبكر عن سرطان الثدي، و(32.9٪) جيد، و(15.8٪) فقط لديهن معرفة ضعيفة. تتبع نصف المشاركات ممارسات جيدة فيما يخص أساليب الكشف المبكر عن سرطان الثدي، حيث كانت نسبة اللواتي يتبعن الممارسات الجيدة جداً (34٪)، بينما كانت نسبة اللواتي يتبعن ممارسات متدنية 16٪. واظهرت النتائج بوجود علاقة إيجابية بين ممارسة الفحص الذاتي للثدي والمتغيرات المتعلقة بالمعرفة (الكشف المبكر، وعوامل الخطر، والعلامات والأعراض)، وثمة اختلاف في درجة المعرفة لدى المشاركات في الدراسة، حيث كان أعلى مستوى للموظفات العاملات في قسم رعاية الحوامل.

تتمتع الموظفات اللواتي تدربن سابقًا على فحص الثدي السريري بمستوى معرفة أفضل (المتوسط = 77.5) من اللواتي لم يكن لديهن تدريب مسبق (المتوسط = 69.7)، حيث كانت الفروق ذات الدلالة الاحصائية (t = 3.5 ؛ p– القيمة 0.001). لا توجد فروق ذات دلالة إحصائية في ممارسة الفحص الذاتي للثدي فيما يخص (وجود تاريخ عائلي أو تدريب سابق على الفحص السريري للثدي).

كان مستوى المعرفة لدى الممرضات اللواتي أجرين تصويراً شعاعياً للثدي سابقًا (78.1) أكثر من اللواتي لم يجرين تصويراً شعاعياً (72.5). ومع ذلك، لا يوجد فرق ذو دلالة إحصائية (t = 1.8 ؛ p– value = 0.06)؛ ولا يوجد ارتباط كبير بين ممارسة الفحص الذاتي للثدي والعمر، إلا أن النساء المتزوجات يمارسن الفحص الذاتي أكثر من غيرهن.

وخلصت الدراسة إلى أن الممرضات يتمتعن بمستوى معرفة جيد وممارسة الكشف المبكر عن سرطان الثدي؛ كما تؤثر الدورات التعليمية السابقة حول المعرفة بطرق الكشف المبكر عن سرطان الثدي بشكل إيجابي. أوصت الدراسة بالحاجة لتوفير بروتوكولات وتنظيم العديد من الدورات حول الكشف المبكر عن سرطان الثدي في هذه العيادات بهدف دعم الممرضات.