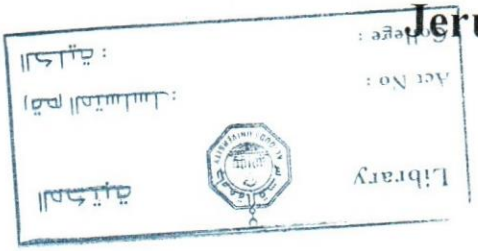
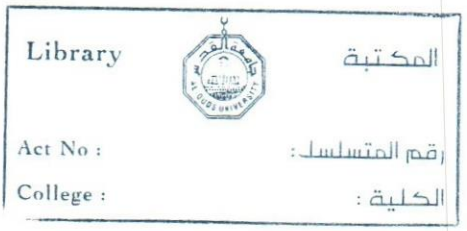
"Knowledge of Palestinian Women on Breast Cancer and Breast Self- Examination in Two Villages-East Jerusalem".





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B.Sc. in Medical Technology from Al-Quds University / Palestine

A thesis submitted in partial fulfillment of requirements for Master degree in Public Health.

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Dedication

In thankfulness this thesis is dedicated to my parents "Hashem and Salwa"; to my husband Anwar; to my brother Rami; and of course to the two candles in my life: My son Abdallah.... And my daughter Sara...
With loving appreciation for their constant support and guidance...

Sylvia Hasanat

Master of Public Health/ School of Public Health

Deanship of Graduate Studies

"Knowledge of Palestinian Women on Breast Cancer and Breast Self- Examination in Two Villages-East Jerusalem."

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Declaration

I certify that this thesis submitted for the degree of Master is the result of my own 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 Sylvia Hashem Hasanat

Sylvia Hashem Mutlaq Hasanat

Date: 21 / 11 / 2001.

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ABSTRACT

This is a cross sectional study aimed at exploring knowledge of Palestinian women on breast cancer and breast self – examination in two villages of East Jerusalem. Data was collected from a convenient sample-using questionnaire and face to face interviews. The consent rate was about 96% and the ages of the participants ranged between (20-64) years. However, results of this study show that 46.2% of the total respondents were from the (20-34) age group, 74.8% were married, 65.2 % were housewives; and 10.6% were illiterate. Of the 385 respondents; 74.3% reported that they had general knowledge on breast cancer but results of this study show that women in the two villages still hold misconceptions related to the disease; and that fear was the predominant feeling expressed throughout the interviews. This study confirmed the strong association between both: the participants' educational level and type of their job with the participant' knowledge on breast cancer separately. Of the total respondents; 72.7% had knowledge on breast self- examination while only 18% indicated that they would classify their breast self – examinations as regular. This study also confirmed the strong association between the educational level of the respondents and the frequency of their breast self exams. However, the most commonly cited resource stated by the participants for obtaining breasts self-examination information were radio and television. Results also show that 53.5% of the total respondents had information on mammography but only 6.3% of those informed women had practiced the mammogram.

A family history of breast cancer was reported in about 15% of all the respondents in the two villages. However, this study does not confirm the association between positive family history and the participants' knowledge on breast cancer on one hand, and between positive family history of the disease and knowledge and practices of breast self-examination on the other hand, (0.087, 0.610 respectively). On the contrast;

this study confirmed the positive association between positive family history and knowledge and practices of mammography, (P = 0.02, P = 0.001 respectively). Results of this study identified a high risk group for breast cancer according to different risk factors, as the majority of the respondents were over the age of 34; 7.5% of the married respondents didn't have children; and of the parous women there were 7.1% who had their first child over the age of 30, in addition to the 15% with positive family history of the neoplasm. The respondents addressed the lack of desire to learn on the disease; the lack of educating materials; and the lack of educating centers in the area as barriers for the lack of information on breast cancer. The majority of the respondents in the two villages agreed with the minor activities of the health clinics on educating the public with an emphasis of their desire to learn on breast cancer. The majority of the respondents show to have a desire to learn on the disease.

Recommendations were suggested in order to educate the public on breast cancer and to promote the utilization of the screening methods especially the breast self – examination.

الخلاصة

تهدف هذه ألاطروحه إلى دراسة معرفة النساء الفلسطينيات المتعلقة بسرطان الثدي وبالفحص الذاتي للكشف المبكر عن سرطان الثدي وذلك في قريتين شرقي القدس . تم جمع البيانات عن طريق تعبئة الاستبيانات الخاصة بالدراسة وذلك من خلال المقابلات الشخصية للمشاركات من كلا القريتين . كان معدل ألا ستجابه حوالي (٩٦ %) و تراوحت أعمار النساء المشاركات في الدر اسه ما بين (٢٠-٦٤) عاما . أظهرت النتائج أن أعمار (٤٦,٢ %) من بين النساء المشاركات في الدر اسه تراوحت بين أل (٢٠-٣٤) عاما ؛ (٧٤,٨ %) منهن متزوجات ؛ (٦٥.٢ %) ربات بيوت؛ وان ما نسبته (١٠,٦ %) من مجموع المشاركات أميات.

من بين (٣٨٥) امراه شاركن في الدر اسه؛ (٧٤,٣ %) أفدن بوجود معلومات لديهن حول سرطان الثدي؛ لكن نتائج هذه الدر اسه أشارت لوجود الكثير من المعتقدات الخاطئة لدى السيدات المشاركات حول المرض وان الخوف من سرطان الثدي كان جليا من خلال المقابلات التي تمت . أثبتت نتائج هذه الدر اسه العلا قه القوية بين المستوى التعليمي للمشاركات وبين وجود معلومات لديهن حول سرطان الثدي ؛ كذلك بين نوع العمل للمشاركات وبين وجود معلومات لديهن حول المرض. من جهة أخرى أفادت (٧٢,٧ %) من النساء بمعرفتهن حول الفحص الذاتي للكشف المبكر عن سرطان الثدي بينما أفادت (١٨%) فقط بممارستهن للفحص الذاتي الشهري للثدي وان مصدر المعلومات المستقاة حول الفحص الذاتي للكشف المبكر عن المرض كان بشكل رئيسي من خلال المذياع والتلفاز. هذا وقد أثبتت نتائج هذه الدر اسه أيضا العلا قه بين المستوى التعليمي للمشاركات وبين ممارستهن للفحص الذاتي الشهري للكشف المبكر عن المرض. النتائج أشارت أيضا لوجود (٥٣,٥ %) من المشاركات ممن لديهن معلومات عن الماموغرافي ولكن نسبه قليلة جدا منهن قد قامت بعمل هذا الفحص.

من جهة أخرى أشارت النتائج لوجود أقارب أصيبوا بسرطان الثدي لـــدى حـــوالي (١٥ %) مـــن بـــين النســـاء المشاركات في الدر اسه في القريتين. لكن هذه الدر اسه لم تثبت وجود علاقة بين كل من: وجود أقارب للمشاركات أصيبوا بسرطان الثدي ووجود معلومات لديهن حول المرض من جهة وبين كون لديهن أقارب أصيبوا بالمرض وبـــين ممارستهن للفحص الذاتي الشهري من جهة أخرى. على العكس تماما أثبتت نتائج هذه الدر اسه العلا قه القوية بـــين وجود أقارب أصيبوا بالمرض وبين ممارسة النساء المشاركات في الدر اسه للماموغرافي.

كانت معظم المشاركات في الدر اسه فوق سن الرابعة والثلاثين ؛(٧,٥ %) من المتزوجات لم يـــنجبن؛ و مـــا نسبته (٧,١ %) ممن لديهن أطفال انجبن طفلهن الأول فوق سن الثلاثين ؛ هذا كله بالاضافه لوجود (١٥ %)ممن يحملن تاريخ مرضي لأقارب توفوا بسرطان الثدي. هذا وقد أفادت المشاركات بان ما يحول دون حصـــولهن علـــى معلومات خاصة بالمرض يتلخص في عدم رغبه البعض أصلا للتعلم عن المرض و بنقص المواد والمحاضـــرات والمراكـــز التعليمية والتثقيف الصحي حول سرطان الثدي هذا مع التأكيد لرغبة المعظم منهن للتعلم عن المرض وكيفية الكشـــف المبكر عنه.

اقترحت بعض التوصيات التي تهدف إلى تثقيف العامة عن سرطان الثدي ولتوعيتهم لأهمية اســـتخدام الوســـائل المختلفة للكشف المبكر عن هذا المرض وبالذات الفحص الذاتي للكشف المبكر عن سرطان الثدي.

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List of Abbreviations

1. AICR: The American Institute of Cancer Research
2. BCAP: Breast Cancer Awareness Program
3. BCERF: Breast Cancer and Environmental Risk Factors
4. BF: Breast Feeding
5. BSE: Breast Self – Examination
6. DCIS: Ductal Carcinoma In Situ
7. FNB: Fine Needle Biopsies
8. HRT: Hormone Replacement Therapy
9. LCIS: Lobular Carcinoma In Situ
10. MOH: Ministry of Health
11. MRS: Magnetic Resonance Spectroscopy
12. NBCC: National Breast Cancer Center
13. PCBS: Palestinian Central Bureau of Statistics
14. TFR: Total Fertility Rate
15. UNRWA: United Nation Relief and Working Agency
16. WHO: World Health Organization
17. WIG: Women Initiatives Group

CHAPTER ONE

1. INTRODUCTION

Breast cancer is the most common type of life threatening tumors of human females throughout the world. The incidence of the disease is rising in most countries since 1970's with one million new cases each year. Breast cancer affect both sexes and can occur at any age, but it is rare before 25 years of age and most frequent over the age of 40. This disease affects both sexes, but it is 200 times commoner in females than males. However, many factors participate in the carcinogenesis of the disease, including environmental; socioeconomic; genetics; hormonal; and nutritional factors. (MacSween & Whaley, 1995).

Breast tumors originate from the epithelial cells that lining the terminal duct lobular unit in one or both breasts. These malignancies are either in situ (noninvasive) tumors, or spreading (invasive) tumors. The in situ carcinoma occurs when the cancer remains within the duct system before penetrating the basement membrane of the breast. On the other hand, the invasive carcinoma occurs when these cells breaks out of the ducts or lobules and extends into the adjacent normal tissues. (Simon, 1999).

The in situ carcinoma forms 10% of all breast cancer cases and it is either Ductal Carcinoma in Situ (DCIS), or Lobular Carcinoma in Situ (LCIS). The (DCIS) is the earliest stage of breast carcinoma, whereas the (LCIS) is not considered a cancer but as a marker for an increased risk of invasive cancer in both breasts. The invasive breast cancer can be either Infiltrating Ductal Carcinoma or Infiltrating Lobular Carcinoma. The first accounts for about 70% of all breast cases, and can spread to the lymph nodes under the arm, while the second accounts for 8% of the cases only. (Simon, 1999).

However, there are other types of breast malignancies such as Paget's Carcinoma, Sarcoma, and Inflammatory Carcinoma, which can be mistakenly treated as an infection or as a dermatological lesion. (Benson, 1980).

The first sign of the disease may be a lump of the breast, thickening, swelling, pain, discharges or skin irritations. The biopsy is the way to rule out or to confirm malignancies. On the other hand, early detection by screening methods is a very useful approach in controlling the disease, because breast cancer can be treated most effectively at its early stages before it has grown very large or before the malignant cells metastasize to other sites of the body. (Abdeen & Bargouthi, 1994).

The main ways of breast cancer screening are mammography, clinical breast and self-breast examinations. Mammography is relatively expensive but it can detect small lumps that are too small to be felt and thus it has been shown that mammography is capable of reducing breast cancer mortality at least in women over 50 years of age. On the other hand, a periodic breast exam by a doctor or trained nurse is recommended. The clinical exams will reduce the human cost of mammography, and it will reduce the rate of the unnecessary biopsies since most of the women who have showed no abnormalities with mammography can be reassured on the spot. (Mittra, 2001).

Abdeen and Bargouthi (1994) reported that monthly breast self-examination is recommended for every Palestinian woman over the age of 20. Mittra (2001) also reported that breast self-examination is considered ideal screening test even it is not effective in reducing mortality from breast cancer, but it is simple, cheap and effective through which women become more familiar with the way her breasts feel, with the ability to detect any abnormalities or changes in her breasts more simply.

Treatment of breast cancer depends basically on the stage and the widespread of the disease at the time of diagnosis. Surgical, hormonal, chemotherapy, and

radiotherapy are all methods used in treating the disease. The effectiveness of the treatment depends on the stage the malignancy present at time of discovery. Recent studies show that the drug Tamoxifen can decrease the incidence of breast cancer in women considered at high risk of developing the disease. (Longlands, 1997).

" About one out of every 48 Palestinian women will have the probability to develop breast cancer during her lifetime." (Abdeen & Bargouthi, 1994). However, little attention has been made to educate Palestinian women on breast cancer and on the importance of early detection of the disease.

This study will be considered the first step in determining the need assessment in order to examine the existing knowledge of Palestinian women on breast cancer and breast self-examination in two villages of East Jerusalem. The assessment should pay particular attention to the misconceptions of the women on the disease and to the existing health education services in the two villages in particular, and in the West Bank in general.

1.1. Statement of the problem

Breast cancer is a fatal disease, which is still growing as a public health problem throughout the world. However, the incidence of breast cancer is relatively low in the developing world; 50% of the world's breast cancer load is in the developing countries. (Mittra, 2001).

In Palestine, women are suffering from a serious Public health problem, which is the cancer of the breast. This disease forms 5.9% of the total deaths among women in the childbearing age (15-49). It is the main cause of death in Gaza Strip as it formed 11.7% of those deaths in that specified age group while this percentage reaches 4.3% in the West Bank. However, breast cancer forms 9.8% of the total cancer deaths in

Palestine, where malignant neoplasm of the digestive system is the first cause of deaths followed by cancer of the respiratory system. (Annual Report, MOH, Palestine, 1999).

Breast cancer is the most important cause of cancer deaths among Palestinian women given those programs of cancer screening is lacking. (Stephenson, 1996).

Women's knowledge and beliefs on breast cancer are important determinants of whether they receive or practice routine screening especially the breast self – examination. Important barriers that can prevent women accessibility to breast cancer screening methods include that women have no knowledge about the disease and about the benefits of screening, the fear of positive results and the fatalistic attitudes toward illness and fear of potential treatment. Yet there is little research about knowledge of Palestinian women on breast cancer and breast self – examination. A study to explore and assess the knowledge of Palestinian women on the disease would thus provide an essential knowledge base that will be used to increase public awareness activities about breast cancer and to enhance screening practices for the early detection of the disease. On the other hand, this information, also, can be used as a first step for future studies on different areas in Palestine, and as a springboard for a discussion of specific recommendations that could be undertaken to achieve certain criteria of policy objectives for women's health.

1.2. Justification and Significance

Breast cancer tends to be detected – in most of the cases- at advanced stages in the developing countries. Miller (1992) reported that this might be due to poor public awareness of the women toward the importance of screening, a fact that will result in a high fatality rate from this neoplasm in the developing countries. (Miller, 1992).

Early detection of breast cancer by screening methods is a potentially, and useful approach in controlling the disease. In other words, finding a breast tumor as early as possible will greatly improve the chance that treatment will be successful. This is because if a tumor is found when it is less than a centimeter; the patient with breast tumor will have a 90% chance of still being alive for 18 years later. (Longlands, 1997). Also Longlands found that a diagnosis of breast cancer means a loss of 12.5 years of life for an average patient. Obviously attempts to detect the disease at a pre clinical stage are very important.

Secondary prevention of gynecologic neoplasms has been proved effective only for breast and cervical cancers. Methods for early detection include breast self – examination, clinical breast exams, and mammography. In populations where mammography is not readily available or too expensive; breast self – examination and clinical exams are very useful in early detection of breast tumors if they are performed correctly and consistently. BSE is a very simple self – care procedure that can detect early modifications of the breast and can be performed by women in the privacy of their homes after minimal instructions.

Although screening methods for breast cancer are very important, efforts should be made to explore the women's knowledge, concepts and practices on the disease. Women who know and are educated on the disease will be more interested on the importance of the screening methods.

This study is intended to serve as an important step on exploring women's knowledge on breast cancer that provide guidance to further studies in the country, and to give recommendations which may be used in policies to improve women health status in Palestine.

1.3. Purpose of the Study

1.3.1. Long Term Goal

The purpose of this study is to raise the concept of breast awareness among Palestinian women in two villages of East Jerusalem.

1.3.2. Specific Objectives

1. To determine knowledge of Palestinian women on breast cancer and breast-self examination in two villages of East Jerusalem.
2. To determine the prevalence of breast self – examination without any indication of proficiency in BSE performance.
3. To examine the relationship between knowledge on breast cancer and different socio- demographic characteristics of Palestinian Women in the two villages.
4. To examine the relationship between the frequency of BSE and different socio demographic characteristics in the two villages.
5. To estimate the number of women considered at high risk of having breast cancer in the two villages in terms of different risk factors.
6. To examine the relationship between knowledge on breast cancer and knowledge and practicing of the screening methods.
7. To examine the relationship between family history of the respondents on breast cancer and the respondent's knowledge on the disease, practicing breast self – examination, and mammography.
8. To address barriers of the women on having knowledge and practices on breast cancer.
9. To propose recommendations for decision-makers in the Ministry of Health regarding health services provided to the women in the two villages.

CHAPTER TWO

2. LITERATURE REVIEW

2.1. Epidemiology of Breast Cancer

Breast cancer is a major public health problem that continues to be a major cause of morbidity and mortality throughout the world. In the countries with a high incidence of this disease such as the United States and the United Kingdom; the problems receives great attention on both scientific and public media. Even in the countries with lower incidence such as Japan, breast cancer remains a cause for concern and attention.

At the global level, the first world conference on breast cancer was held at Queens University in Kingston, Ontario, Canada, 1997. The goal of the conference was to bring together women with breast cancer, survivors of breast cancer, physicians, scientists, different health providers and family members of those affected from around the world. The expected outcomes of this conference are the first complication of ideas to begin drafting and development of Global Action Plan for the eradication of breast cancer and initiating a wide range of activities around the world. (Stone, 1997).

The second conference on breast cancer was held at the Ottawa Congress in Canada in 1999. The conference aimed to educate, share information, strengthen international networks and plan actions into the next century. Dr. Annie Sasco- the Head Epidemiology for Cancer Prevention at the International Agency for Research on cancer- reported that breast cancer killed 385,000 people in 1997, and the number of newly diagnosed cases is expected to exceed one million by the year 2000. (National Breast Cancer Center [NBCC], 1999). Sasco also reported that the international

statistics also show a rapid increase in incidence outside North America and Europe. Over the past five to ten years, Sasco said; breast cancer has for the first time, become more common than cervical cancer among women in the developing world. (NBCC, 1999).

On the other hand, there are 10 to 20 new cases of breast cancer per year per hundred thousand women in Africa, more than 70 in Australia and New Zealand and more than 100 in some North American population groups. (Willet, Rockhill & Hankinson, 2000).

In the United Kingdom, there are nearly 30,000 new cases and over 15,000 deaths each year from breast cancer. Overall, it is estimated that 1 in 12 women will develop breast cancer at some time in their life. (Austoker, 1994).

Austoker (1994) found that breast cancer accounted for over 15,000 deaths in 1992, 19% of all deaths from cancer among women, and 5% of all deaths among women. On the other hand, In the United Kingdom; the age standardized incidence and mortality from breast cancer is the highest in the world. The incidence among the women aged 50 approaches 2 per 1000 women per year, and the disease is the single commonest cause of death among women aged (40 –50), accounting for about a fifth of all deaths in this age group. McPherson, Steel, and Dixon (2000) reported that of every 1000 women aged 50, two will recently have had breast cancer diagnosed and about 15 will have had a diagnosis made before the age of 50, giving a prevalence of breast cancer of nearly 2%. (McPherson et al., 2000).

Breast cancer is the most common cancer in American women, accounting for 32% of all cancers in women. Rosenthal and Stirling (1999) reported that the woman's lifetime risk of breast cancer is 8%, while the lifetime risk of dying from breast cancer is 3.6%.

Newman, Butter, Milliken, and Moorman (1998) reported that approximately 10 to 15 percent of all breast cancers in America are thought to be familial, with about one third of these cases attributable to inherited cancer susceptibility genes, designated BRCA1 and BRCA2.

In American women with breast cancer before age 45 and a family history of the disease, the incidence of BRCA1 mutations jumps to 7.2%. (Isaac, Peshkin & Lerman, 2000).

Rosenthal and Stirling (1999) reported that from the perspective of a family physician with a patient panel that includes approximately 1000 American women, data suggests that one case of breast cancer due to an inherited susceptibility gene diagnosed once every 20 years. (Rosenthal & Stirling, 1999).

Rosenthal and Stirling (1999) reported that breast cancer continues to have devastating impact in the world in general and in the United States in particular. Langston, Malone, Thompson, Dailing and Ostrander (1996) reported that in the United States there are approximately 2.6 million women living with breast cancer. Each year, in the United States nearly 180,000 women are diagnosed with and nearly 44,000women die of breast cancer.

Breast cancer is the most common cause of death from cancer in Australian women. In 1992 there were around 7,500 Australian women diagnosed with breast cancer and one in 14 women will develop the disease if they live to 75 years old age. (Barratt, 1996).

The age standardized mortality rate for Australian women recorded between (1985-1989) whose ages between (45-64) years is 61.1 per 100,000. On the other hand

the incidence rate of breast cancer in the time period for women whose ages between (65-69) years is 97 per 100,000. And for women who are 70 years and older is 135.1 per 100,000. (Kelsey & Horn- Ross, 1993).

With the aim of strengthening epidemiological knowledge on breast cancer, Patavino, Epifani and Menelli (1995) analyzed the geographical and temporal distribution of mortality and incidence of breast cancer in Italy and other countries in the world; attention is focused on recent years and on the influence that the year of birth, the period and age at death have on Italian mortality trend. Patavino et al. (1995) reported that analysis of the latest available data confirm the great variability in distribution of breast cancer in different countries of the world, with greater frequency in economically advanced western countries, urbanized and industrialized areas, white women and in higher socioeconomic classes. Patavino et al. (1995) mentioned that the incidence of breast cancer in the world shows continuos increase, which is more rapid in the countries and among ethnic groups that were until now in lower risk categories, especially in the Mediterranean region. Results of the study show that in Italy, and during the period between (1950-1988), there is a steady increase in the mortality rate from breast cancer, more clearly in the first 20 years.

The age standardized breast cancer mortality rates for Italian women recorded between (1985-1989) were 51.1 per 100,000 for (45-64) age group and 89 per 100,000 for (65-69) age group, this incidence rose to 106.4 per 100,000 for the (70+ years) age group. (Patavino et al., 1995).

In Japan the frequency of breast cancer is now higher than that of the uterine cancer and is expected to surpass that of the stomach to top the list of the Japanese women. In recent years, Kuller (1995) reported that the incidence of breast cancer has increased substantially in Japan, and the breast cancer population is approximately

120,000 women with new cases numbering about 2500 women annually and about 8000 deaths each year. The age-standardized incidence is 27.8 per 100,000 women, with a mortality rate of 6.11 per 100,000 Japanese women.

A study on the Japanese women was conducted in 1993 based on changes in mortality of breast cancer between 1969 and 1990 broken down by the age group. The increase after menopause is evident similarity to the industrialized countries of the West, indicating almost 50% increase in the 40s, and 90% increase in the 50s. (Watanabe, 1993).

In spite of the fact that the incidence of breast cancer is relatively low in developing countries, 50% of the world's breast cancer load is in the developing world. (Mittra, 2001).

Breast cancer is the commonest type of cancer among the Jordanian women, and one most significant finding of the 1997 cancer registry in Jordan is that breast cancer accounted for 14.2% of cancer cases in Jordan, and most of these deadly cases could have been prevented by early detection. (Jordan Times, Feb. 2000).

Breast cancer is the commonest cancer in Sudanese women. It forms 34% of all cancer cases among the women in Sudan, while cervix cancer form 14.5% among them. Together they form almost half the cancers among Sudanese women. 85% of breast cancer patients at present are at advanced stages. This is due to several factors as poverty, illiteracy, and poor medical services in a large country like Sudan, the lack of effective health education activities and early detection programs. For this reason Women Initiatives Group (WIG), decided to concentrate its efforts to establish an early

detection cancer center in Khartoum and this center will act as a nucleus for starting effective health education activities. (NBCC, 1999).

A clinical and epidemiological study was conducted to determine epidemiological profile and clinical - pathological aspect of breast cancer in Tunisia. All cancer cases between first January 1994 and 31 December 1994 were counted and analyzed. In this year 689 new cases of mammary cancers have been diagnosed at the women. The average age of the patients was 50 years and the incidence standardized on the age of the cancer of the breast in Tunisia was 16.7/100,000. (Bulletin du cancer, 1999).

A retrospective study was performed at Al-Ain Hospital in the United Arab Emirates. The objective of this study was to determine the common types of cancer in Al- Ain, and involved 612 cancer patients diagnosed and treated between 1981 and 1995 at the Al-Ain Hospital, which is the main referral teaching hospital in the Al-Ain Medical District. Results show that in females the most common cancer was of the breast (31.6%), followed by cervix cancer (27%). (El Helal, Bener & Galadari, 1997).

In an attempt to study the spectrum of breast diseases in Saudi Arab females, a retrospective study was carried out of all cases of breast biopsies and mastectomies during 26 years: (1967-1992). A total of 915 cases were collected. Carcinoma of the breast ranked third of the breast diseases and forms 14.9% of all the cases. (Amr, Sa'di, Ilahi & Sheik, 1995).

Amr et al. (1995) in their study reported that the vast majority of the carcinoma cases (125 out of 137) were infiltrating Ductal Carcinoma, and the mean age of Saudi Arab females with Ductal Carcinoma was about 47 years as compared to 54 years in the Western countries. Amr et al. (1995) found that many patients were " late presenters" with large tumor size, with skin and/or nipple involvement. Results of the survey suggested a progressive decrease in the ratio of cases of mastitis, and a progressive

increase in the number of cases of breast carcinoma, a fact which should be taken into consideration in the future when studying the epidemiology of breast cancer in Saudi Arabia.

In Israel, each year, breast cancer attacks one in every eight Israeli women, and in more than third of them, the disease has spread beyond the breast by the time it is diagnosed. (Elliman, 1999).

Statistics from the National Breast Cancer Center in Australia, 1997, shows that the age standardized incidence rates for breast cancer differs between the Jewish Israeli women and the Non – Jewish Israeli women. In the years 1990-1992, the age standardized incidence rate in the first group was 81.1 per 100,000, while it was in the second group 22 per 100,000. (Al-Jabari, 1997).

Elliman (1999) reported that breast cancer in Israel attacks, for example, 65 Jewish women compared with 17 Non Jewish women in every 1000 women, and that the incidence is significantly higher among the Asheknazi immigrants to the country.

Another study conducted by Elliman (1999) through which families of different ethnic backgrounds were screened in order to identify environmental and lifestyle factors that may contribute to the development of breast cancer in Israel. One of the findings, Elliman (1999) reported that breast cancer is 50 percent less common among Arab women in Israel than among Jewish women.

However, while breast cancer is far rarer among the Israeli Arab women; it tends to attack women at younger ages, and metastasize more vigorously, and offer far shorter survival. On the other hand, the researchers in Israel have pioneered a method of identifying breast tumors which is called 3TP; it consists of injecting a dye into the

patients blood and monitoring how it is taken up and cleaned by the tumor tissues, using magnetic resonance. But despite all these developments in treatment methods, in the year 2000, there were 36,000 women with breast cancer in Israel. (Elliman, 1999).

A study conducted by Abdeen and Bargouthi (1994) on the Palestinian cancer incidence in the years: 1976-1992, shows that breast cancer was the commonest type of malignancies among the adult women aged (15-49) years with a percentage of 55% of all cancer cases in this age group. According to the older adults, also breast cancer and cancer of the digestive system were the commonest malignancies among women aged 50 and older, accounting for 47% of all cancer cases in the 17 years study period. (Abdeen & Bargouthi, 1994).

Abdeen and Bargouthi (1994) found that with the exclusion of skin cancer, cancer of the breast is the commonest among the Palestinian women with 111 new cases expected to be diagnosed in 2002. In their study, results show that among 3621 cancer cases among the males there was 8 malignancies. On the other hand, from 3435 female cancer cases, there were 980 breast malignancies. The incidence of this neoplasm begins to increase after the age of 30, and since 1976, the incidence rate of the disease increased at an average annual rate of 1.3%. (Abdeen & Bargouthi, 1994).

A study of the United Nations Relief and Works Agency for the Palestinian Refugees UNRWA (1995) shows that the most commoner cancer in a study population of 895 women was of breast with a percentage of 31%. (World Health Organization [WHO], 1995).

A study was conducted by Al- Jabari (1997) to study the prevalence of breast problems among the Palestinian women attending the mammography clinic in the years 1994-1996. A total of 1199 women attending the clinic in the two years study period were included in the study. Al-Jabari (1997) reported in her study that the women of

malignant lesions had a mean age of 56.6 years representing 1.75% of all cases examined. However, 50% of all malignant micro-calcifications were in the 30-39 years. (Al-Jabari, 1997).

In 1999, there were 933 cancer cases in Palestine, 518 for males and 415 for females. There were 91 breast cancer cases with a percentage of 9.8% of the total. All the cases were among females, 44 cases in the Gaza Strip and 47 cases in the West Bank. (Ministry of Health [MOH], 2000).

2.2. Risk Factors for Breast Cancer

There are different predisposing factors that have been identified to increase the risk of having breast cancer, these include the following:

2.2.1 Age, Gender, and Ethnicity

The incidence of breast cancer, like carcinoma in general increases with age, doubling about every 10 years until menopause, after which the rate of increase rises more slowly to a maximum in old age. (McPherson et al., 2000).

Simon (1999) found that more than 80% of breast cancer cases occur in women who live to the age of 85. However, at the age of 40, the women s odds are one in 217, but at the age of 50 the odds are one in 50. (Simon, 1999).

Abdeen and Bargouthi (1994) reported that the risk of breast cancer increases as the age of the woman increases especially after the age of 30, with ¾ new cases occurring between women aged (25-54) years old.

However, age as a risk factor was also discussed by Simon (1999), when he reported that breast cancer in women younger than 30 is very rare, accounting for only 1.5% of all cancer cases.

Breast cancer affects both sexes, but it is more than 200 times commoner in females than males. (MacSween & Whaley, 1995).

The incidence of breast cancer differs in different countries and between different ethnic groups. For example, Native Americans and Asians have lower rates of breast cancer than whites, Hispanics, and African Americans. Simon (1999) reported that the mortality rate in African American is twice that of whites, also African American patients tend to have larger more aggressive cancers. On the other hand, Elliman (1999) found that in Israel Jewish newcomers from Russia have the highest rate of breast cancer at all, while the disease is virtually unknown in the Ethiopian Jewish communities. (Elliman, 1999).

2.2.2.Genetic Factors and Family History

About 10% of breast cancer cases among all the women are due to genetic factors. Breast cancer susceptibility is generally inherited as an autosomal dominant trait. Two breast cancer genes, BRCA1 and BRCA2, which are located on the chromosomes 17 and 13 respectively, have been inherited in a very high risk families, such as those with four or more breast cancers among close relatives. (McPherson et al., 2000).

BRCA1 was discovered in the 1980s and it is known to be involved in tumor suppression. A woman with certain mutations in this gene has a life time risk of 56 to 85 percent for breast cancer and an increased risk for ovarian cancer. In Asheknazi Jewish women, BRCA1 mutations occur in 1%. (Rosenthal & Stirling, 1999).

Mutations in BRCA2 are responsible for an elevated breast cancer risk similar to that occurring with BRCA1 mutations. Similar to BRCA1, BRCA2 mutations are also present in 1% of Asheknazi Jewish women. Claus, Schildkrent, Thompson and Risch (1996) found that mutations in BRCA1 and BRCA2 are associated with early onset breast cancer, and these mutations may account for 50% of inherited breast and ovarian cancer. However, these mutations are also associated with an increase risk in prostate and colon cancers. (Claus et al., 1996).

There are other defective genes that are known to cause breast cancer, including BRCA3, p53, and NOEY2. (Simon, 1999).

In summary, the woman is at risk of breast cancer two or more times greater if she has a first-degree relative (mother, sister, and daughter), who had the disease before the age of 50. The younger the age of the relative when she developed the neoplasm; the greater the risk. The risk increases by between four to six times if two first-degree relatives develop the disease. (McPherson et al., 2000).

2.2.3.Over Exposure to Estrogen

2.2.3.1. Early Menstruation and Late Menopause

Women who start menstruating early in life, mainly before the age 12, or have a late menopause, (after the age 55) have an increased risk of developing breast cancer. On the other hand, women who have her natural menopause after the age 55 is twice as likely to develop breast cancer as if she experiences the natural menopause before the age 45. (McPherson et al., 2000).

2.2.3.2. Pregnancy and Abortion

Studies have detected that pregnancy appears to increase the risk of breast cancer for up to 15 years following the first birth, especially in older women, but after that it was noticed that women who have given birth have a lower risk than those who have not do. (Simon, 1999).

Abdeen and Bargouthi (1994) reported that the nulliparity and late age of the women at first birth both increase the incidence of breast cancer. McPherson et al. (2000) reported that the risk of breast cancer in women who have their first child after the age of 30 is about twice that of the women who have their first child before the age of 20.

Some studies have detected an increased risk of breast cancer in women who have had abortions. Simon (1999) said; that one reason for that is possibly due to the high estrogen levels in the first trimester, the time when most abortions are performed. On the other hand, results from different epidemiological studies proved no consistent effect of first trimester induced abortion upon a woman s risk of getting breast cancer later in her life. (WHO, 2000).

2.2.3.3. Oral Contraceptives

The agreement of different epidemiological studies shows those women who use the oral contraceptives are at increased risk of breast cancer. MacSween and Whaley (1995) reported that the role of the oral contraceptives on the etiology of breast cancer is difficult to be interpreted because of different factors. Simon (1999) noticed that a small risk for breast cancer tends to develop in women especially:

1-while taking the oral contraceptives

2-about ten years after stopping the pill

2.2.3.4. Hormone Replacement Therapy

Studies have indicated an increase risk for breast cancer in women taking Hormone Replacement Therapy (HRT) by a factor of (1.023) for each year of use. Simon (1999) reported that HRT increases breast tissue density, thus reducing the sensitivity and specificity of screening methods like the mammograms.

2.2.4. Breast Abnormalities

A woman's history of breast abnormalities likes the epithelial hyperplasia have a four to five times higher risk of developing breast cancer than women who don't have any proliferate changes in their breasts. More over, McPherson et al. (2000) reported that women with breast abnormalities and a family history of breast cancer have a nine-fold increase in risk. In general, Simon (1999) points out those benign tumors may increase risk of breast cancer after many years, particularly if these tumors are complex.

2.2.5. Diet

Some experts believe on the close correlation between the incidence of breast cancer and dietary fat intake in different populations, although the true relation between breast cancer and fat consumption does not appear to be strong.

However, fat intake is associated with obesity. McPherson et al. (2000) reported that obesity is associated with a twofold increase in the risk of breast cancer in

postmenopausal women, whereas it is associated with a decrease incidence among pre-menopausal women. (McPherson et al., 2000).

Several epidemiological studies found that the dietary levels of the major antioxidant could be related to the prevalence of cardiovascular diseases and cancer in a way that higher the intake of these vitamins the lower the level of the disease. (Folkers, Brown, Judy & Morita, 1993).

A prospective study of the intake of vitamin C, E, and A and the risk of breast cancer was conducted by Hunter and Willett (1993). In this study, it has been hypothesized that large intakes of the antioxidant vitamins C, E & A reduce the risk of breast cancer. Results from this study shows that there is no evidence of a protective influence of vitamin C or vitamin E on the incidence of breast cancer. On the contrast researchers observed a significant inverse association of vitamin A intake with the risk of breast cancer. (Hunter & Willett, 1993).

2.2.6. Environmental Factors

The age adjusted incidence and mortality for breast cancer differs from one country to another by a factor of five. McPherson et al. (2000) reported that results from a study on the migrants from Japan to Hawaii show that the rates of breast cancer in the migrants assume the rates in Hawaii within one or two generations, indicating that the environmental factors such as the exposure to estrogen like chemicals (for example: Xenoestrogens) have been suspected to increase the risk of breast cancer. (Simon, 1999).

Several studies observed the effect of the exposure to radiation and electromagnetic fields on the increased risk of breast cancer. McPherson et al. (2000)

Reported that a doubling of risk of breast cancer was observed among teenage girls exposed to radiation in the Second World War.

Abdeen and Bargouthi (1994) reported that about 8.0% of all human malignancies are caused by environmental factors (such as chemicals and industrial products like pesticides) which can be preventable.

Several studies have observed the increased incidence among "Westernized Japanese" and "Westernized Chinese" women even though the incidence of breast cancer is lower in China and in Japan than Western countries like Britain. This is almost certainly due to the environmental factors. (MacSween & Whaley, 1995)

2.3. Knowledge and Practices on Breast Cancer and Breast Screening Methods

Regular breasts self examination, regular mammography, and clinical breast examination are the recommended methods of breast cancer screening methods. The first sign of breast cancer may be a lump in the breast, thickening; swelling; skin irritation; pain or discharge of the nipple.

A breast self examination is one of three screening tests that recommends helping detect breast cancer at its earlier stages. The main goal of these screening tests is to find cancers at earlier stages enough to give the women the chance of living a longer time. The American Cancer Society believes that although mammography is the most sensitive screening method; a small percentage of breast cancers do not show up on mammograms but can be felt by a woman or her doctor.

Abdeen and Bargouthi (1994) suggested that practicing regular breast self exams by the women is very important, because the women will become more familiar with

her breast, and they will become capable of detecting any small changes in their breasts. (Abdeen & Bargouthi, 1994).

In the second edition of Dr. Susan Love's Breast Book (1995), Dr. Love wrote that 80% of cancers are found by the women themselves when causally touching their breasts or when practicing the monthly breast self examination. Dr. Love uses this information to emphasize that a woman who knows how a normal breast functions and feels throughout her life is empowered by a sense of control. (Love, 1995).

The best time for breast self examination (BSE) is about a week after the period ends and for women who are not having regular periods; they must do the BSE on the same day every month. (MacSween & Whaley, 1995).

A descriptive survey was conducted to identify and describe breast self – examination knowledge and practices of young women in America. The sample consisted of 65 female university nursing students, whose ages ranged between 17 and 45 years. Data was collected using self- administered questionnaires and analyzed using descriptive analysis. The results of the study were that 99% of the sample population had performed the breast self-examinations in the previous 12 months. About 44% of these participants indicated that they would classify their BSE as regular; only 27% of the participants reported that they had examined their breasts from 9 to 12 times in the previous year. However, no significant relationship was found between a family history of breast cancer and regular breast self-examinations.

(Budden, 1995).

Phillips, Cohen, and Moses (1999) conducted another study in order to explore the beliefs, attitudes, and practices related to breast cancer and breast cancer screening among low and middle-income African American women. A total of 26 African American Women, age 40-65, selected from three employment groups, recruited from a

community – based center in a moderate – sized urban area. Discussions were made with the participants and analyzed using thematic context analysis techniques. Results shows that when breast cancer was discussed, fear was the predominant feeling expressed in all groups. This fear was a primary reason not to engage in breast cancer screening. Unemployed women and service workers emphasized the role of violence in causing breast cancer, whereas teachers discussed injury and sex as causing breast cancer.

Results of this study shows that African American women still hold misconceptions regarding the etiology of breast cancer and fatalistic perspectives regarding breast cancer outcomes. (Phillips et al., 1999).

In order to examine perceived barriers to performing breast self examinations in women of varying age groups and educational levels and investigate the relationship of age and education to frequency of breast self examination; a study was conducted by Sensiba and Stewart (1995) on 374 women in nursing center and clerical offices. Chi square analysis comparing age and educational levels to breast self examination frequency showed no significant differences among groups. Cross tabulation suggested that differences in perception of individual barriers to practice might exist among women of different age groups and educational levels.

Results show that less educated women, need information to reduce fear, while women at higher education levels may benefit from help in developing their information on breast cancer screening methods. (Sensiba & Stewart, 1995).

A survey was conducted among Swedish women in order to determine whether women carry out regular breast self examination, and to describe their knowledge of,

and attitudes towards breast cancer. The sample was 200 randomly selected women. The response rate was 81%and the results show that only 10% of the sample practice breast self-examination. On the other hand, neither does age, educational background, or occupation, nor having knowledge of breast disease and medical outcome associated with breast self-examination practice. On the other hand, having a close relative or friend with breast cancer did not affect the practice of breast self-examination. (Person & Johansson, 1995).

Morgan, Park and Cortes (1995) studied beliefs, knowledge and behaviors about breast cancer among Hispanic women. Data was collected from 1413 women. The most important findings are that a large numbers of women had misconceptions on breast cancer, such as the belief that bumps cause cancer. Fifty eight percent believed that surgery causes cancer to spread, this belief prevents the Hispanic women from undergoing early intervention procedures, such as lumpectomy.

The conclusion of this study was cancer prevention programs targeting the Hispanic women should emphasize on educating the women to explore the inaccurate beliefs about cancer that may inhibit preventive health behaviors. (Morgan et al., 1995).

A national survey was conducted among the well women in Australia in order to explore their knowledge; attitudes and self reported behavior in relation to breast cancer. A study was designed by Barratt (1996) where a total of 3000 women were surveyed, aged 30-69, from across Australia. The most important finding of this survey is that most of the women were confused about risk factors for breast cancer. They tended to underestimate the increase in risk with age. However, 43% of the respondents thought that women were at most risk of developing breast cancer before the age of 50. On the other hand, they overestimate the importance of family history. Nearly a quarter of the sample thought that smoking was a risk factor for breast cancer. The survey also

provided a great deal of information about women view of their personal risk, access to information, genetic issues and medicolegal issues. (Barratt, 1996).

In order to explore knowledge, attitudes, beliefs and practices regarding breast cancer among South Asian women; a descriptive exploratory study was conducted on 57 South Asian women, age 40 and over from India and Pakistan. An interview was conducted with each respondent that contained questions regarding knowledge, attitudes, beliefs and practices about breast self-examinations, breast cancer and mammogram. Results shows that 12% of the participants practiced BSE monthly, and 47% had never had a mammogram. The majority of 54% said that they don't know very much about breast cancer. On the other hand, 21% of the women said that detecting cancer early was very important, only 5% reported that breast cancer could be cured. Age and education of the respondents showed no statistically significant relationship with the breast health practice scores.

Results of this study emphasize the needs to educate these women on breast cancer and the benefits of breast cancer detection practices. (Choudry, Srivastava & Fitch, 1998).

A study was conducted by Hitchcock, Steckevicz and Thompson (1995) to examine the associations of certain demographic, insurance, health care, health history, and health practice variables with frequency of screening mammograms received during the past five years. A sample of 350 women aged 40 through 69, never diagnosed with breast cancer was interviewed. Results shows that certain variables such as younger age, having a first degree relative with breast cancer, and having annual clinical breast examinations were statistically significant independent predictors in logistic regression analyses of regular utilization of mammography during the past five years.

However, result shows that the frequency of breast self-examination was unrelated to the frequency of mammograms. (Hitchcock et al., 1995).

Carpenter and Colwell (1995) conducted a study in order to determine the relationship between cancer knowledge and cancer screening self-efficacy in the Mexican women in the United States in which one hundred twelve Mexican American women living in Texas were surveyed regarding their self – efficacy toward engaging cancer-screening activities. Each respondent answered questions related to general cancer knowledge, cervical cancer and pap smears, breast cancer and breast self-examinations (BSE), and colorectal cancer. Results shows that a majority of the responders had significant misconception related to breast cancer causation, symptoms, and treatment and expressed feelings of little control over prevention of the disease. There were strong relationships between all of the knowledge variables examined and between knowledge and self-efficacy related to colorectal cancer screening and Breast self-examination.

The results of this study suggested that increased knowledge is associated with increased self-efficacy for cancer screening. (Carpenter & Colwell, 1995).

A two year study was conducted by Tanjasiri (1999) to assess and analyze the breast cancer knowledge, attitudes and screening practices of women aged 40 years and older in two Pacific Islander populations (Tongan and Chamorro) in Los Angeles and Orange County. Data from the California Cancer Registry show breast cancer is the most common cancer site for these Pacific Islander American women. Between 1997-1999, 530 women (227 Chamorros and 303 Tongans) completed the surveys. Results shows that among Tongans 25.7% ever had a clinical breast exam, 25.1% ever had a mammogram, and only 40.4% ever performed a breast self examination. Among Chamorros, 92.8% ever had a clinical breast exam, 76.8% ever had a mammogram, and

37.3% ever performed BSE. This study also identified barriers to screening, including cost, language, and lack of knowledge for the two populations. (Tanjasiri, 1999)

2.4. Interventions on Breast Cancer

2.4.1. Screening Interventions

Screening is very important in the management of breast cancer, because the earlier the stage at which breast cancer is detected; the greater is the benefit. Several screening programs are implemented around the world. For example in the United States of America, women with 50 years old and over should have a screening test annually, whereas in Israel, screening protocols are targeting women between (50-64) years old, and screening tests are performed each two years.

However, in Britain, screening protocols are subjected to women between (50-64) years old, and every three years. The National Survey Breast Screening Program in the United Kingdom aims to screen women aged (50-64) every three years by mammography.

According to this policy, there are certain guidelines for the general practitioners about specific categories of women to be included in the screening protocol and these include women with family history of breast cancer, women with symptoms between routine mammography, women with breast cancer, and women receiving hormone replacement therapy. (Austoker, 1994).

In 1991, a program funded by the Commonwealth and State governments began operation. This program is known as "Breast Screen Australia" and still actively recruits and screen women aged (40-79) years, but special attention is given to women aged (50-

69) years. This national program offers the opportunity for the Australian women to have regular free mammographic screening, so they can reduce their chance of dying from breast cancer. (NBCC, 1999).

A task force organized by the National Institutes of Health and the National Human Genome Research Institute has proposed a set of provisional consensus recommendations for monitoring known carriers of BRCA1 and BRCA2 mutations. These recommendations were published in the March 16,1997. The consensus suggested that known carriers should begin performing monthly breast self-examinations at age 18 and should begin having annual clinical examination and mammography at age 25. (Rosenthal & Stirling, 1999).

However, the Canadian breast screening guidelines have been implemented since 1988. Several studies were done to evaluate the participation rates of the women in the screening programs. Grasse, Perrault and Joanisse (1996) designed a study to describe changes in breast screening knowledge, practices and attitudes among the Canadian women since the initiation of a regional screening program in Ottawa-Carleton in 1991. A survey was conducted on 384 women aged (50-69) years old, and it was noticed that between 1991 and 1994 there were significant increases in the percentage of screening practices of the participants. For example, there were a significant increases in the percentage of women practicing the monthly breast self-examination (from 46% to 54%), also there were significant improvements in knowledge and encouragement to have a mammogram among the participants.

The authors reported that further studies are needed in order to evaluate strategies to align practices with Canadian breast screening recommendations. (Grasse et al., 1996).

The American Cancer Society recommends periodic mammography, clinical breast examination and breast self-examination beginning at age 40 years for

asymptomatic women at risk of breast cancer. However, the International Union against Cancer, the American Cancer Society and the National Cancer Institute of the United States have convened a series of workshops and planning meetings to consider the available data and outline plans for future research regarding the efficacy of breast cancer in younger women. Plans are being developed to conduct a randomized trial of mammography in women younger than 50 years in different European sites. Successful completion of this randomized trial will help in providing critical data on the efficacy of breast cancer screening in younger women. (Mettlin & Murphy, 1995).

Several screening studies were conducted to address the role of breast self-examination on survival among women diagnosed with breast cancer. One of these studies was a prospective study conducted in Finland, through which survival data were analyzed from 604 breast cancer patients applying for prosthesis between 1984-1986. Breast self-examination practice data were available for 562 of the 604 breast cancer patients. Cases were followed up until the time of death or the end of 1991, whichever come first. There were 134 deaths (24%) due to breast cancer in the study group while there were 514 deaths (23%) in the comparison group. Results shows that among the study group no survival differences were found between women reporting monthly BSE practice, less than monthly BSE practice and no practice. (NBCC, 2000).

However, a case series study relating BSE practice with survival from breast cancer up to six years after diagnosis was conducted in Britain. Women were asked if they had ever practiced BSE and if so whether they had been taught BSE. Results shows that among the 616 women with breast cancer, 322-practiced BSE and of these 226 had been taught BSE. while the remaining 294 women had not practiced BSE. Survival

from breast cancer up to six years after diagnosis was compared among the group of women who were taught BSE and those who were not. The survival rates were 73.1% for the BSE taught group and 66.1% for the other women. Authors stated that the difference in survival curves for the two groups was significant at the 0.07 level. (NBCC, 2000).

In order to gain a clear picture of the influence of BSE to survival of breast cancer, another study was conducted in Japan. This Japanese study focused on women diagnosed with breast cancer and compared those detected by BSE with those detected by chance in relation to stage at diagnosis and survival rates at five and ten years post-diagnosis. Women in this study were diagnosed with breast cancer during the period 1968-1987. Results shows that survival rates for those women whose disease was detected by BSE were significantly better than for those women whose disease was detected by chance. However, the risk of disease among patients whose cancer was detected by BSE was smaller than for those detected by chance. (NBCC, 2000).

2.4.2.Dietary Interventions

Dietary interventions will be possible because there are certain dietary factors associated with increased risk of breast cancer. McPherson et al. (2000) reported that the reduction of dietary intake of such a factor in whole communities would need major social and cultural changes. The American Institute of Cancer Research (AICR) published a report in 1997 stating that " diets high in vegetables and fruits probably decrease the risk of breast cancer."

However, Stephanie Smith-Warner, Ph.D., from the Harvard School of Public Health and his colleagues reanalyzed the combined data from eight studies in which the health and habits of women are followed over time to see who does and does not

develop the disease. A total of over 350,000 women had participated in the eight studies, and there had been 7,377 new cases of breast cancer diagnosed. Investigations ranged from six to eleven years in length and the women were adults between the ages of 20 to 93 years. The investigators found no statistical associations between risk of breast cancer and consumption of green leafy vegetables, fruits and vegetables. In other words, the authors noted that there is no significant relationship between the consumption of fruit and vegetables during the adulthood with breast cancer risk. (Kava, 2001).

In the United States of America, Bob Arnot is well known in his breast cancer prevention diet book. Arnot put a diet plan with 12-step program for preventing breast cancer. According to Arnot; this plan requires drastic lifestyle changes. (Martin, 1999).

Breast cancer researcher Gertraued Maskarinec, M.D., Ph.D., of the University of Hawaii, notes that a little as half a cup of tofu may help in reducing the risk of breast cancer. Tofu contains plant estrogen compounds called (phytoestrogens) that may lower the risk of having breast cancer by blocking circulation of the natural estrogen.
On the other hand, alcohol intake induces estrogen production, more specifically the circulating estradiol, and thus increases the risk of breast cancer. Paolo Toniolo of New York University and Margaret Dorgan of the National Cancer Institute have reported that women with higher levels of circulating unbound estradiol have greater risk of developing breast cancer than women with lower levels. Several studies shows that one drink of alcohol daily can raise the risk of breast cancer slightly, but three drinks of alcohol can more than double it. (Baghurst, Record & Syrette, 1997).

2.4.3. Technological Intervention

Mountford (1998) investigated the possibility that the proton magnetic resonance spectroscopy (MRS), could monitor the breast tumor development. This technology doesn't report the total chemical contents of the cell, but it monitors the pools of chemical molecules that are active at the stage of the development process. Thus the MRS offers the chance of monitoring these alterations in the chemistry of the cell, providing a better tool for the diagnosis of this pathology.

The study on MRS was conducted on more than 250 women with breast lumps or symptoms. Fine needle aspiration biopsies (FNB) were taken from the breast and examined by the MRS and then by conventional histology. Results shows that MRS identified choline-containing metabolites, and discrimination between invasive cancer and benign tissues depend basically on the quantity of the choline in the cell when standardized to other chemical compounds as creatine, phosphocreatine and lysine present in the same sample. Results shows that the conventional histological methods reported 21 case of ductal carcinoma in situ (DCIS) from the total sample. On the other hand the MRS identified the (DCIS) cases and also subcategorized these cases into two categories. Category A contained (DCIS) characterized of high choline to creatine/lysine ratio, and category B contained (DCIS) characterized with a low choline to creatine/ lysine ratio similar to that of benign tumors. MRS can detect the very small microinvasions in the samples, because it ranked the specimen in the invasive category by the detection of the micro chemical changes occurring in cells progressing from in situ to the stage of invasion prior to any morphological manifestation. However, the most exciting aspect of this technology is the subcategorisation of DCIS where some

lesions already are identified as malignant, but is not detectable by the light microscope. (NBCC, 1999).

2.4.4. Treatment Interventions

Several studies were conducted on the drug tamoxifen as a treatment for breast cancer. A study conducted on 3338 women at risk of having the disease equal to that of a 60 years old women showed a 47% reduction in the risk of invasive neoplasm and also about 50% reduction in the rate of the non-invasive breast cancer in those women taking tamoxifen. However, tamoxifen reduced the incidence of osteoporotic fractures especially in the women's hips by 19%. On the other hand, the drug raloxifene, which is a chemical compound similar to tamoxifen, showed a reduction of 54% in the number of breast cancers among women who were treated for osteoporosis by raloxifen. Studies on the two drugs (tamoxifen and raloxifen) suggested their action by the reduction of the estrogen receptor positive breast cancers. (MacPherson et al., 2000).

The estrogen receptor is involved in breast cell development and in the growth of the cancer tumor. Some environmental agents that are similar to estrogen in function can affect the rate of estradiol metabolism and can alter binding with the estrogen receptor and the proliferation of the epithelial cells; consequently this will influence the development of breast cancer. These compounds are called xenoestrogens. Tamoxifen inhibits cell proliferation by interfering with the receptor. Tamoxifen is considered as anti-estrogens that bind to the estrogen receptor, as a result inhibition of genes encoding growth regulating factor and the progesterone receptor occurs. (Davis, Axbrod, Osborne, & Telang, 1997).

2.4.5.Educational Interventions

The Healthy People 2000 – National Health Promotion and Disease Prevention Objectives call for an increase in breast health education to the public to increase women's knowledge about breast cancer and the importance of screening. A breast health education intervention for community health professionals was designed, implemented and evaluated. Workshops and seminars using a comprehensive breast health education curriculum were provided to the health professionals. This intervention showed an increase in the knowledge of the participants about breast cancer and an increase in their skills in performing the breast self- examination. After six months these participants reported an increase in the frequency of breast self examination performance. (Reding, Huber & Lappe, 1995).

In order to determine the differences in the frequency of breast self-examination as a result of certain informational intervention; Champion (1995) conducted a prospective study. Data on the outcome measures were collected after one year following the intervention to determine the effect on BSE measures. The educational intervention consisting of information, breast self-examination demonstration, and follow up demonstration significantly increased the frequency and proficiency of the BSE one year after intervention. Consequently teaching breast self-examination together with the assessment of the beliefs and concepts toward breast cancer is useful in improving screening skills for the participants. (Champion 1995).

The Program on Breast Cancer and Environmental Risk Factors was designed in the New York City in the United States. In attempts to educate women about environmental risk factors for breast cancer, BCERF oriented community-based educators whose goals are to create awareness among the public on breast cancer and on the environmental risk factors associated with the disease. This program composed of

risk reduction strategies involve instructions on the reduced exposure to pesticide and other chemicals in the environment including home, play and different lifestyle changes and new policies. (Lum, 1995).

However, Chapman, Elstein and Hughes (1995) studied the effects of materials for educating patients about treatment options for breast cancer on knowledge about the disease, preferences for alternative treatments, and how changes in knowledge were related. A sample of eighty-two undergraduate students acted as advisors to a hypothetical patients were completed a knowledge test and rated their preferences for three different treatment options. These options are: breast –sparing surgery with radiation, mastectomy followed by reconstructive surgery, and mastectomy followed by prosthesis, all these options were reported before and after viewing a videotape and a booklet version of the educating materials on breast cancer. Both formats increased knowledge scores about the disease, but viewing the videotape resulted in preference shift toward breast-sparing surgery, this was due to features of the video that were not included in the booklet, such as the interviews with other diseased patients with breast cancer. Results showed that knowledge gains were uncorreletaed with preference changes. (Champan et al., 1995).

Gardiner and Swanson (1995) proposed a study to identify factors associated with the use of screening methods in certain American farm population, before and after a community – based educational intervention. This educational intervention composed of providing information about breast cancer risk and community sources for screening to the agricultural community members. Sample for this study included 1545 women, and results showed that the rural participants in the intervention community demonstrated

significant changes in their knowledge and attitudes about breast cancer. According to the Mammography, the author noticed that mammography usage was significantly higher among the women who had higher scores on the knowledge and risk factors of breast cancer. Results of this study support the role of education in raising the awareness of the women that emphasize the importance of early detection screening methods. (Gardiner & Swanson, 1995).

In an attempt to educate the health professionals on breast cancer, Abdel Hadi, a researcher at the King Fahed Hospital in the Saudi Arabia, conducted a study on 300 women in the medical field to be trained as future health education providers. Abdel Hadi said, that only a small number of Arab women are aware of the proper methods of conducting breast self –examination and on the importance and benefits of screening methods. However, in the Arab world, also there is a few of the awareness programs. Through her study, the researcher recruited 300 women from the medical field in order to prepare them as a future health providers in an attempt for the development of Breast cancer awareness program (BCAP) in Saudi Arabia. First, the women were interviewed and asked to fill questioners related to demographic data, family history on breast cancer, performance of BSE, timing of BSE, and their attitudes toward mammography. Results for this study showed that 78% of the participants had previously performed BSE, and only 17.3% had performed the monthly exam at the proper time, and only 42.7% had agreed to mammography screening. Results were disturbing, since from the 35 subjects who had positive family history of breast cancer only 10 of (28.5%) performed the regular BSE while only 20 of the 35 had agreed to mammography screening. Results of this study raised the issue of the critical needs of awareness and educational programs even among the people working in the medical field. (Abdel Hadi, 1999).

CHAPTER THREE

3. MATERIALS AND METHODS

3.1. Design

The research design of this study is a cross sectional design where in quantitative data was collected. This cross sectional design was descriptive, explorative in nature. It was descriptive and explorative since it was one of few trials to determine knowledge of the women on breast cancer and breast self-examination in Palestine. However, this cross sectional design was fast, easy to do, and cost effective. On the other hand, through this design; the study highlights the problem of breast cancer and puts it on the agenda of decision makers by providing valuable information regarding women's health status such as determining the number of women at risk of developing breast cancer, and by proposing recommendations to the administrators who plan health care services in Palestine.

3.2. The Study Area

3.2.1 Jerusalem Governorate

The administrative classifications of the Ministry of Local Government that were used in the 1997 census, divided the Palestinian Territory into 9 governorates in addition to two districts in the West Bank. These governorates are Jenin, Tulkarem, Qalqilia, Nablus, Ramallah and Al-Bireh, Jericho, Jerusalem, Bethlehem and Hebron. The two districts are Tubas and Salfit. (Palestinian Central Bureau of Statistics [PCBS], 1999).

Jerusalem governorate includes 28 different localities, these are: Al –Ka'abneh, Abu-Dees, Al-Jib, Al-Ram & Dahiyat al Bareed, Al-Sawahreh ash Sharqiya, Ash Sheikh Sa'd, Al-A'zariah, Al-Qubeiba, Al-Nabi Smawil, Biddu, Beit Ijza, Beit Iksa, Beit Hanina al Balad, Beit Duqqu, Beit Surik, Beit 'Anan, Bir Nabala, Jaba', Hizma, Kharayib Umm al Lahim, Rafat, 'Arab al Jahalin, 'Anata, Qatanna, Qalandia, Kafr"Aqab, Mikmas, and Qalandia Camp. (PCBS, 1999).

The total population in the Jerusalem Governorate was (113,557), from which (58203) males and (55354) females. (PCBS, 1999).

The Population Housing and Establishment Census data (2000), indicates that the average housing density in the Jerusalem Governorate is 1.79, and about 19.9% of all households live in housing units with three persons or more per room. However, 94.4% of the Jerusalem Governorate houses have access to the public water network, and 96.5% of all housing units have access to public electricity networks. On the other hand, 21.7% of all the housing units in the Jerusalem Governorate were connected to sewage public networks. (PCBS, Housing Report, 2000).

3.2.2.Al-Azariah and Abu-Dees

These are two villages in the Jerusalem Governorate about 2 Km. from the Old City. The total population in the two villages was 12,807 in the first and 8937 in the second. (PCBS, 1999).

3.3. Sampling

3.3.1. The Study Population

The study population for this research was defined as the total Palestinian women in Al-Azariah and Abu-Dees aged between (20-64) years. According to the Population, Housing and Establishment Census (1997), the total number of women in the above mentioned specified age group was (4440) women, (2570) women in Al-Azariah and (1876) women in Abu-Dees.

3.3.2. The Sample

The sample of the study population is a convenient sample. It was decided to target 400 women in the two villages, of which 250 women in Al-Azariah and 150 women in Abu-Dees aged between (20-64) years.

3.3.3. Sampling Approaches

1- Identification of the sampling frame, which was decided to be all the women in Al-Azariah and Abu-Dees aged (20-64) years. According to 1997-population census, this included (4440) women.

2- Determination of the sample size: information for the determination of sample size was provided from the Palestinian Central Bureau of Statistics. (Personal Communication, May 12, 2001). Determination of the sample size in each village was based on Cochran equation which is $\{n= (t^2 * q)/ (r^2 * b)\}$.

Where (n = the sample size), (t = 1.96), (r = .05), (b= number of women whose ages between (20-64) years in each village / number of housing units that were used for the

habitation of families in each village), (q = 1- b). (PCBS, Personal communication, May; 2001).

3- For the determination of sample size according to Cochran equation, the number of housing units in each village was necessary. Information was provided from the village councils in both Al- Azaria and Abu – Dees about the general number of buildings and housing units in each village. Also, during the first two weeks of June a complete count of the housing units in each village was done. The housing units that were counted were those used for family habitation only. For this reason buildings that were utilized for habitation of University students, for work, empty, or under construction at the time of data collection were excluded from the total count of housing units. Finally, and by the middle of June the total number of housing units that were used for families' habitation was available. It was 2988 housing units in Al – Azaria, and 2062 housing units in Abu – Dees.

4- According to Cochran equation, the sample size in Al- Azaria was decided to be 250 women whose ages between (20-64) years old. And the sample size in Abu – Dees was decided to be 150 women of the same specified age group.

5- The method used for sampling is similar to stratified random sampling in that the participants were divided into strata based on their geographical location and localities to provide representatives of different groups within the population. But it differs from the stratified random sampling in that the participants are not randomly selected from each stratum.

6- Determination of the localities that were studied was based on information provided from the Ministry of Rural Affairs in Abu-Dees. Depending on the maps for the two villages and with the help of a licensed land surveyor in the ministry each village was divided into three localities according to defined boundaries of each locality and

according to the congregation of the living population. As a result, a total of six localities were identified as follows:

***Al –Azariah Localities**:

1-Locality 1:It was identified as the area from Kubsa Junction to Al-Eskan Junction.

2-Locality 2: It was identified as Al-Eskan area.

3-Locality 3:It was identified as the area from Al-Eskan Junction to Wadi-Al-Nar Junction.

The total sample in this village was decided to include 100 women from the first locality and 75 women from the second and third localities separately.

****Abu-Dees Localities:***

4-Locality 4: It was identified as the area from Kubsa Junction to Al-Sawahreh Junction.

5-Locality 5: It was identified as the northern part of the Old Abu-Dees village.

6-Locality 6: It was identified as the southern part of the Old Abu-Dees village.

Again, the sample of the study population in Abu-Dees was decided to include 50 women in every locality.

1- The subjects for each stratum in every locality were solicited via a convenience sampling method. The starting point was the first housing unit in each locality, and then every eleventh house was entered based on the total number of the target population in the two villages divided by the number of subjects. The total number of population in this study was 4440, and the total number of subjects was 400. The boundary of each locality was defined using the information provided from the Ministry of Rural Affairs.

3.4. Basic definition and concepts

1- Locality:

Conceptual definition: A permanently inhabitant place, which has an independent municipal administration or a permanently inhabitant separated place not include within the formal boundaries of another locality.

Operational definition: it is a group of housing units with clear boundaries on the ground, (the boundaries that were determined by the maps in the ministry of Rural Affairs in Abu – Dees).

2- Housing unit:

Conceptual definition: A building or part of a building constructed for one household only, with one or more independent entrance leading to the public road without passing through another housing unit. The unit might not be constructed for living purposes but found occupied with a household during the enumeration. The unit might be utilized for habitation or for work purposes. Also, it may be closed.

Operational definition: A building or part of a building constructed for living purposes and are used at the time of data collection for families only, not for students, not for work, and not closed.

3-Age of the participant

Conceptual definition: the age of a person is referred to the date in which the person was born, it is comprised in years, months and days.

Operational definition: age was defined as the span extending from the birth date until the reference date of being interviewed, expressed by years without any attention to the days and months.

4- Age of the participant at the delivery of first child:

Operational definition: it is the temporal span extending from the birth date until the date of first delivery, expressed by years without any attention to the days and months.

5- Illiterate:

Conceptual definition: it applies to persons unable to read or write in any language and who were never awarded a certificate from any formal education system.

Operational definition: it applies to women who were unable to read or write and who were never entered a school.

6- Education of the women:

Conceptual definitions:

Elementary is the educational level for persons who successfully completed the six elementary grades; those who successfully completed the ninth grade are classified under the preparatory level. And persons who successfully completed the general secondary certificate examination are classified under the secondary level. Higher study levels includes associate diploma, bachelor degree (BA/BS), higher diploma, masters degree (MA/MS), doctorate (Ph.D.).

Operational definition:

Elementary: the years of education from 0-6

Preparatory: the years of education from 7-9

Secondary: the years of education from 10 – 12

Higher studies: the years of education more than 12.

7- Experienced respondents with breast cancer

Operational definition: those respondents in the two villages who have relatives died from breast cancer or who have relatives alive with breast cancer.

8- Practicing regular breast self – examination:

Conceptual definition: This is the monthly breast examination the woman performs herself in a proper technique that may be offered by a trained health professional or through leaflets, media, or health education lectures.

Operational definition: This is the monthly breast examination the woman performs herself in a proper technique or in other different ways (such as circular movements, examining the nipples, and examining the presence of lumps under the armpit) not necessarily in steps and without any indication of proficiency in BSE performance.

3.5. Ethical Considerations

The following points were taken into consideration through carrying out this study:

1. Privacy: assurance the respondents' confidentiality of the information provided which included keeping promises.
2. Veracity: a clear description of the objectives of this study and how the collected data will be used was done.
2. The names of the respondents were not mentioned.
3. Each woman was interviewed separately, and was given the opportunity to talk about her knowledge and practices freely, without critiquing the information provided.
4. Women were informed about their right :
   - Of refusal
   - Of withdrawing at any time during the interviews.

3.6.Data Collection Instruments

Quantitative data was collected through interviews with a questionnaire concerned with six types of information:

First: the demographic information of the respondents and this included information related to age, type of job, marital status, and educational level.

Second: information related to the reproductive health variables of the respondents, and this included the presence of children, the number of children, age of the respondent at the first child, practicing of breast feeding, and pregnancy status of the respondents.

Third: Information regarding the respondents knowledge on breast cancer, risk factors of the disease, treatment methods, signs and symptoms, and screening methods.

Fourth: Information regarding the respondent's practices and utilization of the early detection tests.

Fifth: Information related to the family history of the respondents on the disease. This type of information in particular was used to highlight the disease problem into the prospective as it was used in the total estimation of women at risk of breast cancer because of positive family history of the disease.

Six: Information related to the activities of the health clinics in the two villages either by addressing the frequency of conducting educational sessions on the disease, or by addressing the sources of their information on the screening tests. This type of information was used to propose recommendations to the Ministry of Health.

Completing the questionnaires was decided to be through the interviews, because interviews are the most direct methods of obtaining data from the participants. Interviews also were designed to help those respondents who were illiterate. On the

other hand, administering questionnaires through interviewing was responsible for the increase in the response rate in this study.

Collection of the data from the different households was completed within five weeks. (15-June-2001), to (20- July-2001).

3.7. Pilot Testing

Piloting was done for 10% of the total sample, 5% in each village for testing the questionnaires. Needed modifications were simple but were all incorporated in the questionnaires.

3.8.Response Rate

The response rate in this study was 96.25% in the two villages. It was 96.8% in Al-Azaria; and 95.3% in Abu-Dees. The total non-respondents were 15 women. 13 women were over the 50 years of age, and only two young women under the age of 34 refused to participate in the study. The non-respondent old women agreed that it would be a disturbing matter to discuss breast cancer with anybody because of its fatality. One of the young non-respondents said that she was too busy to participate with us this study, while the other said that fear from the disease prevent her from responding.

3.9. Limitations of the Study

1- Political factors: the political situation in Palestine and the movement restrictions made it very difficult to transport from one area to another. This is mainly the important reason for choosing two near villages in this study. The two villages are close to each other and movement from one locality to the other is easy even through narrow roads or hills.

2- Time limitation for data collection, given that data was collected through interviews with 385 women from different sites in the two villages, and most of the time data collection began after finishing my work in the MOH and extends to the night.

3- Social attitudes, values and beliefs: The dominant social attitudes and beliefs of the Palestinian society play a role in this study given that in many times some women were prevented from participation in this study by their husbands and their mothers in law, sometimes women themselves don't tell the truth regarding their positive family history of breast cancer because they were afraid that this will affect the marriage of their daughters and their female relatives.

4- The convenient (non-random) sample that was used in this study limits the generalization of the study results.

CHAPTER FOUR

4. RESULTS

4.1. Socio Demographic Characteristics

4.1.1. Age

In this study the (20-34) year age group was consistently the largest in the total study sample with a percentage of (46.2), followed by the (35-49) year age group that constituted 35.3%. However, the (50-64) year age group formed 18.4% of the total study sample.

4.1.2. Educational Level

(Table 1) shows that only (10.6%) of the respondents in this study sample were illiterate, (30.6%) were of the elementary/preparatory level, and 34.5%were of the secondary level. On the other hand, higher education percentage was at (24.2%) of all the respondents in the two villages.

4.1.3. Type of job

Results in (Table 1) show that:

From the total respondents in the two villages the majority were housewives with a percentage of (65.2%), (4.4%) were students; (13.0%) were teachers; (6.8%) of the total respondents were working in the health sector; (3.4%) were working in clerical jobs; and (7.3%) were laborers.

4.1.4. Marital Status

As was expected the majority of the respondents in the two villages were married with a percentage of (74.8%); and (16.6%) were single; (1.8%) were divorced; and (6.8%) were widowed.

The different socio demographic characteristics of the respondents are listed in Table 1.

Table 1. Distribution of the Study Population by the Socio Demographic Variables.

Characteristic	Total respondents	
	NO	%
***Age*:**		
20-34	178	46.2
35-49	136	35.3
50-64	71	18.4
Educational Level		
Illiterate	41	10.6
Elem./prep.	118	30.6
Secondary	133	34.5
Higher education	93	24.2
***Type of Job*:**		
Housewife	251	65.2
Student	17	4.4
Teacher	50	13.0
Health sector	26	6.8
Clerical jobs	13	3.4
Laborers	28	7.3
Marital status:		
Single	64	16.6
Married	288	74.8
Divorced	7	1.8
Widow	26	6.8

4.2. Reproductive Health Characteristics

4.2.1. Parity

A total of (7.5%) of the (297) married females in this study were non-parous. Results in (Table 3) show that (92.5%) of the married participants had children and (44.1%) of these women had more than five children in their families. This reflects the relatively high total fertility rate (TFR) of the Palestinian women. However, women with less than five children represented (55.9%) of the total parous women in this study. On the other hand, (40.4%) of the parous respondents were under 20 years of age when having their first child. (52.5%) were between (20-29) years old, and only (7.1%) were between (30-40) years old.

4.2.2. Pregnancy Status

However, A total of 35 (10.9%) of the total married respondents in the two villages were pregnant at the time of the study.

4.2.3. Breast Feeding

On the other hand, results of this study also show that the majority (85.9%) of the women that had children had breast-fed them, and only 14.1% didn't practice breast-feeding.

The number of those women who were still breasts feeding their children was 52 with a percentage of (20.4%) of the total parous women.

The different reproductive health results of the respondents were listed in Table 2.

Table 2. Distribution of the Study Population by Reproductive Health Variables

CHARACTERISTIC	***Total respondents in the two villages***	
	NO	**%**
Presence of Children		
Yes	297	92.5
No	24	7.5
Number of Children		
< 5	166	55.9
(5-12)	131	44.1
Age at First child		
< 20	120	40.4
20-29	156	52.5
30-40	21	7.1
Pregnancy Status		
Yes	35	10.9
No	286	89.1
Practice of Breast Feeding		
Yes	255	85.9
No	42	14.1
Last Time of Breast Feeding		
Still feeding	52	20.4
< 5 years	78	30.6
5-10 years	49	19.2
> 10 years	76	29.8

4.3. Knowledge on Breast Cancer

The majority (74.3%) of the total respondents in the two villages said that they had information on breast cancer, and only (25.7%) of the total respondents in the two villages said that they didn't have any information on breast cancer and that they didn't heard before on the disease.

4.3.1. Examining the relationship between knowledge on breast cancer and selected demographic characteristics: age group; educational level; type of job.

Table (3) shows the results of the relationships between knowledge on breast cancer and different socio demographic characteristics: the groups of age; educational level and type of job.

However, these results show that:

- From the total 41 illiterate respondents only 18 had information on the disease. On the other hand, from the total 93 respondents who were highly educated only 4 didn't have information on breast cancer while the majority (89 women) said that they had information related to the neoplasm.
- These results show that there is a difference among the different educational levels and knowledge on the disease. However, this difference reaches the highest statistical significant level since the P value = 0.000.

According to the type of job; from the total 251 housewives, there were 71 women who didn't have any information on the disease. Half the laborers also said that they didn't have such information. On the other hand, only two from 50 teachers didn't know on the disease, and according to those who were working in the health sector there were three women from total 26 didn't know anything on the disease. There is a difference among the different job categories in relation to knowledge on breast cancer and this difference reaches the statistical significant level. P value = 0.000.

Results in Table 3 show that 10.9% from the young women didn't possess information on the disease compared to 6.8% of the older respondents. There is a difference among the respondents knowledge on breast cancer in relation to their ages, but this difference does not reach the statistical significant level since the computed P value = 0.066.

Table 3. Distribution of the Respondents According to their Knowledge on Breast Cancer and Different Socio - Demographic Characteristics

Characteristic	Knowledge on breast cancer				Total		P Value
	Yes		No				
	#	%	#	%	#	%	
***Age*:**							
20-34	136	35.3	42	10.9	178	46.2	
35-49	105	27.3	31	8.1	136	35.3	0.066
50-64	45	11.7	26	6.8	71	18.4	
Educational Level							
Illiterate	18	4.7	23	6.0	41	10.6	
Elem./prep.	70	18.2	48	12.5	118	30.6	0.000
Secondary	109	28.3	24	6.2	133	34.5	
Higher education	89	23.1	4	1.0	93	24.2	
***Type of Job*:**							
Housewife	180	46.8	71	18.4	251	65.2	
Student	11	2.9	6	1.6	17	4.4	
Teacher	48	12.5	2	0.5	50	13	0.000
Health sector	23	6.0	3	0.8	26	6.8	
Clerical jobs	10	2.6	3	0.8	13	3.4	
Laborers	14	3.6	14	3.6	28	7.3	

4.3.2. Examining the relationship between knowledge on breast cancer and knowledge and practices of the screening methods of the disease.

Table 4. Distribution of the Respondents According to Their Knowledge on Breast Cancer and Their Knowledge and Practices of the Screening Methods of the Disease.

Characteristic	Knowledge on breast cancer				Total		P Value
	Yes		No				
	#	%	#	%	#	%	
Knowledge on BSE							
Yes	254	66	26	6.8	280	72.7	0.000
No	32	8.3	73	19	105	27.3	
Frequency of Practices on BSE							
Once monthly	47	12.2	4	1	51	13.2	
Less/once/month	208	54	94	24.4	302	78.4	0.000
More/once/month	31	8.1	1	0.3	32	8.3	
Knowledge on mammography							
Yes	190	49.4	16	4.2	206	53.5	0.000
No	96	24.9	83	21.6	179	46.5	
Practices of mammography							
Yes	13	3.4	0	0.0	13	3.4	0.031
No	273	70.9	99	25.7	372	96.6	

Results in the above table show that:

- There is a difference among the two groups of respondents (those who had knowledge on breast cancer and those who had not), according to their knowledge on BSE and according to their practices of BSE. However, this difference reaches the statistical significant level since the P value = 0.000.
- Also, there is a difference between the above mentioned two groups of respondents according to their knowledge on mammography. This difference reaches the statistical significant level and the P value = 0.000.

On the other hand, there is also a difference among the two groups according to their practices on mammography; this difference again reaches the statistical significant level. The P value = 0.031.

4.3.3. Occurrence of Breast Cancer

Results in (Table 5) show that of total respondents, (54.3%) said that breast cancer can affect women only, (20.0%) said that this disease can affect both sexes especially females. And 99 (25.7%) women in the two villages didn't have any information to answer this question.

Table 5. Distribution of the Study Population by their Knowledge on the Occurrence of the Disease Variables

Characteristic	**Total number of respondents in the two villages**	
	NO	**%**
Site of occurrence:		
women only	209	54.3
Men &Women	77	20.0
don't know	99	25.7
Rate of occurrence :		
More in women	72	93.5
No difference	5	6.5

4.3.4. Reasons for the Occurrence of Breast Cancer

A total of 280 women from all the respondents in the two villages answered the question about the reasons for the occurrence of breast cancer, and consequently 105 women didn't have any information to answer this question.

Results in (Table 6) show that from the 280 women who answered this question; 21 women reported that the reason for the disease could be an infection caused by any infectious agent such as bacteria or viruses, and has the ability to transmit from one patient to another. Those women represented 5.5% of the total respondents in the two villages.

A total of 159 (41.3%) women said that reason for breast cancer could be related to hereditary factors.

The number of respondents who said that nutritional factors were responsible for breast cancer disease was 94 with a percentage of 24.4% of the total respondents in the study sample.

According to the opinions of 100 participants; non-practicing of breast-feeding could be a reason for being affected with breast cancer.

Results in (Table 6) show that 30 respondents believed that psychological factors could cause breast cancer.

Only 18 participants from the two villages, believed in environmental factors to cause breast cancer in humans.

However, a total of (7.5%) of the respondents in the two villages said that the reason for breast cancer occurrence in humans is not discovered yet. And consequently they couldn't determine any possible reason for the occurrence of the disease.

Through the interviews women were given the opportunity to choose more than one possible answer for this question.

Table 6. Distribution of the Study Population by their Knowledge on the Reasons of Breast Cancer Variables

Reason for Breast Cancer is:	Total number of respondents in the two villages	
	NO	%
infection:		
Yes	21	5.5
No	259	67.3
I don't know	105	27.3
heredity:		
Yes	159	41.3
No	121	31.4
I don't know	105	27.3
nutritional:		
Yes	94	24.4
No	186	48.3
I don't know	105	27.3
no Practice of BF		
Yes	100	26.0
No	180	46.8
I don t know	105	27.3
psychological:		
Yes	30	7.8
No	250	64.9
I don't know	105	27.3
environmental		
Yes	18	4.7
No	262	68.1
I don't know	105	27.3
Not Known:		
Yes	29	7.5
No	251	65.2
I don't know	105	27.3

4.3.5. Signs of Breast Cancer

A total of 285 women answered this question, with (74.0%) of the total respondents in the two villages. *Results in (Table 7) show that:*

- 43.6% of the total respondents believed that pain is one of the signs of breast cancer.
- 53.2% of the total participants said that pus or discharge is also a sign for breast tumor.
- 70.1% of the total respondents in the two villages said that this malignancy should be characterized by the presence of a tumor in one or both of the breasts.
- 12.7% of the total respondents mentioned that breast cancer is characterized by the presence of a lump in the armpit. Results are shown in Table 7.

Table 7. Distribution of the Study Population by their Knowledge on the Signs of Breast Cancer Variables

Sign for breast cancer is:	Total	
	NO	%
Pain:		
Yes	168	43.6
No	117	30.4
I don't know	100	26.0
Pus or discharge:		
Yes	205	53.2
No	80	20.8
I don't know	100	26.0
Tumor:		
Yes	270	70.1
No	15	3.9
I don't know	100	26.0
Lump:		
Yes	49	12.7
No	236	61.3
I don't know	100	26.0

4.3.6.Teartment of Breast Cancer

Surgery was the most popular treatment method for breast cancer known by the respondents followed by chemo and radiotherapy. About (5.0%) of all the respondents said that treatment with the Holy Koran is effective, while (9.6%) of them said that they don't know any treatment method for this disease.

Table 8. Distribution of the Study Population by their Knowledge on Methods of Treatment

Treatment method	Total number of respondents	
	NO	%
Surgery:		
Yes	265	68.8
No	83	21.6
I don't know	37	9.6
Chemotherapy:		
Yes	244	63.4
No	104	27.0
I don't know	37	9.6
Radiotherapy:		
Yes	207	53.8
No	141	36.6
I don't know	37	9.6
Nutrition:		
Yes	7	1.8
No	341	88.6
I don't know	37	9.6
Through the environment:		
Yes	7	1.8
No	341	88.6
I don't know	37	9.6
the Holy Koran:		
Yes	19	4.9
No	329	85.5
I don't know	37	9.6

No known treatment:		
Yes	35	9.1
No	313	81.3
	37	9.6

4.3.7. Obesity and Breast Cancer

Through the interviews; participants were asked about their knowledge on the possible relationship between obesity as a risk factor of breast cancer. Results regarding this question are listed in (Table 9). This table shows the distribution of the study population by their knowledge on the presence of possible relationship between breast cancer and obesity. The majority of the respondents (53.8%) said that there is no relationship between obesity and breast neoplasm. On the other hand, only (16.4%) of the respondents agreed with the presence of such a relation. However, about (30.0%) of the respondent women in the two villages said that they didn't have any information to answer this question.

Table 9. Distribution of the Study Population by their Knowledge on the Presence of a Relationship between Obesity and Breast Cancer Variables

Characteristic	**Total**	
	NO	**%**
Presence of a relationship:		
Yes	63	16.4
No	207	53.8
I don't know	115	29.9

4.3.8. Barriers for the Lack of Information on Breast Cancer

Results in (Table 10) shows that (25.7%) of the respondents in the two villages had no information on breast cancer. However, 38.4% of these women said that they lack the desire to have information on this disease, and (61.6%) said that there were other reasons for their lack of knowledge on breast cancer. Of these, (62.6%) reported that the lack of educating materials was responsible for their lack of knowledge on breast cancer. Also, (14.1%) said that there is no center in their living area to educate them and to provide them with the information needed on breast cancer.

Through interviews, women who were lacking the desire to know on breast cancer were given a special attention. They were asked more deeply on the reasons for the lack of such desire, but unfortunately, it was noticed that misconceptions were responsible on the fear of the majority of these women from the disease. They believed that even mentioning the name of the disease is disturbing, and it would be safer to keep away from any information related to this fatal disease.

Table 10. Distribution of the Study Population by presence of knowledge on Breast Cancer and Reasons for the Lack of Such knowledge

Characteristic	Total respondents in the two villages	
	NO	%
Presence knowledge:		
Yes	286	74.3
No	99	25.7
No desire to have information:		
Yes	38	38.4
No	61	61.6
Lack of educating materials:		
YES	62	62.6
No	37	37.4
No center in the area to provide information:		
Yes	14	14.1
No	85	85.9

4.4. Breast Self – Examination

4.4.1. Knowledge and practices of BSE

4.4.1.1. Distribution of the study population on the BSE variables

Of the total 385 respondents in the two villages, (72.7%) said that they had information on the BSE.

Also results in (Table 11) show that from all the 280 women who possessed information on breast self-examination only (35.7%) practiced it.

Table 11. **Distribution of the Study Population by Breast Self Examination variables.**

CHARACTARESTIC	Total respondents in the two villages	
	NO	%
Knowledge on BSE:		
Yes	280	72.7
No	105	27.3
Practice of BSE:		
Yes	100	35.7
No	180	64.3
Frequency of Practices BSE:		
Once monthly	51	18.2
less / once/month	197	70.4
more/ once/month	32	11.4

However, results in (Table 11) show that the prevalence of regular BSE is only (18.2%) of those who practiced the breast self- examination were known to have regular exams.

4.4.1.2. Investigate the relationship between group of age, educational level and type of job and frequency of BSE.

Table 12. Distribution of the Frequency of BSE Variables and the Respondent's different socio demographic characteristics

Characteristic	Frequency of BSE						Total		P Value
	Once/month		Less/once/ month		More/once /month				
	NO	%	NO	%	NO	%	NO	%	
***Age*:**									
20-34	26	6.8	137	35.6	15	3.9	178	46.2	
35-49	18	4.7	106	27.5	12	3.1	136	35.3	0.862
50-64	7	1.8	59	15.3	5	1.3	71	18.4	
Educational Level									
Illiterate	2	0.5	35	9.1	4	1.0	41	10.6	
Elem./prep.	9	2.3	105	27.3	4	1.0	118	30.6	0.000
Secondary	21	5.5	103	26.8	9	2.3	133	34.5	
Higher education	19	4.9	59	15.3	15	3.9	93	24.2	
***Type of Job*:**									
Housewife	32	8.3	202	52.5	17	4.4	251	65.2	
student	2	0.5	13	3.4	2	0.5	17	4.4	
teacher	8	2.1	34	8.8	8	2.1	50	13	.306
health sector	5	1.3	17	4.4	4	1.0	26	6.8	
clerical jobs	2	0.5	11	2.9	0	0	13	3.4	
laborers	2	0.5	25	6.5	1	0.3	28	7.3	

Results from the above table show that:

- There is a difference among the different age groups of the respondents according to their frequency of BSE, but this difference does not reach the statistical significant level since the P value = 0.862.
- There is a difference among the respondents of different types of jobs in relation to the frequency of BSE, however, this difference does not reach the statistical significant level since the resulted P value = 0.306.
- Finally, there is a difference among the respondents according to their different educational levels and the frequency of BSE. This difference reaches the highest statistical significant level, since the computed P value = 0.000.

4.4.1.3. Examining the Relationship between Knowledge of BSE & Practices of BSE

In order to examine the relationship between knowledge and the practices of breast self-examination, cross tabulation of these variables was done for the total respondents in the this study. Results are listed in Table 13.

Table 13. The Relationship Between Knowledge and Practices of the BSE for the Total Respondents in the Two Villages

Characteristic	Practicing of the BSE for the total respondents in the two villages				Total		P Value
	Yes	%	NO	%	NO	%	
Knowledge of the respondents on BSE							
Yes	100	26	180	46.8	280	72.7	0.000
No	0	0	105	27.3	105	27.3	

Results from (Table 13) show that:

1- From the total respondents in the two villages, there were 280 women with (72.7%) who had knowledge on BSE, but only 100 participants of these informed women practiced the exam. However, those who did not practice the exam were of two types: the 180 women who had information on the exam but didn't practice it, and the 105 respondents (who didn't have any information of the BSE, in other words their knowledge on BSE = 0.00).

2- The practices of BSE in the group who had knowledge on the exam differ from those who didn't.

3- Difference between the two groups reached the highest statistical significant level since the (P value = 0.000).

4.4.2. Sources of Information on BSE

The women were asked about the source of their information on breast self-examination. Results were as follows: 20% of the total respondents in the two villages said that the health educator was their source of information on BSE; 14.3% said that the family doctor was their source of information. The majority (69.3%) believed in Radio and television as their sources of information.

Table 14. Distribution of the Study Population by their Source of Information on BSE Variables

Sources of information on breast self examination	Total	
	NO	%
Health Educator		
Yes	56	20.0
No	224	80.0
Family Doctor		
Yes	40	14.3
No	240	85.7
Radio & T.V		
Yes	194	69.3
No	86	30.7
Educating Materials:		
Yes	56	20.0
No	224	80.0

4.5. Mammography

4.5.1. Knowledge and Practices on Mammography

Results in (Table 1◦) show that 53.5% of the respondents in the two villages had information on the mammography. However only a 13 of these women (6.3%) practiced this screening test, six of them on self-request.

Table 1◦ shows that from all the respondents, nearly the half had information on mammography but only (6.3%) practiced it.

Table 15. Distribution of the Study Population by Their Knowledge and Practices on Mammography Variables

Characteristics	Total	
	NO	%
Knowledge on mammography:		
Yes	206	53.5
No	179	46.5
Practice on mammography:		
Yes	13	6.3
No	193	93.7
Who requested mammography:		
Doctor request	7	53.8
Self-Request	6	46.2

4.5.2. Examining the relationship between knowledge on mammography and practicing mammography for the total respondents in the two villages.

One of the important objectives in this study is to examine the relationship between the knowledge on mammography and the practicing of this screening method by the respondents in the two villages. Results in (Table 16) show the distribution of the total respondents according to their knowledge and practices on mammography.

Table 16. The relationship between knowledge and practice of mammography for the total respondents in the two villages

Characteristic	Practicing of mammography for the total respondents in the two villages				Total		P Value
	Yes	%	NO	%	NO	%	
Knowledge of the respondents on mammography							
Yes	13	3.4	193	50.1	206	53.5	0.001
No	0	0	179	46.5	179	46.5	

Results in the above table show that:

1-From the total respondents in the two villages, there were 206 women that constituted (53.5%) of the total respondents who had knowledge on mammography, consequently; the remaining 179 women didn't possess any information on this screening exam.

2-Practicing mammography in the group of women who had knowledge on this screening exam differs from the other group who didn't have any information on the test.

3-Difference between the two groups reach the statistical level, since the P value = 0.001.

4.6. Family History of Breast Cancer and BSE

4.6.1. Positive Family History of Breast Cancer

According to the presence of died relatives of breast cancer, results in (Table 17) show that 7% of all the respondents in the two villages said that they had relatives died with the disease, and approximately half of these relatives were from the second degree.

Table 18. Distribution of the Study Population by Variables Related to the Presence of Alive Relatives with Breast Cancer.

Characteristics	Total	
	NO	%
Presence of alive diseased relatives with Breast cancer:		
Yes	26	6.8
No	359	93.2

4.6.2. Examining the relationship between positive family history and the participant's knowledge on breast cancer

Results in (Table 19) show the distribution of the total respondents in the study in the form of two groups (those who experienced breast cancer and those who didn't) according to their knowledge on the neoplasm.

Table 19. Distribution of the total respondents according to their experience with breast cancer and their knowledge on breast cancer.

Characteristic	Experienced Respondents on breast cancer				Total		P Value
	Yes	%	NO	%	#	%	
Knowledge on breast cancer							
Yes	41	10.6	245	63.6	286	74.3	0.843
No	15	3.9	84	21.8	99	25.7	

In summary results in the above table show that:

* There is a difference between the two groups (experienced & not experienced) according to the presence of general information on breast cancer, since higher number of the respondents in the second group had information on the disease with 74.5% of the total women in this group, compared to 73.2% in the first group.

- The difference between the two groups does not reach the statistical significant level since the computed P value = 0.843.

4.6.3. Examining the Relationship between Positive Family History and Knowledge & Practices on BSE

In order to examine the relationship between positive family history of breast cancer and the knowledge on BSE, cross tabulation was done for the different family history variables and knowledge on BSE Variables, results obtained are presented as ***follows:***

1- Results from (Table 17) show that there were 30 women from all the respondents in the two villages who had relatives died from breast cancer. Also, results from (Table 18) show that there were 26 women from the total respondents had relatives alive with the disease. Therefore, a total of 56 women from the total respondents in the two villages had experienced the presence of breast cancer in their atmosphere, either in the form of a relative died, or in the form of a diseased relative with the neoplasm.

2- Results in (Table 20) show the distribution of the total respondents as experienced respondents with breast cancer, and non experienced respondents with

the disease according to the presence of knowledge on breast self examination, and according to their practices of BSE.

Table 20. Distribution of the total respondents according to their experience with breast cancer and their knowledge & practices on BSE.

Characteristic	Experience of the respondents on breast cancer				Total		P Value
	Yes	%	NO	%	#	%	
Knowledge of the respondents on BSE							
Yes	46	11.9	234	60.8	280	72.7	0.087
No	10	2.6	95	24.7	105	27.3	
Practices of the respondents on BSE							
Yes	13	3.4	87	22.6	100	26	0.610
No	43	11.2	242	62.9	285	74	

In Summary results in the above table show that:

- According to the two groups (those who experienced breast cancer and those who didn't experience the disease); the number of respondents who had information in the first group (82.1% of the total experienced) is higher than the number in the second group (71.1% of the total non-experienced).
- Consequently, there is a difference of the knowledge on BSE in the two groups (those with and without experience of breast cancer).
- The difference does not reach the statistical significance, since the P value = 0.087
- For the same two groups, the number of respondents who practiced the BSE in the second group (those without experience with breast cancer) is higher than those respondents in the first group (those who experienced breast cancer).

- Thus, there is a difference between the two groups according to their practicing of BSE. From the second group there were 26.4% practiced BSE, while there were 23.2% of the first group practiced the exam.
- The difference does not reach the statistical significance level, since the computed P value = 0.610.

4.6.4. Examining the relationship between positive family history of breast cancer and knowledge & practices on mammography

Table 21. Distribution of the total respondents according to their experience with breast cancer and their knowledge & practices on mammography.

Characteristic	Experience of the respondents on breast cancer				Total		P Value
	Yes	%	NO	%	#	%	
Knowledge ofthe respondents on mammography							
Yes	38	9.9	168	43.6	206	53.5	0.02
No	18	4.7	161	41.8	179	46.5	
Practices of the respondents on mammography							
Yes	6	1.6	7	1.8	13	3.4	0.001
No	50	13.0	322	83.6	372	96.6	

From the results in the above table, it is noticed that:

- The number of respondents who had knowledge on mammography in the experienced group is higher than the number in the second non-experienced group.
- There is a difference between the two groups, since 67.9% of the experienced group had information on mammography, while only 51.1% of the other group had information on the same screening test.

- The difference between the two groups according the presence of information on mammography reach the statistical significant level, since the computed P value = 0.02.
- According to the practicing of mammography in the two groups, there is a difference since 10.7% of the respondents in the experienced group practiced mammography, while only 2.2% of all the respondents in the second grouped practiced mammography.
- The difference between the two groups according to the practicing of mammography reaches the statistical significant level, since the computed P value = 0.001.

4.7. Activities of the Health Clinics &The Respondent's Desire to Learn on Breast Cancer

Results in (Table 22) show that the majority of the respondents agreed that there are no activities of the health clinics in the two villages to educate the public on breast cancer and on it's screening methods, most of them (81%) described the occurrence of such activities as never.

Table 22. Distribution of the Study Population by Variables Related the Activities of the Health Clinics

Characteristic	Total respondents in the two villages	
	NO	%
Occurrence of health clinics activities:		
never	312	81.0
rare	43	11.2
sometime	25	6.5
most of the time	5	1.3

On the other hand, the majority of the respondents (88.8%) like to learn on the disease and as represented in (Table 23), only (11.2%) of them said that they have had no desire to learn on breast cancer.

Table 23. Distribution of the Study Population by Their Desire to Learn on Breast Cancer

CHARACTERISTIC	Total Respondents	
	NO	%
Desire to learn on breast cancer:		
Yes	342	88.8
No	43	11.2

CHAPTER FIVE

5. DISCUSSION

This cross sectional study was carried out in an attempt to determine the existing knowledge of Palestinian women on breast cancer and breast – self-examination in two villages of East Jerusalem. To achieve this; a convenient sample of 400 women was used. However, of the 400 eligible women aged (20-64) years; 385 women in Al-Azaria and Abu-Dees agreed to take part in this study, giving a response rate of about 96%. Of these 385 women; 242 were from Al- Azaria and 153 from Abu – Dees. The respondents were from different age groups, which included the (20-34) age group; the (35-49) age group; and (50-64) age group. However, the knowledge and practices of all the respondents in the two villages were determined at the same time of all the age groups.

Demographic data was obtained for the two groups of respondents in the two villages. The majority of the respondents were young (46.2%) and only 10.6% were illiterate.

However, the majority of the respondents in this study were married (about 75% of the total respondents); this is similar to Al- Jabari study on the women attending the mammography clinic where 81% of them were married, (Al- Jabari, 1997). And Barak in his study on the Palestinian women in the West Bank. (Barak, 1980).

This study included in addition to socio demographic and reproductive health data, an investigation of general knowledge on breast cancer and breast screening methods like the breast self – examination and mammography.

The majority of the respondents had general information on breast cancer, but it was noticed that when breast cancer was discussed through the interviews with the women, fear was the predominant feeling expressed in all the age groups.

Results of this study show that Palestinian women in Al-Azaria and Abu-Dees still hold misconceptions regarding the etiology of breast cancer, and that some of the women were confused about the risk factors that causes breast cancer to occur, such as the conviction of some respondents that breast cancer is an infectious disease that could be transmitted from one person to another. Also, the majority of the respondents believed that breast cancer is a feminine disease that couldn't affect males. On the other hand, the respondents overestimated the risk of hereditary factors for breast cancer since 41.3% of the total respondents agreed with family history as a risk for breast cancer, but non-of the respondents mentioned the increase in age as a risk factor for the disease.

These results support the results of Barratt, which were obtained from the National Australian Survey. Barratt found that women in the survey tended to underestimate the increase in risk for breast cancer with age. And that women overestimate the importance of family history as a risk for breast cancer (Barratt, 1996). On the other hand, Carpenter and Colwell in their study on the Mexican women also pointed that their responders had misconceptions related to breast cancer causation and treatment. (Carpenter & Colwell, 1995).

Results in this study also show that the majority of the respondents (81.3%) agreed that breast cancer could be a curable disease. This finding is in contradistinction with Choudry, Srivastava and Fitch results in their study on the South Asian Women where only 5% of all the participants in their study reported that breast cancer cases could be cured. (Choudry et al., 1998).

This study also confirmed the strong association between the educational levels with general knowledge of the respondents on breast cancer (P = 0.000), also strong association was found between type of job with general knowledge of the respondents on breast cancer (P value = 0.000). On the other hand, the group of ages showed no association with the knowledge of the respondents on the disease. (P = 0.066).

On the other hand, neither does age nor type of job associated with breast self examination practice and only the educational level of the respondents was associated with practicing the breast self- exam.

Results of this study show that the majority (72.7)% of the respondents said that they had information on the breast self – examination, but only about 18% of them were known to have regular breast self – exams. Results also show that more than half of the respondents heard on mammography but very small proportion practiced it. These findings differ from the findings of Choudry, Srivastava and Fitch in their study on the South Asian Women. Choudry et al. (1998) found that only 12% of his respondents practiced the monthly breast self – examination while 47% had never had a mammogram.

However, an important finding in this study was the positive association between general knowledge on breast cancer and practicing regular breast self-examination and screening mammogram. The resulted positive association between general knowledge on breast cancer and practicing BSE in this study supports the results of Carpenter and Colwell, and also supports the results of Morgan, Park and Cortes. On the other hand, this positive association between the general knowledge and practices of the screening tests was in contrast with the results of Person and Johansson.

In their study, Carpenter and Colwell (1995) found a strong relationship between general knowledge and between knowledge and practice of the breast self –

examination. And Morgan et al. (1995) proved the positive association between breast cancer knowledge and screening practices of BSE and mammography. In other words; Morgan et al. (1995) emphasized the fact that the most important predictor of inadequate cancer screening was lack of knowledge.

On the other hand, Person and Johansson (1995) found in their study on the Swedish women that neither does age, educational background, or occupation nor *having knowledge of breast disease* associated with breast self-examination practice.

Results in this study show that about half of the total respondents (50.1%) had heard of but had never practice mammography. This result differs from the result of Mickey, Durski and Danigelis study on the African – American women where 36% of the total participants in his study had heard of but never participated in screening mammography. (Mickey et al., 1995).

Results in this study show that the main sources of the respondent's information on breast self examination were the health educator, the family doctor, radio and television, and educating materials.

Results of this study show that no associations were found with being experienced of breast cancer and with the participants' knowledge on the neoplasm; knowledge on BSE; and practicing BSE. On the contrast, strong associations were found between being experienced of the disease in the form of positive family history and between knowledge and practices of mammography. The results of this study support the results of Budden who found no significant relationship between a family history of breast cancer and practicing breast self – examinations. (Budden, 1995). And supports the results of Person and Johansson, who found that having a close relative or friend with breast cancer did not affect the practice of breast self examination. (Person and Johansson, 1995).

However, the result in this study of the positive association between having relatives (died or alive) with breast cancer with knowledge and practices of mammography supports the result of Hitchcock, Steckevicz and Thompson who found that having a first degree relative with breast cancer was statistically independent predictors of regular utilization of mammography during the past five years. (Hitchcock et al., 1995).

Results in this study address the lack of desire, educating materials and educating centers in the area as barriers from being informed on the disease and its screening methods.

However, the majority of the respondents agreed with the minor activities of the health clinic in Al-Azaria and Abu-Dees in health educational interventions. On the other hand, the majority of the respondents (88.8%) said that they have a desire to learn about breast cancer and about the breast self – examination, and only 11.2% said that they didn't like to have any such information on the disease.

Results in this study show that there were a number of women who are considered at risk for the development of breast cancer in the two villages:

Abdeen and Bargouthi (1994) reported that the risk of breast cancer increases with age (as the incidence of the disease begin to rise after the age of 30); a family history of the disease; having the first child over the age of 30 and never giving birth.

In this study there were more than half of the respondents over the age of 34; 7.5 % didn't have children; and 7.1% who had their first child over the age of 30. On the other hand, a total of about 15% of all the respondents had positive family history of breast cancer. This means the need to prepare for educational interventions to educate all the women on the possible risk factors and the importance of the utilization of screening tests. These educational interventions must highlight the concept of breast awareness of

the women toward their breasts beginning with educating them the proper way of practicing the breast self – examination.

Conclusion

It is the time now to raise the concept of breast awareness among the Palestinian women beginning with planning and implementing educational interventions regarding the breast cancer risk factors and early detection methods. These intervention plans should target all the Palestinian community especially those women of low educational levels and those of positive family histories of the disease. On the other hand, it is important to establish a policy that will ensure the availability of the screening methods as part of the integrated Primary Health care services in the MOH, so that women can have access to doctors and well – trained nurses who can perform the clinical breast examination, and teach the breast self - examination correctly. Other studies are also needed in order to support the results of this study or to show differences. And also to explore knowledge and practices of the Palestinian women in other different rural, urban areas, and in camps. It is suggested to conduct future researches on women's knowledge and practices on breast cancer in the Gaza Strip since breast cancer is the major cause of death among women in Gaza Strip in their childbearing age.

Recommendations

Results of this study show that Palestinian women had a highly positive attitudes towards their desire to learn on breast cancer and breast screening methods especially the breast self examination. Such information must raise the question of why do women still show low performance in practicing the breast self examination and mammography, and why many of the respondents still hold misconception on the disease? The answer might still be bound to the social and environmental factors that surrounded Palestinian women. This must bring us back to the direction of improving the enabling factors which refer to the accessibility to different educational programs as well as the need to improve reinforcing factors linked to the whole community in general and to the family and different health professional's influence in particular. For this reason it is recommended to:

- To initiate and sustain the work on health educational programs based on the health needs of different age groups, and taking into consideration the different levels of education in order to raise public awareness (including women and men) on breast cancer etiology, symptoms, treatment and screening methods.
- To activate the community and husbands involvement in promoting the utilization of the screening methods since this involvement is felt to be very important in the way that helps women to maintain healthy practices over time.
- To initiate a public media campaigns targeting women at high-risk for having breast cancer (such as those of positive family history and old women), to promote their utilization of screening tests.
- To support the health professional's training on the screening tests since they are central in the health educational process.

- To initiate and support a research center on breast diseases through which we can establish an epidemiological surveillance system that can monitor the prevalence of breast malignancies in Palestine.
- To ensure the availability of screening and early diagnostic methods of breast cancer as part of the integrated system of the primary health care of the Ministry of Health, beginning with promoting attitudes of the general practitioners in the MOH to influence women attend screening.
- To support the coordination between the Ministry of Health and the Ministry of Education to integrate the educational interventions on school health programs regarding breast self-examination in the secondary female classes.
- To conduct future researches with the aim of testing women's knowledge and practices on breast cancer and BSE in different rural, urban Palestinian areas and in camps in order to support the findings of this study or to show differences.
- To convoke for a "Palestinian Breast Awareness" day where all the above mentioned recommendations are animated.

Appendix 1

Knowledge of Palestinian women on breast cancer and breast self – examination questionnaire

- *The aim of this questionnaire is to collect information that is necessary in this study about " knowledge of Palestinian women on breast cancer and breast self-examination in two villages at East Jerusalem": Al-Azaria and Abu-Dees.*

1- **No.----------**

2- Date:

3- Village:

1- *Al-Azaria* 2- *Abu-Dees*

4- Locality:----------

5- Age of the participant:----------

6- Marital Status:

1- Single *2- Married* *3- Divorced* *4- Widowed*

7- If you are married or had been married before, do you have children?

1- YES *2- NO*

8- If your answer is (YES) what was your age when you had your first baby?

1-less than 20 years

2- (20 – 29) years

3- (30-40) years

4- more than 40 years

9- What is the number of your children? ----------

Did you breast fed them?

1- YES *2- NO*

10- What was the time of the last breast-feeding?

11- Are you pregnant?

1-YES *2-NO*

12- Please, determine your educational level?

1- illiterate *2- Elementary/Preparatory* *3-Secondary* *4-Higher education*

13- What is your job? ----------

14- Do you have any information on breast cancer? *1- YES* *2- NO*

- **if your answer is no, please go to question no. 15**
- **if your answer is yes, please go to the question no. 16**

15- What is (are) the reason (s) for the lack of information on breast cancer?

1- Lack the desire to have information on the disease

2- Lack of the educating materials on the disease

3- Lack of educating centers to hold activities related to breast cancer awareness

4- *other reasons: (please determine)*----------

16- Does breast cancer infect:

1- women only *2- men only* *3- men and women* *4- I don't know*

- **if your answer is (men and women) please go to question no. 17**
- **If your answer is not (men and women) please go to answer question no. 18.**

17- Does the rate of breast cancer:

1- more in women

2- more in men

3- no difference

4- I don't know

18- What is (are) the reason(s) for breast cancer?

1- infection

2- hereditary

3- nutritional

4- non practice of breast feeding

5- other reasons , please determine----------

6- I don't know

19-What is (are) the sign (s) of breast cancer?

1- pain in the breast(s)

2- pus and(or) discharges in the nipple(s)

3- tumor and (or) swelling in the breast(s)

4- all of the above

5- non of the above

6- others , please determine

7- I don't know

20- Do you believe in obesity as a risk factor for breast cancer?

1- YES *2-NO* *3-I don't know*

21- Do you know what is the breast self – examination?

1-YES *2- NO*

*** If your answer is yes, please go to the question no. 22**

*** If your answer is no, please go to the question no. 23**

22- Do you practice the breast self – examination?

1-Yes *2-No*

23- how many times do you practice the test?

1- less than once / month (include zero)

2- once monthly

3- more than once / month

24- If you answer (yes) on question no.21, what is (are) the source(s) of your information?

1-the health educator (if you can mention the name of the clinic, please report it------)

2- family doctor

3-radio and television programs

4- educating materials

5- others please determine----------

25- do you know what is mammography?

1- Yes *2-NO*

26- did you practice mammography in your life?

1-yes *2- no*

*** If your answer is yes, please go to question no.27**

*** If your answer is no, please go to question no. 28**

27- Who requested the practiced mammogram?

1- your doctor

2- your self

28- Do you have relatives died with breast cancer?

1-yes (please determine the relationship)

2-no

29-do you have relatives diseased with breast cancer?

1-yes (please determine the relationship)

2-no

30-How can you evaluate the public awareness activities of the health clinics in your area on breast cancer and the early detection of the disease?

1- never

2- rare

3- sometime

4- often

31-what is (are) the treatment method(s) of breast cancer?

1- surgery

2- chemotherapy

3- radiotherapy

4- all of the above

5- non of the above

6- others , please determine----------

7- I don't know-

32-Do you have a desire to learn on breast cancer?

1- yes *2- no*

Thank you for the time you spend with me in answering this questionnaire

Sylvia H. Hasanat

Appendix 2

جامعة القدس

كلية الصحة العامة

يهدف هذا الاستبيان إلى دراسة معرفة النساء الفلسطينيات في قريتي العيزريه وأبو ديس شرقي القدس واللواتي تقع أعمار هن بين (20–64) سنه حول سرطان الثدي والفحص الذاتي للكشف المبكر عن سرطان الثدي.

1–رقم الاستمارة : ☐

2–التاريخ : ☐

3–القرية: 1– العيزريه 2– أبو ديس

4–الحي : _____

5– عمر السيدة : ☐

6–الحالة الاجتماعية:

1– عز باء 2–متزوجه 3– مطلقه 4–أرمله

7– إذا كنت متزوجه أو سبق لك الزواج، فهل لديك أطفال؟

1– نعم 2– لا

8– إذا كانت إجابتك نعم ، فكم عدد الأبناء اللذين أنجبتهم؟ ☐

9– هل كنت تقومين بإرضاعهم طبيعيا؟ 1– نعم 2– لا

10- متى كانت آخر مره أرضعت فيها طفلك؟

11- هل أنت حامل ؟ 1- نعم 2- لا

12- حددي المستوى التعليمي لديك؟

1- أمية 2- ابتدائي/ إعدادي 3- ثانوي 4- دراسات عليا

13- ما هي مهنتك؟

14-هل لديك معلومات عن سرطان الثدي؟

1- نعم (إذا كانت إجابتك نعم ، اذهبي للاجا به على سؤال رقم 16)

2- لا (إذا كانت إجابتك لا ، اذهبي للاجا به على سؤال رقم 15)

15-إذا كانت إجابتك لا، فهل السبب برأيك هو:

1-عدم الرغبة في الاطلاع على معلومات خاضه بالمرض

2-عدم توفر برامج توعيه أو نشرات خاصة بالمرض

3-أسباب أخرى الرجاء تحديدها

إذا كانت إجابتك نعم ، الرجاء ألا جابه على الاسئله التالية الخاصة بالمرض:

16- هل الاصابه بالمرض مقتصرة على: 1- النساء فقط 2- الرجال فقط 3- الرجال والنساء

4- لا اعلم

17- إذا كانت إجابتك رقم 3 -أي الرجال والنساء- فهل باعتقادك معدل الاصابه بالمرض:

1- اكثر عند النساء 2- اكثر عند الرجال 3- لا فرق بين الجنسين

18- ما هي برأيك أسباب الاصابه بالمرض:

1-عدوى

2-وراثيه

3- غذائية

4-عدم الرضاعة

5-غير ذلك حددي----------

6- لا اعلم

19- ما هي برأيك علامات الاصابه بالمرض؟

1-ألم في ألثدي

2- تقرحات وصديد في حلمة ألثدي

3- ورم وانتفاخ في ألثدي

4-جميع ما سبق

5-لا شيء مما سبق

6-غير ذلك حددي ؟

7-لا اعلم

20- هل باعتقادك هناك علاقة بين السمنة والاصابه بسرطان الثدي؟

1- نعم 2-لا 3- لا اعلم

21- هل سمعت عن الفحص الذاتي للكشف عن سرطان الثدي؟

1- نعم 2- لا

* إذا كانت إجابتك لا – اذهبي للاجا به على سؤال رقم 23

22-إذا كانت إجابتك نعم ، فهل تقومين بفحص نفسك ؟

1- نعم

2-لا

23- حددي كم مره تقومين بفحص نفسك؟

1-اقل من مره في الشهر

2- مرة شهريا

3-اكثر من مره في الشهر

24- إذا كانت إجابتك "نعم" على السؤال رقم (21) فمن أين حصلت على المعلومات الخاصة بهذا الفحص؟

1-تعليمات المثقفة الصحية في العيادة الصحية(حددي اسم العيادة----------)

2-تعليمات طبيب العائلة

3-برامج إذا عيه أو تلفزيونية

4-نشرات توعيه(حددي مصدر النشرة أن أمكن----------)

25- هل سمعت عن الفحص الشعاعي للكشف المبكر عن سرطان الثدي؟

1- نعم 2-لا

26-إذا كانت إجابتك نعم فهل سبق وأجريت صوره شعاعيه للتأكد من عدم إصابتك بسرطان الثدي؟

1- نعم 2- لا

27- إذا كانت إجابتك نعم، فهل كان ذلك بناءا على:

1-رغبة طبيبك

2-رغبتك أنت

28-هل هناك أحد من عائلتك توفي من المرض

1-نعم - حددي صلة القرابة----------

2-لا

29-هل هناك أحد من عائلتك مصاب حاليا بالمرض؟

1-نعم- حددي صلة القرابة

2-لا

30-هل تعقد العيادات الصحية في منطقتك محاضرات للسيدات عن المرض وضرورة الكشف المبكر له؟

1- أبدا	2- نادرا	3- أحيانا	4-غالبا

31-ما هي طريقة العلاج برأيك؟

1-الجراحة

2-العلاج الكيميائي

3-العلاج بالاشعه

4-جميع ما سبق طرق مختلفة للعلاج

5-لا شيء مما سبق ،حددي----------

6- لا اعلم

32- هل ترغبي بمعرفة المزيد عن المرض وبالذات عن الفحص الذاتي للثدي؟

1- نعم 2- لا

أشكرك على الوقت والجهد الذي بذلته معي في تعبئة هذا الاستبيان.

References

1) Abdeen Z. and Bargouthi F. (1994). Palestinian cancer statistics " Seventeenth Years of Cancer Incidence: 1976-1992. Al- Quds University. Jerusalem.

2) Abdel – Hadi M., (1999). Breast cancer awareness among health professionals. Department of Surgery, King Fahed Hospital, Saudi Arabia.

3) Amr S., Sa'di AR., Ilahi F., Sheikh S., (1995). The spectrum of breast diseases in Saudi Arab females: A 26 Year Pathological Survey at Dhahran Health Center: Annual of Saudi Medicine: 15(2): 125-132.

4) Armstrong B., Doll R. (1975). Environmental factors and cancer incidence and mortality in different countries, with special reference to dietary practices. International Journal of Cancer: 15: 617-631.

5) Austoker J. (1994). Screening and self – examination for breast cancer. British Medical Journal: 309; 168-174.

6) Baghurst P, Record S, Syrette S. (1997).. Diet and Breast Cancer, Breast News. Vol. 3, no.3.

7) Barak F. (1988). Breast cancer at medical centers in Israel, the West Bank and the United States. Oncology 45: 345-359.

8) Barratt A. (1996). Breast Health Survey: Newsletters of the NHMRC of the National Breast Cancer Center. Vol.2, No.4

9) Baum M. and Houghton J. (1999). Contribution of randomized controlled trials to understanding and management of early breast cancer. British Medical Journal; vol. 319: 568-571, (28 August).

10) Benson.R.C. (1980). Hand Book of Obstetrics & Gynecology. (7ed.). Los Altos, California.

11) Budden L. (1995). Young women s breasts self – examination knowledge and practice. Department of Nursing Sciences: Australia. Vol.12, No. 1: 23-32.

12) Bulletin du Cancer. (1999). Breast Cancer in Tunisia: clinical and epidemiological study. Vol. 86s, issue 3, March: 302-306.

13) Cabot S. (1987). Women s Health. Pan Books. London.

14) Caplan L.S. (1995). Patient delay in seeking helps for potential breast cancer. USA. Vol.23, No.3: 263-274.

15) Carpenter V., Colwell B. (1995). Cancer knowledge, self- efficacy, and cancer screening behaviors among Mexican- American women. USA.vol.10, No.4: 217-222.

16) Choudry U.K., Srivastava R., Fitch M.I. (1998). Breast cancer detection practices of South Asian women: Knowledge, attitudes, and beliefs. USA, vol.25, and No.10: 1693-1701.

17) Claus EB. Schildkrent JM., Thompson WD, Risch NJ. (1996). The genetic attributable risk of breast and ovarian cancer. Vol.77: 2318-24.

18) Champan G.B., Elstein A.S., Hughes K. (1995). Effects of patient education on decision about breast cancer treatments: A preliminary report. USA. Vol.15, No.3: 231-239

19) Champion V.L. (1995). Results of nurse – delivered interventions on proficiency and nodule detection with breast self – examination. USA. Vol. .22,No.5: 819-824

20) Davis D., Axbrod D., Osborne M., and Telang N. (1997). Environmental influences on breast cancer risk. USA.

21) El – Helal A., Bener A., Galadari I. (1997). Pattern of cancer in the United Arab Emirates referred to Al- Ain Hospital. Annual Saudi Medicine. Vol.17, N0.5: 506-509.

22) El-Jabari C. (1999). Breast Screening Guidelines. Patients Friend Society. Jerusalem.

23) El – Jabari C. (1997). The prevalence of breast disease among Palestinian women: 1994-1996, Patients Friend Society, Jerusalem.

24) Elliman W. (1999). Israeli researchers making progress on breast cancer. San Francisco Jewish community publications. USA.

25) Folkers K., Brown R., Judy WV. Morita M. (1993). Survival of cancer patients on therapy with coenzyme Q 10. Biochem. Biophys. Res. Comm. 192: 241 – 251.

26) Friedman L.C., Webb J.A., Woodruff A. (1995). Breast cancer screening: racial/ ethnic differences in behaviors and beliefs. USA.VOL.10, No.4: 213-216.

27) Gardiner J.C., Swanson G. M. (1995). Mammography usage and knowledge about breast cancer in a Michigan farm population before and after educational intervention. USA. Vol.10, No.3: 155-162.

28) Grasse. C. E., Perrault D.J, Joanisse. S. (1996). Changes in women's breast cancer screening practices, knowledge, and attitudes in Ottawa – Carleton since 1991. University of Ottawa. Vol. 87, No 5:333-338.

29) Grunfeld E., Mant D., Vessey MP. Fitzpatrick R. (1996). Specialist and general practice views on routine follow up of breast cancer patients in general practice. British Medical Journal; 313:665-669(14 September).

30) Haigney E., Morgan R., King D. (1997). Breast examinations in older women: questionnaire survey of attitudes of patients and doctors. British Medical Journal; 315: 1058-1059. (25 October).

31) Harris R., Leininger L. (1995). Breast cancer screening: weighing and using the evidence. Annual International Medicine; 122: 539 – 547.

32) Hitchcock S.L., Steckevicz M. J., Thompson W.d. (1995). Screening mammography: factors associated with adherence to recommended age/ frequency guidelines. USA. Vol.1. No.3: 221-235.

33) Hunter D. J., Weillett W.C. (1993). A prospective study of the intake of vitamin C, E, and A and the risk of breast cancer. Vol.329: 234-240. (July 22).

34) Isaac CJD. Peshkin BN., Lerman c. (2000). Evaluation and management of women with a strong family history of breast cancer. In: Harris JR, Lippaman ME, Morrow m, Osborne CK, Eds. Diseases of the breast. Philadelphia: Lippincott Williams & Wilkins: 237-54.

35) Jordan Times. (2000). Research awareness key to early detection- Queen. Wednesday, Feb.23.

36) Katz. R.C., Myers K., Walls J. (1995). Cancer awareness and self – examination practices in young men and women. USA. Vol.18, No. 4:377-384.

37) Kava R. (2001). Where to turn for breast cancer prevention? American Council on Science and Health.USA.

38) Kelsey J L., Horn-Ross PL. (1993). Breast cancer: Magnitude of the problem and descriptive epidemiology. Epidemiological reviews, Vol. 15, n0.1. The Johns Hopkins University.

39) Kuller LH. (1995). The etiology of breast cancer from epidemiology to prevention. Public health reviews. Vol.23, no.2: 157-213.

40) Langston AA. Malone KE., Thompson JD, Dailing JR, Ostrander EA. (1996). BRCA1 mutations in a population based sample of young women with breast cancer. National England Journal of Medicine. Vol.334: 137-42.

41) Last J. M. (Ed.). (1992). Public Health and Preventive Medicine (13ed.). USA.

42) Leitch A. M. (1995). Controversies in breast cancer screening. USA. Vol. 76, No.10: 2064-2069.

43) Love S. (1995). Your best self- defense against breast cancer. USA.

44) Longlands A. (1997). The next 100 years- prognostic factors, screening and prevention.vol.2, No.4.

45) Lum M. (1995). Environmental public health: future directions, future skills. USA.

46) Mac Sween R., And Whaley K. (1995). Muires Textbook of Pathology (13 ed.). University of Gaslow. London.

47) Martin J. (1999). The breast cancer prevention diet: The powerful foods, supplements, and drugs that can save your life. Nutrition Forum. http://www.findarticles.com.

48) McPherson K., Steel M., Dixon J.M. (2000). ABC of breast cancer: Epidemiology, Risk factors and genetics. British Medical Journal; 321:624-628 (9 September).

49) Mettlin C., Murphy G. P. (1995). Breast cancer screening in premenopausal women: current recommendations and opportunities for research. USA.vol.27, No.4: 461-465.

50) Mickey R.M., Durski J., Danigelis N.L. (1995). Breast cancer screening and associated factors for low – income African women. USA. Vol.24, No.5: 467-476.

51) Miller A. (1992). The Role of screening in the fight against breast cancer, World Health Forum. Vol.13.

52) Mittra I. (2001). Breast cancer screening. India. Vol.22, suppl.3: 230-235.

53) Morgan C., Park E., Cortes D.E. (1995). Beliefs, knowledge, and behavior about cancer among urban Hispanic women. USA.vol.18: 57-63.

54) Mountford C. (1998). New pathology category identified by magnetic resonance spectroscopy. Vol.3, No.4.

55) National Breast Cancer Center. (1999). The Second Conference on Breast Cancer. http://www.nbcc.org.au.

56) National Breast Cancer Center. (2000). National Breast Cancer Awareness Month: how to perform a breast self – exam. http://www.nbcc.org/NBCAM.

57) Newman B., Butter L.M., Milliken R.C, Moorman P G. (1998). Frequency of breast cancer attributable to BRCA1 in a population based series of American women. JAMA; 279: 915-921.

58) Nimry M. (1998). Health experts plan major study on breast cancer patterns in Jordan. Jordan Times, Sunday, June 28.

59) Nystron L., Rutqvistle E., Wall S. (1993). Breast Cancer Screening with mammography: an overview of the Swedish randomized trials. Lancet; 341: 973-978.

60) Palestinian Central Bureau of Statistics (PCBS). (1999). Final Results: Population report, Jerusalem Governorate, 1997: statistical report. Palestine.

61) Palestinian Central Bureau of Statistics (PCBS). (2000). Final Results: Housing Report, Jerusalem Governorate: Statistical Report Series (072).

62) Palestinian Ministry of Health. (1999). Annual Health Report. Palestine.

63) Patavino V.M., Epifani A.C., Menelli L. (1995). Epidemiology of breast carcinoma. Italy. Vol.7, No.4: 257-266.

64) Person K., and Johansson I. (1995). Breast self – examination among Swedish women: a survey of frequency, knowledge, and attitudes. Sweden vol.10, No.3: 163 -167.

65) Phillips J.M., Cohen M.Z., Moses G. (1999). Breast cancer screening in African American women: fear, fatalism, and silence. National Institute of Nursing researches, vol.26, N0.3: 561-571.

66) Rajaram S., Rashidi A. (1999). Asian – Islamic women and breast cancer screening a socio cultural analysis. University of Nebraska: USA.vol.28, No.3: 445-58.

67) Reding D.J., Huber J.A., and Lapp K.A. (1995). Results of a rural breast health education demonstration project. USA.Vol.3, n0.5: 295-302.

68) Rosenthal T., Stirling M. (1999). Screening for genetic risk of breast cancer. State University of New York at Buffalo.

69) Sainsburg J.R.C., Anderson T.J., Morgan D. (2000). ABC of breast diseases. British Medical Journal; 321: 745-750(23 September).

70) Schleicher U.M. (1995). Detection of breast carcinoma: a statistical – epidemiological study of the current situation. Germany. Vol.163, No.6: 469-473.

71) Sensiba M.E., Stewart D.S. (1995). Relationship of perceived barriers to breast self examination in women of varying ages and levels of education. USA. Vol. 22. No8: 1265-8.

72) Simon H. (1999). What is breast cancer? Web site at http://www.webmd.com-article-546196(March).

73) Stephenson P. (1996). The health of the Palestinian women in the West Bank and Gaza Strip. (Problems and Priorities – Resources and Opportunities). Jerusalem.

74) Stone M. (1997). Report on the first World conference on breast cancer.

75) Tanjasiri S. P. (1999). Breast Cancer knowledge / Attitudes: California, Pacific Islanders. University of California. Irvine.

76) Watanabeh S. (1993). Breast cancer in Japan – Trends and recent researchers in biology and epidemiology. American Medical Journal. Vol.36, no.9, September (28th).

77) Willet WC, Rockhill B, Hankinson SE. (2000). Epidemiology and nongenetic causes of breast cancer. Philadelphia: Lippincott Williams & Wilkins: 175-220.

78) World conference on breast cancer. (1997). Information Packet (Part 26 of 40). January 1997.

79) World Health Organization. (2000). Induced Abortion does not increase the risk of breast cancer (fact sheet). No 240. Geneva.

80) World Health Organization. (1995). Cancer control in the Eastern Mediterranean region, EMRO tech series. No. 20.