بسم الله الرحمن الرحيم

Shendi University

Faculty of Graduate Studies and Scientific Research

Impact of Breast Self Examination Program on Women's knowledge, Attitude and Practice Regarding Breast Self Examination

In Shendi locality

A thesis submitted in fulfillment of the requirement for PH.D.

In community health nursing

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الآية

قال تعالى:

{ سُبْحَانَكَ لاَ عِلْمَ لَنَا إِلاَّ مَا عَلَّمْتَنَا إِنَّكَ أَنتَ الْعَلِيمُ الْحَكِيمُ }

صدق الله العظيم

سورة البقرة32

Dedication

To my mother

To my father

My brothers and sisters for their help without request

To my wife (Huria) for love and support

To who helped me to reach this stage

I would like to dedicate this Work to

My friends and Colleagues

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First of all my deep thanks and gratitude to Allah for helping me to allow the study to come to light

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Abstract

This Quasi experimental Community based study, was conducted in Shendi locality to assess the impact of breast self-examination training programme on women's knowledge-attitude and practice towards breast self examination in the period from January 2011 to June 2013. In this study 377 women of 30 years age and above were included. Data was collected by three tools (Self-administered questionnaire, an attitude questionnaire and an observation checklist). Before implementation of education program (pretest data) the questionnaire was distributed for women and each one was allowed sufficient time to fill it. Then each woman was observed by the trainee for their skills using the checklists. After collection of pretest data the women were received the training program. The training continued for six month, the Post test was done after two months during which the study group go for teaching and demonstrating the required skills, using the same assessment sheets. Then the researcher filled the interview questionnaire, and each women was observed by simplified checklist regarding breast self examination.

The present study shows that two third of study population (74.3%) had no breast problems and More than three-fifth of women (69.2%) had no family history of breast cancer. However, the obtained results clarify that the majority (93.1%) of study population have heard about the breast cancer. The highest proportion of the study population (41.6%) obtained their information and heard about breast cancer and breast self examination from audiovisual (TV, internet). medical staff (as physicians or nurses). Moreover, the present study shows that most of study population has poor knowledge regarding the risk factors and screening methods of breast cancer. In contrast to less than two third (65.0%) of study population have poor knowledge about early warning signs of breast cancer. A possible explanation for this discrepancy may be due to lack of health services emphasize for health education.

The present result highlighted that a relative improvement (100%) was observed in the study population after the program. In comparison to pre program. The present study shows that 36.9% of study population did not start breast self examination. In contrast to more than quarter (28.9%) started performing breast self examination when they were above 19 years old. While more than half (52.5%) of study population was thought about breast self examination and less than half (47.2%) of those who had carried out breast self examination before did so to examine their breast regularly due to family history of breast cancer. The study found that the most of study population had no barrier to practice BSE, 19% do not know the proper way to do it. 14.4% never attended any demonstration.

Concerning the practical issues of women's regarding breast self examination, the study shows that, the majority of study population have fair performance for inspection and palpation phase. The fair skill drop to 4.6% after interventional training with significant statistical test (p-value 0.004).theses evidenced had been changed to positive demonstration of these skills during the programme.

Finally, the study recommend that, the ministry heath should take decisions to design a breast cancer control programmes in Sudan. Great efforts should be taken by rural hospitals, organizations and primary health centers to increase public awareness regarding prevention and early detection of breast cancer through national health programs, continuous and comprehensive workplace educational health programs are recommended to provide women with information about BC, BSE, cancer screening and early detection methods.

مستخلص البحث

أجريت هذه الدراسة المجتمعيه، (شبه التجريبية) في محلية شندي لتقييم تأثير البرنامج التدريبي للفحص الذاتي للثدي على معرفة وسلوك وممارسة النساء للفحص الذاتي للثدي في الفترة من يناير 2011م إلى يونيو 2013م . شملت هذه الدراسة 377 من النساء واللاتي في عمر 30 سنة فما فوق، وجمعت البيانات بواسطة ثلاث أدوات (استبيان المعرفه ، واستبيان عن السلوك والقائمة المرجعية). قبل تنفيذ برنامج التعليم (بيانات الاختبار القبلي) تم توزيع الاستبيانات للنساء وسمح لكل واحدة الوقت الكافي لملئه. ثم لوحظت كل امرأة عن طريق القوائم المرجعية لمهاراتهن باستخدام متدربة. بعد جمع البيانات من الاختبار القبلي تم تدريب النساء علي برنامج الفحص الذاتي ، واستمر التدريب لمدة ستة أشهر وتم إجراء الاختبار البعدي بعد شهرين باستخدام أدوات التقييم نفسها أثنائها انتقلت مجموعة الدراسة للتعليم والتدريب على المهارات المطلوبة.ثم قام الباحث بملء الاستبيانات ، ولوحظت كل النساء من خلال قائمة مرجعية مبسطة بشأن الفحص الذاتي للثدي.

أظهرت الدراسة أن ثلثي عينة الدراسة (74.3٪) ليست لديهم مشاكل في الثدي، وأكثر من ثلاثة أخماس من النساء (69.2٪) ليس لديهم تاريخ عائلي للإصابة بسرطان الثدي. . ومع ذلك فأن النتائج التي تم الحصول عليها توضيح أن أغلبية مجتمع الدراسة (93.1٪) قد سمع عن سرطان الثدي.نجد أعلى نسبة من الذين شملتهم الدراسة (41.6٪)حصلوا على المعلومات الخاصة بهم وسمعوا عن سرطان الثدي والفحص الذاتي للثدي من المصادر السمعية البصرية (التلفزيون، والإنترنت) والكادر الطبي (الأطباء والممرضات). علاوة على ذلك أظهرت الدراسة أن معظم من شملتهم الدراسة يعاني من ضعف المعرفة فيما يتعلق عوامل الخطر وطرق فحص سرطان الثدي. وعلى النقيض فأن أقل من ثلثي مجتمع الدراسة(65.0٪) لديهم ضعف المعرفة حول علامات الإنذار المبكر لسرطان الثدي قد يكون هناك تفسير ممكن لهذا التفاوت بسبب نقص الخدمات الصحية والتي تؤكد اهميه التثقيف الصحي. النتيجة الحالية أبرزت أنه لوحظ وجود تحسن نسبي (100٪) في مجتمع الدراسة بعد البرنامج. بالمقارنة ماقبل البرنامج وهي ذات دلالة إحصائيةع (0,5<).

أظهرت الدراسة أن 36.9٪ من مجتمع الدراسة لم يبدأوا الفحص الذاتي للثدي. وعلى النقيض من أكثر من الربع (28.9٪) التي قمن بالفحص الذاتي للثدي عندما كانوا فوق 19 سنة. في حين أن أكثر نصف مجتمع الدراسة (52.5٪) كن يفكرن عن الفحص الذاتي للثدي، وأقل من النصف (47.2٪) أولئك الذين قمن بالفحص الذاتي للثدي وذلك لممارسه فحص ثديهن بانتظام لوجود تاريخ عائلي لسرطان الثدي. نجد أن معظم الذين شملتهم الدراسة لم يكن لديهن اي عائق لممارسة الفحص الذاتي للثدي ، و 19٪ لا يعرفون الطريقة الصحيحة للقيام بذلك. و14.4٪ لم يحضرن أي تطبيق.

فيما يتعلق الجوانب العملية للفحص الذاتي للثدي عند النساء أظهرت الدراسة أن أغلبية من شملتهم الدراسة لديهم أداء مناسب فيما يخص مرحلتي الملاحظه و الجس. وقد تم تغيير هذه المهارات بعد التدريب مع وجود دلالة إحصائية . وتم تغيير هذه الدلاله للتطبيق العملي الإيجابي لهذه المهارات خلال البرنامج.

وفي الختام، فإن الدراسة توصي، وزارة الصحة باتخاذ القرارات لتصميم برامج التحكم ومكافحة سرطان الثدي في السودان. وينبغي بذل جهود كبيرة من المستشفيات والمنظمات ومراكز الرعاية الصحية الاولية لزيادة الوعي العام عن الوقاية والكشف المبكر عن سرطان الثدي من خلال البرامج الصحية في العمل التثقيفي المستمر وبرامج شاملة للصحة الوطنية والدولية وينصح لتزويد النساء بالمعلومات حول سرطان الثدي، والكشف عن السرطان وطرق الكشف المبكر.

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Abbreviation	Meaning
ACS	American cancer society
AIDS	Acquire Immune Deficiency Syndrome
BBD	Benign breast diseases
BC	Breast cancer
BSE	Breast self-examination
CBE	Clinical breast examination
HBM	Health belief model
HIV	Human Immune deficiency Virus
HBM	Health Belief Model
LMCs	Low and middle income countries
NCI-UG	National Cancer Institute-Gezira University
WHO	World Health Organization

Chapter one

- Introduction

- Rationale

- Objectives

1.1 Introduction

Cancer is an important factor in the global burden of disease. The estimated number of new cases each year is expected to rise from 10 million in 2002 to 15 million by 2025, with 60% of those cases occurring in developing countries. While breast cancer has long been recognized as a major public health burden in high-income countries, the majority of cases actually occur in low- and middle-income countries (LMCs), and it is expected that incidence rates will rise most rapidly in these locations (**F. Kamangar. et al 2006**). In Sudan breast cancer is the most common type of cancer accounting for 34.5% of all female cancers. Optimal chances for surviving breast cancer in women is by detecting it early, either by breast self examination (BSE) clinical breast examination by health staff or by mammography. (BSE) has an important role in the early detection of disease and hence its management as it enables women to detect breast lumps of less than 1.0cm in diameter (**Abdurrahman, Samira.M.Yousif, Ahmed.M: 2006**).

Breast self-examination (examination of the breasts by the individual) or clinical breast examination (examination of the breasts by a doctor or a nurse) have been promoted for many years as screening methods to diagnose breast cancer at an early stage, in order to decrease the risk of dying from breast cancer. Screening for breast cancer by regular self-examination of the breasts or regular clinical breast examination carried out by a health professional might be a possible alternative or addition to mammographic screening. Such screening might lead to less harm than mammographic screening since slow-growing tumors and tumors that do not develop into invasive cancer might be detected less often. A further advantage is that these methods do not require any technical equipment and can be performed by the women themselves if properly trained or by general practitioners or nurses.

Based on an individual assessment of benefits and risks some cancer societies and health authorities recommend regular breast self-examination and regular professional examination (**JohnWiley and Sons.2008**).

Monthly breast self-examination (BSE) is an extremely important part of health care for all women in every stage of life. Because most women discover breast changes themselves through self-exams, this is an important health routine to establish. Provides the best chance for the detection of breast cancer in its earliest and most treatable stages **(www.upmc.com)**. Although the etiology of breast cancer is unknown, numerous risk factors may influence the development of this disease including genetic, hormonal, environmental, Psychobiological and physiological factors. Over the past few decades, while the risk of developing breast cancer has increased in both industrialized and developing countries by 1%–2% annually, the death rate from breast cancer has fallen slightly. Researchers believe that lifestyle changes and advances in technology, especially in detection and therapeutic measures, are in part responsible for this (**Oussama M.N., Modjtabai.K.A.2006**).

Breast cancer is a worldwide disease resulting in many deaths. Although breast cancer incidence is lower in Sub-Saharan African countries than in developed countries, African women are more likely than women in the developed world to be diagnosed at later stages of the disease and, thus, are more likely to die from it. This is due to the lack of awareness by women, accessibility to screening methods, and availability of African-based research findings that would influence decision making at the governmental level.

Breast cancer (BC) is one of the most common forms of malignancy in women. In western countries, it represents 23-28% of all cancers and almost 6% of all women will develop BC in their lifetime. Mentioned that (BC) was ranked as the second most common cancer of women in developing countries and it is one of the major causes of death. (**Karayurt et al.: (2008**).

Unnecessary morbidity and mortality results from cancers that could have been prevented or could have been successfully treated had they been detected earlier. For many cancer sites detection of the cancer early in the course of the disease, when treatment is more likely to be successful, improves survival (**Bailer and Gornik.2010**). Screening for early detection and diagnosis of diseases and health Conditions are an important public health principle. Breast self examination (BSE) is a process where by women examine their breasts regularly to detect any abnormal swelling or lumps in order to seek prompt medical attention.

The United State Preventive Services Task Force found fair evidence that women who have screening mammography die of breast cancer less frequently than women who do not have it, but the benefits minus harms are small for women aged 40 to 49 years. Benefits increase as women age and their risk for breast cancer increases. However, there are relatively few studies of mammography for women aged 75 years or older (**U.S.preventive services task force:(2009**).There is strong evidence suggesting that older women in the developed countries are more likely to delay their presentation with breast cancer, there is data suggesting that factors related to women's knowledge and beliefs about breast cancer and its management may contribute significantly to medical help-seeking behaviors. The three screening methods recommended for breast cancer includes breast self-examination (BSE), clinical breast examination (CBE), and mammography. Unlike CBE and mammography, which require hospital visit and specialized equipments and expertise, BSE is inexpensive and is carried out by women themselves. Several studies, based on breast cancer patient's retrospective self-report on their practices of the exam, have established that a positive association exists between performance of the exam and early detection of breast cancer. There is also evidence that most of the early breast tumors are self-discovered and that the majority of early self-discoveries are by BSE performers (**M. N. Okobia et al: 2006**).

African countries such as Sudan do not have the equipment, trained personnel, or supplies to organize a national or even a regional mammography-based screening program. Because of these limitations, implementation of a program similar to the one tested in this study might help increase breast cancer survival and improve women's quality of life. In retrospective study done at the National Cancer Institute, Gezira University (NCI-UG), they reported that breast cancer in women from central Sudan started at age 20 years and gradually increased in prevalence in older women, peaking in women aged 34–45 years. There are no guidelines that state the age at which cancer screening should begin in Sudan or any other low-income and middle-income African countries, which means that screening programs such as the one described in this study could be beneficial in low-income and middle-income African countries(**D.O. Abuidris etal:2013**).

1.2 Rationale

Carcinoma of the breast is an important public health problem in Sudan and several studies have reported low levels of awareness and practice of breast self-examination as an important method of prevention or early detection of breast cancer. Breast self-examination is a cost-effective method of early detection of cancer of the breast especially in resource poor countries.

Sudanese women, many of whom live in small cities, have limited access to Mammography and clinical breast examinations. Thus, breast self-examination (BSE) becomes an important and necessary approach to detect breast cancer in its early stages in order to limit its resultant morbidity and mortality rates. Instead of treatment and care that given to the breast cancer in hospitals by professional persons. Medical advances have shown that one-third of all cancers are preventable and a further one third, if diagnosed sufficiently early, is potentially curable. This observation demands that cancer control should be of increasing priority in the health care programs of developing countries.

The professional community health nurse has the challenge and responsibility to help women gain the knowledge, attitudes and practice of BSE necessary for self-care. The nurse reach older medically underserved women with information about the early detection of breast cancer. For assuming this responsibility the nurse must assess self-care activities of breast cancer detecting and screening for breast cancer. No such an intervention study has been done in Shendi locality and there is no previous data about the subject. On the other hand a recent center for cancer control has been established in Shendi University and this study may be an integral part of its activities.

1.3 Objectives of the study

1.3.1 General objective

The main objective of this study is to evaluate the impact of breast self-examination program on women's knowledge-attitudes and practices in Shendi locality.

1.3.2 Specific objectives

1. To evaluate women's knowledge in relation to importance of breast self examination and its benefits.
2. To identify women's level of practice regarding breast self examination.
3. To apply an educational program about breast self-examination practice and attitude among group of women in order to upgrade their skills needed to activate their participation in early detection of breast cancer.
4. To evaluate the impact of the educational program on women's knowledge, attitude and practice.

Chapter Two

Literature review

2.1 Introduction

Breast cancer is a major public health problem in both developed and developing countries (**Parkin et al., 2005**) with more than one million new cases are diagnosed annually (**Pisani et al., 2002**). Breast cancer remains a common and frequency fatal disease, the most commonly diagnosed cancer in women and second ranking cause of cancer death in Eastern Mediterranean Region. More than 1.2 million women are diagnosed with breast cancer annually worldwide. In developed countries, most patients (>80%) with breast cancer present with operable disease that can apparently be entirely resected surgically (**World health organization, 2006**).

2.2 Definition

Breast cancer is a malignant tumor that starts from cells of the breast.

A malignant tumor is a group of cancer cells that may grow into (invade) surrounding tissues or spread (metastasize) to distant areas of the body. The disease occurs almost entirely in women, but men can get it, too (**American Cancer Society, 2010**). Cancer is a condition that results when cells lose their ability to regulate controlled and orderly growth. Cancer cells form when this orderly process of growing, dividing and dying is disrupted. Abnormal cells grow and multiply rapidly, clump, then form lumps.

Some are too small to feel but can be seen on a mammogram as a cluster of calcium deposits (micro calcifications), nodules, or dense spots on the X-ray film(**The Robert G. and Marguerite M. Derx Foundation, 2009**).

The available and advisable method for breast cancer screening worldwide are breast self examination (BSE), clinical breast examination (CBE) and mammogram. However, in most of developing countries the routine screening mammographies are often unavailable (**Coughlin and Ekwueme , 2009**).

American Cancer Society did recommends on (BSE) as option breast awareness and for early detection of breast cancer (**Karayurt et al., 2008**). It was reported that women who practicing regular BSE were presented more often with clinically early tumors and had shorter patient delay in presentation (**Philip et al., 2006**). Although women younger than 50 years are at a reduced risk of developing breast cancer than those older than 50 years, tumors that do develop in the earlier decades are more likely to be more aggressive and have a lower overall survival rate than those found later in life (**National Breast Cancer Centre, 2001**).

In spite of technical improvements in surgery, chemotherapy and radiotherapy, the mortality rate due to breast cancer is increasing. Because of high cost in treatment, health education and prevention of breast cancer is very important. The best way for early diagnosis is breast cancer screening, in which breast self-examination (BSE) and clinical examination by a trained doctor and mammography are recommended. Studies showed that survival rate of women who had early diagnosis was 90% and survival rate in women who had developed breast cancer has been reduced to 60%. (**Moodi et al., 2011**).

2.2 Risk factors of breast cancer

- Older age (risk increases with each year of aging, especially after the age of 40).
- Early age at menarche (<12 years).
- History of never giving birth, or later age of giving first birth (≥30 years).
- No prior history of breastfeeding.
- Prior history of breast cancer.
- Strong family history of breast cancer, especially in two or more first-degree relatives.
- History of proliferative benign breast disease.

- Prior history of having received thoracic radiation, especially prior to age 30.
- History of nodular densities on postmenopausal mammograms Oophorectomy
- before age 35.
- History of hormonal contraceptive or hormone replacement therapy use.
- Alcohol use   **(Helen varney et al., 2004).**

2.3 Signs and symptoms

- Painless or mass on palpation.
- Clear, milky or bloody discharge.
- Asymmetry of breasts.
- Change in breast tissue – thickening.
- Nipple retraction or scaly skin around nipple.
- Arm edema.
- Enlargement of cervical, supra clavicular or axillary lymph nodes.

(**Hurst reviews pathophysiology review 2008**)

- A lump or thickening in the breast or under the arm
- A change in the size, shape, or texture of the breast
- Nipple changes in a previously normal breast
- Nipple discharge, either clear or bloody
- A change in the color or feel of the skin of the breast or areola, such as dimpling, puckering, or scaling (**The Robert G. and Marguerite M. Derx Foundation, 2009**).

2.4 Benign breast diseases

The breast undergoes regular cyclical changes in response to hormonal stimulation. Each month, in rhythm with the ovulatory cycle of ovaries and uterus, the breast becomes engorged with fluid, and the women may experience sensations of tenderness, lumpiness, or discomfort. Mastodynia (pain in the breasts) is common and usually lasts for3 to 4 days before the onset of menses. (**Arlene Burroughs & Gloria Leifer, 2001**).

Non-cancerous breast conditions are breast changes that are not cancer. They are very common and most women have them. In fact, most breast changes that are sampled(biopsied) and looked at under the microscope turn out to be benign (be-nine). Benign is another word for non-cancerous. Unlike breast cancers, benign breast conditions are not life-threatening. But sometimes they can cause symptoms that bother you. And certain benign conditions are linked with a higher risk of developing breast cancer in the future. We will cover this in more detail later (**American Cancer Society,2003**). Benign breast diseases (BBD) which form the majority of breast pathologies range from developmental abnormalities, inflammatory lesions, epithelial and stromal proliferations to various neoplasms. They may present a wide range of symptoms or may be detected as incidental microscopic findings (**Guray and Sahin, 2006**).

2.4.1 Breast tenderness or fullness

Many women notice a day or two of premenstrual breast fullness and tenderness each month. Some may find palpable granular or fine nodular lumps in their breasts during this time. This is benign occurrence due to the change of hormone stimulation at this time. Fore accurate assessment, BSE should be done after, not before, a menstrual period. If a lump or tenderness persist, the women should consult a health care provider for additional assessment and care, because this might suggest amore extensive change than simple menstruation cycle fluctuation (**Adele pillitteri,2007**).

2.4.2 Breast neoplasm

A breast neoplasm is an abnormal mass of tissue in the breast as a result of neoplasia. A breast neoplasm may be benign, as in fibroadenoma, or it may be malignant, in which case it is termed breast. Either case commonly presents as a breast lump. Approximately 7% of breast lumps are fibro adenomas and 10% are breast cancer, the rest being other benign conditions or no disease (**www.wikipedia.org**).

2.4.3 Fibrocystic:

Fibrocystic breasts are characterized by lumpiness and usually discomfort in one or both breasts. The lumpiness is due to small breast masses or breast cysts. The condition is very common and benign, meaning that fibrocystic breasts are not malignant (cancerous). Fibrocystic breast disease (FBD), now referred to as fibrocystic changes or fibrocystic breast condition, is the most common cause of "lumpy breasts" in women and affects more than 60% of women. The condition primarily affects women between the ages of 30 and 50, and tends to become less of a problem after menopause(www.medicinenet.com).

2.4.4 Fibro adenoma

A fibro adenoma is a benign (not cancerous) breast lump that occurs mainly in women under 35. This is the most common lump found in teenagers and in women in their early 20's. Unlike cysts, which are fluid-filled, fibro adenomas are solid lumps made up of fibrous tissue and gland cells that have multiplied faster than normal (**Kneece, 2003**). Fibroadenoma of the breast is a relatively frequently occurring tumor. It can occur in women of any age, but the peak incidence is during the second and third decades of life. Although often considered a benign tumor, several reports describe a higher risk of subsequent breast carcinoma in patients diagnosed with fibro adenoma (**Arno Kuijper. Etal., 2001**)

2.5 National cancer control program:

The national cancer control program, started in 1975, was revised in 1984 to strengthen it with the objectives of:

Primary prevention: by health education specially regarding hazards of tobacco consumption and necessary of genital hygiene for prevention of cervical cancer.

Secondary prevention: early detection and diagnosis of common cancer such as cancer such as cancer of cervix, mouth, breast and tobacco-related cancer by screening self-examination methods.

Tertiary prevention: strengthening of existing institutions for comperhesive therapy, including palliative care (**BT Bassavanthappa, 2008**).

2.5 .1 Cancer control program aim:

Cancer control aims to reduce incidence, morbidity and mortality of cancer and to improve the quality of life of cancer patients in a defined population, through the systematic implementation of evidence-based interventions for prevention, early detection, diagnosis, treatment, and palliative care. Comprehensive cancer control addresses the whole population, while seeking to respond to the needs of the different subgroups at risk (**World health organization, 2008**).

2.5.2 Component of cancer control program:

Prevention: Prevention of cancer especially when integrated with the prevention of chronic diseases and other related problems (such as reproductive health, hepatitis B immunization, HIV/AIDS, occupational and environmental health), offers the greatest public health potential and the most cost-effective long-term method of cancer control. We now have long-term method of cancer control. We now have sufficient knowledge to prevent around 40% of all cancers. Most cancers are linked to tobacco use, unhealthy diet, or infectious agents (**World health organization, 2008**).

Early detection:

Early detection and prompt treatment offer the greatest chance of long-term survival. Mammography, clinical breast examination and breast self-examination (BSE) are the secondary preventive methods used for screening in the early detection of breast cancer. Cancer screening tests play a pivotal role in reducing breast cancer related mortalities (**http://www.biomedcentral.com**). Early detection remains a major effective approach that should be employed to combat the disease. The issue of concern, however, is whether women in the rural underserved areas are aware of these early detection methods (**Olowokere et al., 2012**). Over the years, people had the belief that breast cancer is an older woman's disease, therefore, the primary focus has been on prevention, detection and treatment of breast cancer for Women who are 50 and older (**Kinnon, 2003**). But in the African-American community, the disease can strike well at a younger age and this prompted physicians and cancer advocate groups to recommend that women should get baseline mammograms at age 40. American Cancer Society (2012) also recommends that women, starting from age 20 should be educated on the benefits and limitations of performing a monthly Breast Self- Examination (BSE) (**American Cancer Society 2012**).

Early detection detects (or diagnoses) the disease at an early stage, when it has a high potential for cure (e.g. cervical or breast cancer). Interventions are available which permit the early detection and effective treatment of around one third of cases. There are two strategies for early detection:

- early diagnosis , often involving the patient's awareness of early signs and symptoms, leading to a consultation with a health provider – who then promptly refers the patient for confirmation of diagnosis and treatment;

- National or regional screening of asymptomatic and apparently healthy individuals to detect pre-cancerous lesions or an early stage of cancer, and to arrange referral for diagnose and treatmen.

Treatment:

Treatment facilities should be available to all cancer patients. Certain form of cancer is amenable to surgical removal, while some others respond favorably to radiation or chemotherapy or both. Since most of known methods of treatment have complementary effect on the ultimate outcome of the patient, multi-modality approach to cancer control has become a standard practice in all centers over the word. In the developed countries today, cancer treatment is geared to high technology. For those who are beyond the curable stage, the goal must be to provide pain relief.Alargely neglected problem in cancer care is the management of pain. (**K.park, 2011**).

Palliative care:

Palliative care meets the needs of all patients requiring relief from symptoms, and the needs of patients and their families for psychosocial and supportive care. This is particularly true when patients are in advanced stages and have a very low chance of being cured, or when they are facing the terminal phase of the disease. Because of the emotional, spiritual, social and economic consequences of cancer and its management, palliative care services addressing the needs of patients and their families, from the time of diagnosis, can improve quality of life and the ability to cope effectively (**World health organization, 2008**).

2.6 . Screening tests for breast cancer:

As screening advances the date of diagnosis, the survival time will automatically be longer even if there is no effect on the actual date of death. Screening will therefore detect proportionally more of the slow growing, or

non-invasive, cancers, which in turn will result in a better prognosis**(della et al., 2006)**.

2.6.1 Breast ultrasound:

Ultrasound imaging, also called ultrasound scanning or sonography, involves the use of a small transducer (probe) and ultrasound gel to expose the body to high-frequency sound waves. Ultrasound is safe and painless, and produces pictures of the inside of the body using sound waves. Ultrasound examinations do not use ionizing radiation (as used in x-rays). Because ultrasound images are captured in real-time, they can show the structure and movement of the body's internal organs, as well as blood flowing through blood vessels.

Ultrasound imaging of the breast produces a picture of the internal structures of the breast. During a breast ultrasound examination the sonographer or physician performing the test may use Doppler techniques to evaluate blood flow or lack of flow in any breast mass. In some cases this may provide additional information as to the cause of the mass (**http://www.radiologyinfo.org/en/pdf/breastus.pdf)**.

Breast ultrasound is painless and reliable method of assessing the size of tumour, especially in younger women and in women with smaller or firmer breasts. (**National Health and Medical Research Council, 2003**). Ultrasound is not used on its own as a screening test for breast cancer. Rather, it is used to complement other screening tests.

If an abnormality is seen on mammography or felt by physical exam, ultrasound is the best way to find out if the abnormality is solid (such as a benign fibro adenoma or cancer) or fluid-filled (such as a benign cyst). It cannot determine whether a solid lump is cancerous, nor can it detect calcifications. Most breast lumps in young women are benign cysts, or clumps

of normal glandular tissue. Doctors also can use ultrasound to guide biopsy needles precisely to suspicious areas in the breast. (**www.breast cancer.org).**

Ultrasound examination is done by bouncing high frequency sound waves off the tissues within the breast to determine the density of the tissues and to map the breast structures. This is mainly useful for distinguishing fluid-filled (cystic) lumps from solid tumors but may also be used to guide a needle for fine-needle aspiration of cystic fluid or core needle biopsies(**Lina S.Williams & Paula D.Hopper, 2007**).

2.6.2 Clinical breast examination:

Clinical breast examination is relatively simple and inexpensive but the exact benefit of this screening modality in reducing mortality is yet to be established. It is argued that in diagnosis of breast cancer by screening the shift should be to the point that will cost least both in human and financial terms and be effective in reducing mortality, and that clinical breast examination would be able to fulfill this (**Ali Montazeri, 2008**). However, it has been shown that clinical breast examination could only detect about 60% of breast cancers detected by mammography as well as some breast cancers not detected by mammography. Recent estimates suggest that clinical breast examination has a sensitivity of about 54% and specificity of about 94%(**Weiss NS:2003**).

Women in their 20 s and 30 s should have a (CBE) as part of a periodic (regular) health examination by health professionals preferably every 3 years. After the age of 40, women should have a **CBE** every year, as recommended by the **ACS.** (**http://www.biomedcentral.com).**

To establish an education program which prepares nurses to teach breast-self examination, there is a need to identify the levels of nurse's BSE practice, their perceived self efficacy, as well as the relationship between them (**Amina Khatun et al., 2010**).

2.6.3 Mammography:

Annual mammography is considered the most valuable tool for detecting breast cancer in the earliest possible stages, before the cancer has metastasized and when interventions are most effective and least invasive and debilitating. The decline in breast cancer mortality has been largely attributed to regular mammography screening practice (**Wu TY and Yu MY, 2003**). The ACS recommends that women aged 40 and over should have a screening mammogram every year and should continue to do so for as long as they are in good health**.** (**American Cancer Society, 2005**).

Several researchers have reported that there is strong relationship between beliefs and health behaviors, such as mammography (**Sheeran, 2002; Ajzen, 2004**). In line with breast cancer screening via mammography, beliefs include knowing the time and place of doing mammogram and other information such as arranging for work leave and transportation are subjects that will increase the mammography usage among women (**Rutter, 2006**). However, although mammography is established as a screening modality for breast cancer, it is out of reach of many socially disadvantaged women in Egypt, and another approach has to be considered for the early detection of breast cancer (**Boulos, 2002**). It is therefore, important to promote awareness about early diagnosis of breast cancer and to evaluate the role of screening, recognizing that resources are not available to permit the introduction of mass mammography screening. Hence, physical assessment of the breast should be part of periodic health maintenance examinations, and teaching the client to perform monthly breast self-examination were suggested (**Altman, 2004**).

Mammography is the most sensitive and specific in detecting small tumour that is sometimes missed in palpation. The mammography has three potential drawbacks:

I. Exposure to radiation. There is has been concern about exposure to radiation from repeated mammographies and risk of breast cancer developing as a result.

II. Mammography requires technical equipment of a high standard and radiologist with very considerable experience-these two factors limit its more widespread use for mass screening purpose.

III. Biopsy from asuspicious lesion may end up in false-positive in as many as 5-10 cases for each case of cancer detected (**K.park, 2011**).

2.6.4 Biopsy:

This procedure involves removing a small portion of tissue, fluid, or cells from the breast or lymph nodes for microscopic examination. This may be done by surgically removing a portion of tissue or by aspirating fluid or cells through a needle that is placed into the lump or lesion. Needle biopsies are often done with local anesthetic and may take place in a clinic or physician's office. More extensive biopsies may require a general anesthetic.

A frozen section examination may be done in the laboratory by moistening and rapidly freezing a section of tissue, slicing it very thinly, and immediately examining it by microscope. This allows for diagnosis to be made during the course of an operation, so that the patient is spared an additional later operation for removal of cancerous tissue. (**Lina S.Williams and Paula D.Hopper, 2007**).

2.6.5 Fine needle aspiration:

A thin needle is used to draw cells from a lump. If the lump is a cyst that has a lot of fluid, your doctor might drain (aspirate) that fluid through the needle.

This is usually done with a local anesthesia. This type of biopsy has limitations, since it can obtain so few cells. It can diagnose cancer, but provides little additional information about it (**The Robert G. and Marguerite M. Derx Foundation, 2009**).

2.6.6 Core needle biopsy:

Core needle biopsy uses a larger hollow needle than fine needle aspiration does. If you have this type of biopsy, you'll be lying down. After numbing the breast with local anesthesia, the surgeon or radiologist uses the hollow needle to remove several cylinder-shaped samples of tissue from the suspicious area. In most cases, the needle is inserted about 3 to 6 times so that the doctor can get enough samples. Usually core needle biopsy does not leave a scar. If the lesion cannot be felt through the skin, the surgeon or radiologist can use an image-guided technique such as ultrasound-guided biopsy or stereotactic needle biopsy. A small metal clip may be inserted into the breast to mark the site of biopsy in case the tissue proves to be cancerous and additional surgery is required. This clip is left inside the breast and is not harmful to the body. If the biopsy leads to more surgery, the clip will be removed at that time. (**www.breastcancer.org).**

2-6-7 Surgical (open) biopsy

Doctors usually prefer to do needle biopsies to determine if a suspicious area is breast cancer, but in rare cases surgery is needed to take out all or part of the lump for a biopsy. This is called a surgical biopsy or an open biopsy. Usually this is an excisional biopsy, where the surgeon removes the entire mass or abnormal area, often with some of the normal tissue around it. If the mass is too large to be removed easily, an incisional biopsy may be done, where only part of the mass is removed (**American Cancer Society, 2003**).

2.7 Breast self examination:

Breast self examination is a unique procedure in many ways. It is inexpensive, non-invasive, involves little time and physical energy, is simple and does not depend on Professional help. In developing countries, (BSE) is considered to be simple, inexpensive, non-invasive, and non-hazardous intervention, which is not only acceptable, cost-effective and appropriate, but also encourages women to take an active responsibility in preventive health.
(**Redhwan etal.2011**). Additionally, **Mittra (2000)** argued that BSE, particularly, in developing countries was the only realistic approach to early detection of breast cancer, as it is simple, cost effective i.e. does not need a technology and teaching women to practice BSE may raise the awareness about early detection of breast cancer, particularly amongst women living in rural areas where access to clinical breast examination is not possible (**Dundar et al., 2006; Parvani, 2011**).

Breast self-examination (BSE) is a painless, cost-free and easy physical exam that allows premature detection of aneoplasia enabling efficient therapeutically action, all of which may extend the patient's life, avoid future and severe physical sequelae as well as emotional, social and economical problems . This examination is also extremely important so the woman it able to have better knowledge of her breasts typical aspects, such as shape, size, skin and nipple texture; all of which will greatly assist in the early diagnosis of any abnormality that may arise and, thus, lead to premature diagnosis, maybe avoiding breast mutilation(**Silva et al., 2009**).

Breast self examination refers to a woman being aware of the normal look and feel of her breasts and looking for changes in size or shape of the breasts, the presence of lumps, skin dimpling, redness, discharge, or unusual pain(**National Breast Cancer Centre, 2004**).

This method is of particular relevance to women under 50 years of age due to the infrequency of clinical breast examination and the ineffectiveness of mammography in younger women (**Crossing & Manaszewicz, 2003**). It should be noted clearly that BSE is not always the most appropriate diagnostic tool for younger women, especially in the case of dense breast tissue, and women who notice any unusual breast change should consult a doctor immediately for diagnostic investigations such as mammography, ultrasound examination or biopsy (**National Breast Cancer Centre, 2006**).

American cancer society (ACS) no longer recommends BSE as there is reliable data that breast cancer detection through BSE does not increase survival rates. But, BSE seems to be an important viable optional substitute available in rural areas, where access to CBE and mammograms is difficult and might still detect breast cancer early enough for treatment which can be offered to prolong women's lives and reduce suffering. For younger women, BSE training and adherence is a gateway health promotion behaviour provides women with the knowledge that sets the stage for adherence to (CBE) and mammography screening guidelines later in life. Screening is linked to perceptions of risk, benefit, and barriers through a reasoning process that includes personal and social influences and attitudes (**Lee EH, 2003**).

Most women accept the idea that breast cancer may happen to any of them, yet at the same time, some of them fear discovering the disease. Although researchers have studied the determinants of BSE, there has been relatively little understanding about the motivation of women to learn breast self-examination. A more in-depth exploration of women's experiences in relation to BSE might provide an insight into their behavioral choices. Therefore, we have attempted to explore the reasons why women want to learn BSE skills, as well as explore and illustrate the patterns of how women make the decision to learn this technique (**Yang, et al.2010**).

2.7.1 Breast self examination importance:

Breast self-examination is one of the most important health protection skills that nurses can teach to women. The few moments spent monthly on this activity may mean the difference between life and death or comfort and extreme suffering for women. (**Lina S.Williams and Paula D.Hopper, 2007**). It seems that breast self-examination not as a public health policy but as a preventive measure remains a method of choice for early detection of breast cancer in developing countries. Resource constraints in low and middle income regions lead to limited application of established guidelines for breast health care in developed countries (**Anderson BO, Jakesz R:2008**).

Unlike to mammography and clinical breast examination, BSE is simple, inexpensive, low in technology, teaching is possible to both health professionals and women and more importantly raises awareness about breast cancer in women. It is argued that in many countries, especially in developing countries, BSE may be the only realistic approach to the early detection of breast cancer (**Mittra, et al. 2000**). It is a free, private, relatively simple examination and is a useful measure when mammography screening is not available, especially in the rural and poor inner urban areas (**Sangchan, et al. 2008**).

Breast self examination is a screening method that should be taught at early ages to aware women about the importance of early detection of breast cancer. This screening method can be performed without the assistance of health professionals and requires no special equipment (**Aghamolaei, et al.2011**).

2.7.2 Breast self examination technique:

Instructions for Breast Self Exam (BSE):

Step (1) Inspection:

1.   Visually inspect the breasts, looking for dimpling, lumps, skin irregularities,

2.   symmetry

2. Visually inspect in several positions; may accentuate an Abnormality.

- Hands at the side
- Hands above the head
- Hands pressed onto hips
- Leaning over (**Dillon PM. (2003).**

Step (2) Palpation:

1. Feel the breast tissue and lymph node chain for lumps or thickening by using three finger pads while exerting light, medium, and deep pressure in a systematic fashion.

2. Begin by lying down on a flat surface with arm raised and a folded towel under the back of the breast being examined.

3. After examining breast tissue, bring arm toward body and feel the axilla and the skin above as well as below the collar bone

4. Repeat technique on the other side.

5. Report lumps, thickening, nipple discharge or any suspicious findings to health-care provider**. (Brenda Holloway, 2006).**

Breast changes women should look out for include:

- A lump, lumpiness or thickening, particularly if in only one breast and apparently unrelated to hormonal influences (such as monthly periods or pregnancy).
- A change to the nipple – this might include a change in shape, crusting, ulceration, redness or inversion.

- A discharge from nipple – particularly if it is only from one nipple, from a single duct, spontaneous, bloodstained.
- Any changes in the skin – including any puckering or dimpling of the skin, unusual redness or other color change.
- Persistent pain – this may be particularly important if it occurs in only one breast, does not improve after the menstrual period or is not related to taking hormones.
- A noticeable change in the shape or size of one breast – this may be either an increase or a decrease in size. **(www.breasthealth.com.au).**

2.7.3 Attitude toward breast self examination

The investigation of attitudinal components of health related behaviour has been important. If attitudes related to health behaviour can be identified, health protection interventions for attitudinal change can be developed, and an increase in desirable health behaviour would result **(http://www.biomedcentral.com)**. Along with early detection, there must be adequate self-efficacy to challenge the psychosocial obstacles. It seems women who are aware of cancer detection are more likely to take part in the screening programs. A significant positive relationship has been found between breast self-exam and self-efficacy

(**Maryam, Asnarulkhadi ,2012**). However, according to **Shirazi (2006)** although most women seem to believe in the efficacy of breast self-exam, they are not so easy to do. In addition, women seem to find that it is embarrassing to perform breast self exam and to look at their own body in the mirror. The majority also lacked confidence in performing breast self examination. Was also investigated to be a significant variable for mammography screening (**Wallace, 2002**).

In some Asian countries, culturally norms inhibit the discussion of particular issues, such as cancer behavior. Similarly, Iranian women do not tend to talk about cancer disease, as they believe breast cancer affect their body and attractiveness. So, participating women could not benefit information which has been received in their social network. On the other hand, most women who have participated in mammography in the past two years have indicated that their mammography was diagnostic. It can be concluded that there is resistance against family or friends' advice regarding mammography use and as a result they were less influenced by social factors (**Maryam and Asnarulkhadi , 2012**).

2.7.3 Barriers of breast self examination:

The barriers were categorized into three main areas: knowledge, psychosocial, and socio demographic factors.

Knowledge Factors:

Knowledge of breast cancer screening guidelines was a major predictor of regular screening women. Women who had knowledge of mammography guidelines were 10 times more likely of having regular mammograms (**Secginli et al., 2006**). Education level had no impact on the awareness. Full-time housewives were significantly more likely to have heard of mammographic screening compared to non-housewives. Suggest that the media is an important source of breast cancer information for women and could improve women's knowledge about breast cancer and breast cancer screening.

(**Parsa.etal.2011**).

Psychosocial Factors:

Screening involves a dynamic process of moving through stages of contemplation and action following the propositions of the transtheoretical model (**Pearlman et al., 1996**).

The health belief model (HBM) appeared most frequently in literature explaining breast cancer screening. The model suggests that changes in preventive health behavior are originally based on six factors:

a. Susceptibility: perceived personal vulnerability to or subjective risk of a health condition,

b. Seriousness: perceived personal harm of the condition,

c. Benefits: perceived positive attributes of an action,

d. Barriers: perceived negative aspects related to an action

e. Health motivation refers to beliefs and behaviors related to the state of general concern about health and Confidence is defined as the belief that one can successfully execute a behavior that will then lead to a desirable outcome **(Champion,1997)**.

According to the (HBM), women who believe that they are susceptible to breast cancer and that breast cancer is a serious condition are more likely to perform BSE and have mammography. Similarly, women who perceive more benefits and fewer barriers from BSE and mammography are more likely to use breast cancer screening behaviors. Moreover, women who are more confident in their ability to detect abnormal lumps and more motivated to promote their health are more likely to perform BSE and have mammography **(Champion, 1997)**. Concepts of susceptibility, seriousness, benefits, confidence, and health motivation are positively associated with screening behaviors, while perceived barriers are negatively associated with them **(Secginli et al., 2006)**.

An interesting finding was that some of the women strongly believed that they would not have breast cancer because they have breastfed their children. Probably, some previous education programs delivered by the media or community health nurses had provided the women with this information.

However, the information was not adequate, or misinterpreted due to inadequate understanding, and the women even did not know about other risk factors or procedures for **BCST (Im et al. 2004).**

Fear of Breast Cancer Screening Results:

Fears and worries may be due to erroneous perceptions that the women held. Teaching the realistic risks of developing BC and the importance of BC screening can reduce these fears and would enable women to overcome barriers due to their wrongly held beliefs. The barriers to screening behavior as including fear of results, fear of treatment and fear of the test itself **(Parsa.etal.2011)**.

Embracement of Clinical Breast Examination:

Mothers in the menopausal transition rarely talk about their experiences to their daughters, and teenage girls frequently learn about menstruation at menarche **(Im et al., 2004)**. Because male physicians did the clinical exams and/or women needed to expose their breasts, they felt ashamed and humiliated, and they as a result refrained from participating in breast exams. "Painful" and "uncomfortable" experiences doing mammography may be made more pleasant by first having the radiographers to explain to patients what to expect before carrying out the procedure and as gently as possible (**Im et al., 2004; Juon et al., 2004; Abdulah, 2001**).

Socio- demographic Factors:

According to **Madan et al., (2000)**, factors such as high education, married status, employment and young age but not ethnicity were predictors of performance of BSE. Other studies also concluded that age, education, knowledge, attitude, social influence, preventive health orientation, ease in establishing a BSE routine were all associated with breast cancer screening.

However, **Madan et al. (2000) and Abdulah and Leung (2001)** studies have limitations such as self reported screening test by women which may lead to an overestimation of BCS, and other socioeconomic factors such as income

level, women guarantor status, and psychological issues with BCS were not explored in these studies.

Social Support and Network:

A lack of social support and intrinsic cultural beliefs were postulated to be a negative influence on the choice of screening (**Im et al., 2004; Chua et al., 2005**). Women who stated that time and cost were concerns for regular screening were more likely to be married and/or have children. If the social support network, including employers, colleagues in the workplace, family, and friends, can be improved through appropriate health education campaign, then it is likely that a more positive attitude toward preventive health care will provided (**Straughan and Seow, 2000; Abdullah and Leung,2001; Juon et al., 2004**).

Forgetfulness and Lack of Time:

Forgetfulness and lack of time are reported as two of the most common barriers for BC screening among women in Asia (**Hisham and Yip, 2003**). These results could be due to the multiple responsibilities held by women at the workplace and at home, and restricting of time that urge the working women to postpone their own affairs for the sake of family members(**Parsa.etal.2011**).

Having Health Insurance:

Women with health insurance were more likely than other women to undergo mammography (**Juon et al., 2004; Secginli, 2006**). Recommendations and guidelines for mammography as a public health practice may vary between countries.

Having Regular Health Care:

It is important to encourage women to consult with their doctors for more information. Many countries demonstrated that most of the women, aged 40 years and older, did not receive a mammography referral by their physicians. The low rate of mammography use may be due in part to lack of physicians' referral and regular visits with a gynecologist.

Efforts to educate health care providers, particularly physicians, should emphasize the importance of the mammography referral and the importance of being enthusiastic when making the referral. In addition, periodical checkups such as regular gynecologist visits are also important. Future research is recommended to explore the role of physician referral in the take up of mammography**(Parsa.etal.2011)**.

The American Cancer Society recommends a regimen for breast cancer screening that includes mammograms, clinical breast examination, and breast self-examination. Compliance with breast cancer screening guidelines has been linked to a number of barriers and facilitators.

These barriers and facilitators seem to lie within the cognitive framework and generalized beliefs of women, and in the situational contexts in which they lead their lives. A comprehensive study was designed to investigate variables related to breast cancer screening behaviors (breast self-examination, mammography, and clinical breast examination) of working women >= 35 years of age at their worksite environments. A factor analysis identified similar sets of composite variables related to each of the screening modalities, and a discriminated analysis was performed for each screening technique to identify those variables that were most significant in predicting compliance with screening guidelines. The variables discomfort, perceived efficacy, and desire for control over health were significant for all three screening behaviors.

Perceived importance was identified as a fourth variable for mammography and clinical breast examination, and lack of knowledge was a fourth variable for breast self-examination. Effective breast cancer screening programs involve all three screening techniques. In the design of education and intervention programs at worksites, it is critical to emphasize the commonalities of the variables that emerged in this study as important for each screening technique (**http://journals.lww.com/cancernursingonline**).

It is believed that the strong negative social and cultural perception of breast cancer in developing countries could to be the main reason for the delay in presentation. This is made worse by poverty and the lack of health care services across wide geographical areas. Nonetheless, it appears that improved communication, health education, and creating awareness of the advantages of health-seeking behavior represent a step towards earlier presentation and diagnosis of breast cancer in developing countries (**Parsa.etal.2011**).

With regard to Muslim women, (**Rajaram and Rashidi, 1999**) pointed out that Muslim men inappropriately use Islam to justify their authority and dominance over their spouses which creates another barrier for breast cancer screening. Usually, an expectation of obedience to spouse who exerts control over family health decisions is in conflict with the expectation of remaining healthy in order to serve the needs of the family.

Comprehensive cancer control and advocacy:

- Lack of political will and leadership for developing cancer control with a public health approach.
- Excessive reliance on treatment approaches, disregarding prevention, early detection and palliative care.
- Limitations in resources, inequalities and competing health problems.
- Cultural taboos and myths (e.g. a woman with breast cancer may feel guilty that she has brought "bad genes" into the family).
- Religious attitudes to cancer (e.g. some faith groups see cancer as a punishment from God).
- Stigma (e.g. a woman with cervical or breast cancer may keep her disease secret to avoid social rejection and social isolation).
- Limited understanding about advocacy, the need for advocacy, and lack of advocacy skills(**WHO.2008**).

2.7.4 Nursing role in Early Detection and Prevention of Breast Cancer:

Work sites are an important venue for efforts to reduce cancer morbidity and mortality. Through worksites, it is possible to influence the health behaviors of large proportions of the population based on providing educational risk reduction message targeting individual behavior changes, promotion of environmental supports, and use of natural social network structures (**Mary et al, 2003**).

In breast cancer screening (**Hanser, 2005**) the nurse has the roles of educator, health promoter, advocate, researcher, consultant, and direct care provider. The preventive services delivered by nurses in the form of health assessment, screening, and counseling can be integrated into comprehensive health promotion and protection activities at the community level, including worksites (**Chernecky and End, 2009**). Nursing professionals which work in primary health care services can give information and orient patients on the correct realization of **BSE**. According to the normative and recommendations of the Ministry of Health for the control of breast cancer published in 2004, educational actions must be developed through breast palpation of the patient's own breasts by herself as a strategy for body care(**Silva et al., 2009**).

The major component of nursing care is health promotion. The role of health promoter includes consideration of the unique individual characteristic as well as predictable health needs of community member.

She also acts as a health educator, teaching self-examination of breast to mother or teaching self-care to individual during house visit. Promoting health is always a component of nursing care, whether the nurse teaches breast self-examination during a routine clinic visit or discusses nutrition with anew mother during a home visit. The role of health promoter includes consideration of the unique individual characteristic of each client as well as predictable health needs. (**Bassavanthappa, 2008**).

Chapter Three

Methods and Materials

3.1 Study design:

This Quasi experimental Community based study was conducted in Shendi locality to assess the impact of breast self-examination training program on women's knowledge, attitude and practice towards breast self examination in the period from January 2011 to June 2013.

A quasi study was designed in three steps: pre-program, program intervention and post program for assessing the effect of the training program. The intervention tackled the three main areas: knowledge, attitude and practice of the subjects regarding BSE and BC.

3.2 Study area:

Shendi locality is one of the localities of the River Nile State. It is bounded by Khartoum state to the south, Elddamer locality to the north, River Nile to the west and Gadarif state to the east. The total area of the locality is about 14596 Km2. Geographically it lies between line 36 east to 31 west longitudinal and line 19 north to line 15 south latitudinal in the arid zone of Sudan with an annual rainfall ranging' between 0 and 119ml per year. It is situated on the main River Nile, which provides the water for the agricultural land. It consist of five administrative units (Kaposhia, North rural, Shendi city, South rural, Hagar alasaal). The main plants are cash crops such as white beans, onions, wheat and sorghum , goats and camels are practiced both by the few nomadic 'Rashaida' and the settled farmers.

Culturally the population of Shendi is a mixture of the various cultures that occur in Sudan though the Northern tribes, particularly ElGaalien, are predominant. The total population of Shendi 'Mahalia' is estimated at about 245000. Growth Rate: 2.3%, Male 48.7%, Female % 51.3%. the average of family size is 6members, 78% of the population depends upon subsistence agriculture while the rest are traders, teachers and handcraft workers, including spinners, weavers and other artisans.

About 60% of the population is rated as 'poor'. The literacy rate is high in the towns and villages in the locality. Basic Education consist of (112) primary schools. Secondary Education consist of (17) secondary schools. Shendi University was established in the early 1990s and includes (10) faculties in the locality (shendi, mattama, taybat elkhound).

Many governmental and private health services were established, to provide health care to the community. There are many hospitals (10), health centers (38), basic health units (17), and others health programs in the locality, (MCH and expanded program of immunization (EPI)). Moreover, environmental Health and Sanitary activities are carried out by the Environmental Health staff. The major constraints facing the heath facilities in the locality are the small number of qualified staff, lack of training courses, and the shortage of equipments.

3.3 Study population:

The study population are women of 30 years age and above in Shendi locality. The total numbers of women in shendi locality are 38313 (**Sudan central bureau of statistics. 2008**).

- **Inclusion criteria:**

The only inclusion criterion was age being at 30 years and above.

- **exclusion criteria:**
  - Women below 30 years old.
  - Women that have been diagnosed with breast cancer.

3.4 Sample Size and Sampling technique:

The sample size was calculated using software Known as the survey system available at http:/www.surveystem.com.sscalc.htm. The system inertly relies on this equation:

$$\text{Sample size (n)} = \frac{Z^2 / pq}{d^2}$$

(n) = the sample size

Z = the standard normal deviate, usually set at 1.96, which corresponds to the level of the 95% confidence level

P = the proportion of target population

d = absolute precision required on either side of the proportion

q = 1.0-P

The sample size was calculated to be (377) women. The sample was distributed proportionally to the study population and according to total population in the administrated units as follows:

No	Administrative unit	Population	Percentage	Sample size
1-	Kaboashyia	7128	18%	68
2-	North rural	7838	20%	75
3-	Shendi town	7453	19%	72
4-	South rural	7499	19%	72
5-	Hagar alasaal	8395	24%	90
Total		38313	100%	377

The sampling was selected by multi stage cluster- sampling for selecting the study population this was done by three stages:

First stage: distribution of the total sample among the five administrative units. The five clusters were selected using the 'probability proportional to size' (PPS) sampling method.

Second stage: divided each administrated unit into clusters villages (cluster sampling technique). A random sampling technique is then used on any relevant clusters to choose which villages to include in the study in each identified cluster.

Third stage: All households of the selected cluster enlisted. An attempt was made to select an equal number of household in the unit as far as possible.

Household from each village was selected by systemic random sampling .The sample size was distributed for each village using the following formula:

K= N/n

Where:

K= interval.

N= population.

n= sample.

The women in each household were selected by simple random sampling proportional to population size to ensure the diserd representation of specific subgroup (age group).

3.5 Materials:

3.5.1 Data collection tools:

Three tools were used for data collection (pre-/post-program). They were developed and filled under supervision of the researcher himself.

(1) Self-administered questionnaire: for women to assess knowledge level of participants related to BC, BSE information resources and barriers for practicing BSE. It includes three parts:

The first Part:

The first part used to collect data about socio-demographic characteristics of the studied women including age, sex, educational level, marital status and parity. This part included (9) closed questions

The second Part:

The second part was developed to collect data about the women's knowledge on breast cancer such as incidence &prevalence, risk factors, source of information and warning signs of breast cancer This part included questions from (10-29).

The third Part:

The Third part testing the knowledge of women on the study about breast self examination such as source of information, performance. This part included questions from (30-40).

(2)An attitude questionnaire: is used to determine the participants' attitude toward practice of BSE. Which includes the barriers to practice breast self examination.

(3) An observation checklist: is used for assessing women's practice of breast self-examination. It involved 19 steps marked to evaluate the performance of women at the different steps then the researcher used the following grades on assessing the performance of the women (Good, Faire, poor& not done).

- Good for the best performance of the steps is considered as (3) three.
- Fair for the average performance of the steps is considered as (2) two.
- Poor for those who fails to perform satisfactory is considered as (1) one.
- Not dot for those who are not perform the steps as (0) zero.

3-5-2 Score system:

Knowledge: For the knowledge items, a correct response was scored (1) and the incorrect (zero). For each area of knowledge, the scores of the items were sum med-up and the total divided by the number of the items, giving a mean score for the part. These scores were converted into a percent score.

Knowledge was considered good if the percent score was 75% or more, acceptable if the percentage score between 40%-75% and poor if the percentage less than 40%.

Observational chick list: The total grade score in every step was considered as good if the women scored between > (2- 3) n where (n) is the number of steps, and considered fair if score > (1-2) n and considered poor if scored (1) and zero for not done. The total score of practice was 19 points.

For successful performance of breast self examination, the women must get 19 points.

Six consecutive BSE training sessions were carried out, in the form of lectures, group discussions, demonstration and redemonstration by using Breast Examination Facilitating Device (BEFD) and the trainee. Four months later, the aforementioned tools were used for follow up.

3.6 Data collection technique:

Three tools were used to collect data: a sociodemograph Characteristics data form, knowledge of BSE and risk factors for breast cancer form, attitude toward BSE and BSE practice form.

I. **Pretest: -** used to collect information from the study group to be as base line and will be done through four months according to the sample size techniques.

II. **The programs consist of two phases:**

Phase one: training of 50 women (trainee) who were selected from different administrative units of locality (10 from each administrative unit).

The women at the beginning of the study filled a pre test questionnaire. Its aim was to elicit women awareness about BC and BSE. All 50 women were trained as apart of study program implementation. The assessment of women was done through the pre and post tests, the practical by observational chick list of BSE and the end by oral exam.

Phase two: which include the women interview. The trainee visited the women that participate in study to conduct the following tasks after collection of baseline data:

▪ Orientation of women about the problem of BC and role of regular BSE.

▪ Teaching women the correct method of BSE.

▪ Asking the women to perform BSE in the program sessions that will be conducted by the researcher.

III. **Post test: -** this was done after four months during which the study group go for teaching and demonstrating the required skills, using the same assessment sheets.

3.7 Validity and Reliability of the Questionnaire:

The questionnaire in its initial form has been presented to the supervisor who gave his opinion by adding, excluding or amending some of the statements of the questionnaire. He recommended that the statements ought to cover and express the hypotheses of the study and measure them properly.

To verify the validity of the study, the researcher after that presented the questionnaire to a committee of five experienced medical and nursing staff at the University of Shendi, faculty of medicine and faculty nursing , to approve and reassure the validity and to what extents the questionnaire statements and phrases were clear and appropriate to the study. They all gave their valuable contribution by adding, excluding or amending some of the statements of the questionnaire. So the questionnaire validity was of a high stability and an internal consistency. After the verification of the validity of the questionnaire, then questionnaire was distributed to **37** women in whom were not included later in the study sample.

A pilot study was carried   before embarking on the actual study (data collection). It was conducted during august 2010 in order to test applicability of the tools of data collection, and to estimate the time required for filling the required forms. It was carried out on (37 women) to evaluate the content of tools in order to determine whether the women understood the items. The reliability of the questionnaire was (0, 78). The samples of pilot study were not included in the research result.

3.8 Field work:

The field work was carried out along a period of 18 months starting from 0ctober 2011 to March 2013, 1-2 days weekly. The assessment phase lasted for four months. The implementation phase of the program took ten months and post-test took four months.

Program implementation was in the form of small group sessions, the program content has been sequenced through 13 sessions (2 sessions for pre-test, 9 session for program implementation, 3 sessions for theory and 6 sessions for practice by using observation check list and 2 session for post test). Group consisted of 30 women chosen from different villages according to administrative unit. The lists of participants were prepared and provided to the administration office for agreement. Different educational methods and media were used. Post-tests were conducted at the end of the program.

3.8.1 Health Education Program:

An intense educational program has been designed by the researcher based on actual assessment of women needs to improve breast self care practice in the light of the available researches and literature. The intervention has been developed in a simple Arabic language to cover the relevant theoretical and practical   aspects of breast cancer and breast self-examination practice for women. Different teaching methods as discussion, demonstration, and re-demonstration, have been used.

The intervention has be implemented to trainee in small groups divided into four main group each group contain 10-15women .The program has been implemented in one sessions a week. Each session had taken about 4-6 hour and at the end of each session each women has been assessed for her understanding of the instructions. The impact of the program had based on the improvement of the trainee quality to train women self practice, and to be more compliant to women breast problems. Sessions was conducted in conference rooms of rural hospitals in each administrative unit, classroom, public presentations in local schools, clubs, schoolyards, household room and mosques were offered in a simple and interactive session to educate the women about breast cancer and the importance of early detection.

3.8.2 Modules:

Real objects (Breast Examination Facilitating Device (BEFD)).the researcher has used different media as charts, animation, colored pictures showing steps of BSE. To aid learning, the women were given presentations, handouts, brochures, and hands-on practical sessions covering breast examinations.

3.8.3 The program implementation:

Training was start by (50) fifty trainees(Every ten (10) volunteers (trainees) for each administrative unit of locality) .they are train in a workshop for two days in the faculty of nursing science -shendi University. The trainee was trained about the value of breast self-examination, the positive aspects and reasons not to apply it between the women in the shendi locality and then

followed by an intensive program of practical steps for the application of breast self-examination.Each trainee will train ten (10) woman in the neighborhood or village where she live. After that the program is implemented by trained (Trainee) on women, which includes (500) a woman all over shendi locality.

The researcher selects the trainee to participate in the implementation of the study program because:

- Religious barriers.
- Customs and traditions of society.
- To help in study sample collection & selection.
- To improve quality of data collection and accuracy.
- Facilitate the application of the training of women in performing the BSE.

The required criteria for the trainees

- To be illiterate.
- To be capable of learning and teaching.
- To be selected from various locations so that information reaches a greater number of women.

3.9 Ethical consideration:

Permission has been taken from the General Directorate of Health and Population of shendi locality to conduct the research. Then the purpose of the study was explained to each administrative unit who agreed to conduct the study. At the initial interview, each potential subject was informed about the nature, purpose, and benefits of the study, and informed that her participation is voluntary. Confidentiality and anonymity of the subjects were also assured through coding of all data. The researcher assured that the data collected and information will be confidential and would be used only to improve their health and for the purpose of the study.

3.10 Data analysis:

After the data was collected, they are coded and transferred into a specially designed formats so as to be suitable for computer feeding by using, Statistical Package for Social Sciences (SPSS version 16). SPSS was used for analysis and to perform Pearson Chi square test for statistical significance (P value). The 95% confidence level and confidence intervals were used. Following data entry, checking and verification process were carried out to avoid any errors during data entry. Frequency analysis, cross tabulation, and manual revision were all used to detect any errors.

The following statistical measures are used:

1. Descriptive measures include count, percentage, and arithmetic mean, standard deviation, minimum and maximum.

2. statistical test include : Chi square test , T test was used for quantitative variables

3. Graphical presentation includes Bar graph, Pie graph.

4. The level of significance selected for this study was P value equal to or less than 0.05.

3.11 Limitations of the study:

The researchers were faced with many logistic problems and spent much effort to convince and explain the objectives of the study. They were faced with refusals from women due to culturally related fears, pessimism, and wrong beliefs. Also, it was difficult to gather all women at the same time for program implementation, and thus the program had to be repeated several times in the same setting.

4 Results

The results of current study were presented into the following sequences:

Part 1: characteristics of study population.   Table 1------table 2.

Part 11: knowledge of study group about breast cancer.   Table 3------table 8.

Part111: knowledge of study group about breast self examination. Table 9-table 15.

Part 1V: study group performance of breast self examination.   Table 15.

Table (1) The distribution of the study population according to Socio-Demographic Characteristics (age, level of education, Women's job and marital status) (n=377).

Item	Number	Percentage
Age		
30-35	194	51.5%
36-40	78	20.7%
41-45	50	13.3%
More than 45	55	14.6%
Total	**377**	**100%**
Level of education		
Illiterate	38	10.1%
Primary school	95	25.2%
High school	163	43.2%
University graduate	79	21.0%
Post graduate	2	.5%
Total	**377**	**100%**
Women's job		
House wife	228	60.5%
Worker	36	9.5%
Student	61	16.25%
Employee	41	10.9%
Others	11	2.9%
Marital status		
Single	134	35.5%
Married	203	53.8%
Widow	16	4.2%
Divorced	19	5.0%
Separated	5	1.3%
Total	**377**	**100%**

Table (1) shows that more than half of study group their age range between 30- 35 year (51.5%). With only 13.3% of study population their age rang 41-45 year and (14.6%) are age more than 45 years.

About the educational level of study group the table revealed that less than half (43.2%) are high school. Quarters of them (25.2%) are primary school and (21.0%) of the women are university graduate.

More than half of the women are house wife. The worker and employee are (9.5%, 10.9%). Respectively. Almost three-fifth (53.8%) are married.

Table (2) The distribution of the study population according (Socio-Demographic Characteristics (parity, family type and post- menopausal period) (n=377).

Item	Number	Percentage
Parity		
Single(not married)	163	43.2%
Null parous	33	8.8%
Multi parous	181	48.0%
Total	377	100
Family type		
Nuclear	181	48.0%
Expanded	196	52.0%
Post menopausal period		
Yes	83	22.0%
No	294	78.0%
Total	377	100

Table (2) shows that less than half of study group are null parous (43.2%). While (48%) of them are multi parous only (8.8%) of study population are single (not married).

Half of study populations (52.0%) are expanded family type while less than half of them (48.0%) are nuclear family. More than tow third of study population (78.0%) are not in post-menopausal period.

Table (3). The distribution of the study population according to breast problems and family history of breast cancer. (n=377).

Item	Number	Percentage
History of breast problems		
Present	64	17.0%
Not present	280	74.3%
Don't know	33	8.8%
Total	377	100
Family history of breast cancer		
Yes	71	18.8%
No	261	69.2%
Not remember	45	11.9%
Total	377	100%

Table(3) shows that (17.0%) of study population had history of breast problems. Two third of them (74.3%) had no breast problems and only (8.8%) do not remember this problem. More than three-fifth of women (69.2%) had no family history of breast cancer. And (18.8%, 11.9%) of the women had no family history of breast cancer and not remember.

Table (4) The knowledge of breast cancer among the study population (pre & post intervention). (n=377).

Item	Pre program		Post program		P-Value
	Number	Percentage	Number	Percentage	
Heard about BC					
Yes	351	93.1%	377	100 %	
No	26	6.9%	0.0	0.0%	
BC in the environment					
Common	107	28.4	377	100%	
Rarely found	95	25.2%	0.0	0.0%	**0.00**
Not common	144	38.2%	0.0	0.0%	
Don't know	31	8.2%	0.0	0.0%	
Incidence of BC over the world					
High	263	69.8%	377	100%	
Moderate	50	13.3%	0.0	0.0%	
Low	11	2.9%	0.0	0.0%	**0.00**
Don't know	53	14.1%	0.0	0.0%	

* Significant at P. value ≤ 0.05

** Highly significant at p. value≤ 0.001

Table No (4) clarifies in program testing the majority (93.1%) of study population have heard about the breast cancer. Third of study population (38.2%) they reveal that breast cancer is not common in their environment. but only 8.2% not know about it in their environment.

More two third (69.8%) of study population reveal that the incidence of breast cancer over the world is high. On other hand (13.3% ,14.1%)reveal it as moderate and not know about this incidence respectively.. This knowledge raise to (100%) in the post program intervention with highly significant statistical different (p- value < 0.00).

Table (5). The knowledge about risk factors of breast cancer among the study population (pre & post intervention). (n=377).

Item	Pre program		Post program		P-Value
	Number	**Percentage**	**Number**	**Percentage**	
Risk factors of breast cancer					
Good knowledge	99	26.3%	361	95.8%	**.000**
Acceptable knowledge	119	31.6%	16	4.2%	
Poor knowledge	159	42.2%	0.0	0.0	
Total	**377**	**100.0%**	**377**	**100.0%**	

* Significant at P. value ≤ 0.05
** Highly significant at p. value≤ 0.001

This table illustrate that only 26.3% of study population have good knowledge about risk factors of breast cancer. Quarter of them (26.3%) have acceptable knowledge and less than half (42.2% have poor knowledge. After the program intervention, a remarkable improvement in participants level of knowledge (95.8%).significant differences were found between results pre/post program.

Table (6). The knowledge regarding early detection and chance of survival from breast cancer among the study population (pre & post intervention (n=377).

Item	Pre program		Post program		P-Value
	number	Percentage	number	Percentage	
Early detection of BC					
Yes	334	88.6%	377	100%	
No	7	1.9%	0.0	0.0%	**.000**
Don't know	36	9.5%	0.0	0.0%	
chance of survival of BC					
Yes	295	78.2%	377	100%	**.000**
No	27	7.2%	0.0	0.0%	
Don't know	55	14.6%	0.0	0.0%	
Total	**377**	**100%**	**377**	**100%**	

* Significant at P. value ≤ 0.05
** Highly significant at p. value≤ 0.001

This table shows most of study population know that breast cancer can be detect early. While only 1.9% of the study population not know. With 9.5% don't know if they can be detecting early. Two third (78.2%) of study population know about chance of survival of breast cancer. corresponding to (14.6%) don't know. This knowledge raise to (100.0%) with significant (p-value 0.00).

Table (7). The knowledge regarding screening methods and early warning signs of breast cancer among the study population (pre & post intervention). (n=377).

Variable	Pre program		Post program		P-Value
	Number	**Percentage**	**Number**	**Percentage**	
screening method of BC					**0.00**
good knowledge	36	9.5%	377	100%	
acceptable knowledge	35	9.3%	0.0	0.0%	
poor knowledge	306	81.2%	0.0	0.0%	
early warning signs of BC					
good knowledge	103	27.3%	377	100%	
acceptable knowledge	29	7.7%	0.0	0.0%	**.005**
poor knowledge	245	65.0%	0.0	0.0%	
Total	377	100%	377	100%	

This table shows that before the program majority of study population (81%) have poor knowledge about screening methods of breast cancer .And (9.5%, 9.3%) have acceptable and good knowledge, respectively.

Less than two third (65.0%) of study population have poor knowledge about early warning signs of breast cancer .More than quarter (27.3%) have good knowledge and only 7.7% have acceptable knowledge about it. The present table highlighted that a relative improvement (100%) was observed in the study population after the program. In comparison to pre program. With significant statistical test (p value < 0.05) .

**Table. (8) The relation between the level of education and knowledge about screening method of early detection of breast cancer (n=377).**

		screening method of early detection of breast cancer				P-Value
		good knowledge	acceptable knowledge	poor knowledge	Total	
level of education	illiterate	2	1	35	38	
	primary school	7	8	80	95	**0.05**
	high school	12	16	135	163	
	university graduate	15	10	54	79	
	post graduate	0	0	2	2	
Total		36	35	306	377	

* Significant at P. value ≤ 0.05

** Highly significant at p. value≤ 0.001

This table illustrates the significant statistical relation between the level of education and knowledge of study group (p-value 0.05) about the screening methods of early detection of breast cancer.
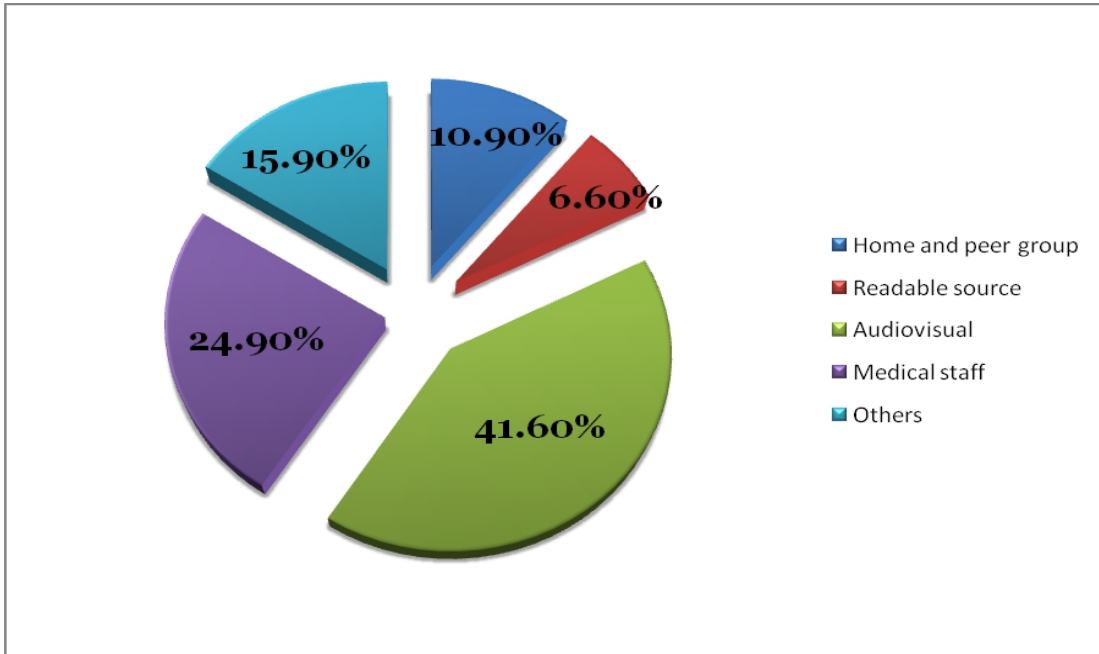
Figure (1) information sources about breast cancer and breast self examination.

As regarding source of information figure (1). Displays that only two-fifth (41.6%) of the study population heard about breast cancer and breast self examination from audiovisual (TV, internet). While the readable source (books and newspaper) represented 6.6%. Those who mentioned medical staff (as physicians or nurses) represented about 24.9% with only   10.9% from home and peer group but there was 15.9% from other sources like colleagues and family members.

Table (9). The knowledge about age and best time of performing breast self examination among the study population (pre & post intervention).(n=377).

Item	Pre program		Post program		P-Value
	Number	**Percentage**	**Number**	**Percentage**	
Hearing about BSE					
Yes	297	78.8%	377	100%	
No	80	21.2%	0.0	0.0	
The age which BSE should begin					
At puberty	201	53.3%	0.0	0.0%	
At 20 years	99	26.3%	377	100%	0.00
After child birth	31	8.2%	0.0	0.0%	
At menopause	46	12.2%	0.0	0.0%	
Total	377	100%	377	100%	
Best time to do the BSE					
After menstruation	189	50.1%	377	100%	
Before menstruation	48	12.7%	0.0	0.0%	0.00
Any time during menstruation	34	9.0%	0.0	0.0%	
Don't know	106	28.1%	0.0	0.0%	
Total	377	100%	377	100%	

Table(9) shows that two third (78.8%) of study population heard about breast self-examination.. In testing of program more than half (53%) of study population believed that the age of which breast self examination should begin is puberty. More than quarters (26.3%) reveal that should be at 20 years. While 12.2% believed it at menopausal period .

According to best time of performing BSE Half (50.1%) of study population clarify that best time to do breast self-examination is after menstruation.. While 28.1% don't know the best time but only few of them 9.0% believed that at any time during menstruation. The table demonstrates the progression of knowledge of studied sample related to breast self examination through the health educational program.

Table (10) The knowledge regarding the position and frequency of performing breast self examination among study population (pre & post intervention).(n=377).

Item	Pre program		Post program		p-value
	number	percentage	Number	percentage	
the suitable position for perform BSE					
Stand in front of mirror	169	33.3%	377	100%	
Lying on the bed	99	19.5%	377	100%	**0.00**
In the bathroom	87	17.1%	377	100%	
Others	153	30%	0.0	0.0%	
Performance of BSE					
Daily	43	11.4%		0.0%	
Weekly	21	5.6%	8	2.1%	
Monthly	221	58.6%	367	97.9%	**0.03**
Yearly	32	8.5%		0.0%	
Others	60	15.9%		0.0%	
Total	**377**	**100%**	**377**	**100%**	

Table No (10)   shows   that third (33%)   of the study population have reveals that the suitable position to perform breast self examination is to stand in front of a mirror in preprogram testing as less than quarter (19.5%) were aware about lying on the bed when performing BSE. This is in contrast to the post intervening checking where this awareness rises to (100%) with significant statistical different (p – value < 0.00).

Concerning knowledge about frequency of breast self examination (5.6%, 8.6%) were believed that it should be weekly and yearly respectively. While more than half (58.6%) know that should done monthly in pre program checking. The post intervention results showed an increased to 97.9 %   with significant statistical different (0.003).

Table (11). The experience of study participant regarding performing breast self examination.(n=377).

Item	Number	percentage
Performance of BSE before		
Yes	144	38.2%
No	233	61.8%
Total	**377**	**100%**
Frequency of performing BSE		
Regular	40	27.7%
not regular	104	72.2%
Total	**144**	**100%**

Table No (11) reveals that before the program 61.8% of study population are not performing breast self examination ever before. While one third (38.2%) practice it before. In the other hand more than quarter (26.3%, 27.6%) perform the breast self examination regular and not regularly respectively.
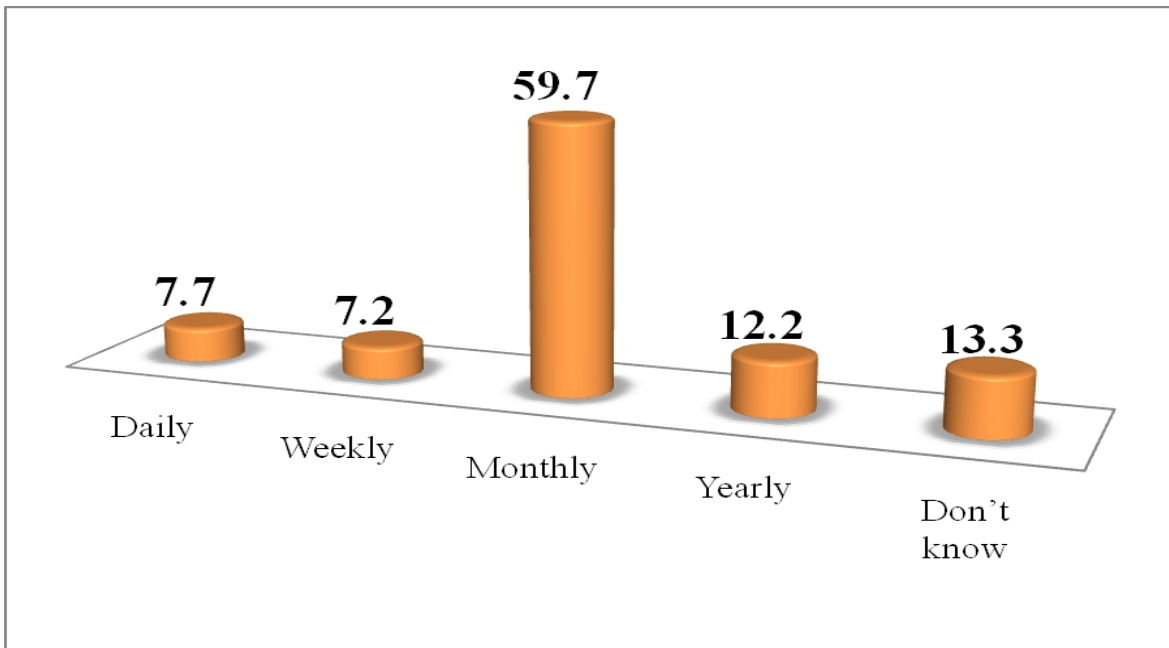
Figure (2). The frequency of performing breast self examination among study group.

This figure present less than three-fifth (59.7%) of study population felt that breast self examination should be carried monthly. Similar percentage (7.7%and 7.2%) felt that they should be carried daily or weekly, respectively. While 12.2% felt it should be done yearly. In contrast to 13.3% do not know about the frequency of performing breast self examination.

Table (12).The age of starting BSE and last time of the performance of BSE among the study population. (377).

Item	Number	Percentage
Age of starting BSE		
More than 19 years	41	28.4
Less than 19 years	14	9.7
Don't start	52	36.3
Don't know	37	25.6
Total	**144**	**100%**
Last time of performing BSE		
Less than a week	28	19.4%
Less than six months	18	12.5%
Less than one year	8	5.6%
Don't know	90	62.5%
Total	**144**	**100%**

This table show that 36.3% of study population did not start breast self examination. More than quarter (28.9%) started performing breast self examination when they were above 19 years.

Less than quarter (19.4%) of study population last performed breasts self examination less than a week ago.Majority of the study population did not remember the last time they perform breast self examination.

Table (13). The distribution of study population in relation to their attitude and Reasons for Doing BSE of study participant n=(377).

Item	Number	Percentage
Necessity of BSE		
Yes	313	83.0%
No	15	4.0%
Not sure	49	13.0%
Thought of BSE before		
Yes	198	52.5%
No	134	35.5%
Don't remember	44	11.7%
The reasons of thought about BSE		
To regularly examine breast	178	47.2%
Breast cancer in the family	25	6.6%
Others	53	14.1%
The reasons of not thought about BSE ©		
Don't know how to do it	124	23%
Don't think it is important	35	6.5%
Don't think should touch their body like that	23	4.3%
Don't believe in the efficiency of BSE	33	6.1%
Don't have any symptoms	102	19%
Know they can never have cancer	13	2.4%
Scared of being diagnosed with BC	32	6%
Others	176	33%

©more than one answer was given.

Table(13) shows that majority of studied sample (83.0%) showed that the breast self examination was necessary. More than half (52.5%) of study population was though about breast self examination before. 35.5% of them didn't thought about it.

Less than half (47.2%) of those who had carried out breast self examination before did so to examine their breast regularly but only 6.6% carry it due to family history of breast cancer. Only 14.1% for other reason. Less than quarter (23%) of study population whom had not carried out breast self examination shows that they don't know how to do it. Similar percentages (6.5%, 6.1%) their reasons not thought about it said they don't think it is important and don't believe in the efficiency of breast self examination, respectively. Mean while 19% they believed they don't have any symptoms. More than third (33%) of study population have other reasons for not to though about breast self-examination.

Table (14). Shows Barriers towards Performing Breast-Self Examination (BSE) among Respondents. (n 377)

Item (s)	Pre program		Post program	
	Number	Percentage	Number	Percentage
The barriers ©				
Lack of time	42	8.3%	377	0.0%
Never attend any demonstrations of BSE	75	14.4%	377	0.6%
Not at risk hence not required to do it	101	19.5%	377	0.0%
Fear of finding some abnormality	39	7.5%	70	18.5 %
Lack of privacy	13	2.5%	20	5,3%
Not convinced about BSE	13	2.5%	377	0.0%
Don't know the proper way to do it	98	19%	377	0.0%
Others	25	4.8%	377	0.0%
No barriers	111	21.4%	377	0.0%

©more than one answer was given.

Table (15). The relation between barriers of BSE and level of education (n =377).

		level of education					
		illiterate	primary school	high school	university graduate	post graduate	Total
barriers of BSE	Lack of time	5	3	6	5	0	19
	Never attending demonstrate BSE	1	18	23	21	0	63
	Not at risk	8	17	44	11	0	80
	Fear of finding abnormality	0	5	15	6	0	26
	Lack of privacy	2	2	1	1	0	6
	Not convinced about BSE	1	4	3	2	0	10
	Don't know the proper way to do it	6	13	23	15	0	57
	Others	15	32	48	18	2	115
Total		38	94	163	79	2	376

p-value = 0.66

* Significance at P. value ≤ 0.05
** Highly significance at p. value≤ 0.001

Table (16). Shows the progression of practices of study population (Pre & post intervention) in relation to breast self examination through the health education program.

Item (s)	Before program		After program		p-value
	number	Percentage	number	Percentage	
Inspection phase					
Good	8	2.1%	353	93.6%	
Fair	329	87.3%	24	6.4%	**0.004**
Poor	40	10.6%	0.0	0.0%	
Palpation phase					
Good	89	23.6%	362	96.0%	
Fair	205	76.4%	15	3.7	**0.001**
Poor	83	22%	0.0	0.0	

Regarding the study population practice of breast self examination, table (16) reveals that before the program, the majority (87.3%) of them have fair performance for inspection phase with only 2.1% have good performance. The fair skill drop to 4.6% after interventional training with significant statistical test (p-value 0.004).

This table explains that   76.4%   of study population has fair performance for palpation phase. while less than quarter (23.6%) of study population have good performance in pre program checking .There is a highly progress in practice regarding breast self performance   with significant statistical test (P- value .001).
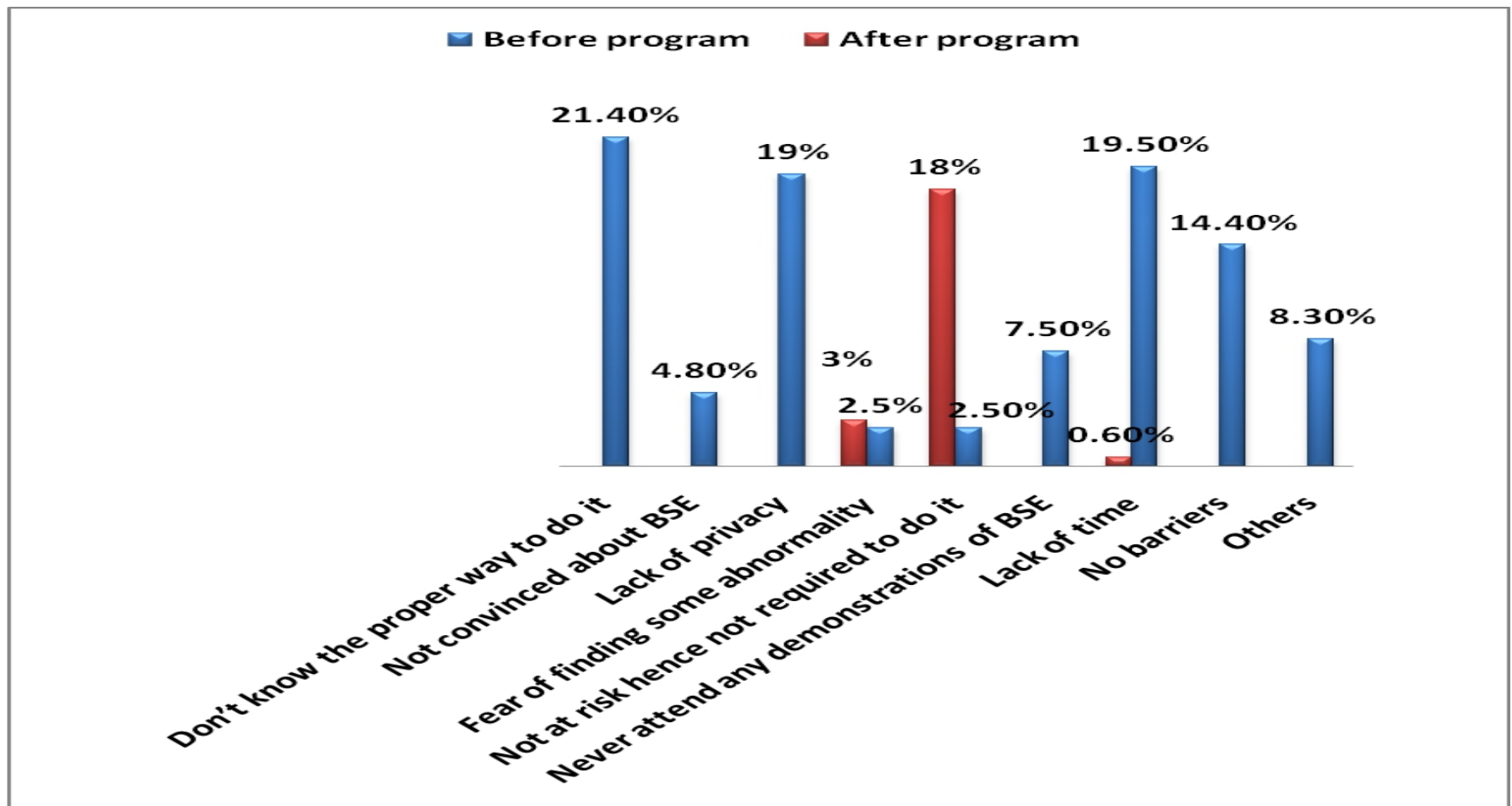
Figure (3) Shows Barriers Towards Performing Breast-Self Examination among Respondents (n =377).

Concerning barriers of study population to practice breast self examination monthly (figure 3) highlighted that 21.4% have no barrier and 19% do not know the proper way to do it. While same percentage (2.50%) because of lack of privacy and have not convinced about breast self examination. Those who mentioned fear of finding some abnormality and lack of time represented (7.5% and 8.3%) respectively. While 14.4% never attend any demonstration.

Chapter Five

- Discussion

- Conclusion

- Recommendations

5.1 Discussion:

Sudan is a very large country, inhibited by many different heterogeneous communities. These communities greatly varying in their life style and exposure to environmental factors that might be potent risk factors for the development of breast cancer. Moreover, no epidemiological study has undertaken this issue before. Breast cancer accounts for around a third of all cancers. In a descriptive study done in Sudan in 2010, the prevalence of advanced, stage III or worse metastatic disease was higher in women living in rural areas than it was in women living in urban area. In general, women living in sub-Saharan African countries present with advanced-stage disease that is difficult to treat and results in death **(D.O. Abuidris etal: 2013)**.There-fore, this study is an attempt to assess the impact of breast self-examination training programme on women's knowledge-attitude and practice towards breast self examination which might contribute to the increase the awareness of breast cancer in the Sudan.

Recent studies have shown that deaths from breast cancer for women in their forties can be reduced by 17 percent and by at l east 30 percent for women ages 50-69, if they follow breast cancer screening recommendations, including routine mammography, regular exam in at ions by a physician, and monthly breast self exams. (**Nahala.A.A.etal:2011**).

The present study shows that more than half (51.5%) of study group their age range 30- 35 year. concerning the educational level of study group reveal that less than half are high school. Through this age breast cancer are common and incidence rates of breast cancer rise in which consider the suitable age for educational programme that enhance the women to promote their awareness about the BC and BSE.

According to **(American cancer society, 2008)** stated that the breast self exam (BSE) is an option for women starting in their 20s. Women should be

told about the benefits and limitations of BSE. Women should report any breast changes to their health professional right away. While More than half of the women are house wife. Almost three-fifth (53.8%) are married. This interpretation is supported by (**D. O. Abuidris etal:2013**) pilot study about Breast-cancer screening with trained volunteers in a rural Area of Sudan: which reported that breast cancer in women from central Sudan started at age 20 years and gradually increased in prevalence in older women, peaking in women aged 34–45 years. There are no guidelines that state the age at which cancer screening should begin in Sudan or any other low-income and middle-income African countries, which means that screening programmes such as the one described in this study could be beneficial in low-income and middle-income African countries. Additionally, although mammography is clearly a life-saving technology, its role in the decrease in deaths due to breast cancer has been overestimated and its benefit has been widely debated. On-mammographic early detection through awareness campaigns have been shown to have substantial positive effects and to contribute to almost half of the decrease in breast cancer mortality in high income countries.

It has been found from the present study two third of study population (74.3%) had no breast problems and more than three-fifth of women (69.2%) had no family history of breast cancer. Only 18.8%, 11.9%) of the women had no family history of breast cancer and not remember. However, evidence from some studies shows that some women may be at a greater risk. Generally Women with a family history of breast cancer are at increased risk of the disease, but no study has been large enough to characterize reliably how, over women's lives, this risk is influenced by particular familial patterns of breast cancer. Moreover, WHO recommended that in order to make BSE a habit, education about BSE ought to be started for girls at school age.

The collected evidence from the obtained results clarify that the majorities (93.1%) of study population have heard about the breast cancer.

Third of study population (38.2%) revealed that breast cancer is not common in their environment. More than two third (69.8%) of study population revealed that the incidence of breast cancer over the world is high. This knowledge raise to (100%) in the post program intervention with highly significant statistical different (p- value < 0.00).This mean the study population had background about the global of breast cancer but implementation of a cancer awareness and breast examination programme by use a local women could increase the early detection of breast cancer in district areas. According to (**WHO Global Burden of the disease, 2004**) Breast cancer survival rates vary greatly worldwide, ranging from 80% or over in North America, Sweden and Japan to around 60% in middle-income countries and below 40% in low-income countries. The low survival rates in less developed countries can be explained mainly by the lack of early detection programmes, resulting in a high proportion of women presenting with late-stage disease, as well as by the lack of adequate diagnosis and treatment facilities.

The present study shows that most of population has poor knowledge regarding the risk factors of breast cancer. Our results are compatible with the study done in Sudan which was an attempt to find out the frequencies of exposure to some risk factors that might be associated with the breast cancer in the Sudan. Knowledge of risk factors, as well as, rising of the awareness are momentous, particularly in a country like the Sudan, where many patients present from remote areas with poor health services.

For that reason, the incidence and mortality of breast cancer are high, remarkably constant and the frequency is increasing particularly amongst younger women (**Ahmed, etal:2010**).This program intervention, had a remarkable improvement in participants level of knowledge to (95.8%).significant differences were found between results pre/post.

The highest proportion of the study population (41.6%) obtained their information and heard about breast cancer and breast self examination from

audiovisual (TV, internet). Medical staff (as physicians or nurses) represented about 24.9%. This finding inconsistent with a previous studies done in Malaysia (**Al-Dubai.S. A: etal 2012**) which revealed that, newspapers and magazines were found the most common source of information on breast-self examination (BSE) followed by information from medical health personnel. In Turkey a study showed that mass media was the common source of knowledge about BC 48.6%, followed by health professionals and books and journals 44.4%, 38.9% respectively (**Salaudeen et al, 2009**). A possible explanation for this discrepancy may be due to lack of health services emphasize for health education. Mean while the role of electronic media, particularly television should be stressed as it was found to play a key role in imparting health education and belief changes among women especially in rural area. Therefore important that effort should made using the media to create breast cancer awareness in rural areas with less health services and emphasize the importance of early detection as appears to be better media to reach a wider audience.

The finding of this research indicates that before the program majority of study populations have poor knowledge about screening methods of breast cancer. And (9.5%, 9.3%) have acceptable and good knowledge, respectively. In contrast to less than two third (65.0%) of study population have poor knowledge about early warning signs of breast cancer .More than quarter (27.3%) have good knowledge and only 7.7% have acceptable knowledge about it. It is justifiable to assume that lack of implementation of cancer-screening programmes and the availability of professional health care personal. However, the implementation of similar screening programmes in Sudan is challenging by finance, resources, or trained personnel to carry such programmes effectively especially in rural areas outside major cities. As well as the restricted capabilities of health-care systems. The present result highlighted that a relative improvement (100%) was observed in the study

population after the program. In comparison to pre program. With significant statistical test (p value < 0.05).

The present observation are in agree with previous study in Saudi Arabia (**Dandish.K.F, Al- Mohaimeed.A;2007**) which show that majority of participants did not recognize the most common methods of breast cancer screening (mammography and CBE).This could be attributed to the absence of a national periodic examination program; which usually includes cancer screening tests; in Saudi Arabia. In contrast, BSE was familiar as a screening method and ever practiced by about one third of the participants, and 15.4% of them had practiced it during the last month. The study confirms that could be attributed to educational level which the highly significant statistical relation between the level of education and knowledge of study group (p-value 0.05) about the screening methods of early detection of breast cancer.

Irrespective of the early detection method used, central to the success of population based early detection are careful planning and a well organized and sustainable programme that targets the right population group and ensures coordination, continuity and quality of actions across the whole continuum of care. Targeting the wrong age group, such as, younger women with low risk of breast cancer, could cause a lower number of breast cancers found per woman screened and therefore reduce its cost-effectiveness(**Yip et al., 2008**).the present study show that   two third (78.8%) of study population heard about breast self examination. More than half (53%) of study population believed that the age of which breast self examination should begin is puberty and the best time of performing BSE is after menstruation. while 61.8% of study population are not performing breast self examination ever before .

In the other hand more than quarter (26.3%, 27.6%) perform the breast self examination regular and not regularly respectively. There was a progression of knowledge of studied sample related to breast self examination through the health educational program in contrast to the post intervening

checking where this awareness rises to (100%) with significant statistical different (p – value < 0.00). The result of present study provide evidence that the BSE should be started at school age and must be remains an important early detection strategy, particularly in low- and middle-income countries where the diseases is diagnosed in late stages and resources are very limited.

It was found that a sense of self-security became an important motivator for entering BSE training. The satisfaction in obtaining a sense of self-security emerged as the central theme. The present study show that 36.9% of study population did not start breast self examination. In contrast to more than quarter (28.9%) started performing breast self examination when they were above 19 years old. Unfortunately, majority of the study population did not remember the last time they perform breast self examination but they showed that the breast self examination was necessary.

In a study from Egypt, (**Seif N, Aziz M. 2000**). Age was found to be a significant predictor of BSE. Younger women tended to practice BSE than the older women. In yet another study in Iran by (**Ebrahimi M, etal: 2001**) the most frequent barrier for breast self examination was forgetfulness (52%) and having 'no problem in the breasts. The practice of BSE was more frequent in married women than in singles (p<0.001) and in women with positive family history of breast cancer (p<0.039). Beliefs about and practice of BSE were better in women with history of a breast problem or history of a visit to the gynecologist. In general, intention to do BSE was associated with self efficacy, knowledge of breast cancer issues, concern about getting breast cancer and employment status.

Our study emphasizes the need for continuous health education and training on BC and BSE through the programmes which consider an important first step to raise women's awareness of breast screening and BSE. So motivate them to appositive attitude for early detection of breast cancer perhaps reduce mortality and more lives could be saved if women were aware of practices of breast

health awareness. Moreover more than half (52.5%) of study population was though about breast self examination and less than half (47.2%) of those who had carried out breast self examination before did so to examine their breast regularly due to family history of breast cancer. Only 14.1% for other reasons. While less than quarter (23%) of study population whom had not carried out breast self examination shows that they don't know how to do it. Similar percentages (6.5%, 6.1%) their reasons seem to be they don't think it is important and don't believe in the efficiency of breast self examination, respectively. Mean while 19% they believed they don't have any symptoms. More than third (33%) of study population have other reasons for not to though about breast self examination. Generally, It appeared that the program has successfully motivated the women to be more aware of their breast health and spread the information to others, although follow-up is required to determine the long-term effectiveness of BSE programme uptake.

Concerning barriers of not practicing breast self examination monthly (the women were allowed to state more than one reason) we found that the most the study population had no barrier, 19% do not know the proper way to do it. While same percentage (2.50%) because of lack of privacy and have not convinced about breast self examination. Those who mentioned fear of finding some abnormality and lack of time represented (7.5% and 8.3%) respectively. While 14.4% never attend any demonstration.

This finding agree with the study in Turkey showed that the most common reasons for not doing BSE were "not knowing how to perform BSE" (98.5%), "not expecting to get BC" (45.6%) and "not having a close relative with BC" (42.9%) (**Salaudeen et al: 2009**). Also Consistent with many studies, (**Grunfeld et al., 2002**). Other study done among Kuwaiti women reported that the main reasons for not performing BSE were, fear of cancer discovery 13.4%, forgetfulness 14.6%, failure to realize the importance of BSE 15.3% and lack of knowledge about the technique of BSE

28.9% (**Al Qattan and Saleh, 2008**). A study in Egypt revealed that the most frequent cited reason of not practicing BSE 50% was the fear to find a lump, and 35.2% mentioned forgetfulness. Those who mention no time and culture and health beliefs represent similar percentage 31.1%, dislike to touch one's own breasts represent 23%.also unavailability of specialized centers was reported by only 20.5% (**Seif and Aziz, 2000**).

Other study in Iran found that the commonest reason given for not doing BSE was lack of knowledge on how to do it 48%. Other reasons include: forgetfulness 20%, fear of finding a mass 17%, not necessary 9%, and lack of time 4% (**Parsa and Kandiah, 2005**). A finding which underlines the need for public awareness campaign highlighting the rational and effectiveness of BSE.

Concerning the practical issues of women's regarding breast self examination, the study showed that, majority of study population have fair performance for inspection and palpation phase. The fair skill drop to 4.6% after interventional training with significant statistical test (p-value 0.004)., theses evidenced had been changed to positive demonstration of this skills during the programme but unfortunately there still few of women did not perform a good skills for breast self examination. This point has been improved to be 90% during the ongoing evaluation phase.

This result is in congruence with **(Leight et al 2003)** who stated that individual training in BS E with guided practice improved both the depth of palpation and the search duration of BSE. On the same line, **Jane** (2005) reported that an intervention program significantly increased both BSE frequency and accuracy among women in the experimental group.

5.2 Conclusion:

Based on the findings of present study, it is concluded that:

- Majority of study population have heard about the breast cancer. They obtained their information and heard about breast cancer and breast self examination from audiovisual (TV, internet) and Medical staff.

- Less than two third of study population have poor knowledge about early warning signs of breast cancer. Most of population has poor knowledge regarding the risk factors of breast cancer.

- The majority of study populations have poor knowledge about screening methods of breast cancer.

- The study shows that most the study population had no barrier and the majority of study populations have fair performance for inspection and palpation phase. The fair skill drop to 4.6% after interventional training with significant statistical test (p-value 0.004).

- There was a progression of knowledge and practice of studied sample related to breast self-examination through the health educational program in contrast to the post intervening checking where this awareness rises to (100%) with significant statistical different ($p - value < 0.00$).

5.3 Recommendations:

In the light of the results, the following recommendation can be made:

- The Ministry of the heath should take decisions to design a breast cancer control programmes in Sudan. The Breast self examination (BSE) training programmes should be adopted as an element of the services offered to the women in rural areas.

- Great efforts should be taken by rural hospitals, health organizations and primary health care centers to increase public awareness regarding prevention and early detection of breast cancer through national and international health programs.

- Continuous and comprehensive workplace educational health programs are recommended in high schools to provide women with information about BC, BSE and cancer screening and early detection methods.

- Similar studies should be done amongst health practitioners preferably in a rural setting.

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Appendices

Appendix (1)

Part (1):- Demographic profile of women

1. **Age:**

    A.30-35 ☐   b.36-40 ☐   c.41-45 ☐   d. More than 45 ☐

2. **level of education:**

    a. Illiterate ☐   b.primary ☐   c.high school ☐

    d. University graduate ☐   e. Post graduate ☐

3. **Women`s job:**

    a. House wife ☐ b. worker ☐ c. Employee ☐ d. Student ☐ e. others ☐

4. **Marital status:**

    a. Single ☐   b. Married ☐   c. widow ☐ d. Divorced ☐ e. separated ☐

5. **Parity**

    a. Nulliparous. ☐ b.Single parity ☐ .Multiparous ☐

6. **Family type:**

    a. Nuclear ☐ b. expanded ☐

7. **History of breast problems:**

    a. present ☐ b. Not present ☐ c. Don't know ☐

8. **Family history of breast cancer:**

    a. Yes ☐   b. No ☐   c. Not remember ☐

9. **Are you in menopausal period?**

    a. Yes ☐   b. No ☐

Part (2): women`s knowledge of breast cancer

10. Have you ever heard about breast cancer?

       a. Yes ☐   b. No ☐

11. Is it common in your environment

      a. Common ☐   b. Rarely found ☐   c. Not common. ☐   D. Didn't ☐ know

12. What the incidence of breast cancer all over the world?

      a. High ☐   b. Moderate ☐   c. low ☐   D. Didn't ☐ know

13. What is the effect of aging on breast cancer probability?

     a.Increase with age ☐ b.Decrease with age ☐ c.No effect ☐ d.Don't know ☐

14. What is the effect of null parity on breast cancer probability?

     a.Increase ☐   b.Decrease ☐   c.No effect ☐   d.Don't know ☐

15. What is the effect on breast cancer probability if menopause age is above 50?

     a.Increase ☐   b.Decrease ☐   c.No effect ☐   d.Don't know ☐

16. What is the effect on breast cancer probability if first delivery age is above 30 ?

     a.Increase ☐   b.Decrease ☐   c.No effect ☐   d.Don't know ☐

17. What is the effect on breast cancer probability if menarch age is under 11?

     a.Increase ☐   b.Decrease ☐   c.No effect ☐   d.Don't know ☐

18. What is the effect on breast cancer probability if family history is present?

     a.Increase ☐   b.Decrease ☐   c.No effect ☐   d.Don't know ☐

19. What is the effect of obesity on breast cancer probability?

     a.Increase ☐   b.Decrease ☐   c.No effect ☐   d.Don't know ☐

20. What is the effect of oral contraceptives on breast cancer probability?

     a.Increase ☐   b.Decrease ☐   c.No effect ☐   d.Don't know ☐

21. What is the effect of breast feeding on breast cancer probability?

     a.Increase ☐   b.Decrease ☐   c.No effect ☐   d.Don't know ☐

22. What is the effect of smoking on breast cancer probability?

     a.Increase ☐   b.Decrease ☐   c.No effect ☐   d.Don't know ☐

23. What is the effect of radiation exposure on breast cancer probability?

a.Increase ☐   b.Decrease ☐   c.No effect ☐   d.Don't know ☐

24. What is the effect of having benign breast disease on breast cancer probability?

a.Increase ☐   b.Decrease ☐   c.No effect ☐   d.Don't know ☐

25. What is the effect of hormone replacement therapy on breast cancer probability?

a.Increase ☐   b.Decrease ☐   c.No effect ☐   d.Don't know ☐

26. Can the breast cancer be detected early?

a. Yes ☐   b. No ☐   d. Don't know ☐

27. What are the screening methods for early detection of breast cancer?

a.Breast self-examination ☐

b.Mammography ☐

c.Breast ultrasound ☐

d.Fine needle biopsy ☐

28. Can the early detection of breast cancer improve chances of survival?

a.Yes ☐   b.No ☐   d. Don't know ☐

What are the early warning signs of breast cancer?

a.Painless lump in the breast or axilla ☐

b.Nipple retraction ☐

c.Change in the breast shape or volume ☐

d.Bloody or any discharge ☐

e.Changes in the skin of the breast ☐

Part (3): women`s knowledge of breast -self examination

29. Have you ever heard of breast-self examination?

a.Yes ☐   b.No ☐

30. If yes what is the source of information?

a.Home ☐   b.Peer group ☐   c.Television/ Radio ☐

e.Journals,Newspaper ☐   f. Internet ☐   g.Health worker ☐

i.Others ☐   L.determine...................

31. At what age should breast-self examination begin?

a. At puberty ☐ b. At 20 years ☐ c. After childbirth ☐ d. At menopause ☐

32. What is The best time to do the BSE?

a. After a woman's menstruation period starts ☐

b. Before a woman's menstruation period starts ☐

c. Any time during a woman's menstruation period ☐ e. Don't know ☐

33. Have you ever performed breast-self examination?

a. Yes ☐ b. No ☐

34. **If yes, breast-self examination performance frequency**

a. Regular ☐ b. Not regular ☐

35. How often should you perform breast-self examination?

a. Daily ☐ b. Weekly ☐ c. Monthly ☐ d. Yearly ☐ e. Don't know ☐

36. At what age did you start breast-self examination?

a. More than 19 years ☐ b. Less than 19 years ☐ e. Don't know ☐

37. When was the last time did you perform breast-self examination

a. Less than a week ☐ b. Less than six months ☐

c. Less than one year ☐ d. Don't remember ☐

38. Where do you usually perform breast-self examination?

a. In front of mirror ☐ b. Lying on the bed ☐

c. In the bathroom ☐ e. others ☐

f. determine...................................

39. How often should BSE perform?

a. Daily ☐ b. Weekly ☐ c. Monthly ☐ d. yearly ☐ e. Don't know ☐

Part (4) Attitude of women towards breast-self examination

40. Do you think breast-self examination is necessary?

a. Yes ☐ b. No ☐ d. Don't sure ☐

41. Have you thought about to do breast-self examination before

a. Yes ☐ b. No ☐ d. Don't remember ☐

42. If yes, why?

      a. To examine my breasts regularly ☐

      b. Breast cancer in my family ☐

      c. Others ☐

      d. Determine...

43. If no, why?

a. I don't know how to do it ☐

b. I don't think it is important ☐

c. I don't think I should touch my body like that ☐

d. I don't believe in the efficacy of the BSE ☐

e. I don`t have any symptoms ☐

f. I know I can never have cancer ☐

g. I am scared of being diagnosed with breast cancer ☐

h. Others ☐

i. Determine...

44. Barriers to breast self examinations (BSE).

a. Lack of time ☐

b. Never attended any demonstrations of BSE ☐

c. Not at risk hence not required to do so ☐

d. Fear of finding some abnormality ☐

e. Lack of privacy ☐

f. Not convinced about BSE ☐

g. Don't know the proper way to do it ☐

h. Others ☐

i. Determine...

Appendix (2)   بسم الله الرحمن الرحيم

Shendi University

Faculty of Post- graduate studies

Check list for Practice of women about breast self-examination

in Shendi locality, River Nile State, Sudan

No	Steps	Good	Fair	Poor	Not done
	Inspection phase				
1.	Stand in front of a mirror undressed to the waist with arms relaxed at sides.				
2.	Compared breasts while turning from side to side.				
3.	Placed hands on the waist and press inward. Then turn from side to side to note any changes.				
4.	Placed the hands on the waist and bow toward the mirror allow breasts to fall forward.				
5.	Placed hands behind the head and pressing forward.				
6.	Looked at the nipple for changes such as scaliness or pulling to one side.				
7.	Looked for any skin color changes, dimpling, or puckering of the skin or change in breast size or shape.				
	Palpation phase				
8.	Took hand and find collarbone and rub hand firmly down the breast, feeling for lumps, thickenings, or changes from previous exams.				
9.	Repeated the Step on the other breast.				
10.	Checked for lumps or thickening under your arm while relaxing your arm at your side. Reach across with your other hand to feel the area. Check deeply up and down the inside of the armpit, and up and forward toward your chest.				
11.	Used one hand to support the breast and with the other hand press firmly, feeling for lumps, thickenings. Or changes.				
12.	Used the right hand to examine the left breast.				
13.	Hold the fingers of the right hand together, keeping them flat				
14.	Used firm pressure to move in circles around breast.				
15.	Moved fingers in smaller circles until felt the entire breast.				
16.	Placed finger on the nipple and push it in, feeling beneath for any change				
17.	Firmly squeezed the breast tissue around the nipple using thumb and middle finger.				
18.	Placed left hand behind head and repeat the self breast examination on left breast using right hand.				
19.	In lie down repeat steps from 8-17.				

Key wards: Good: 3mark.   Fair: 2mark.   Poor: 1mark   Not done: zero mark

Appendix (3)

Map of Shendi locality (study area):
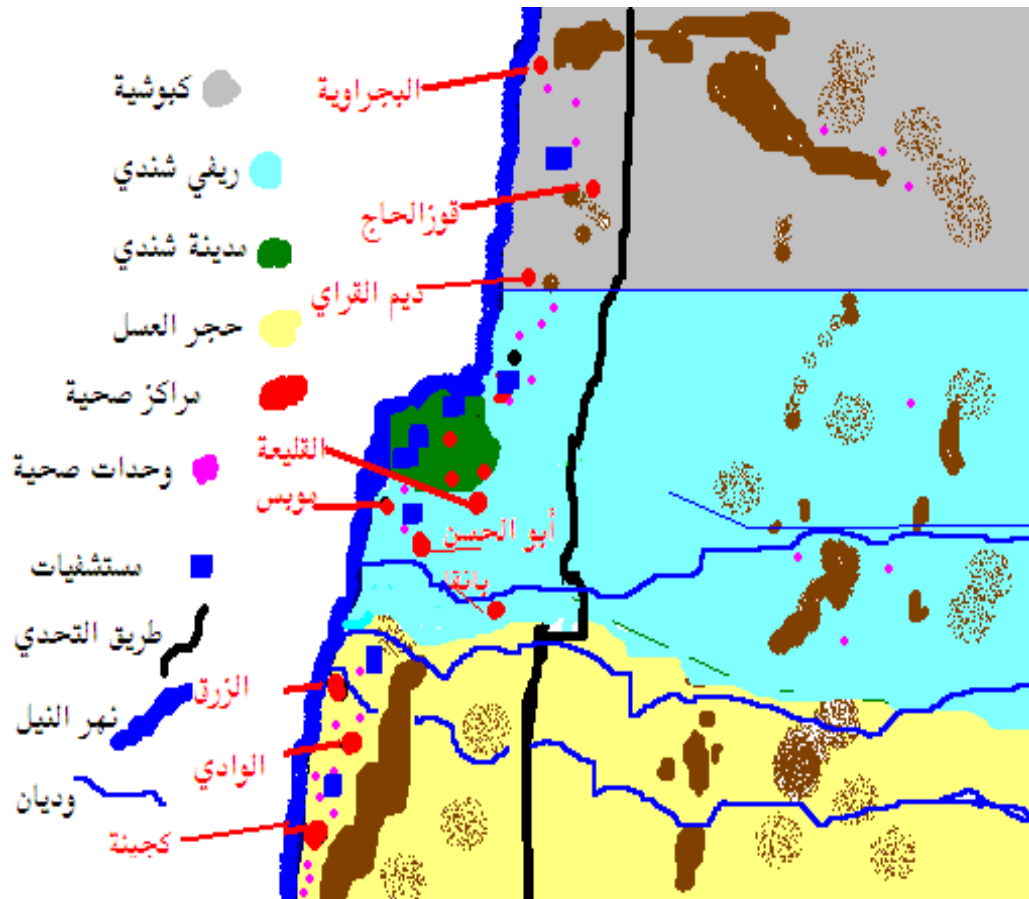
The women program

بسم الله الرحمن الرحيم

جامعة شندي

كلية الدراسات العليا

البرنامج التعليمى للنساء بمحلية شندي عن الفحص الذاتى للثدي

أعداد: محمد جبرالدار ابوعنجه نمر

كلية التمريض-جامعة شندي

الهدف : زيادة الوعي عن سرطان الثدي

المحتويات:

1. مقدمه عن سرطان الثدي و الفحص الذاتي للثدي.
2. تشريح الثدي ومكوناته ووظائفه وأهميته للمرأة
3. التغيرات الطبيعيه التي تصيب الثدي.
4. انواع الأورام التي تصيب الثدي.
5. تعريف سرطان الثدي وخصائص الخلايا السرطانيه.
6. العوامل التي تؤدي إلى زيادة احتمال الإصابة بسرطان الثدي.

المقدمة :

كلمة السرطان قد تكون مخيفة ولها وقع قد يرتبط في كثير من الأحيان بدنو الأجل وفقدان الأمل. قد يعني سرطان الثدي عند المرأة أكثر من ذلك فبالإضافة إلي خطورة المرض هناك خشية من فقدان الثدي واثر ذلك على حياة المرأة العملية والاجتماعية والزوجية. قد يدفع هذا الخوف بالكثير من النساء إلى عدم المراجعة والسكوت على المرض لفترات طويلة.

قد يلجا البعض في بداية المرض إلى العلاجات الشعبية حيث أن انه لا تكاد تخلو حالة من سرطان الثدي إلا وقد نسبت إلى العين والحسد أو السحر. هذه المعتقدات قد تودي إلى التأخر في التشخيص والعلاج مما قد يودي إلى عدم نجاح العلاج وعودة المرض والموت بسببه. ويعتبر نسبه حدوث سرطان الثدي مرتفعه جدآ في جميع أنحاء العالم.

كما تدل الإحصائيات على أن امرأة واحدة من بين كل ثمانية نساء معرضة بالإصابة بسرطان الثدي خلال حياتها.و يعتبر سرطان الثدي أكثر أنواع الأورام غير الجلدية شيوعا بين النساء.إذ بلغ عدد المتوفيات من جراء إصابتهن بسرطان الثدي 43500 امرأة وذلك حسب إحصائيات جمعية السرطان الأمريكية لعام 1999م، وأن أكثر من 175000 امرأة مصابة تم تشخيصها في العام نفسه.

سرطان الثدي مرض عضوي مثل غيرة من الأمراض العضوية التي تحتاج إلى علاج طبي مبكر واكتشافه في المراحل المبكرة يساعد على علاجه والشفاء منه بأذن الله تعالى . ويعتبر هذا النوع من الأورام السبب الثاني من بين أسباب الوفاة عند النساء.

مما يروج له أيضا عدم فعالية العلاجات المتخصصة في الشفاء من هذا المرض وهو عكس الحقيقة تماما

ومن الملاحظ تأخر الحالات ويرجع ذلك إلى :

1. عوامل خاصة بالمريضة
2. عوامل خاصة بالكادر الطبي

سرطان الثدي من أكثر أمراض السرطان انتشارا في العالم وبالذات في الدول الغربية..... في أمريكا (10%) بمراحل متأخرة مقارنة بالمراحل المبكرة فى البلاد المتقدمة.
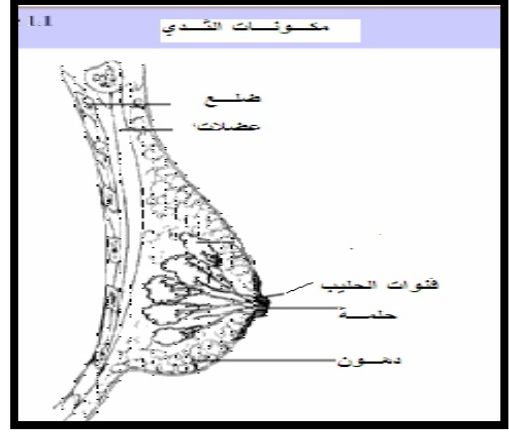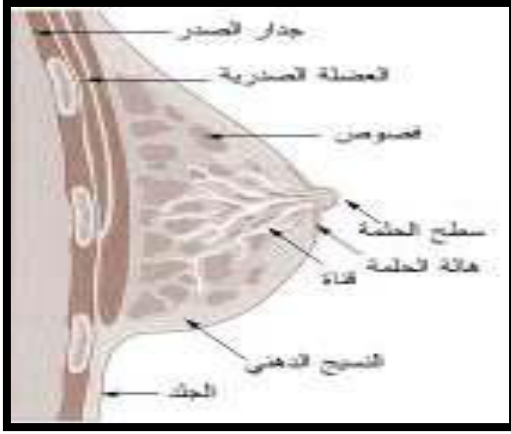
يتكون ثدي المرأه من:

- النسيج الدهني
- الفصوص-تقوم بفرز الحليب أثناء الحمل والرضاعه.
- القنوات الثديه-قنوات تنقل الحليب من الأنابيب الي منطقه الحلمه.
- هاله الحلمه- المنطقه الغامقه المحيطه بالحلمه.
- سطح الحلمه- الجلد السميك الذي يغطي الحلمه.
- العضله الصدريه-تقوم بعمليه ربط الثدي بالجدار الصدري.
- الجلد

التغيرات التي تصيب الثدي:

هي حالات طبيعية تشعر المرأة فيها بتغيرات في ثدييها خلال مراحل العمر المختلفة من حياتها وهي:

- في الحمل :يتضخم الثديان للتهيئة لإفراز الحليب
- قبل الدورة الشهرية
- عند تناول حبوب منع الحمل
- مع تقدم العمر:يتغير الثدي في الشكل والتكوين بعد توقف الانجاب حيث تنكمش الغدد اللبنية وتستبدل بأنسجة شحميه.
- الافرازات الحليبيه والتي تحدث لأسباب عده منها الفصور
- الدرقي ،وتناول حبوب منع الحمل ،او تعاط أي نوع من العقاقير كالمهدئات والمسكنات.
- الافرازات اللزجه ذات اللون البني أو الأخضر والتي تحدث نتيجه للاصابه بعدوي.
- الإفرازات الدمويه والتي تكون بسبب ورم القنوات الحليمية الداخلي.
- ورم القنوات الحليميه الداخلي المتركز في منطقه واحدة وكثيرآ مايصيب النساء في سن اليأس.
- ورم القنوات الحليميه الداخلي المتشعب الشائع كثيرآ لدي السيدات اللآتي في مقتبل العمر.

- **التغيرات التي تصيب الثدي أثناء فتره الحمل:**
- كبر في حجم الثدي
- تورم وكثير الحساسيه.
- تغير لون الحلمه والهاله المحيطه بها الي اللون الغامق
- نتيجه التغيرات الهرمونيه التي تؤثر في الإفرازات الصبغيه للجلد.
- تغير لون الأوعيه الدمويه في منطقة الثدي إلي اللون الغامق نتيجـه لتزويدها باالدم اللازم في عمليـه تكوين الحليب.
- تغير لون الثدي إلي اللون الأصفر مع زياده في سماكته.
- كبر في حجم الحلمه والهاله المحيطه به.
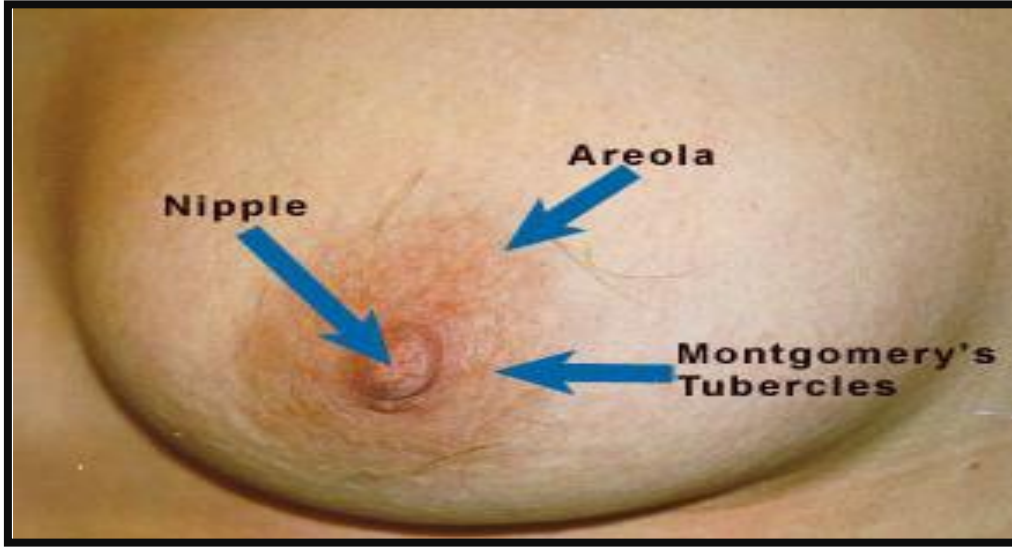
أنواع الأورام:

- هنالك أنواع عديده من الأورام تصيب الثدي يمكن تقسيمها بالشكل التالي.

1-حميد: يعبر هذا المصطلع عن اضطرابات الثدي غير السرطانية والتي تسبب الالم والقلق مما يدعو الى معالجتها واجراء بعض الفحوصات لتميزها عن الحالات السرطانية وذلك بأستئصـال نسيج حي لدراسته او مايسمى بالخزعة (Biopsy)
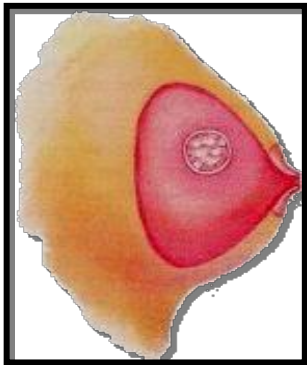
- التليف الغددي.
- التكيس الصديدي.
- التآكل الدهني ويحدث للسيدات البدينات
- نخر الغدد المتصلب الذي يتطلب نموء
- مفرط في أنسجه الثدي.

2-سرطاني:
- سرطانات القنوات الغددي وهو شائع.
- السرطان المفصص وهو أقل شيوعآ من النوع الاول.
- السرطان النخاعي الثدي وهو نادر الحدوث.
- التزايد المفرط في استنساخ الخلايا الغير مسيطر عليه.

ما هو سرطان الثدي؟

تتكون أورام الثدي السرطانية من خلايا سرطانية تنشأ في أنسجة الثدي، وهو أكثر أنواع
السرطانات انتشاراً ويأتي بالدرجة الثانية من بين أنواع السرطان التي قد تسبب الموت عند
النساء. وقد أدى التقدم والتحسن في طرق اكتشاف المرض مبكراً إلى زيادة فرص الشفاء بإذن
الله سبحانه وتعالى.

| ورم غير اجتياحي من القناة | ورم غير اجتياحي من الفص | ورم اجتياحي من القناة | ورم اجتياحي من الفص |
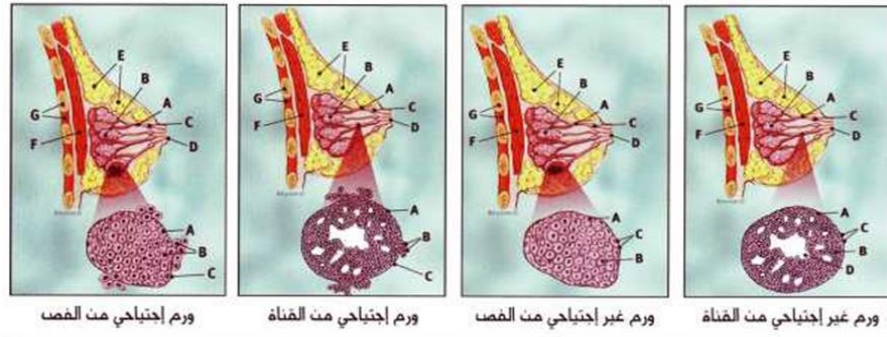
خصائص الخلايا السرطانية

- الخلايا السرطانية تنقسم بسرعة
- لا تموت حسب النظام العام للخلايا
- تسمى بالسرطان لأن بإمكانها غزو وتخريب الخلايا المجاورة وباقي أعضاء الجسم
- يمكن لهذه الخلايا أن تتفكك وتدخل في مجرى الدم أو الجهاز الليمفاوي
- بهذه الطريقة ينتشر السرطان ليكون أوراما ثانوية في أجزاء من الجسم مثل العظام والكبد
  والرئة.
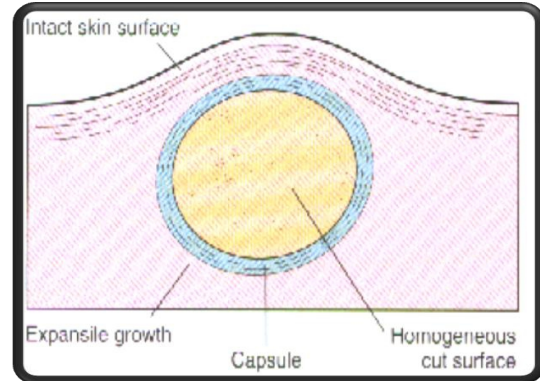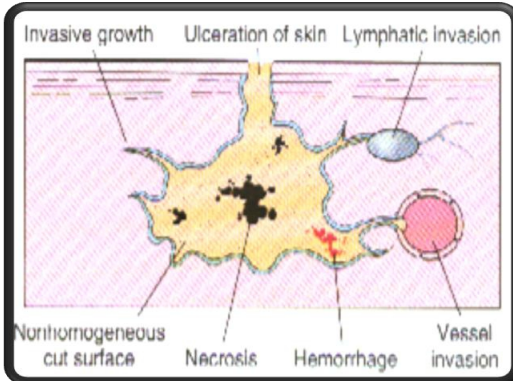
مراحل سرطان الثدي:
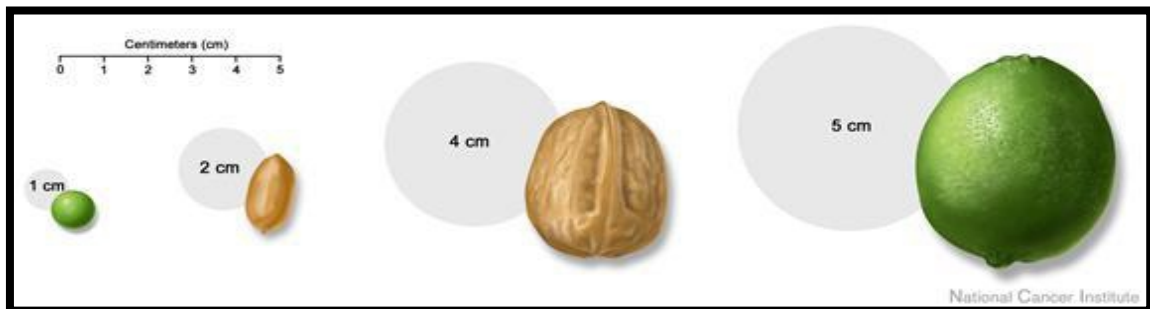
العوامل التي تؤدي إلى زيادة احتمال الإصابة بمرض سرطان الثدي:

- العوامل الوراثية خاصة إذا تمثلت بإصابة الأم أو إحدى الأخوات، وهي تمثل 13% من عدد الحالات.
- تغييرات جينية (5-10% من حالات سرطان الثدي) و لها صلة بأسباب وراثية تتعلق بتشوهات بعض الجينات ومن أهم هذه الجينات BRCA1 و BRCA2.
- تقدم العمر.
- بداية الدورة الشهرية (البلوغ) قبل سن 12 سنة.
- انقطاع الدورة الشهرية بعد سن 50 سنة.
- السيدات اللاتي لم يحملن أبدا.
- السيدات اللاتي أنجبن طفلهن الأول بعد سن الثلاثين.
- الإصابة بورم خبيث في الثدي الأخر أو ورم حميد غير نمطى.
- العرق ـ النساء البيض قليلا أكثر عرضة للإصابة بسرطان الثدي من النساء السود . النساء الآسيويات أقل عرضة للإصابة بالمرض من الأمريكيات.
- العلاج بهرمون الإستروجن في سن اليأس.
- استخدام حبوب منع الحمل لفترات طويلة.
- استخدام الهرمونات البديله
- زيادة نسبة الشحوم (الدهون) في الأكل.
- زيادة الوزن (من بعد مرحلة البلوغ).
- العلاج بالإشعاع في منطقة الصدر
- تلوث البيئة.
- المواد الكحولية.
- التدخين.
- وجود أمراض الثدي الحميده.
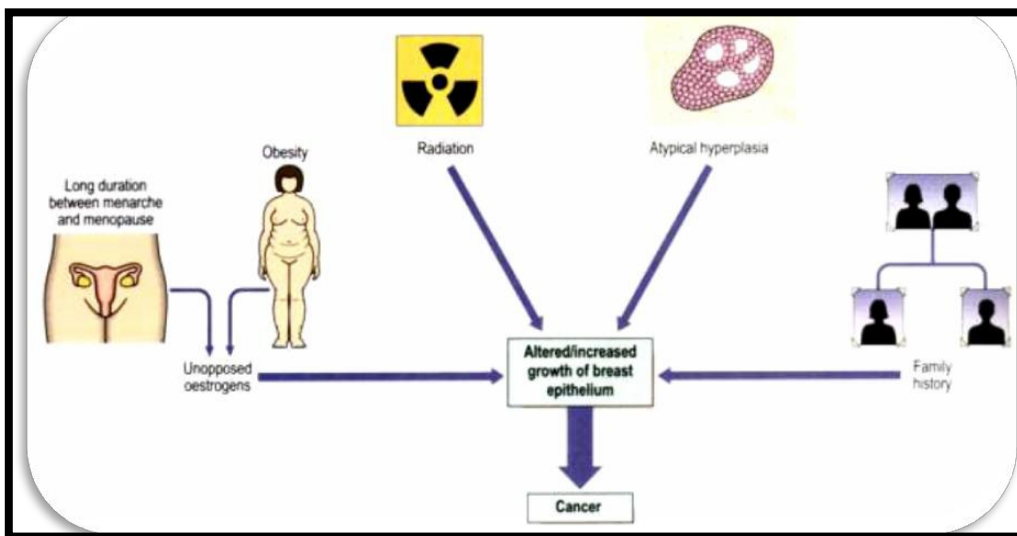
الجزء الثاني

الهدف:أهمية الأكتشاف المبكروالتشخيص المبكر لسرطان الثدي

المحتويات:

1. أعراض وعلامات سرطان للثدي.
2. علامات الأنذار لسرطان الثدي.
3. أهمية الاكتشاف المبكر لسرطان الثدي.
4. طرق الأكتشاف المبكر لسرطان الثدي.

أعراض وعلامات سرطان الثدي:

▪ ألم موضعي في الثدي أو تحت الإبط (رغم أن معظم الأورام الخبيثة غير مصحوبة بألم).

▪ وجود كتلة أو غلاظة بالثدي أو تحت الإبط.

▪ تغير في شكل أو حجم الثدي.

▪ إفرازات دموية أو غير دموية من الحلمة.

▪ تغير في مظهر أو لون الحلمة (انقلاب الحلمة للداخل بشكل مستمر، تغير في المكان أو الهيئة).

▪ الشعور بتغيرات في الجلد أو الحلمة من حيث المظهر (تشققات ، تهيج ، انكماش ـ شد للداخل) أو من حيث الإحساس.
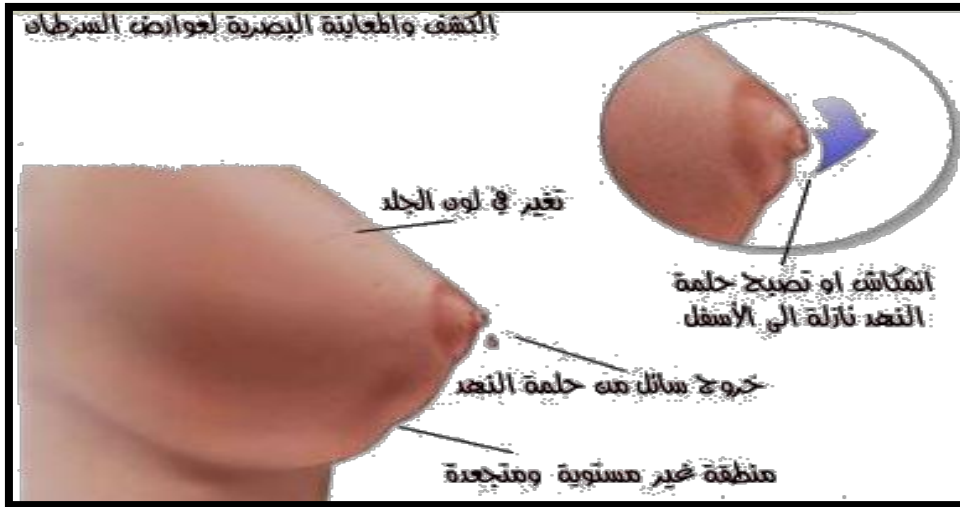
علامــات الإنـــذار:

إنتبهي جيداً للإنذارات التالية:

▪ الورم او النمو في الثدي أو ظهور كتل قاسية جديدة.

▪ التقلص في جلد الثدي أو ظهور تجعدات على جلد ثديك.

▪ الإحساس بالشد إلى الداخل في حلمتك.

▪ افرازات الثدي باستثناء الحليب.

▪ التغيرات في حجم او شكل الثدي العام

أهمية الأكتشاف المبكر:

إتباع الخطوات السليمة لصحة الثدي هي الخطوة التي لا بد من العمل بها .

لذا يتوجب عليك ما يلي:

المواظبة على الفحص الذاتي على الثدى شهريا بعد تخطي سن العشرين .

زيارة الطبيب لفحص الثدي الإكلينيكي بعد سن الأربعين سنويا .

إجراء فحص بانتظام بالأشعة (الماموجرام) بعد سن الأربعين كل سنة أو سنتين .

الاكتشاف المبكر لهذا المرض يعطي المرأة خيارات أكثر للعلاج ويؤدي إلى ارتفاع معدل الشفاء الكامل بإذن الله بمعدل 97%.

اكتشاف سرطان الثدي مبكرا وعلاجه مبكرا يؤدي في أغلب الأحيان للشفاء التام.كما أن اكتشاف سرطان الثدي متأخرا يعني تفشي المرض في الجسم بنسبة كبيرة ويصبح علاجه صعبا. اكتشاف كتلة بالثدي ليس بالضرورة يعني وجود سرطان ، والحمد لله فمعظم الكتل المحسوسة بالثدي حميدة. فآلام الثدي شكوى عادية عند النساء في مختلف الأعمار والأسباب لهذه الآلام كثيرة والقليل من سرطان الثدي يكتشف عن طريقها.

- أن الاكتشاف المبكر للتغيرات غير الطبيعية تساعد على العلاج في الوقت المناسب.
- توجد هناك فروق بسيطة طبيعية بين الثدي والآخر، وكذلك ليس من الضروري أن يكون كل تغيير في الثديين أمر غير طبيعي وخطر.
- من الطبيعي أن تشعر المرأة بآلام بسيطة مع زيادة في حجم الثديين وذلك في الفترة قبل وأثناء الدورة الشهرية.
- يمكنك دائما الاستعانة بالطبيب أو الطبيبة المعالجة وكذلك الممرضة في المركز الصحي لتوضيح عملية الفحص.

رغم التطور العلمي الهائل في علاج المرض يبقى مبدأ الوقاية خير من العلاج. فسرطان الثدى من الإمراض التي يمكن الكشف عنها مبكرا وبالتالي الشفاء التام منها بأذن الله تعالى ولنتذكر قول رسولنا الكريم صلى الله عليه وسلم ((ما جعل الله من داء إلا وجعل له دواء علمه من علمه وجهله من جهله)) ولنعلم أن الشفاء من عند الله عز وجل وعلينا الأخذ بالأسباب بعد التوكل على عز وجل ونسال المولى عز وجل أن يقينا شر كل مرض انه على ذلك قدير .

طرق الكشف المبكر عن سرطان الثدي:

I. الفحص الذاتي للثدي:

يتم أجراه كل شهر بعد بدايه الدورة أو الحيض (من 7-10) أيام ويجب أن يبدأ عند سن العشرين وثم الأنتظام فيه مدي الحياه.

II. فحص الثدي الإكلينيكي:

يتم بواسطه الطبيب أو الطبيبة المعالجة وكذلك الممرضة في المركز الصحي لتقوم بعملية الفحص.نجد ان الفحص الدوري للثديين عند طبيبة أخصائية . يكشف 40% من الحالات.

III. الفحص بالأشعة السينية (الماموجرام)

الفحص الشعاعي الدوري للثدي (الماموجرام) هو الفحص الأهم والوحيد لاكتشاف سرطان الثدي المبكر وكذلك الفحص بالموجات فوق الصوتية يبين الورم قبل أن تتمكنين أنت أو الطبيب من اكتشافه ، وهذا لا يمنع بأن يكون الفحص السريري الدوري مهم أيضا لاكتشاف أورام أو كتل بالثدي لم تنتبهي إليها .

الماموغرام هو أفضل طريقة لاكتشاف سرطان الثدي مبكراً، ويمكن من خلاله كشف الورم قبل أن يكون كبيراً بالقدر الذي يكون فيه محسوساً .

- الماموغرام هو نوع خاص من الأشعة السينية التي تستخدم لفحص الثدي ويمتاز بأن الكمية الإشعاعية المستخدمة في الأشعة إكس أو الأشعة السينية صغيرة جداً الماموغرام نوع من الأشعه السينيه لتصوير الثدي والتي تستعمل كميه محدوده من الأشعه الفعليه الناتجه من الماموغرام صغيره وهي مساويه تقريآ لكميه الأشعه التي تصل للجسم من البيئه الخارجيه في ثلاثه إشهر.

- يبدأ استخدامه من بعد سن الأربعين .

يوضع الثدي على رف وجهاز الأشعة السينية يمر ببطء في الاتجاه المعاكس للثدي حتى تشعري ببعض الضغط. هذا الضغط مطلوب حتى يمكن أن تؤخذ صورة أشعة أفضل. الأشعة السينية تستغرق دقيقة أو دقيقتين فقط والعملية بمجملها عادة لن تستغرق أكثر من حوالي 20 دقيقة .الماموغرام ممكن أن يكون غير مريحً.يمكن الكشف بالماموغرام بعد فترة الحيض بوقت قصير .سيكون أقل إزعاجاً لأن الثدي في هذه الفترة أقل تورماً.

كيفيه عمل الماموغرام؟

يتم بأخذ تصوير صورتين إشعاعيتين لكل ثدي علي حده

متي تحتاجين عمل الماموغرام؟

يفضل عمل الماموغرام لمن هم فوق الأربعين من النساء.كل أمرأة سبق لها الإصابه بورم سرطاني أو كان لها تاريخ عائلي، لأنها ربما تكون عرضه أكثر من غيرها.تستخدم الموجات فوق الصوتيه للسيدات مادون سن 35 إلا اذا احتاج الأمر لعمل الماموغرام.

لماذا نستخدم الماموغرام؟

■ للكشف عن وجود أي تغيرات في الثدي مثل وجود نتوء ،تضخم.......الخ.

■ للتأكد مما إذا كانت تلك التغيرات ناتجه عن وجود ورم   سرطاني.

ماهي الأمور التي يجب مراعاتها قبل الفحص:

اذا كنت حامل أو مرضعه يجب إبلاغ أخصائي الاشعه فبل بدء الفحص.

في يوم الفحص تجنبي استعمال مزيل العرق، الكريمات، البودره، لانها قد تؤثر في وضوح الصور.

يفضل عمل الأشعه في الأسبوع الأول من انتهاء الدورة الشهرية وذلك لحساسيه الثدي في تلك الفترة.
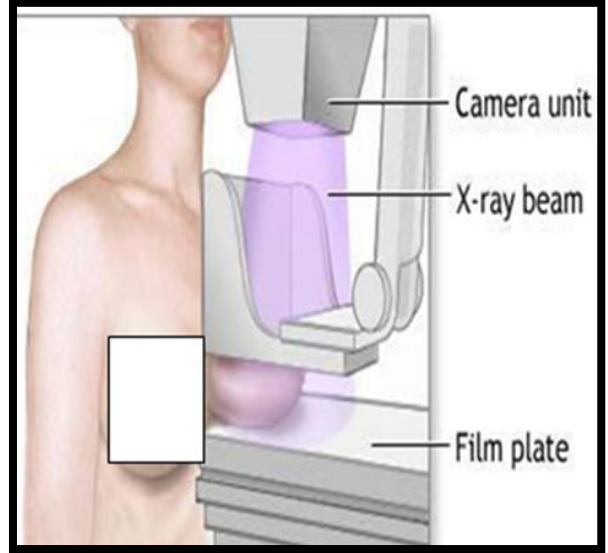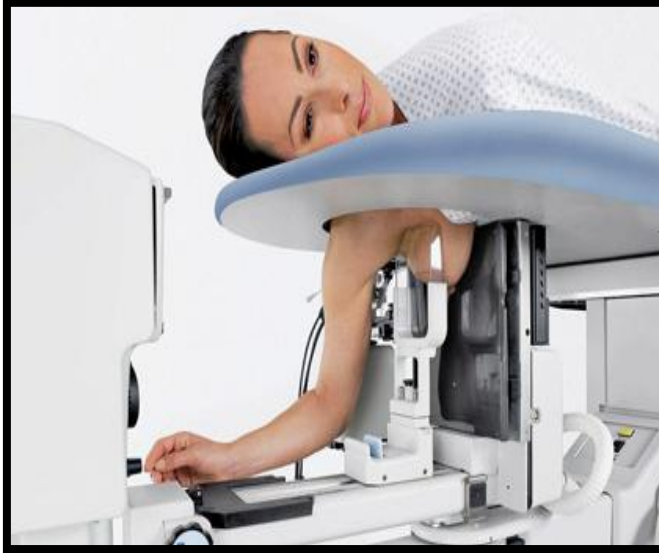
تشخيص سرطان الثدي:

الفحص بالجس Palpation

الفحص بالأشعة السينية للثدي Mammography

التصور بواسطة الأشعة فوق الصوتية Ultrasonography.

عمل تصوير بالرنين المغناطيسي Magnetic Resonance Imaging أو ما يعرف اختصارا MRI للثدي إذا لزم الأمر.

الخَزعة:

أخذ عينة من الورم لمعرفة ما إذا كان الورم حميد أو خبيث. ويمكن الحصول على عينة من الورم بأحد الطرق التالية:

الرشفة أو استئصال الأنسجة بالإبرة

Fine-Needle Aspiration or needle biopsy

أخذ عينة من الأنسجة بالإبرة Core-needle biopsy

الخزعة الجراحية Surgical biopsy
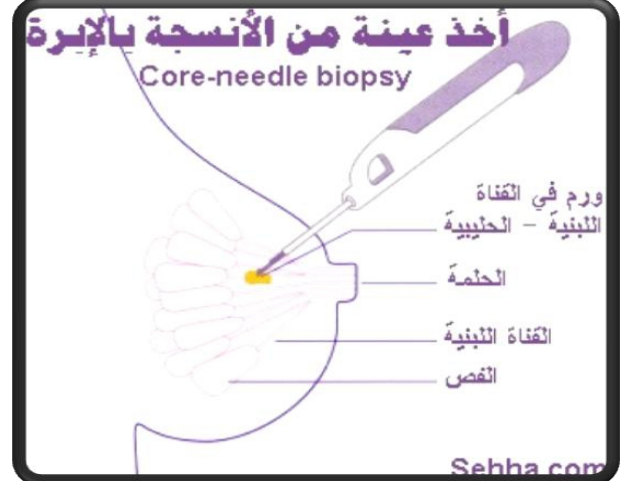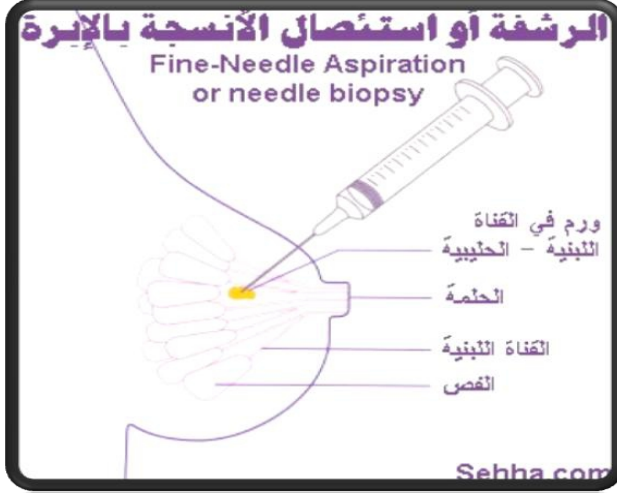
إجراء فحوصات نسيجية مخبرية متعددة على العينة:

لإثبات ما إذا كانت خبيثة أم حميدة.

تحديد درجة تميز المرض Grading

وضع المستقبلات البيولوجية على خلايا الورم

مستقبلات هرموني الإستروجين estrogen receptors - ERs والبروجيستيرون

progesterone receptors – PgRs

أو مستقبلات الهير2 / HER2

ما هي الفحوصات التي تعمل لتبين إذا أنتشر المرض في الجسم ومدى هذا الانتشار؟

أشعة للصدر لتبين إذا كان هناك انتشار للرئة.

مسح نووي للهيكل العظمي للكشف عن ثانويات في العظم.

أشعة مقطعية للبطن للكشف عن وجود ثانويات في الكبد أو أعضاء أخرى.

الرنين المغناطيسي للدماغ والحبل الشوكي للكشف عن وجود ثانويات.

المسح النووي باستخدام تقنية متقدمة (بت – سكان) وهو دقيق وحساس جدا في الكشف عن ثانويات في مختلف أجزاء الجسم.

بت سكان يوضح نشاط في غدد الإبط والثدي الأيمن

الجزء الثالث

الهدف:أهميه الفحص الذاتي للثدي وكيفيه تطبيقه

المحتويات:

1. أهميه الفحص الذاتي للثدي.
2. طرق وزمن الفحص الذاتي الثدي.
3. خطوات الفحص الذاتي الثدي.

ماذا تعرفين عن الفحص الدوري الذاتي للثدي؟

هو فحص الثدي بصوره منتظمة ودوريه ويتم أجراه كل شهر.بعد بدايه الدورة أو الحيض (من 7-10) أيام.يجب أن يبدأ عند سن العشرين وثم الأنتظام فيه مدي الحياه. لقد أثبتت الدراسات المختلفة أن معظم أورام الثدي الحميدة منها والخبيثة يتم اكتشافها بواسطة المرأة نفسها. لذا يجب على كل امرأة أن تقوم بفحص ثديها منذ بلوغها العشرين عاما، ويفضل أن يكون الفحص شهرياً وذلك عند نهاية الدورة الشهرية أو بعدها بيوم أو في أول يوم من كل شهر في النساء اللاتي انقطعت عنهن الدورة الشهرية. لقد أعد هذا المشروع من أجلك أنت ومن اجل إعطائك المعلومات التي تساعدك على إجراء مثل هذا النوع من الفحص.

كيف يتم عمل الفحص الذاتي بطريقة صحيحة؟

يمكن اجراء الفحص في عده اماكن

- عند الأستحمام
- بعد الأستحمام
- عند الأستلقاء
- مقابل المرآة

يتم الفحص على ثلاث مراحل:

- الخطوة الأولى : أمام المرأة
- الخطوة الثانية: الفحص باليدين
- الخطوة الثالثة: الفحص أثناء الاستلقاء

الخطوة الأولى : أمام المرأة

اجلسي أو قفي أمام المرآة وانظري إلى ثدييك مع وضع يديك في الأوضاع المبينة بالصور من رقم 1 إلى رقم 3 وذلك لملاحظة التغيرات غير الطبيعية:

- حجم الثديين
- الحلمتين
- انغمار أو ثني الجلد
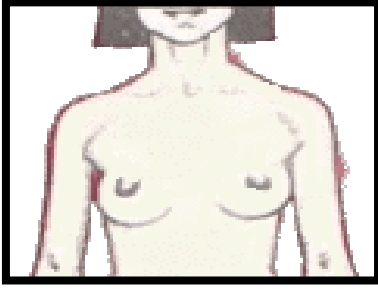
ذراعيك ضاغطة على منطقة الحوض

ذراعيك على جانبي الجسم
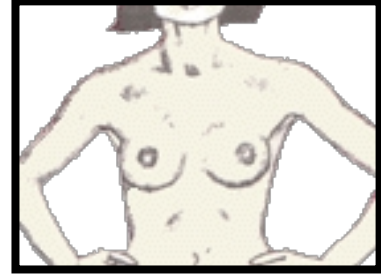
ذراعيك الى الاعلى

الخطوة الثانية: الفحص باليدين (الجس)

Wedge Section

Concentric Circle

Verticle Strip
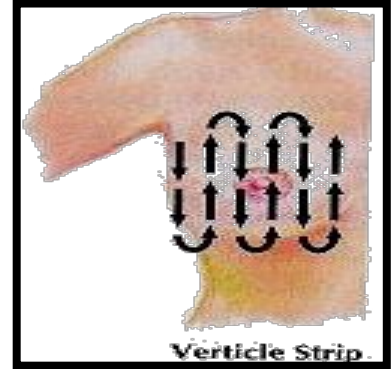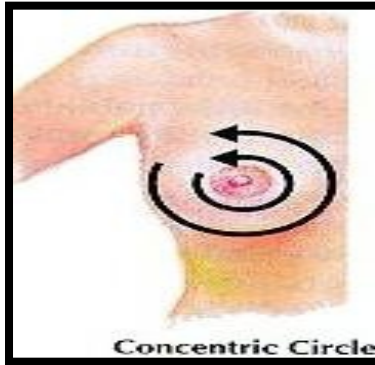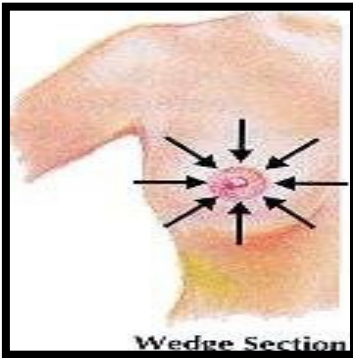
يمكنك فحص ثدييك أثناء الاستحمام وأنت واقفة، حيث أن الماء والصابون عاملان مساعدان لعملية الفحص. استخدمي أصابعك اليمنى لفحص ثديك الأيسر مع وضع اليد اليسرى فوق الرأس كما هو مبين بالصورة رقم 4. (والعكس صحيح بالنسبة للثدي الأيمن).

ابدئي عملية الفحص من المحيط الخارجي للثدي وإلى الداخل في مسار دائري حتى تصلي إلى الحلمة كما هو مبين في الصور رقم (5، 6، 7) وذلك لاكتشاف أي كتلة متصلبة.

الخطوة الثالثة: الفحص أثناء الاستلقاء:

استخدمي نفس الطريقة السابقة ولكن هذه المرة وأنت مستلقية على السرير مع وضع مخدة تحت الظهر ناحية الثدي المراد فحصه كما هو مبين في الصور.

بسم الله الرحمن الرحيم

بسم الله الرحمن الرحيم

قالوا سبحانك لا علم لنا إلا ما علمتنا إنك أنت العليم الحكيم

صدق الله العظيم

سورة البقرة الآية ٣٢

University of Shendi
Faculty of Graduate Studies
&
Scientific Research

A thesis Submitted in fulfillment of requirement for Ph.D in Community Health Nursing

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2013

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Introduction

breast cancer has long been recognized as a major public health burden in high-income countries, the majority of cases actually occur in low- and middle-income countries (LMCs), and it is expected that incidence rates will rise most rapidly in these locations (**F. Kamangar. et al 2006**).

African women are more likely than women in the developed world to be diagnosed at later stages of the disease and, thus, are more likely to die from it.

This is due to the lack of awareness by women, accessibility to screening methods, and availability of African-based research findings (Karayurt et al: 2008).

In Sudan breast cancer is the most common type of cancer accounting for **34.5%** of all female cancers.

Breast self examination has an important role in the early detection of disease and hence its management as it enables women to detect breast lumps of less than 1.0cm in diameter (**Abdurrahman: 2006**).

Monthly breast self-examination (BSE) is an extremely important part of health care for all women in every stage of life. Because most women discover breast changes themselves through self-exams, this is an important health routine to establish. (www.upmc.com).

Objectives of Study

The main goal of Study is to

evaluate the impact of BSE Program on women's Knowledge, Attitude and Practice in Shendi locality.

The specific objectives

To evaluate women's knowledge in relation to importance of BSE and its benefits.

To identify women's level of practice regarding BSE.

To apply an educational program about BSE practice among group of women.

To develop women self-examination training.

To evaluate the impact of educational program on women's knowledge and practice.

Subjects and Methods

Design :

A quasi-experimental design community based study.

Setting:

The study was carried shendi locality, River Nile state.

Subjects:

Women of 30 years and above in Shendi locality. The total number of women who participated in the study were **377** woman. The number was distributed proportionally to five administrative units in the locality.

Sampling:

A multi stage sampling was used for selecting the study population in the study.

Tools of Data Collection:

three tools were used to collect the necessary data to achieve the aim of the study, they were:

❶ Self-administered questionnaire .

❷ An attitude questionnaire:.

❸ An observation checklist.

❶ Self-administered questionnaire :

This is a structured interview schedule that was developed by the researcher after a thorough review of literature to collect data about knowledge level of women related to BC, BSE information resources.

❷ An attitude questionnaire :

This interview sheet was developed by the researcher. It was used to determine the participants' attitude toward practice of BSE. Which includes the barriers to practice breast self examination.

- **It involved 19 steps marked to evaluate the performance of women at the different steps.**

- **The following grades were used:**
  - ➢ **Good=3marks**
  - ➢ **Faire = 2 marks**
  - ➢ **Poor= one mark**
  - ➢ **Not done= zero mark**

Table (3). Shows the distribution of the study population according to breast problems and family history of breast cancer. (n=377).

Item (s)	Number	Percentage
History of breast problems		
Present	64	17.0%
Not present	280	74.3%
Don't know	33	8.8%
Total	377	100
Family history of breast cancer		
Yes	71	18.8%
No	261	69.2%
Not remember	45	11.9%
Total	377	100%

Table (5). Shows knowledge about risk factors of breast cancer among the study population (pre & post intervention). (n=377)..

Item (S)	Pre program		Post program		P-Value
	Number	Percentage	Number	Percentage	
Risk factors of BC					0.00**
Good knowledge	99	26.3%	361	95.8%	
Acceptable knowledge	119	31.6%	16	4.2%	
Poor knowledge	159	42.2%	0.0	0.0	
Total	377	100.0%	377	100.0%	

Table (7). Shows knowledge regarding screening methods and early warning signs of breast cancer among the study population (pre & post intervention).

Variable(S)	Pre program		Post program		P-Value
	Number	Percentage	Number	Percentage	
screening method of BC					0.00**
good knowledge	36	9.5%	377	100%	
acceptable knowledge	35	9.3%	0.0	0.0%	
poor knowledge	306	81.2%	0.0	0.0%	
early warning signs of BC					
good knowledge	103	27.3%	377	100%	
acceptable knowledge	29	7.7%	0.0	0.0%	0.005*
poor knowledge	245	65.0%	0.0	0.0%	
Total	377	100%	377	100%	

Figure (1) information sources about breast cancer and breast self examination.

Table (12). Shows age of starting BSE and last time the performance among the study population.

Item (s)	Number	Percentage
Age of starting BSE		
More than 19 years	109	28.9%
Less than 19 years	36	9.5%
Don't start	139	36.9%
Don't know	93	24.7%
Total	**377**	**100%**
Last time of performing BSE		
Less than a week	73	19.4%
Less than six months	47	12.5%
Less than one year	17	4.5%
Don't know	240	63.7%
Total	**377**	**100%**

Figure (3) Shows Barriers Towards Performing Breast-Self Examination among Respondents (n =377).

Table (16). Shows the progression of practices of study population (Pre & post intervention) in relation to breast self examination through the health education program.

Item (s)	Before program		After program		p-value
	Number	Percentage	Number	Percentage	
Inspection phase					
Good	8	2.1%	353	93.6%	0.004*
Fair	329	87.3%	24	6.4%	
Poor	40	10.6%	0.0	0.0%	
Palpation phase					
Good	89	23.6%	362	96.0%	0.001**
Fair	205	76.4%	15	3.7	
Poor	83	22%	0.0	0.0	
total	100	100%	100	100%	

Conclusion

Based on the findings of present study, it was concluded that :

➢Less than two third of study population have poor knowledge about early warning signs of breast cancer.

➢Majority of study populations have poor knowledge about screening methods of breast cancer.

➢Concerning barriers of not practicing breast self examination monthly, we found that the most the study population had no barrier.

Recommendations

1

     The Policymakers' of heath should take decisions to design a breast cancer control programmes in Sudan.

2

Great efforts should be taken to increase public awareness regarding prevention and early detection of breast cancer through national and international health programs.

3

     Continuous and comprehensive workplace educational health programs are recommended to provide women with information about BC, BSE and cancer screening and early detection methods.

4

   Initiate of community-oriented education as type of training of medical students as part of their training in community medicine that focuses on health need of community regarding the early detection of breast cancer.

5

       Similar studies should be done amongst health practitioners preferably in a rural setting.

يارب ♥

قل لأُمنياتي كُوني لتَكون

بسم الله الرحمن الرحيم

بسم الله الرحمن الرحيم

قالوا سبحانك لا علم لنا

إلا ما علمتنا

إنك أنت العليم الحكيم

صدق الله العظيم

University of Shendi
Faculty of Graduate Studies
&
Scientific Research

A thesis Submitted in fulfillment of requirement for

Ph.D in Community Health Nursing

Submitted by: Mohammed Jebreldar

Abuanja Nimer

B.S.c.Nursing Science. Khartoum University

M.S.c.Community Health Nursing. Khartoum University

2013

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(M.B.Bs),M.D. Community medicine

breast cancer has long been recognized as a major public health burden in high-income countries, the majority of cases actually occur in low- and middle-income countries (LMCs), and it is expected that incidence rates will rise most rapidly in these locations (**F. Kamangar. et al 2006**).

African women are more likely than women in the developed world to be diagnosed at later stages of the disease and, thus, are more likely to die from it.

This is due to the lack of awareness by women, accessibility to screening methods, and availability of African-based research findings (Karayurt et al: 2008).

In Sudan breast cancer is the most common type of cancer accounting for **34.5%** of all female cancers.

Breast self examination has an important role in the early detection of disease and hence its management as it enables women to detect breast lumps of less than 1.0cm in diameter (**Abdurrahman: 2006**).

Monthly breast self-examination (BSE) is an extremely important part of health care for all women in every stage of life. Because most women discover breast changes themselves through self-exams, this is an important health routine to establish. (www.upmc.com).
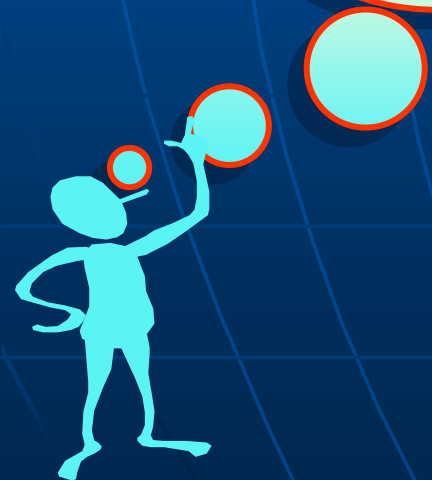
Rationale

➢ **breast self-examination (BSE) becomes an important and necessary approach to detect breast cancer in its early stages in order to limit its resultant morbidity and mortality rates.**

➢ **No such an intervention study has been done in Shendi locality and there is no previous data about the subject. On the other hand a recent center for cancer control has been established in Shendi University and this study may be an integral part of its activities.**

Objectives of Study

The main goal of Study is to

evaluate the impact of BSE Program on women's Knowledge, Attitude and Practice in Shendi locality.

The specific objectives

-To evaluate women's knowledge in relation to importance of BSE and its benefits.

-To identify women's level of practice regarding BSE.

-To apply an educational program about BSE practice among group of women.

-To develop women self-examination training.

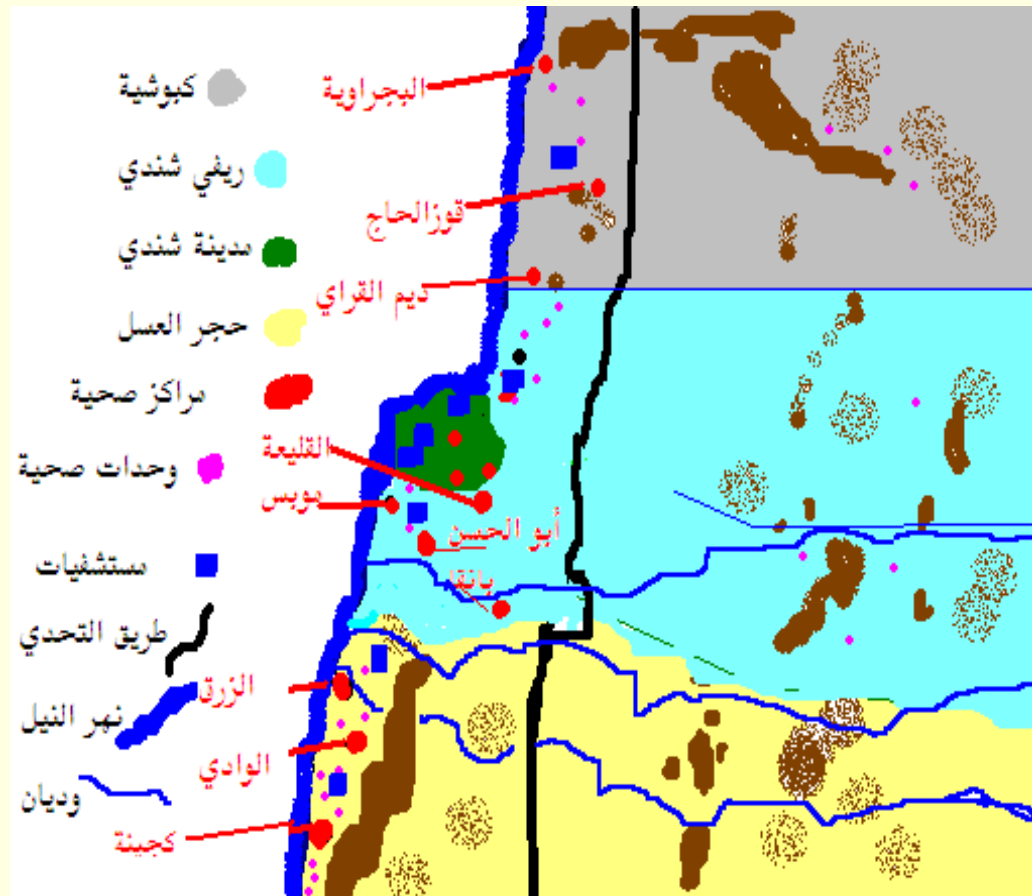-To evaluate the impact of educational program on women's knowledge and practice.

Subjects and Methods

Design :

A quasi-experimental design community based study.

Setting:

The study was carried shendi locality, River Nile state.

Subjects:

Women of 30 years and above in Shendi locality. The total number of women who participated in the study were **377** woman. The number was distributed proportionally to five administrative units in the locality.

Sampling:

A multi stage sampling was used for selecting the study population in the study.

Tools of Data Collection:

three tools were used to collect the necessary data to achieve the aim of the study, they were:

❶ **Self-administered questionnaire .**

❷ **An attitude questionnaire:.**

❸ **An observation checklist.**

❶ Self-administered questionnaire :

This is a structured interview schedule that was developed by the researcher after a thorough review of literature to collect data about knowledge level of women related to BC, BSE information resources.

❷ An attitude questionnaire :

This interview sheet was developed by the researcher. It was used to determine the participants' attitude toward practice of BSE. Which includes the barriers to practice breast self examination.

❸ An observation checklist :

- **It compose of 19 steps marked to evaluate the performance of women at the different steps.**

- **The following grades were used:**
  - ➤ **Good = 3marks**
  - ➤ **Faire = 2 marks**
  - ➤ **Poor = one mark**
  - ➤ **Not done= zero mark**

Table (1). Shows the distribution of the study population according to breast problems and family history of breast cancer. (n=377).

Item (s)	Number	Percentage
History of breast problems		
Present	64	17.0%
Not present	280	74.3%
Don't know	33	8.8%
Total	377	100
Family history of breast cancer		
Yes	71	18.8%
No	261	69.2%
Not remember	45	11.9%
Total	377	100%

Table (2). Shows knowledge about risk factors of breast cancer among the study population (pre & post intervention). (n=377)..

Item (S)	Pre program		Post program		P-Value
	Number	Percentage	Number	Percentage	
Good knowledge	99	26.3%	361	95.8%	0.00**
Acceptable knowledge	119	31.6%	16	4.2%	
Poor knowledge	159	42.2%	0.0	0.0	
Total	377	100.0%	377	100.0%	

Table (3). Shows knowledge regarding screening methods and early warning signs of breast cancer among the study population (pre & post intervention).

Variable(S)	Pre program		Post program		P-Value
	Number	Percentage	Number	Percentage	
screening method of BC					0.00**
good knowledge	36	9.5%	377	100%	
acceptable knowledge	35	9.3%	0.0	0.0%	
poor knowledge	306	81.2%	0.0	0.0%	
early warning signs of BC					
good knowledge	103	27.3%	377	100%	
acceptable knowledge	29	7.7%	0.0	0.0%	0.005*
poor knowledge	245	65.0%	0.0	0.0%	
Total	377	100%	377	100%	

Figure (1) information sources about breast cancer and breast self examination.
.

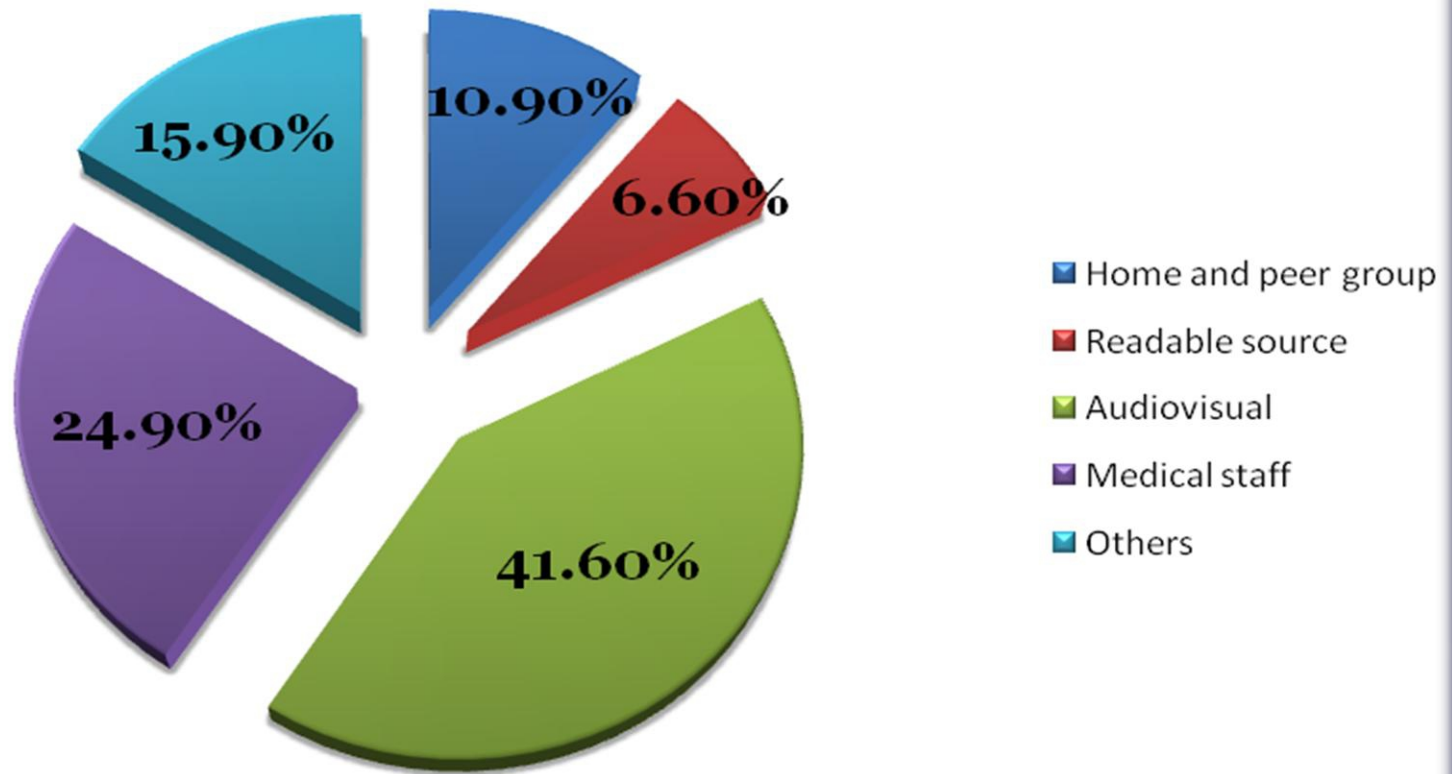**Table (4). Shows age of starting BSE and last time the performance among the study population.**

Item (s)	Number	Percentage
Age of starting BSE		
More than 19 years	109	28.9%
Less than 19 years	36	9.5%
Don't start	139	36.9%
Don't know	93	24.7%
Total	377	100%
Last time of performing BSE		
Less than a week	73	19.4%
Less than six months	47	12.5%
Less than one year	17	4.5%
Don't know	240	63.7%
Total	377	100%

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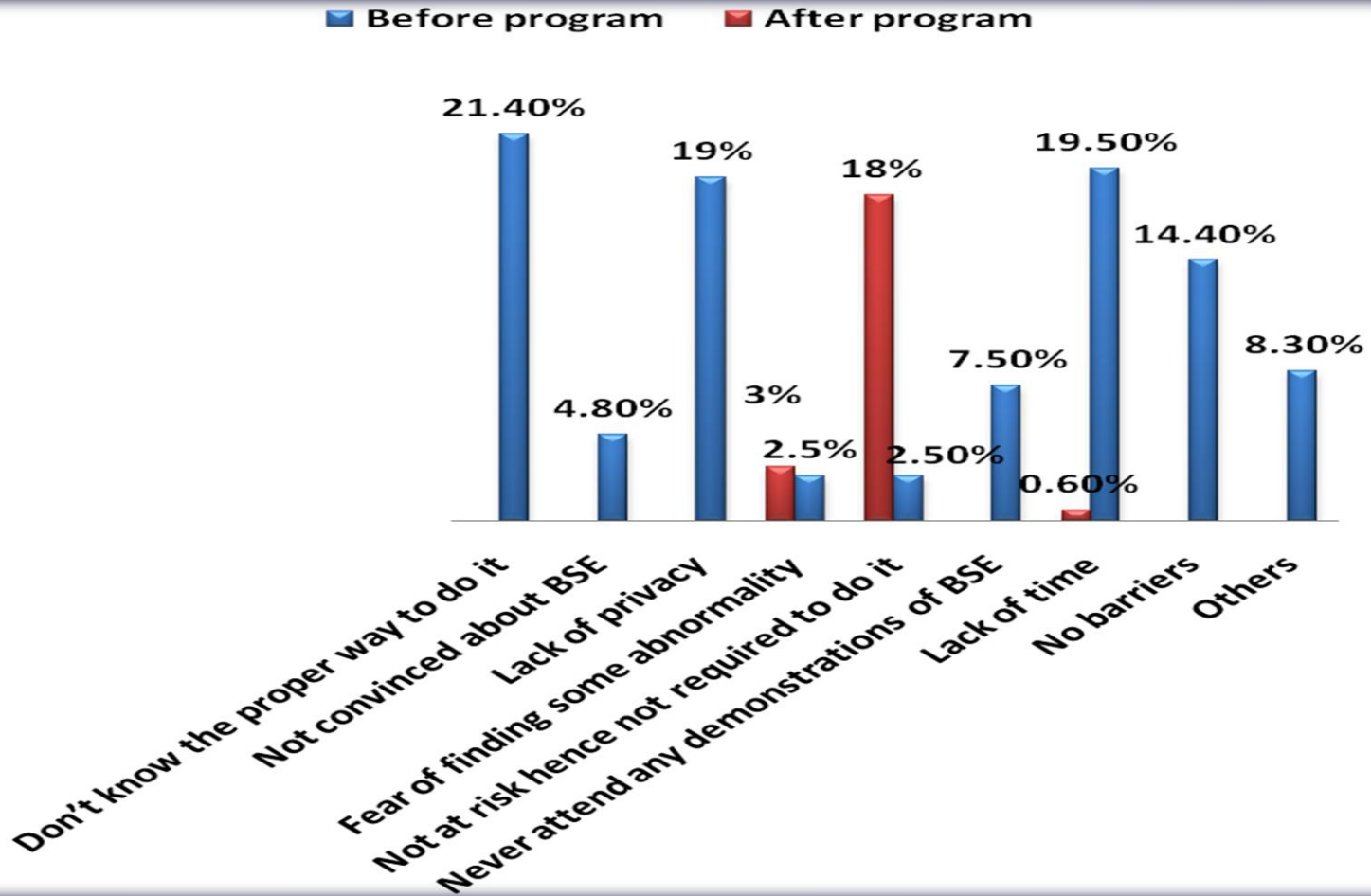
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Poor	83	22%	0.0	0.0	
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Conclusion

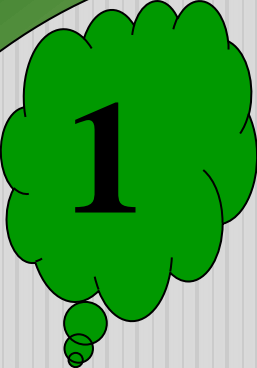■ **Based on the findings of present study, it was concluded that :**

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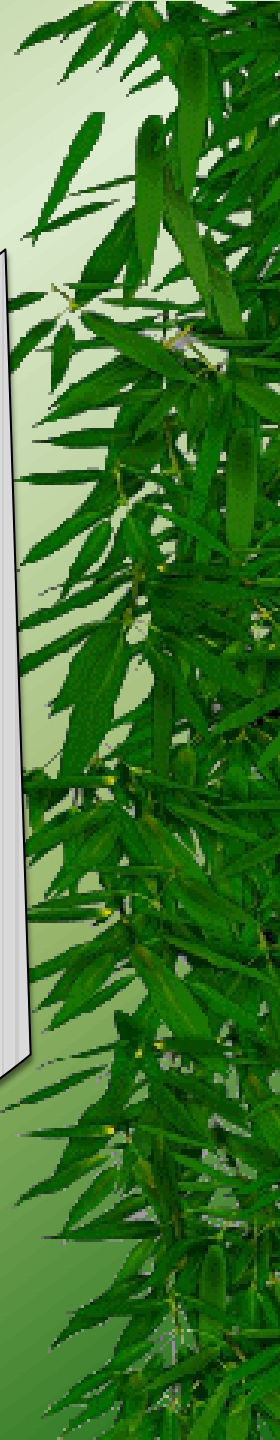
Recommendations

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Train of trainee(TOT)

Train of trainee(TOT)

أدارية حجر العسل

أدارية الريف الشمالي(قرية التراجمة الغابه)

أدارية الريف الجنوبي(قرية الدويمات)

أدارية الريف الجنوبي
(قري ابوالحسن و المجاذيب)

أدارية كبوشية(قرية ديم القراي)

شندي المدينة

Thank You

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قل لأُمنياتي كُوني لتكُونْ