

Breast Cancer and Management

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Abstract

Amongst the leading cause of death for women, breast cancer is the second leading cause of death and most commonly diagnosed. But good news to the world because in the recent times or lately, death rate has decreased as a result of health education and tools put in place to detect it early. This write up will show us the preventive and therapeutic management that have given rise to an impressive figure of survivors of breast cancer in different countries most especially the USA which has a survivor of 2.5 million.

Going through recent studies, the assessment carried out by the primary care provider regarding screening for breast cancer was geared towards decisions about when to initiate mammography—the process of using low energy x-ray to examine the human breast. Emphasis was made on early diagnosis as the best protection against breast cancer morbidity.

However, there have been recent developments in the ability to predict and modify breast cancer risk. It is therefore important for the health care provider to be able to recognize women at higher risk for breast cancer and be familiar with issues regarding screening and reduction of risk. Recent data regarding the evaluation of breast cancer risk, newer screening strategies for high-risk women, and medical and surgical intervention to minimize breast cancer and its risk, are presented in the project.

Every year 170,000 women are diagnosed with breast cancer; screening for breast cancer is one of the topics that primary care providers should address with their patients. Screening for breast cancer has been extensively endorsed and most women in the United States more than 40 years old participate in screening activities. In the community mammography remains the main screening tool. However, there have been several important developments in the ability to predict and modify breast cancer risk. Recently, data have become available regarding the evaluation of risk, screening strategies for high- risk women, and medical and surgical approaches that can decrease breast cancer risk. Women who are concerned about their risk for breast cancer and should be counseled and managed appropriately. It is important for primary care providers to be conversant with these issues. In my first three blocks which are health education, nursing informatics and ethical issues in nursing, the practice of health education, counseling, electronic health records were discovered to prevent diseases and decrease high mortality and morbidity rate. It is on this ground that I chose the topic breast cancer in women and management, sighting different methods from research by which breast cancer can be prevented, the role of the nurse in the stated aspect so that breast could be a thing of past in the nearest future. With the knowledge of nursing informatics, data analysis with tables, bar charts and pie charts were used to illustrate the results in this project.

Introduction

Breast cancer is the most common cancer and the diagnosis of breast cancer is most times delayed, leading to initial presentation with already advanced disease condition. The most common invasive cancer in women globally is breast cancer and it is also the second leading cause of death from cancer amongst women. What is breast cancer? A malignant tumor that starts in the cells of the breast is called breast cancer. Malignant tumor is a group of cancer cells that can grow to invade the surrounding tissues or metastasize (spread) to other distant body parts. This disease occurs almost entirely in women, but can occur in men also. In the United States, About 11,000 women aged lesser

than 40 years are diagnosed yearly in the United States with invasive breast cancer, which is accounting for 4.7% to 4.9% of all patients diagnosed of breast cancer. Chung M, Chang HR, Cancer 1996. In Western women, lesser than 4% of breast cancer patients are aged below 35 years. While the mean age at diagnosis is about 10 years lower in Korea, as in other Asian countries, and the proportion of patients with young aged breast cancer is higher in Asian than in Western countries. According to the 2011 Annual Report of the Korea Central Cancer Registry, 13.2% of women diagnosed with breast cancer were aged below 40 years, and 4.7% were aged below 35 years. Han V, Kans SY. Korean Breast Cancer Society (Breast Cancer Res Treat 2010)

Current guidelines for breast cancer screening recommend mammograms for women above 40 or above 50 years of age. In addition, mammograms in young women have a markedly lower sensitivity for breast cancer due to higher incidence of dense breasts in this age group. Diagnosis is also complicated by the various physiological changes and parenchyma development occurring in the time of pregnancy and breastfeeding. 163 breast carcinomas occurring in women aged between 26 and 44 years were examined for pathological features, estrogen and progesterone receptor status, proliferation as determined by Ki-67 labeling and the presence of c-erbB-2 and p53 protein, and were compared with a control group of carcinomas from women in the 50-67 years age group. Carcinomas occurring in women aged lesser than 35 years had a significantly high incidence of being poorly differentiated and of having high proliferation rates.

This group also had a significantly high incidence of p53 protein staining. Carcinomas in the under 30 years age group had a lower incidence of estrogen and progesterone receptor positivity. No differences were found in c-erbB-2-positive staining between the groups. Infiltrating lobular carcinomas were only identified in women aged 40 years and above. There was a higher incidence of a family history in the 35-44 years age group 18 percent than in the under 35 years age group 11 percent. Breast cancer occurring in women aged below 35 years are highly aggressive. An important discovering is the high level of p53 positivity, which could mean genetic instability. Eur. J Public Health 2014

Breast cancer commonly starts off in the inner lining of milk ducts or the lobules that supply them with milk. A malignant tumor can spread to other parts of the body. A breast cancer that began in the lobules is called lobular carcinoma, and one that began from the ducts is called ductile carcinoma. **Breast** cancer is the most common invasive cancer in females in whole world. In general, it accounts for 16 percent of all female cancers and 22.9 percent of invasive cancers in women. 18.2 percent of all cancer deaths worldwide According to the National Cancer Institute, 232,340 female breast cancers are reported in the USA each year, as well as about 39,620 deaths caused by the disease.

Causes of breast cancer?

The cause of breast cancer is definitely not known. It is difficult to say the reason some persons develops the disease while others do not. We know that some risk factors can impact on a woman's likelihood of developing breast cancer. They are: **Getting older** – the age of a woman is a risk factor, the older a woman gets, the higher is her risk of developing breast cancer; Over 80 percentage of all women's breast cancers occur among women aged 50years and above beyond the menopause. **Genetics** - women who have a close relative who has had breast or ovarian cancer, are more likely to develop breast cancer. But majority of breast cancers are not hereditary. The women who carry the BRCA1 and BRCA2 genes have a higher risk of developing breast and ovarian cancer. These genes can be inherited. TP53, another gene, is also linked to greater breast cancer risk.

A history of breast cancer - women who have had breast cancer, even non-invasive cancer, are more likely to develop the disease again, compared to women who have no history of the disease.

Having had certain types of breast lumps - women who have had some types of benign (a non-cancerous) breast lumps are more likely to develop cancer later in life. Such as atypical ductile hyperplasia or lobular carcinoma.

Dense (thick) breast tissue - women with dense breast tissue have a higher chance of developing breast cancer.

Estrogen exposure - women who started menstruating earlier or delayed menopause than usual have a greater risk of developing cancer of the breast. The reason is due to the fact their bodies have been exposed to estrogen for a longer time. The exposure to estrogen begins when menses start, same also drops dramatically at the period of menopause.

Obesity - the women who become obese and overweight post menopausal may have a higher risk of developing breast cancer. Experts say that there are higher levels of estrogen in the obese menopausal women, which may be the cause of the higher risk. Obesity causes about 5% cancer in UK.

Height – taller than average women have a slightly greater likelihood of developing breast cancer than shorter than average women. Experts are not sure why. A woman's height has been associated with breast cancer risk in many studies. Taller women (5 feet 9 inches or taller) have a small increase in risk of both premenopausal and postmenopausal breast cancer compared to shorter women (5 feet 3 inches or shorter). About 17% of cancer could be caused by height.

A person's height is determined by the interaction of genetics, nutrition and hormone levels. How these three factors might affect breast cancer risk is unclear. One possible explanation suggests that the hormones that affect women's height may also cause an increase in the amount of milk duct tissue in the breast. Most breast tumors arise from this tissue and more breast ducts would lead to increased susceptibility to breast cancer

Alcoholism – women who take alcohol the more regularly have higher risk of developing cancer of the breast. The Mayo Clinic says that if a woman wants to drink, she should not exceed one alcoholic beverage per day. Researchers said alcoholism caused about 106% of cancer

Smoking- Researchers at the American Cancer Society have found an increased breast cancer risk among women who smoke, especially those who start smoking before they have their first child. The risk of invasive breast cancer was highest in women who began smoking at an earlier age. When compared to women who never smoked, those who started smoking before their first menstrual cycle had a 61% higher risk, while those who started smoking after their first cycle, but 11 or more years before having a child, had a 45% higher risk.

The researchers also found that these results were supported by the findings of earlier cohort studies. When combining the results of 9 studies (including this one), they found a 12% increase in breast cancer risk amongst women who began smoking at a younger age, and a 21% increase in risk among women who started before the birth of their first child.

Mia Gaudet, PhD, American Cancer Society director of genetic epidemiology, said breast tissue is not fully developed until after a woman has her first child, and that makes it more sensitive to the harmful effects of tobacco. Gaudet said, “The key message from this study should be additional motivation to young women to not start smoking.” The risk of invasive breast cancer was highest in women who began smoking at an earlier age. When compared to women who never smoked, those who started smoking before their first menstrual cycle had a 61% higher risk, while those who started smoking after their first cycle, but 11 or more years before having a child, had a 45% higher risk. women who started smoking at a younger age, and a 21% increase in risk among women who started before the birth of their first child. The risk of invasive breast cancer was highest in women who began smoking at an earlier age. When compared to women who never smoked, those who started smoking before their first menstrual cycle had a 61% higher risk, while those who started smoking after their first cycle, but 11 or more years before having a child, had a 45% higher risk. **Smoking cigarette**-article date: February 28, 2013. By Stacy Simon. Researchers said smoking cause about 70% of breast cancer.

Radiation exposure - exposure to X-rays and CT scans may raise a woman's risk of developing breast cancer slightly. The scientists at the Memorial Sloan-Kettering Cancer Center discovered that

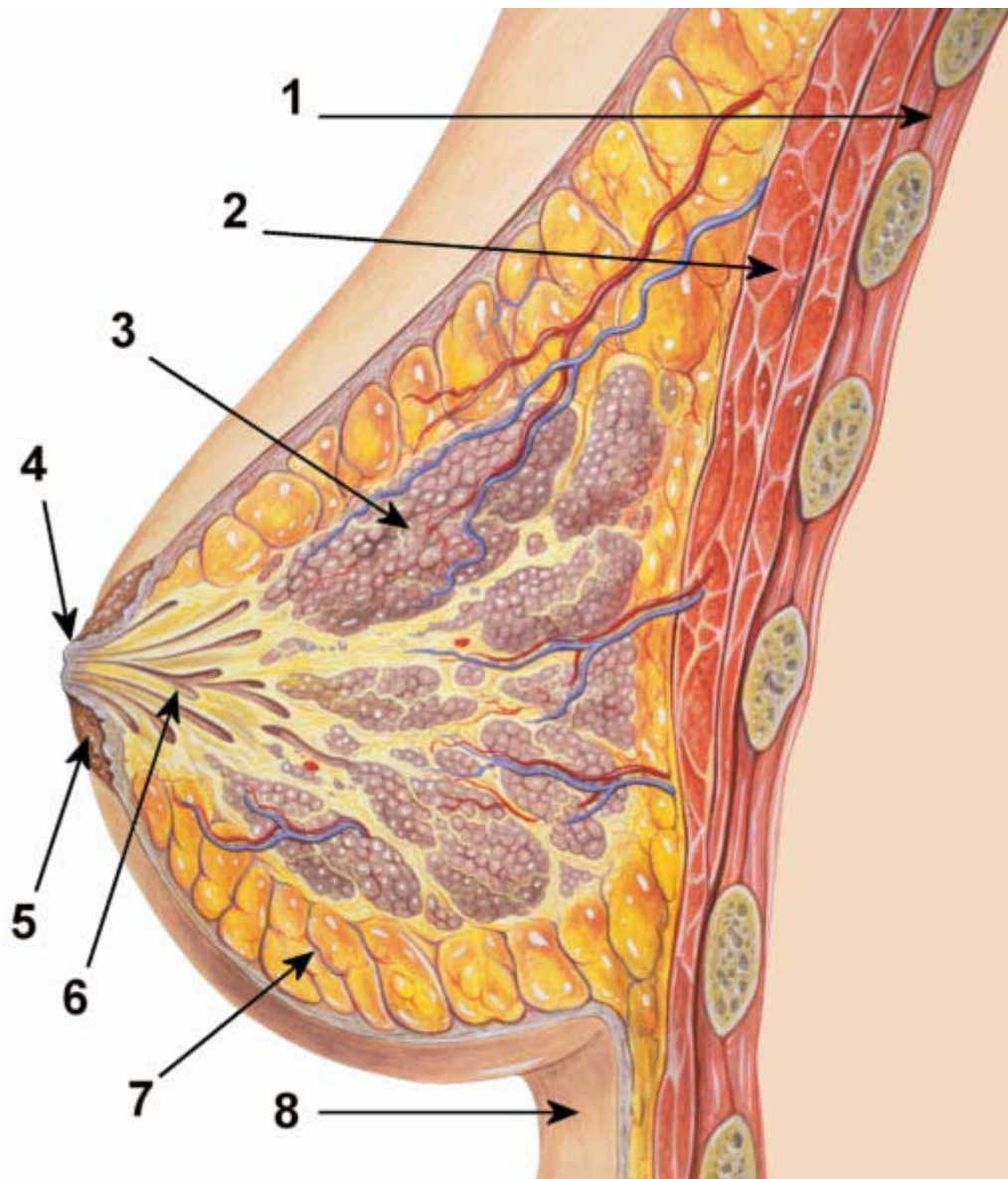
women who had been treated with radiation to the chest for a childhood cancer have a higher risk of developing breast cancer.

Hormone replacement therapy whether combined or estrogen only HRT therapies can increase a woman's risk of developing breast cancer. About 26% of breast cancer is caused by this hormonal use.

Certain jobs - French researchers found that women who worked at night prior to a first pregnancy had a higher risk of eventually developing breast cancer. Melatonin is a mammalian hormone involved in circadian rhythms and sleep and potentially in restraining tumor growth.

The synthesis and release of melatonin occur in a dose–response-like manner that is stimulated by darkness and inhibited by light through photic information from the retina. Peak melatonin levels normally occur during sleep in the middle of the night. Several experimental studies have provided evidence of an association between melatonin levels and risk of cancer. For example, evidence from rodent studies found that pinealectomy increased tumor growth, that administration of melatonin inhibited the promotion of chemically induced mammary tumors and that constant light exposure had a growth-promoting effect on chemically induced tumors. About 60% of breast cancer is by night duty Canadian researchers found that certain jobs, especially those that bring the human body into contact with possible carcinogens and endocrine disruptors are linked to a higher risk of developing breast cancer. Such as bar/gambling, manufacturing of automotive plastics, metal-working, food canning and agriculture. They reported their findings in the November 2012 issue of *Environmental Health*. Cosmetic implants may undermine breast cancer survival - women who have cosmetic implants in their breast and develop breast cancer may have a higher risk of dying prematurely from the disease compared to other women, researchers from Canada reported in the *BMJ (British Medical Journal)* (May 2013 issue).

The anatomy of a female breast



1. Chest wall. 2. Pectoralis muscles. 3. Lobules (glands that make milk). 4. Nipple surface. 5. Areola. 6. Lactiferous duct tube that carries milk to the nipple. 7. Fatty tissue. 8. Skin. Image by Patrick J. Lynch and Morgoth666

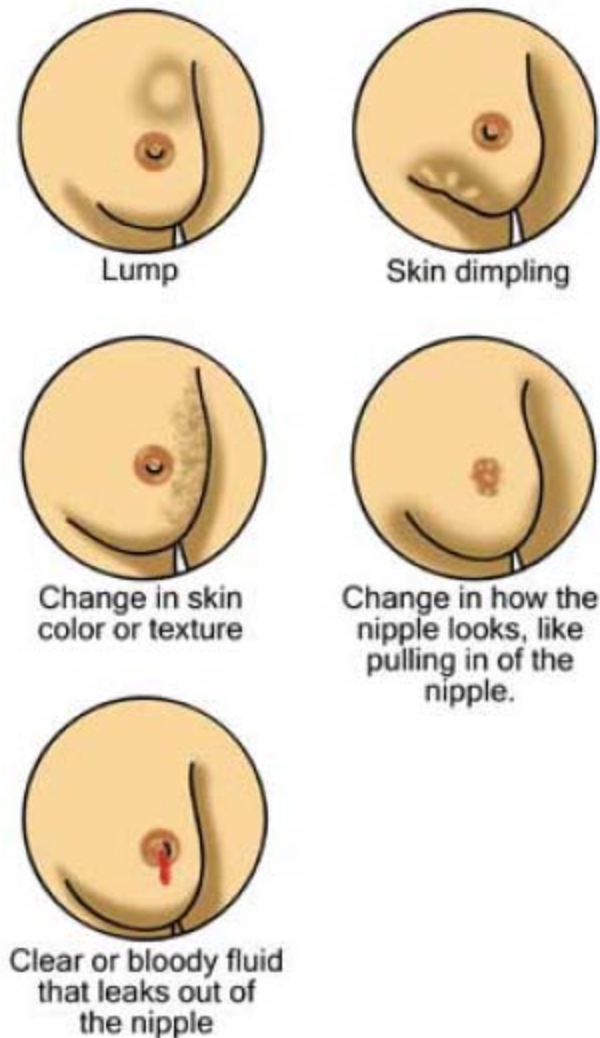
A mature human female's breast comprises of fat, connective tissue and thousands of lobules – tiny glands which produce milk. The milk of a breastfeeding mother goes through tiny ducts (tubes) and is delivered through the nipple.

The breast is made up of billions of microscopic cells. These cells multiply in an orderly manner and new cells are made to replace the ones that have died. When there is cancer, these cells multiply uncontrollably, and there are too many cells, progressively more and more than there should be naturally.

Cancer that begins in the lactiferous duct (milk duct), is called **ductile carcinoma**, it is the most common type. Cancer that begins in the lobules is known as lobular carcinoma and it is much less common. Managing breast cancer involves simple examination of breast for early detection of lump,

screening for women with high risk, prophylactic mastectomy, lumpectomy and therapeutic mastectomy.

This project is to create awareness amongst women and in the countries where screening for high risk for breast cancer and its management is not yet popular so that affected women can live much more longer than expected.



Some of the possible early signs of breast cancer Wikimedia Commons

A symptom is only felt by the patient, and is described to the doctor or nurse, as a headache or pain while a sign is something the patient and others can detect, for example, a rash or swelling. The very first symptoms of breast cancer are usually an area of thickened tissue in the woman's breast, or a lump. Most of the lumps are not cancerous; however, I see it as important for women to get them checked by a health care professional

Women who detect any of the following signs or symptoms should tell their doctor (NHS, UK lump in a breast pain in the armpits or breast that does not occur with the woman's menstrual period Pitting or redness of the skin of the breast appears like the skin of an orange A rash around or on one of the nipples A swelling in one of the armpits An area of denser tissue in a breast One of the nipples is discharging sometimes the discharge may contain blood The nipple changes in appearance; it may become sunken or inverted When there is changes in the size and shape of the breast When there is scaling, peeling or flaking of the skin of the nipple and breast. The management of breast cancer in

women is in preventive which can be done by starting from simple examination of the breast, screening with mammogram, risk assessment- involving family history and using magnetic resonance imaging, to carrying out risk reducing management like non pharmacological management, hormonal preventive therapy and surgical management according to National Cancer Institute, J. AM Board FAM 2009. The objective of this project is to enhance a vibrant health education that will create awareness to all classes of women globally of the availability of screening tools and the same time lay much emphasis on the use of these tools and also inform people of a better lifestyle. These will go a long way to prevent the disease called breast cancer and women will live a healthy and a prolonged live. After all, according to an adage, prevention is better than cure.

Literature review

Before the implementation of the preventive management of breast cancer, women who were diagnosed of breast cancer in USA in 2007 were 202,964 and women who lost their lives as a result of breast cancer were 40,598. In 2005, women of 40 to 64 years accounted for 61% of in situ cases, 54% of invasive breast cancer cases, and 40% of breast cancer deaths. A combined exposition (1971-1980) and probable (1981-1990) study of the epidemiology, clinical characteristics and pathology of breast cancer in a black African population was carried out. There were 1946 biopsy-proven cases, with a rate frequency of 33.6 per 100,000 patients per year. The age range was 14-96 years but 70 per cent of patients were between 26 and 50 years old. The cumulative frequency of cancer was 0.8 per cent at age < 20 years and 3.3 per cent at age < 25 years; the peak age range for disease was 36-45 years. Of 1842 evaluable patients, 17.2 per cent presented with stages I or II cancer and 73.8 per cent with stage III disease. The dominant histopathological type was infiltrating ductal cancer (49.2 per cent), followed by undifferentiated anaplastic carcinoma (33.3 per cent). Burkitt's lymphoma occurred in five patients and developed concurrently and rapidly during lactation in four. The prospective study did not demonstrate that age at menarche or first full-term pregnancy, duration of breast feeding or parity were risk factors in black women. Breast cancer in Nigerian women. [Br J Surg. 1992]. In recent times, the word 'Cancer' has become synonymous amongst Nigerians. While late presentation of patients at advanced stages of breast cancer is becoming a common trend in Nigeria, global statistics reveal that rising global incidence of breast cancer is occurring at a faster rate in populations of developing nations, with Nigeria included. A publication on Fri, Jul 10th, 2015 Lagos Nigeria, The Medical Director in Optimal Cancer Care Foundation, Dr Femi Olaleye, said breast cancer killed 1: 25 Nigerian women. Here in Nigeria like in some of the developing countries, most people present late and as such, diagnoses are made when it is too late, thereby leading to several needless and painful deaths of our beloved moms, sisters, aunts, friends, colleagues. "this condition Breast cancer is at present the most common cancer in Nigeria. Olaleye said that screening was the process of looking for early signs of a disease in a healthy population. He explained that while other cancers could be detected through proper medical tools, they could not be screened for in such a cost effectual manner. Olaleye said that the screening was just a five to 10 minutes procedure that medical practitioners in the primary healthcare centers could be trained to do. He said that the main aim of the foundation was to make screening accessible to communities from corner to corner in the country.

"Rather than locating a cancer foundation in your church, you just invite us to come and screen your women every year. People who love to be part of public campaign can organize this project in their own communities as their own charity to impact on the lives of their people." Olaleye said that annual screening would not only boost a woman's chance of early detection and survival but also expose her to information she could adopt on preventive measures. He said that information on lifestyle including eating habits, exercise practice and stress level often came during counseling. (NAN)

Preventive management for breast cancer overview

Life-style is now recognized as a main determinant of cancer risk. Public education is an important component of cancer control programmes and has been shown to be effective in leading to life-style

changes. Four fundamental types of education programmes are reviewed: for increasing the public's awareness of cancer, for changing particular risk behaviour like stopping smoking, breast self-examination, and promoting early cancer detection in the community.

To change human behavior it is best to approach the risk habit through the same forces that develop and sustain the habit. Simply giving information of an association between specific habits and cancer, even if repeated several times, will lead to increased public awareness and encourage some to make a minimal effort to change their behavior, but in general the new habit does not persist and continuing and intensifying this approach are ineffective. An alternative strategy utilizes socially active forces to support the prevention practice and remove possible barriers to action. For example, an antismoking program should create a favorable social image of the non-smoker. Although a culturally and socially relevant mass media campaign can influence knowledge and beliefs and induce people to participate in a screening activity, this needs to be supplemented over a period of time by personal contact methods, such as group discussions, telephone conversations and home visits, in order to promote a regular screening habit. Contrary to popular opinion, mass communication methods can be expensive on a per person cost-effectiveness basis because of low participation rates and weakness in sustaining healthy behavior.

Breast exam - the physician will check both the patient's breasts, looking out for lumps and other possible abnormalities, such as inverted nipples, nipple discharge, or change in breast shape. The patient will be asked to sit/stand with her arms in different positions, such as above her head and by her sides. Also added by the researchers is **breast awareness**.

Breast awareness has been advocated in the UK since the early 1990s, but while it is now generally established as a method of self-care there is still uncertainty about what it is among health professionals and the universal public. Austoker (2003) claims that much of this confusion has existed since its beginning in the 1990s. Several women confuse breast awareness with breast self-examination and often believe they are the same thing. However, breast awareness advocates that women no longer need to be anxious on how to examine their breasts in a specific way or to remember to do it at an exact time, as it is directed with breast self-examination. Rather it focuses on breast awareness becoming a normal part of caring for their bodies.

In breast awareness women are encouraged to become familiar with what is normal for them through looking at and feeling their breasts. Most women will know how their breasts look and feel simply by carrying out daily activities such as washing and dressing, though this knowledge and awareness may be unintentional. Austoker (1994) reports that 90 per cent of breast cancers are found by women themselves or their partners. This reinforces the subjective evidence that women know what is normal for them. Breast awareness is not about searching for cancer, it is part of general body awareness, ensuring everything remains the same. It does involve looking at and feeling the breasts from time to time but not in any taught way or at a set time. By being breast aware women become confident in knowing what is normal for them so they are more able to recognize when something is not the same and can report these changes to their doctor. (CRUK, 2004).

X-ray (mammogram) - commonly used for breast cancer screening. If anything unusual is found, the doctor may order a diagnostic mammogram. Breast cancer screening has become a controversial subject over the last few years. Experts, professional bodies, and patient groups cannot currently agree on when mammography screening should start and how often it should occur. Some say routine screening should start when the woman is 40 years old, others insist on 50 as the best age, and a few believe that only high-risk groups should have routine screening.

Evaluation of breast cancer risk

Average risk

The National Cancer Institute's Surveillance, Epidemiology, and End Results program estimates that, based on breast cancer statistics from 2001 through 2003, 12.7% of women born in the United States today will develop breast cancer sometime during their lifetime. This average risk of

approximately 12% is often expressed as "1 in 8," whereas the chance that a woman will never have breast cancer is 87.3%, or "7 in 8" women.

Identification of women at higher risk for breast cancer

Several approaches are available for identifying women with a higher than average risk of breast cancer. These include an assessment of family history with genetic testing consideration; a review of clinical history, including prior breast biopsies; and the evaluation of mammographic density. Family History. Many women will have a family history of breast cancer but, among the majority of these women, the risk does not increase substantially and is associated with, at the most, a doubling of the lifetime risk. Only 1% to 2% of breast cancer cases are caused by the inheritance of an auto-soma dominant, high-pen trance gene, conferring up to an 85% lifetime risk of breast cancer. Features of the family history that suggest cancer may be caused by such a high-pen trance gene include. Two or more first-degree that is parent, sibling, or child or second-degree that is grandmother, granddaughter, aunt, niece, half-sibling relatives with breast cancer. Breast cancer occurring before the age of 50 - premenopausal in a close relative. Family history of both breast and ovarian cancer. One or more relatives with 2 cancers (breast and ovarian cancer or 2 independent breast cancers). Breast cancer in male relatives.

Two breast cancer susceptibility genes (BRCA1 and BRCA2), have recently been identified; these genes are responsible for up to about 40% of cases of inherited breast cancer. In patients with BRCA1 mutations, the average cumulative risk of developing cancer by the age of 70 ranges between 55% and 85% for breast cancer and between 16%. In BRCA 2-mutation carriers, the risks range between 37% and 85% for breast cancer **Clinical History and Significance of Previous Breast Biopsies.** Studies have shown an increased cancer risk in young survivors after radiation treatment. Among women with Hodgkin's disease who received mantle field radiation treatment, the risk of breast cancer increases significantly 15 to 30 years after radiation therapy. The best-characterized premalignant lesions are atypical ductile hyperplasia -ADH, atypical lobular hyperplasia -ALH, and lobular carcinoma in situ - LCIS. LCIS and ALH, together described as lobular neoplasia, are associated with substantially increased risk of subsequent breast cancer, with lifetime risk estimates ranging from 10% to 20%.. ADH is part of the continuum of ductile proliferative breast diseases, ranging from usual ductile hyperplasia to ductile carcinoma in situ -DCIS. The literature review by Arpino et al suggests a 4- to 5-fold increased risk of invasive breast cancer in women with atypical ductile hyperplasia at a median follow-up of 17 years, which is doubled if the woman has an associated family history of breast cancer.

Once thought to be a precursor to invasive carcinoma, lobular carcinoma in situ is now considered to be a marker of increased risk for breast cancer. In most cases it is characteristically multifocal and bilateral. More than 50% of patients with lobular carcinoma in situ have multiple foci in the ipsilateral breast, and approximately 30% of patients have lobular carcinoma in situ in the contra lateral breast. Lobular carcinoma in situ is considered a marker of increased risk of cancer in either breast. In contrast, ductile carcinoma in situ also called intra ductile carcinoma represents the stage of breast cancer development in which most of the molecular changes that characterize invasive breast cancer are already present even though the lesion has not assumed a fully malignant phenotype. DCIS is a precursor to invasive cancer and is therefore not discussed in this review. A systematic review of published studies done by the Agency for Health care Research and Quality revealed that within 5 years after LCIS diagnosis, 4.2% to 9.3% of patients were diagnosed with breast cancer. In studies that followed patients for more than 5 years, the incidence of cancer was 7.7% to 26.3%. **Mammographic Density.** Extensive mammographic density is strongly associated with the risk of breast cancer, with age and mutations in the breast cancer gene being the only other factors associated with a greater risk. A meta-analysis of 42 studies showed that women in the highest quartile of mammographic density have a risk of breast cancer that is approximately 4 to 6 times higher than that of women of similar age in the lowest quartile. In a recent study, Boyd et al also reported an

association between breast cancer and extensive mammographic density even when the density was observed as much as 8 years before a breast cancer diagnosis. This finding indicates that the association between extensive mammographic density and an increased risk of breast cancer is not only because of a masking effect of the breast density, which could obscure a cancer, but also because of a biologic connection between breast density and breast cancer.

Breast density is not currently used routinely when assessing breast cancer risk. In the future, however, measures of mammographic density could be useful in assessing the risk of breast cancer and in guiding measures to prevent breast cancer.

Risk assessment tools

The use of breast cancer risk assessment tools in the evaluation of risk is a good way for physicians to engage their patients in a discussion of factors that may contribute to their increased risk. These models incorporate family history, which is the main determinant of risk, but some of these models incorporate other risk factors, such as previous abnormal breast biopsies and reproductive history; these are discussed below. Women who are assessed in primary care settings as being high risk by the use of any one of these models should be offered a referral to centers that have expertise in high-risk breast cancer for genetic counseling and a more definitive assessment of risk.

Breast cancer risk assessment tool

It is an interactive tool made by the National Cancer Institute and the National Surgical Adjuvant Breast and Bowel Project (NSABP) to estimate a woman's risk of developing invasive breast cancer. This is available on the National Cancer Institute's Web site (<http://www.cancer.gov/bcrisktool/>).

This tool was developed from the original Gail model and includes the following risk factors: current age, race, age at menarche, age at first live birth, the number of first-degree relatives with breast cancer, the number of previous breast biopsy examinations, and presence of atypical hyperplasia. The model predicts a woman's likelihood of having a breast cancer diagnosis within the next 5 years and within her lifetime up to the age of 90. Although this prediction model has been validated in large populations, one of the limitations of this model is that it is not good at predicting individual risk. In addition, this model does not take into consideration the paternal family history, second-degree relatives, or the age at onset in affected relatives. Both of these factors are significant in predicting hereditary breast cancer risk.

Claus model

The Claus model (<http://www4.utsouthwestern.edu/breasthealth/cagene/default.asp>) estimates the probability that a woman will develop breast cancer based on her family history of cancer; it incorporates more extensive family history but excludes other risk factors. Risk tables have been published by Claus et al and the risks can be calculated as lifetime probabilities of developing cancer or an estimated risk that a woman will develop cancer over 10-year intervals. It should be emphasized that the Claus model may be used only for women with at least one female first- or second-degree relative with breast cancer; this model does not take into account other risk factors that have been associated with breast cancer, such as age of menarche, age at first live birth, or a family history of ovarian cancer.

Genetic testing and brcapro

Although less than 10% of all breast cancers are linked to genetic mutations, such as BRCA-1 and BRCA-2, women who carry these mutations are at very high risk for breast cancer. The information provided by genetic testing is invaluable when making informed decisions related to breast cancer risk management. Universal genetic testing has some major drawbacks, namely the high cost and the frequency of mutations of uncertain clinical significance that occur in unselected families. The American Society of Clinical Oncology has devised guidelines suggesting that it is reasonable to consider testing of women whose mutation probability is greater than 10%. The BRCAPRO is a

program that calculates the probability that a particular family member carries a germ-line mutation of the BRCA1 and BRCA2 genes (<http://www4.utsouthwestern.edu/breasthealth/cagene/default.asp>). The calculations are based on Bayes' rules of determination of the probability of a mutation, given family history. Women who are identified in primary care settings to be at high risk should be referred to genetic counseling for a more definitive risk assessment. Risk assessment tools are recommended as an adjuvant to genetic counseling. Genetic counseling is recommended before mutation testing. Data are not available to determine the optimal age to test.

Screening strategies in high-risk women

Mammography has been proven to detect breast cancer at an early stage. However, for women with an increased risk of breast cancer, newer screening technologies are available for earlier detection, particularly in women below the age 40 years for whom mammography is less sensitive. Contrast-enhanced magnetic resonance imaging - MRI has been shown to have a high sensitivity (86% to 100%) for detecting breast cancer in high-risk asymptomatic and symptomatic women, although reports of specificity have been more variable (37% to 97%). The American Cancer Society now recommends MRI screening in addition to mammograms for women who meet at least one of the following conditions; They have a BRCA1 or BRCA2 mutation They have a first-degree relative (parent, sibling, child) with a BRCA1 or BRCA2 mutation (even if they have not been tested themselves)

Their lifetime risk of breast cancer has been scored at 20% to 25% or greater (as defined by BRCAPRO or other accepted risk assessment tools that look at family history and other factors); They had radiation exposure to the chest between the ages of 10 and 30; or They have clinical syndromes that place them at high risk, like Li-Fraumeni syndrome, Cowden syndrome, or Bannayan-Riley-Ruvalcaba syndrome; or if they may have at least one of these syndromes based on a history in a first-degree relative.

There is still not enough evidence for or against recommending MRI screening in women who have a 15% to 20% lifetime risk of breast cancer based on one of several accepted risk assessment tools that look at family history and other factors like LCIS or ALH, ADH, 'having very dense breasts or unevenly dense breasts on a mammogram; or have already had breast cancer, including ductal carcinoma in situ Screening MRIs are not recommended for women with a lifetime risk of breast cancer below 15%. Although an MRI is a more sensitive test, it may still miss some cancers that a mammogram would detect. An MRI should therefore be used in addition to, not instead of, a screening mammogram.

For most high-risk women, screening with MRI and mammograms should begin at the age of 30 and continue for as long as the woman is in good health. Because evidence is limited regarding the best age at which to start screening, this decision should be based on shared decision-making between patients and their health care providers, taking into account individual patient circumstances and preferences.

Reducing risk of breast cancer

Non pharmacological interventions (life style)

Studies have been made about several of them such as regular exercise which may reduce breast cancer risk, although the mechanism is not known. Reduction in body weight and reducing or stopping alcohol intake may reduce breast cancer risk in postmenopausal women. Interventions You've heard of antioxidants, such as vitamin C, lycopene, and beta-carotene, which are in many fruits and vegetables. Studies suggest that people who eat meals that are rich in fruits and vegetables have a lower risk of cancer. A variety of chemicals from plants known as phytochemicals also seem to protect cells from harmful compounds in food and in the environment, as well as prevent cell damage and mutations, according to Jed W. Fahey, ScD, MS, a faculty research associate at Johns Hopkins University School of Medicine. HE studied how cruciferous vegetables can help protect against

disease. A diet that could shield off cancer does not really look that different from the healthy foods you should be eating anyway according to Wendy Demark-Wahnefried, PhD, RD, a professor of behavioral sciences at the University of Texas M.D. Anderson Cancer Center in Houston. This means that much of fruits and vegetables, in addition to whole grains and lean meat or fish should be encouraged. Dietary folate seems to protect against the increased risk of breast cancer caused by alcohol intake. interventions Although it is not statistically significant, according to the Women's Health Initiative it was found that a low-fat diet was associated with a 9% reduction in the risk of breast cancer Observational studies also suggest that vitamin D and calcium might be involved in the development of breast cancer. Of the 13 studies of breast cancer, 9 reported a favorable association of vitamin D markers or sunlight with cancer risk, including one where the association was limited to premenopausal women; 1 study reported a favorable trend of borderline statistical significance and 3 found no association. None reported adverse effects.

However, there are no data from randomized controlled trials ensuring adequate vitamin D intake could reduce the risk of breast cancer. It is important to discuss these with women, but they need to be aware that lifestyle changes alone should not be relied on as the only risk reduction strategies.

Hormonal interventions

Use of selective estrogen receptor modulators

The links between hormones and breast cancer has long been recognized. The identification of the estrogen receptor provided a successful target for the treatment and prevention of breast cancer. Selective estrogen receptor modulators (SERMs), which antagonize estrogens in some tissues and mimic their action in others, play a key role in chemoprevention. Tamoxifen acts as an estrogen antagonist in breast tissue and as an estrogen agonist in the endometrium. Conversely, raloxifene behaves as an estrogen antagonist in both the breast and the endometrium. Differences in their molecular and 3- dimensional structures affect the transcriptional activity of the activated estrogen receptor. The National Surgical Adjuvant Breast and Bowel Project (NSABP P-1) Breast Cancer

Prevention Trial evaluated the use of tamoxifen for the prevention of breast cancer in high-risk women who were either pre or postmenopausal. The study found that tamoxifen, when given for 5 years, decreased the risk for developing invasive breast cancer by 49% in women who were at an increased risk for developing breast cancer. Those with atypical hyperplasia derived the largest risk reduction: 85%. Tamoxifen can cause significant adverse effects, including hot flashes, endometrial cancer, and venous thromboembolism. Women may opt out not to take tamoxifen due the risk that out weighs its potential benefits. Tamoxifen happens to be the first drug which was approved for the chemoprevention of breast cancer.

Recent evidence suggests a similar magnitude of benefit from the related drug raloxifene. In the NSABP P-2 Study of Tamoxifen and Raloxifene trial, tamoxifen and raloxifene had equivalent effects in reducing risk of invasive breast cancer in all examined high-risk women who were postmenopausal, including women with a history of atypical hyperplasia or LCIS, who had the highest annual rates of invasive breast cancer. There were fewer noninvasive cancers in the women who took tamoxifen, although this was not statistically significant. Comparisons of raloxifene with tamoxifen show equal efficacy as a chemo preventive agent for breast cancer, but there were fewer thromboembolic disorders, endometrial cancers, hysterectomies, cataracts, and cataract surgeries in women taking raloxifene. Raloxifene was approved for the prevention of invasive breast cancer in high-risk postmenopausal women in 2007.

Women should be offered chemoprevention with SERMs only after a shared decision-making process that involves careful consideration of the risks and benefits. Data are currently needed regarding the optimal time to initiate chemoprevention in women identified as high risk.

Aromatase inhibitors

The aromatase enzyme is required for the last step in estrogen biosynthesis. The third-generation aromatase inhibitors, which include exemestane, anastrozole, and letrozole, are potent and selective inhibitors of aromatase activity. The effect of aromatase inhibitors, as measured by the degree of aromatase inhibition, is approximately 98% for each of the third-generation agents. Interest in the use of the drugs for chemoprevention developed from the findings of the Anastrozole, Tamoxifen Alone and in Combination trial. Postmenopausal women with early-stage breast cancer who were using anastrozole alone had a 58% reduction in contralateral invasive breast cancer. The second International Breast Cancer Intervention prevention trial began in 2003 and compares anastrozole to placebo in 6000 postmenopausal women with an increased risk of breast cancer as well as women with mammographic density covering at least 50% of the breast.

Surgical preventive management

Cancer prediction models work well for populations but are not good at predicting individual risk. In a patient who has no evidence of breast cancer but who is at high risk, bilateral mastectomy is an option for risk reduction. Bilateral prophylactic mastectomy has been reported to reduce breast cancer incidence more than 95%. A recent position statement by the American Society of Surgical Oncology suggests bilateral prophylactic mastectomy may be considered in the following patients without a cancer diagnosis who are at high risk because of; The presence of BRCA mutations or other genetic susceptibility genes; A strong family history of breast cancer; cancer in multiple first-degree relatives and/or multiple successive generations of family members with breast and/or ovarian cancer; Histology risk factors: atypical ductile hyperplasia, atypical lobular hyperplasia or lobular carcinoma in situ confirmed on biopsy. These changes are especially significant when they are present in a patient who has a strong family history of cancer of the breast or Difficult surveillance; a clinically and mammographically dense breast may make surveillance difficult.

Patients considering prophylactic mastectomy should also be informed about the potential benefits and risks of immediate reconstruction. The position statement recommended that these patients are best evaluated by a multidisciplinary team, which may include a surgeon, a medical oncologist, a pathologist, and a genetic counselor. It is important for these patients to be aware of potential risks and benefits of prophylactic mastectomy as well as the fact that the procedure does not provide 100% protection against the development of breast cancer. Other factors to consider is patient's age and other co morbidity

The nurses role in health education on prevention of breast cancer

Having made known the different method by which breast cancer can be prevented, it will be of importance to briefly discuss the role of the nurse in the preventive methods.

ICN Position: While helping to prevent cancer is an important role of many health care professionals and consumer groups, nurses are in a key position to directly affect people's health. therefore, the International Council of Nurses (ICN) strongly advocates that nurses: Contribute to the primary prevention of cancer through helping individuals adopt healthy living lifestyle.

Carry out secondary prevention and early detection activities by providing information about the importance of screening programs and facilities; encouraging high risk individuals or families to undertake screening; and participating in screening activities, particularly at the primary health care level.

National Nurses Associations (NNAs) have an essential role to play. ICN urges NNAs to: Lobby for nursing research that addresses the potential improvement in the approaches and strategies of cancer prevention and early discovery, as well as Nurses' roles in this. Advocate for inclusion of new knowledge and new technology about cancer prevention and early detection in basic, post-basic and continuing education programs of nursing. Support and become involved in public awareness raising, government and other initiatives aimed at prevention and early detection. Promote the participation of

the national cancer nursing organization in international exchange activities on cancer prevention and early detection. Lobby for inclusion of human papillomavirus vaccine (HPV) in national immunization program

Work together with other health professionals and government bodies for total ban of tobacco use and smoking in public places. Encourage nurses' involvement in cancer prevention activities and strategies, including involvement in national and international activities. Lobby for changes in environmental health policy such as smoke-free public places and healthy public policy that addresses the broader social determinants of health The Nurse plays considerable roles in primary and secondary deterrence of breast cancer because their holistic perception and advanced practice skills enable them to get involved for clients at every levels of health care. Nurses are knowledgeable of not only assessing the health of their female clients, but also the organization that serves client needs. They use their advanced knowledge and practice skills to educate women about cancer risk factors, and to initiate screening programs aimed at early detection and intervention. The Nurse Practitioner observe screening and treatment services extended to women clients, and promote high excellence care by enlightening both professional and non-professional care givers to health care needs.

Advocacy on behalf of women's health issues impacting breast cancer screening and care is an additional part of the Nurses role. Nurses' Role in Prevention of Cancer. Date Posted: 29/Jan/2013

Role of the nurse in promoting health of the breast

In order to help promote the government's program, it is vital that the nurse has an adequate knowledge of these plans so that she can raise awareness of health benefits, offer advice and educate patients about all the strategies that they can do to help promote a healthier life. It is very significant to become familiar with how the breasts look and feel at different times of the month. The breast awareness 5-point code was introduced as a way of caring for your body and being able to notice any odd changes in your breasts (Breast Cancer care 2007). The practice nurse will offer guidance to show patients how to examine their breasts or offer a leaflet which contains all the necessary information. School nurses are also helping to promote breast health and breast cancer prevention to young girls across the nation in schools where they give health talk openly to girls about breast development and the complex health and emotional issues and problems that may occur. The health promotion enables the young girls to face the future with assurance and with facts of breast cancer. (Breast cancer 2008).

Breast screening is offered to all women between the ages of 50-70 years and they will receive an appointment by letter to attend for breast screening, however, if any unusual changes in the breast are noticed, it is essential that an appointment to see a doctor or the practice nurse is made, where a complete examination of the breasts will be given. Reassurance and support will be given by the nurse or doctor and they will try to alleviate some embarrassment by maintaining privacy and dignity by locking the door and by pulling the curtains around (NMC 2008). If the nurse or doctor is uncertain about the problem, or they think that cancer may be present then a referral to a breast specialist for advice or treatment will be given. The patients that are referred to a specialist with breast symptoms, even if breast cancer is not suspected should be seen within two weeks of the referral (DH 2007). Diagnosis in the breast clinic at the hospital is made by a tripple assessment (clinical assessment, mammography and/ or ultrasound imaging, core biopsy and/ or fine needle aspiration cytology (NICE 2009). The breast cancer nurse will introduce herself and she will explain everything fully to the patient before gaining important historical information off them, the nurse will also ask the patient if they have any questions before asking the patient to put on a gown. Dignity and privacy is maintained through-out. The nurse must use sensitivity, empathy and understanding as this can often be emotionally upsetting and distressing for women. The nurse will ensure that prior consent is always gained from the patient (NMC 2008).

Nurses role in evaluation of breast cancer risk

Nurses have an important role in early detection of breast cancer. So, when the role of the nurse is explicitly identified, further studies can begin to determine the effectiveness of nursing practice in

terms of women health regarding early detection through screening practices. the setting for conducting mammography should be peaceful with some manner of beauty. It should be welcoming and warm. Each woman should feel that she is unique and important as a member of our family. It should be emphasized that peace of mind will be granted to the women who have abnormal mammography. Women should be informed that health care providers are not just looking for early lesions, but providing peace of mind to the women with a benign mammography. The has to be attentive and gentle to the women, and answer carefully all their questions intelligently. <http://www.mcgrathfoundation.com.au/>

Therapeutic surgery overview

Lumpectomy - surgically removing the tumor and a small portion of healthy tissue around it. This is mostly called breast-sparing surgery in breast cancer. It is preferred if the tumor is small and the surgeon has ascertain it will be easy to separate from the tissue around it. British researchers noted and reported that about one fifth of patients with breast cancer who chose breast-conserving surgery instead of mastectomy eventually need a reoperation. Mastectomy - surgically removing the breast. Simple mastectomy involves removing the lobules, ducts, fatty tissue, nipple, areola, and some skin. Radical mastectomy means also removing muscle of the chest wall and the lymph nodes in the armpit. According to a study carried out at the Dana-Faber Cancer Institute and published in Annals of Internal Medicine, it was found out that many young women choose to have their healthy breast removed after being diagnosed with cancer in one breast. Unfortunately, doing so does not improve survival rates and this of course is pointless, the authors explained. Sentinel node biopsy - one lymph node is surgically removed. If the breast cancer has reached a lymph node it can spread further through the lymphatic system into other parts of the body. Axillary lymph node dissection - if the sentinel node was found to have cancer cells, several nymph nodes will be recommended to be removed from the armpits by the surgeon. Breast reconstruction surgery - a series of surgical procedures aimed at recreating a breast so that it looks as much as possible like the other breast. This procedure may be carried out at the same time as a mastectomy. The surgeon may use a breast implant, or tissue from another part of the patient's body.

Methods

Study selection

The search on this project was conducted using Mozilla Firefox and Google search using key words as “women, breast cancer, high risk” management. Studies is geared towards using preventive management to hinder the occurrence of breast cancer among women and the use of therapeutic surgery to prevent spread of cancer cells should in case cancer occur. Moreover, the articles selected for this review are expected to report outcomes.

Results

Statistics on preventing breast cancer

The countries with the top 21 highest occurrence of breast cancer in 2012 are specified in the table below.

Belgium had the maximum rate of breast cancer, followed by Denmark and France. faintly more cases of breast cancer were diagnosed in less developed countries (53%). The highest incidence of breast cancer was in Northern America and Oceania.

Table 1

Rank	Country	Age-Standardized Rate per 100,000 (World)
1	Belgium	111.9
2	Denmark	105.0

3	France (metropolitan)	104.5
4	Nigeria	100.1
5	The Netherlands	99.0
6	Bahamas	98.9
7	Iceland	96.3
8	United Kingdom	95.0
9	Barbados	94.7
10	United States of America	92.9
11	Ireland	92.3
12	French Polynesia	92.2
13	Germany	91.6
14	Italy	91.3
15	Finland	89.4
16	Luxembourg	89.1
17	New Caledonia	87.6
18	Australia	86.0
19	Malta	85.9
20	New Zealand	85.0
21	Switzerland	83.1

Statistics on breast cancer survivors

The top 20 countries with the most breast cancer survivors are provided in the table below. The statistics are for 2012 and show the number of breast cancer survivors who were alive five years after diagnosis. The order in which the countries are ranked is based on the number of breast cancer survivors per 100,000 adult women in each country. Belgium had the highest fraction of breast cancer survivors still alive five years after their diagnosis, followed by Denmark and France. In more developed countries, there were 3.2 million women who had survived breast cancer for at least 5 years; the figure for less developed countries was 3.0 million. The maximum fraction of breast cancer survivors still alive five years after their diagnosis was in Northern America and Europe; and the lowest occurrence in Africa and Asia.

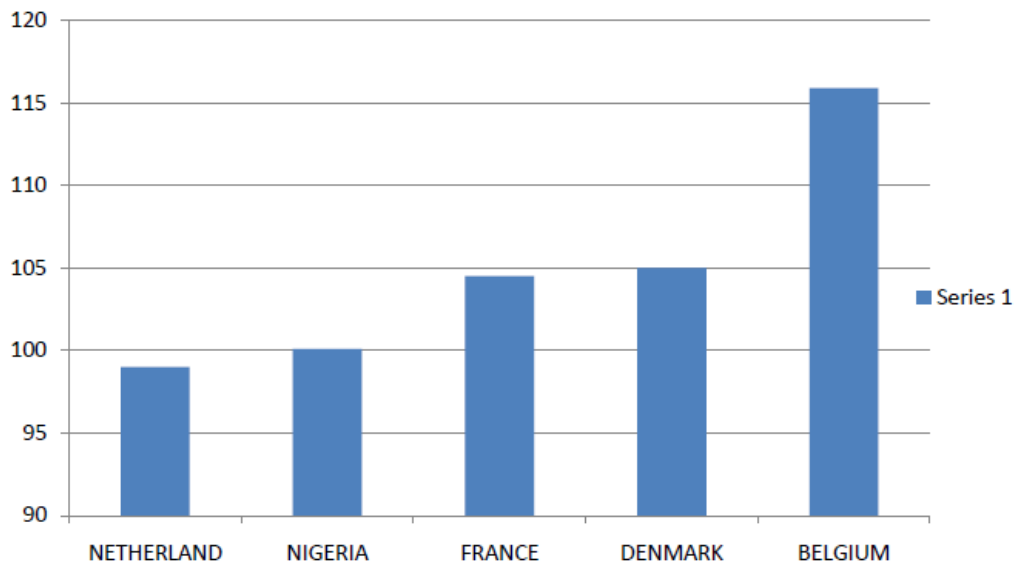
Table 2

Rank	Country	Number of women still alive five years after a breast cancer diagnosis
1	Belgium	41,418
2	Denmark	20,714
3	France (metropolitan)	230,385
4	The Netherlands	57,493
5	Finland	18,722
6	Italy	209,048
7	Germany	279,045
8	United Kingdom	200,286

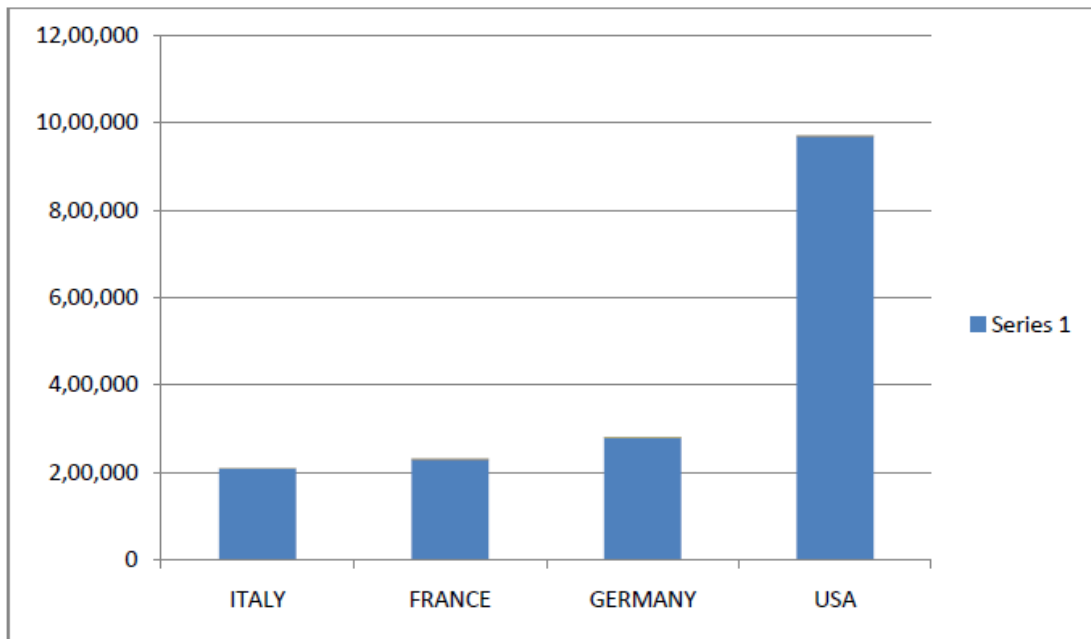
9	United States of America	970,693
10	Iceland	966
11	Luxembourg	1,588
12	Switzerland	23,750
13	Sweden	27,428
14	Malta	1,233
15	Canada	98,091
16	Barbados	754
17	Australia	59,584
18	New Zealand	11,557
19	Ireland	11,316
20	Norway	11,926

source: Ferlay J, Soerjomataram I, Ervik M, Dikshit R, Eser S, Mathers C, Rebelo M, Parkin DM, Forman D, Bray, F. GLOBOCAN 2012 v1.1, Cancer Incidence and Mortality Worldwide: IARC Cancer Base No. 11 [Internet]. Lyon, France: International Agency for Research on Cancer; 2014. Available from: <http://globocan.iarc.fr>, accessed on 16/01/2015.

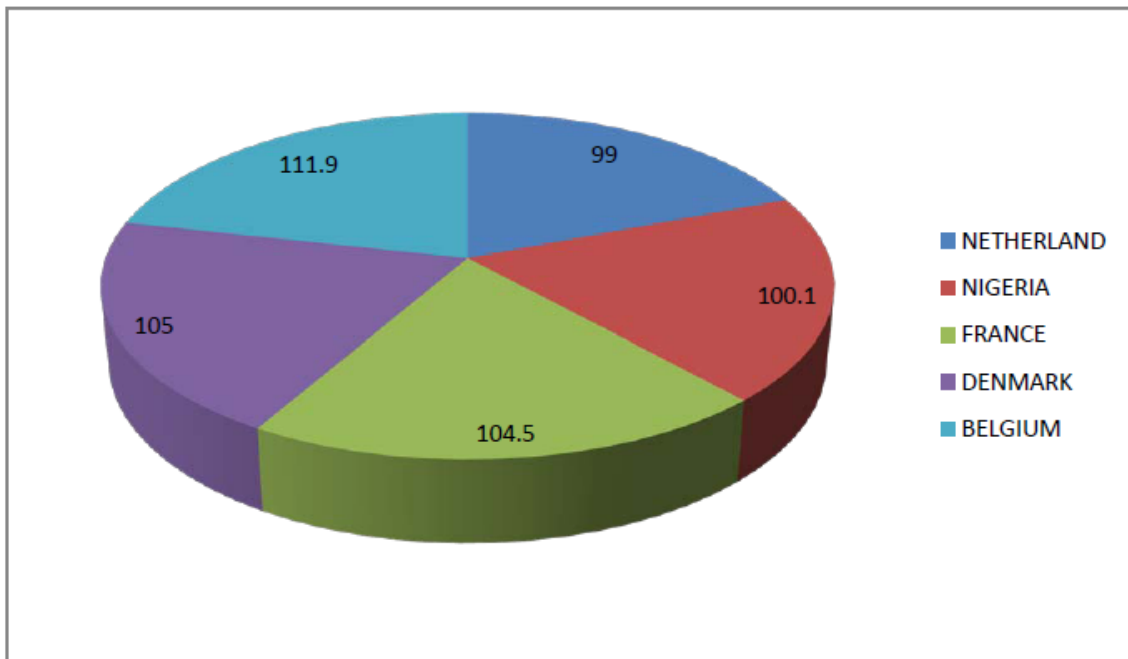
Bar chart showing the incidence of cancer in listed countries in 2012



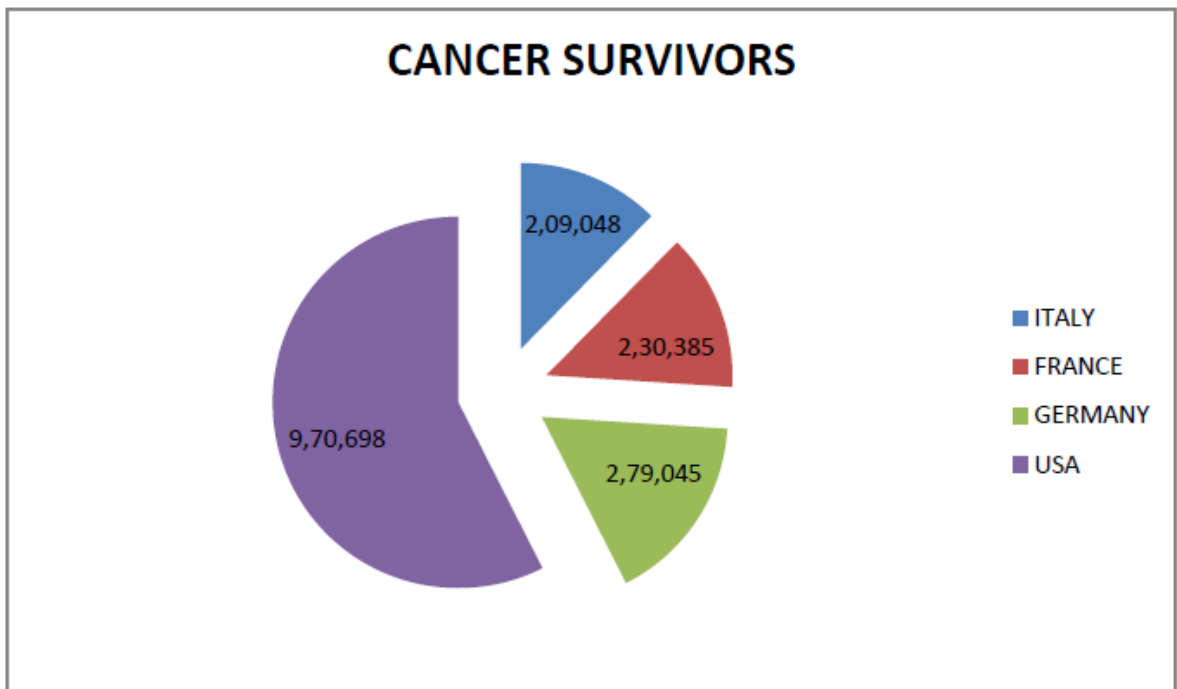
Bar chart showing the incidence of cancer survivors in listed countries five years after diagnosis



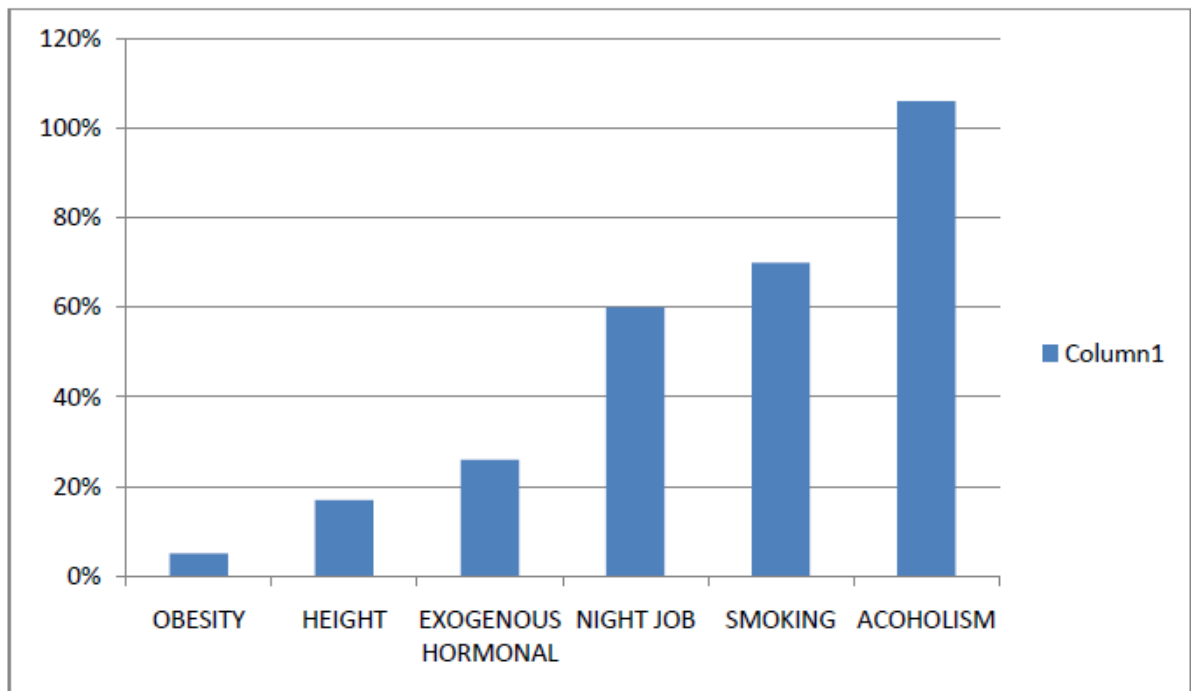
Pie chart showing the incidence of cancer in listed countries in 2012



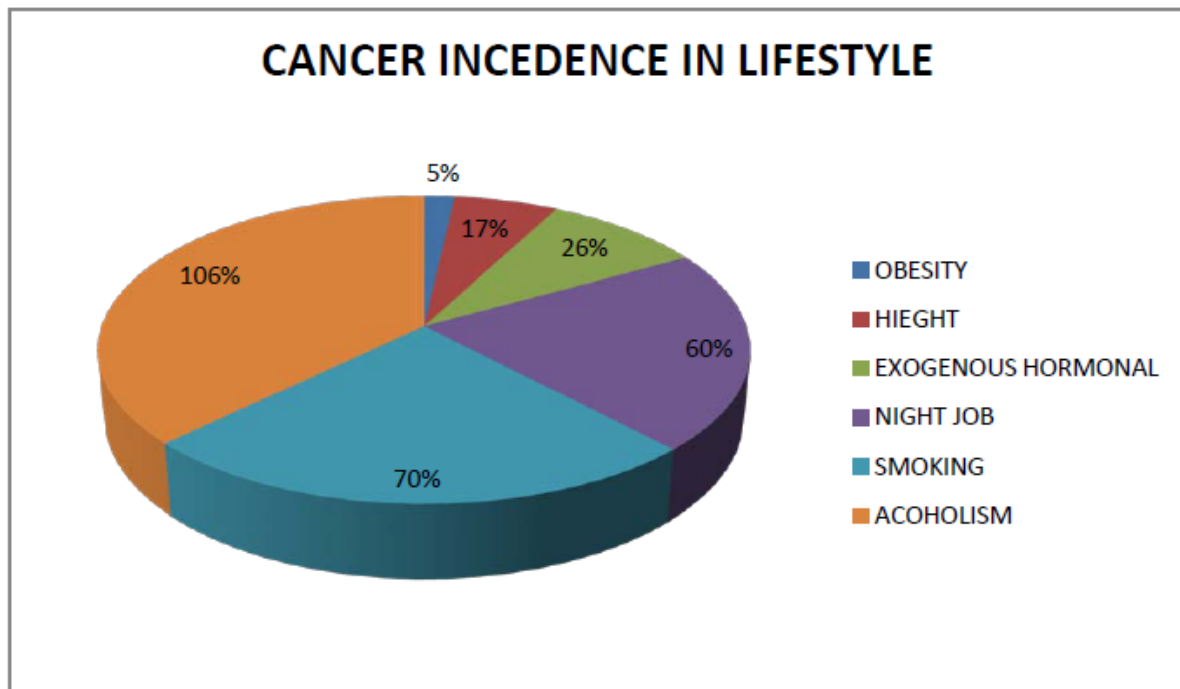
Pie chart showing the incidence of cancer survivors in listed countries five years after diagnosis



Barchart representing the incidence of breast cancer in smoking, acoholism, night job, obesity etc.



Piechart representing the incidence of breast cancer in smoking, acoholism, night job, obesity etc



Evaluation of breast cancer risk

Mammography test in the US, according to the 2013 National Health Interview Survey (NHIS), 51.3% of women 40 years of age and older reported having a mammogram within the past year. The fraction of women 40 years of age and older receiving mammography within the past two years was higher (65.9%). The fraction of women 40 years of age and older who reported having a mammogram within the past years increased from 29% in 1987 to 70% in 2000, although this percentage declined by 3.4% between 2000 and 2005 and has remained reasonably stable since then. While mammography predominance has improved over time in all racial and ethnic groups, they remained steadily low in uninsured women. In 2013, the predominance of a mammogram in the past two years was similar among non-Hispanic black white, and Asian women 66-67%, but was faintly lower in Hispanic 61.6% and the American Indian/Alaskan indigenous women 63.0%.

The lowest predominance of mammography make use of in the past two years was reported among uninsured women 38.0%, followed by recent immigrants living in the US less than 10 years 39.9%. Mammography is underutilized in our environment due to lack of facilities and awareness. In 2009/2010, majority (95.4%) came for mammography for the first time, this implies that women are more interested in breast health than previously reported but the low rate of mammography in Nigeria may be due to lack of access to diagnostic units and the cost. We believe that by reducing the cost to 13 dollars (2000 Naira), the economic power to conduct the test was now within the reach of most of our women. Three hundred and five women were involved in the study; the mean age was 49 years \pm 7.2. Majority of the women (95.4%) have never had a previous mammogram, only 10 women have had a mammogram in the last two years. The following types of breast density were noted, Type 1 and 2 comprise (63.5%); Type 4 was noted in thirteen patients (4.3%). The most common mammographic lesions were masses, which were bilateral in 6 women and unilateral in 19. In 5 women the breast masses were in grouping with other pathologies. Calcifications alone were present in 10 subjects.

Hormonal preventive therapy of breast cancer in women at high risk: primary prevention

While the oldest form of hormonal therapy, tamoxifen, and its newer cousin, raloxifene are the only drugs approved to prevent breast cancer in women who've never had the disease but are at high risk, early results from long-term studies suggest that aromatase inhibitors are also effective at preventing breast cancer in postmenopausal women. Studies are underway to see if aromatase inhibitors can be used to prevent breast cancer in premenopausal women as well, but it is likely that they would have to be used in combination with other drugs to temporarily stop ovarian function.

Hormonal preventive therapy for women with early-stage breast cancer

Tamoxifen. A study in print in 2013 in *Lancet* revealed that taking tamoxifen for 10 years results in faintly lower reappearance rates and slightly better survival rate, compared to taking it for 5 years. This study, which followed breast cancer patients taking tamoxifen for longer than other studies, establish that 25% of the women who took tamoxifen for 5 years had their cancer come back within 15 years of surgery, whereas 21% of women who took tamoxifen for 10 years had a breast cancer recurrence within 15 years. Survival was also slightly better: over 81% of women who took tamoxifen for 10 years were living 15 years after surgery compared to just under 79% of the women who took tamoxifen for only 5 years. While longer treatment with tamoxifen resulted in 2.5% more patients surviving for 15 years. Tamoxifen is the only hormonal therapy approved for use in women with ductile carcinoma in situ. It decreases a woman's risk of getting ductile carcinoma in situ again or emergent of breast cancer in both breast. According to a 2011 study in print in the *Journal of the National Cancer Institute*, 10% of women treated with lumpectomy and radiation had a return of ductile carcinoma in situ or developed cancer in the same breast within 15 years of operation, as compared with 8.5% in the women who as well took tamoxifen. Among the women who took tamoxifen, only 7.3% developed ductile carcinoma in situ or cancer in the other breast Although rates of smoking, a major cause of cancer, have declined, the U.S. population is aging, and cancer rates increase with age. Obesity, another risk factor for cancer, is also increasing.

Surgical preventive management

Bilateral prophylactic mastectomy has been shown to reduce the risk of breast cancer by at least 95 percent in women who have a deadly mutation in the BRCA1 gene or the BRCA2 gene and by up to 90 percent in women who have strong family history of breast cancer.

Lifestyle

Preventability estimates confirm that about 22% of cases of breast cancer in Brazil can be prevented by not ingesting alcohol, being physically active and maintaining a healthy weight.

The World Cancer Research Fund/American Institute for Cancer Research (WCRF/AICR) has predicted that over 40% of breast cancer post menopausal could be prevented by reductions in alcohol, surplus body weight, and inactivity. Proper lifestyle throughout the lifespan and the challenge of finding ways to support women to achieve healthy ways of life is important. In the Iowa Women's Health Study, constant weight reduction of 5% of body weight decreased the risk of post-menopausal breast cancer by 25% to 40% compared with the women who continued to increase in weight. The Nurses Health Study pointed out that post-menopausal women who did not take hormonal reduction therapy but maintained a body weight reduction of 10 kg or more had a 50% reduction in the risk of breast cancer. There is a number of proof from the National Surgical Adjuvant Breast Project P-I and STAR SERM trials that weight reduction after the age of 35 is also effective. It is of utmost important to stress the other well-known positive effects of weight control. Sticking to types of diet may also affect risk. According to the California Teachers Study, data from 91,779 women were analyzed according to major dietary pattern by using primary constituent factor study. A greater eating of plant-based foods was connected with a 15% reduction in breast cancer risk (85% CI 0.76 to 0.95). A

systematic review of dietary patterns and breast cancer was carried out by Albuquerque and colleagues, who concluded that a Mediterranean dietary pattern and diets consist greatly of vegetables, fruit, fish, and soy are associated with a reduced risk of cancer of the breast. You can help to reduce risk by intake of appropriate dietary fiber, fruit, and vegetables.

These studies put forward that women who want to lessen their breast cancer risk should not be drinking alcohol more than one unit daily and probably have at least two alcohol-free days weekly. J. Nati Cancer Institute (2009)

Table 3. Showing percentage of women who have utilized mammography

	1987-2000	2000-2005	2009-2010	2013
USA (insured women)	29%-70%	70%-66.6%		51.3%-65.9%
USA (uninsured women)	-	-		38%
USA (immigration)	-	-		39.9%
NIGERIA	-	-	95.4%	-
ASIAN WOMEN	-	-		66-67%
HISPANIC WOMEN	-	-		61.6%
American Indian/Alaskanindige	-	-		
Nous women	-	-		63%

Table 4. Showing percentage of effect from use of tamoxen

Tamoxen for 10yrs	Reoccurrence in 15yrs = 21%
Tamoxen for 5yrs	Reoccurrence in 15yrs = 25%
SURVIVAL RATE	
Tamoxen10yrs	81%
Tamoxen5yrs	79%

Conclusions

Most women will not develop breast cancer during their life span. Nevertheless modern data can help recognize the subset of women who are at higher risk for breast cancer. In addition, improved test strategies and management options are now accessible that could reduce the risk for these women JAM Board FAM MED 2009. True advancement against breast cancer and advancement that is measured not only by the number of months of survival but also by the frequency of cancer-free life span. Thus, prevention become a much superior priority. We all have a function to play, whether as individuals, clinicians, researchers, funders, community planners, educators or parents. New cancer treatments are rightfully cheered at medical meetings and in the press, but the cure of advanced breast cancer continues to be an obscure goal. Moreover, access to expensive tests and treatments may be limited in developing countries that are experiencing rising rates of breast cancer. According to what Vogelstein et al spotted out, "Plan A must involve prevention and early detection, with "Plan B" (treatment of advanced cancer) being necessary only when Plan A fails"

Prevention is feasible. Truly all the answers are yet not available, but that should not impede us from acting on what we already know. Prevention strategies such as radical health education. weight control may be more difficult to stick to than screening strategies such as mammography, but the added benefit is significant and extends well further than breast cancer. According the statistics of survivors of breast cancer stated above in table 2, the USA has the highest rate followed by few other countries and in table 3, it shows that the USA started the utilization of mammography earlier than other countries. This was feasible only as a result of awareness created on breast examination, mammogram on early detection of breast cancer and advocating of positive lifestyle. This step called awareness campaign should also be intensely done in developing countries of Africa and other

countries that also far behind in making breast cancer a thing of the past. One conclusion of this review is that the application of measures that are already available, such as hormonal prevention and lifestyle change, would result in considerable reductions in breast cancer risk. A second ending is that the speed of advance of our understanding of the biology of breast cancer risk and development is greatly likely to give rise to fresh avenues for prevention over the next decade. A major difficulty is applying what we before now know concerning the effectiveness of prevention to the correct populations of women. To apply hormonal prevention, we need to have measures in place to review risk and to explain the advantage and disadvantage of treatment and for prescription of suitable therapies. Lifestyle change is a population problem which involves media hype concerning its risks and benefits of change and providing mechanisms to sustain women in their choices throughout all societies as stated by the US Institute of Medicine Cancer Treat Res 2014.

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