

BREAST CANCER KNOWLEDGE AND SELF- EXAMINATION OF NILE UNIVERSITY UNDERGRADUATE STUDENTS

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ABSTRACT

This study was carried out to identify the factors associated with breast cancer knowledge and breast self-examination among the students of Nile university of Nigeria. The survey research design was adopted by physical administration of 80 questionnaire. Also, an electronic mailing of questionnaire was used for the students on vacation through their school electronic mail addresses and designated through purposive sampling techniques. Descriptive statistics, frequencies, and percentages was used to determine the relationship between factors associated with breast cancer knowledge and breast self-examination among the students socio using Statistical Program for Social Science (SPSS) package version 23. The findings showed that Almost all of the students said they have not been taught breast cancer as a topic in school as part of their curriculum while a few of them said they have not been taught about the disease in school this showed that more than half of the respondents which shows that the students who believed early detection can increase survival rate were more likely to have a good knowledge of breast cancer believe that early detection of the disease can increase survival rate. Half of the students have heard of breast self-examination while the other half have never heard of breast cancer. It was concluded that there are prevalent factors associated with breast cancer knowledge and breast self-examination among the students as there exist a statistically significant association between knowledge of breast cancer, family history of breast cancer, awareness about breast cancer and the belief that early detection increases survival rate. There is need to promote BSE among this study population. It was the recommended that since less than half of the respondents practice BSE, it is recommended that the University clinic should ensure that students have a routine clinical breast exam by health workers whenever they are present to the hospital/clinics and there should be an introduction of a structured health education module course into academic curriculum for students to be informed on important factors that are associated with breast cancer.

Keywords: Assessment, Breast cancer, Practice, Self-examination and Undergraduates.

INTRODUCTION

Nile University of Nigeria is a community with individuals from different parts of Nigeria. The age range of the majority of female undergraduates is between 16-25years. The breasts are paired mammary glands located between the second and sixth ribs. However, the contour of the breast should be smooth with no retractions, dimpling, or masses Depending on the woman's age, it should be noted that the breasts of a healthy mature woman are equal in size and shape. Nutrition and heredity are other factors apart from age (Basavanthappa, 2011).

Breast cancer is cancer that develops from breast tissue. It occurs both in males and females and has frequent cases of occurrence in females. It's the most common invasive cancer in female-folks worldwide, accounting for 16% of all female cancers and 22.9% of invasive cancers in women (WHO, 2020). World Cancer report 2014 says about 1.7 million new breast cancer cases were diagnosed in 2012. The occurrence has since increased due to a decrease in the ages of those at risk of being diagnosed (McGuire, 2016). About 5-10% of cancer cases are due to inherited genes from one's parents, including BRCA1 and BRCA2, with different types such as ductal carcinomas

(cancers developing from the ducts) and lobular carcinomas (cancers developing from the lobules) (McGuire, 2016).

Apart from the sudden decrease of the age of those at risk of having breast cancer, being a female/gender factor poses a woman at risk. Inheriting the gene from one's parents who live a sedentary lifestyle, smoke, or drink alcohol could make an individual have breast cancer. But this is preventable through early diagnosis, which remains the cornerstone of the fight against breast cancer. Early diagnosis of breast cancer positively affects the prognosis and limits the spread of cancerous cells. The increasing number of breast cancer cases and the disease's fatality can be reduced by detecting abnormalities in the topography of the breast in the early years. Breast cancer is preventable and curable. The knowledge of breast cancer and its impact on health determines the practices of breast self-examination. Given the importance of BSE in the early detection and prevention of cancer, assessing the knowledge of breast cancer knowledge and breast self-examination among the undergraduates of Nile University of Nigeria becomes important. Therefore, this research is important because it assess the knowledge to practice of BSE among these students and then drives the measures of breast cancer prevention and control. Apart from the sudden decrease of the age of those at risk of having breast cancer, being a female/gender factor poses a woman at risk. Inheriting the gene from one's parents who live a sedentary lifestyle, smoke, or drink alcohol could make an individual have breast cancer. But this is preventable through early diagnosis, which remains the cornerstone of the fight against breast cancer. Early diagnosis of breast cancer positively affects the prognosis and limits the spread of cancerous cells. With the rising incidence of breast cancer and the absence of any uniform breast screening strategy in most nations (Harding, et al, 2015). It is important to identify the factors associated with breast cancer knowledge and breast self-examination among the students. It is hoped that the findings of this study will guide the University authority and other relevant stakeholders plan and implement pragmatic measures based on the findings of this study. In addition, the findings will contribute to the body knowledge on the knowledge of breast cancer and BSE among University undergraduates.

Statement of the Research Problem

In Nigeria, breast cancer cases were historically low but are now increasing as a result of urbanization and lifestyle changes. It is the leading cause of cancer deaths; the prevalence of breast cancer in Nigeria is 59.31% (WHO, 2020). Breast cancer occurs in women of different age groups but a decrease of its occurrence has been seen in women of 16-35years. Because of this, it's important for someone to detect early signs and symptoms of breast cancer through the practice of breast self-examination (BSE). Majority of Nile University students fall between reproductive age of 16 to 49.

Early detection is usually done through screening, and screening methods include breast self-examination (BSE), clinical breast examination (CBE), and mammography. Breast self-examination (BSE) is a screening method used in an attempt to detect early cases of breast cancer. This method involves the woman herself looking at and feeling each breast for possible lumps, distortions or swelling. BSE is a low-cost, low risk procedure that can be repeated at frequent intervals and has been advocated as a self-performed screening procedure. Due to fewer numbers of experts and lack of advanced diagnostic techniques in developing countries, promoting regular BSE has been said to be the feasible screening option for early detection of breast cancer. BSE has a positive effect on the early detection of breast cancer (Ahmed, et al., 2019). Knowledge of BSE is important because it helps the individual to detect abnormality with the breast and prevent the occurrence of breast cancer. The level of awareness about BSE among women from studies in different African countries is relatively high; however, the level of practice is low, even among health workers (Johnson, 2019). Therefore, this study will assess the knowledge of breast cancer and breast self-examination for early detection of cancer among university students.

Aim and Objective of the Study

The aim of this paper was to investigate breast cancer knowledge and self-examination of Nile University undergraduate students. While the specific objective was to identify the factors associated with breast cancer knowledge and breast self-examination among the students.

Research Question

The following research question guided the Paper

1. What factors are associated with breast cancer knowledge and breast self-examination among the students?

Review of Related Literature

Conceptual Review

The incidence of breast cancer varies around the world with its lowest occurrence in less developed countries and vice versa. In the twelve world regions, the annual age-standardized incidence rates per 100,000 women includes: Eastern Asia, 18; South Central Asia, 22; Sub-Saharan Africa, 22; South Eastern Asia, 26; North Africa and Western Asia, 28; South and Central America, 42; Eastern Europe, 49; Southern Europe, 56; Northern Europe, 73; Oceania, 74; Western Europe, 78; and in North America, 90 (Stewart & Wild, 2014).

Risk Factors of Breast Cancer

There are a number of factors that have been shown to increase a woman's risk of developing breast cancer, amongst them is age. Although breast cancer can occur at any age, the risk factor increases as one gets older. The average woman at age 30 has 1 chance in 280 of developing breast cancer in the next 10 years, which increases to 1 in 70 for a woman aged 40. A 60-year old woman has 1 in 30 chances of developing cancer in the next 10 years. The majority of breast cancer cases occur in women over the age of 50 (WHO, 2020). Family history is another risk factor for breast cancer. If a woman has a personal or family history of breast cancer, she is at increased risk of developing breast cancer. Patients with one 1st degree relative with breast cancer (grandmother, sister, or daughter) have twice or three-fold risk of breast CA. Risk is much higher if affected first degree relatives had premenopausal onset and bilateral breast CA. Risk decreases quickly in women with distant relatives affected with breast cancer (cousins, aunts, grandmothers). The positive family history may be familial or hereditary. Other factors include a late first pregnancy; women who have a late first pregnancy (after the age of 35) are more likely to develop breast cancer, clinical history of women who have previously suffered with benign breast cancer are at greater risk of developing breast cancer in the future and prolonged hormonal exposure long menstrual life or possibly use of hormone replacement therapy after menopause expose women to an increased risk of developing breast cancer. There are other factors like lifestyle, being obese or overweight after menopause, physical inactivity, a high fat diet and high alcohol consumption for example, can play an important role in the development of breast cancer, sex/gender which is primary risk factor for breast cancer is female sex, women are at greater risks than men. Men can have breast cancer too, but this disease is about 100 times more common in women than in men, certain inherited genes; about 5% to 10% of breast cancer cases are thought to be hereditary, meaning that they result directly from gene defects passed on from a parent. BRCA1 and BRCA2 are the most inherited genes (Reeder & Vogel, 2008).

Signs and Symptoms of Breast Cancer

The symptoms of early-stage breast cancer can often go undetected. There are 12 common signs of breast cancer which are; a hard lump developing in the breast or armpit – typically painless and occurring only on one side, a change in the size or shape of the breast, including indentation, growing (particularly prominent) veins or skin erosion, changes in the skin such as hardening, dimpling, bumps, redness/heat or an orange peel like appearance, changes in the nipple such as

retraction, the secretion of unusual discharge or a rash around the nipple area. The first noticeable symptom of breast cancer is typically a lump that feels different from the rest of the breast tissue. More than 80% of breast cancer cases are discovered when the woman feels a lump in her breast (Thomson, et al., 1990). The earliest breast cancers are detected by a mammogram (American Cancer Society, 2018). Indications of breast cancer other than a lump may include thickening different from the other breast tissue, one breast becoming larger or lower, a nipple changing position or shape or becoming inverted, constant pain in the part of the breast or armpit, and swelling beneath the armpit or around the collarbone (Watson, 2008). Pain is an unreliable tool in determining the presence or absence of breast cancer but maybe indicative of other breast health issues.

Management of Breast Cancer

There are several ways to treat breast cancer, depending on its type and stage. They are as follows:

a. Local treatment: Some treatments are called local therapies, meaning they treat the tumor without affecting the rest of the body. Types of local therapy used for breast cancer include: Surgery and Radiation therapy. These treatments are more likely to be useful for earlier stage (less advanced) cancers, although they might also be used in some other situations. Other treatments include; Systemic treatments: Breast cancer can also be treated using drugs, which can be given by mouth or directly into the bloodstream. These are called systemic therapies because they can reach cancer cells anywhere in the body. Depending on the type of breast cancer, several different types of drugs might be used, including: Chemotherapy, Hormone therapy, Targeted therapy. Many women will get more than one type of treatment for their cancer.

b. Surgical Interventions; Depending on the situation, surgery may be done for different reasons. For example, surgery may be done to: Remove as much of the cancer as possible (breast-conserving surgery or mastectomy), find out whether the cancer has spread to the lymph nodes under the arm (sentinel lymph node biopsy or axillary lymph node dissection) and restore the breast's shape after the cancer is removed (breast reconstruction), relieve symptoms of advanced cancer. The two main types of surgical procedures to remove breast cancer are:

i. Breast Conserving Surgery (also called a lumpectomy, quadrantectomy, partial mastectomy, or segmental mastectomy) – in which only the part of the breast containing the cancer is removed. The goal is to remove the cancer as well as some surrounding normal tissue. How much of the breast is removed depends on the size and location of the tumor and other factors. As with all operations, bleeding and infection at the surgery site are also possible. If axillary lymph nodes are also removed, other side effects such as lymphedema may occur.

ii. Mastectomy: in which the entire breast is removed, including all of the breast tissue and sometimes other nearby tissues Types of mastectomies: Simple (or total) mastectomy is the most common type of mastectomy used to treat breast cancer. In this procedure, the surgeon removes the entire breast, including the nipple, but does not remove underarm lymph nodes or muscle tissue from beneath the breast. Double mastectomy; if a mastectomy is done on both breasts, it is called a double (or bilateral) mastectomy. When this is done, it is often as preventive surgery for women at very high risk for getting cancer in the other breast, such as those with a BRCA gene mutation. Modified radical mastectomy; A modified radical mastectomy combines a simple mastectomy with the removal of the lymph nodes under the arm (called an axillary lymph node dissection). Radical mastectomy; In this extensive operation, the surgeon removes the entire breast, axillary (underarm) lymph nodes, and the pectoral (chest wall) muscles under the breast. This surgery was once very common, but less extensive surgery (such as modified radical mastectomy) has been found to be just as effective and with fewer side effects, so this surgery is rarely done now. This operation may still be done for large tumors that are growing into the pectoral muscles. Many women with early-stage cancers can choose between breast-conserving surgeries (BCS) and mastectomy. The main advantage of BCS is that a woman keeps most of her breast. But in most cases, she will also need radiation. Women who have mastectomy for early-stage cancers are less likely to need radiation.

For some women, mastectomy may clearly be a better option, because of the type of breast cancer, the large size of the tumor, previous treatment history, or certain other factors.

c. Radiation Therapy for Breast Cancer

Some women with breast cancer will need radiation, often in addition to other treatments. The need for radiation depends on the type of surgery done, whether the cancer has spread to the lymph nodes or somewhere else in the body, and in some cases, the age of the client. Radiation therapy is treatment with high-energy rays (such as x-rays) or particles that destroy cancer cells. There are 2 main types of radiation therapy that can be used to treat breast cancer: External beam radiation; this type of radiation comes from a machine outside the body. This is the most common type of radiation therapy for women with breast cancer. The radiation is focused from a machine outside the body on the area affected by the cancer and internal radiation (brachytherapy). For this treatment, instead of aiming radiation beams from outside the body, a device containing radioactive seeds or pellets is placed into the breast tissue in the area where the cancer had been for a short time. Women who have had breast radiation may have problems breastfeeding later on.

d. Chemotherapy for breast cancer

Chemotherapy (chemo) is treatment with cancer-killing drugs that may be given intravenously (injected into a vein) or by mouth. The drugs travel through the bloodstream to reach cancer cells in most parts of the body. When is chemotherapy used? Not all women with breast cancer will need chemo, but there are several situations in which chemo may be recommended:

- i. After surgery (adjuvant chemotherapy): When chemo is given after breast surgery, it is called adjuvant chemotherapy. Surgery is used to remove all of the cancer that can be seen, but adjuvant chemo is used to try to kill any cancer cells that may have been left behind or spread but can't be seen, even on imaging tests. If these cells were allowed to grow, they could form new tumors in other places in the body. Adjuvant chemo can reduce the risk of breast cancer coming back. Before surgery (neo adjuvant chemotherapy): In neo adjuvant chemotherapy, you get the treatments before surgery instead of after. In terms of survival and the cancer coming back, there is no difference between getting chemo before or after surgery. But neo adjuvant chemo can have some benefits. First, chemo may shrink the tumor so that it can be removed with less extensive surgery. Because of this, neo adjuvant chemo is often used to treat cancers that are too big to be removed at the time of diagnosis (called locally advanced cancer). Also, by giving chemo before the tumor is removed, doctors can better see how the cancer responds to it. If the first set of chemo drugs does not shrink the tumor, your doctor will know that other drugs are needed.
- ii. For advanced breast cancer: Chemo can be used as the main treatment for women whose cancer has spread outside the breast and underarm area, either when it is diagnosed or after initial treatments. The length of treatment depends on whether the cancer shrinks, how much it shrinks, and how well you tolerate the chemo.

Chemotherapy Drugs Used For Breast Cancer

In most cases (especially as adjuvant or neoadjuvant treatment), chemo is most effective when combinations of more than one drug are used. Today, many different combinations are used, and it's not clear that any single combination is clearly the best. The most common drugs used for adjuvant and neoadjuvant chemo include: Anthracyclines, such as doxorubicin (Adriamycin) and epirubicin (Ellence), Taxanes, such as paclitaxel (Taxol) and docetaxel (Taxotere), 5-fluorouracil (5-FU), Cyclophosphamide (Cytoxan) and Carboplatin (Paraplatin). Most often, combinations of 2 or 3 of these drugs are used together.

Chemotherapy Drugs Used For Advanced Breast Cancer

The chemotherapeutic drugs useful in treating advanced breast cancer include: Docetaxel, paclitaxel, Platinum agents (cisplatin, carboplatin), Vinorelbine (Navelbine), Capecitabine (Xeloda). Others are Liposomal doxorubicin (Doxil), Gemcitabine (Gemzar), Mitoxantrone (Novantrone),

Ixabepilone (Ixempra), Albumin-bound paclitaxel (nab-paclitaxel or Abraxane) and Eribulin (Halaven).

Although drug combinations are often used to treat early breast cancer, advanced breast cancer is more often treated with single chemo drugs. Still, some combinations, such as carboplatin or cisplatin plus gemcitabine are commonly used to treat advanced breast cancer. One or more drugs that target HER2 may be used with chemo for tumors that are HER2-positive e.g. tamoxifen

Possible Side Effects of Chemotherapy for Breast Cancer

Chemotherapy drugs can cause side effects, depending on the type and dose of drugs given, and the length of treatment. Some of the most common possible side effects include: hair loss and nail changes, mouth sores loss of appetite or increased appetite, nausea and vomiting. The drugs can affect the blood-forming cells of the bone marrow, leading to: Increased susceptibility to infections (due to low white blood cell counts) easy bruising or bleeding (from low blood platelet counts) fatigue (from low red blood cell counts and other reasons) and diarrhea. Other side effects like nerve damage (neuropathy), hand-foot syndrome, feeling unwell or tired (fatigue), menstrual changes and fertility issues tend to regress on stopping the treatment.

Breast Cancer Screening Guidelines

The following guidelines apply to women with no unusual risk factors or symptoms of breast problems. For women age 20 to 39: A monthly breast self-exam, a clinical breast exam by a trained health professional every one to three years for women age 40 and older: A monthly breast self-exam. A yearly clinical breast exam by a trained health professional. A yearly screening mammogram starting at age 40. If one has an increased risk of breast cancer because of family history or other reasons, ask a health care provider about beginning screening mammograms at an earlier age, or having more frequent exams.

Empirical Review

Research was conducted by Ogunbode et al., (2015) in Nigeria to determine the prevalence and factors determining the practice of BSE in Nigerian women attending a tertiary outpatient clinic. Descriptive baseline cross-sectional study among 140 Nigerian women attending a tertiary outpatient clinic. Overall, self-reported prevalence of BSE practice was 62.1%, out of which only 12.6% performed it monthly. The highest prevalence was among older women, 76.2%; married women, 65.6%; and women with tertiary education, 68.9%; civil servants, 78.1%; women with previous history of breast disease, 68.2%; and women with family history of breast disease, 63.6% (Ogunbode et al., 2015) .

Fondjo, et al., (2018), conducted a study to evaluate and compare knowledge, attitudes, and practice of BSE among female secondary and tertiary school students in Ghana. Descriptive cross-sectional study among 1036 students in a secondary and tertiary school Awareness of BSE was 90.9%, only 54.5% had good knowledge of BSE. Only 8.1% practiced BSE monthly (45).

Suh, et al., (2012), also carried out a study to describe Cameroonian women's knowledge of BSE and assess their impression on the practice of BSE. A cross-sectional survey was conducted in a volunteer sample of 120 consenting women in Buea, Cameroon Awareness level about BSE was 74.1%. Only 36.7% recognized breast examination as a breast cancer prevention method, while 59.2% claimed to know how to perform BSE with 35% reportedly practicing it monthly (46).

Badawy, (2013), conducted a study to identify the knowledge about BSE and assess the practice of BSE among female college students in Assiut, Egypt. A descriptive study conducted at the university on 240 students Awareness level of the students on BSE was 87.9%. The main source of information was the media as reported by 36.7% of the students. Furthermore, 57.9% of them knew the right way to carry out BSE and 15.8% practiced BSE monthly.(43)

METHODOLOGY

The survey research design was adopted by physical administration of 80 questionnaire. Also, an electronic mailing of questionnaire was used for the students on vacation through their school electronic mail addresses and designated through purposive sampling techniques. Descriptive statistics, frequencies, and percentages was used to determine the relationship between factors associated with breast cancer knowledge and breast self-examination among the students socio using Statistical Program for Social Science (SPSS) package version 23.

FINDINGS

The factors associated with knowledge of breast cancer and breast self-examination, it was found that none of the students have had breast cancer which shows a statistically significant association between knowledge of breast cancer and family history of breast cancer $p=0.020$. a good number of them have a member of their family who has had breast cancer; and the students without family history were more likely to have good knowledge of breast cancer than those with family history. Almost all of the students said they have not been taught breast cancer as a topic in school as part of their curriculum while a few of them said they have not been taught about the disease in school this showed that more than half of the respondents which shows that the students who believed early detection can increase survival rate were more likely to have a good knowledge of breast cancer believe that early detection of the disease can increase survival rate. Half of the students have heard of breast self-examination while the other half have never heard of it. There was a statistically significant association between practice of BSE and family history of breast cancer ($p<0.001$). The students without family history of breast cancer were more likely to have practice BSE than those with family history. Similar international studies have confirmed by logistic regression analysis that marital status and knowing someone with breast cancer might affect the level of knowledge (Alam, 2006). In addition, similar studies from Saudi Arabia have identified a significant association between certain demographic characteristics and knowledge regarding breast cancer (Birhane , et al, 2017).

CONCLUSION

From the available data, it was concluded that there are prevalent factors associated with breast cancer knowledge and breast self-examination among the students as there exist a statistically significant association between knowledge of breast cancer, family history of breast cancer, awareness about breast cancer and the belief that early detection increases survival rate. There is need to promote BSE among this study population.

RECOMMENDATIONS

It was then recommended that:

1. since less than half of the respondents practice BSE, it is recommended that the University clinic should ensure that students have a routine clinical breast exam by health workers whenever they are present to the hospital/clinics.
2. there should be an introduction of a structured health education module course into academic curriculum for students to be informed on important factors that are associated with breast cancer knowledge and breast self-examination among the students in the Universities.

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