

UNIVERSITY OF EDUCATION, WINNEBA

**ASSESSING THE LEVEL OF BREAST CANCER AWARENESS
AMONG JUNIOR HIGH SCHOOL PUPILS AT CHARILE ROMAN
CATHOLIC SCHOOL**



2023

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AMONG JUNIOR HIGH SCHOOL PUPILS AT CHARILE ROMAN
CATHOLIC SCHOOL**

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requirements for the award of the degree of
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DECLARATION

Student's Declaration

I, Julius Koya, declare that this dissertation, except for quotations and references contained in published works which have all been identified and duly acknowledged, is entirely my original work, and it has not been submitted, either in part or whole, for another degree elsewhere.

Signature:

Date:

Supervisor's Declaration

I hereby declare that the preparation and presentation of this work were supervised following the guidelines for supervision of dissertation as laid down by the University of Education, Winneba.

Supervisor's Name:

Signature:

Date:



DEDICATION

I whole heartedly dedicate this work to my brother Jerome Dekumwin Koya.



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This statement of gratitude is especially relevant in light of the realisation that treating everyone with kindness and respect is lovely to do.

In all honesty, there is a long list of people in front of me to whom I owe unending and unbounded gratitude and appreciation for the assistance given to me at the time when I most desperately needed it. It would be impossible to count them all.

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From bottom of heart, I thank my wife Elena Kanyeregbani and my sons Conrad Naamwinfang Koya and Cuthbert Beguana Koya for their prayer and support both financially and psychologically am most grateful to you all.

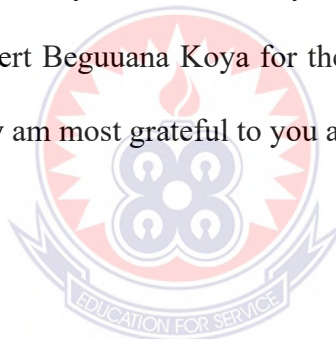


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ABSTRACT

Breast cancer remains a significant global health concern, necessitating targeted efforts to enhance awareness and early detection. Despite extensive research in adult populations, limited attention has been directed toward assessing the awareness levels of breast cancer among younger demographics, prompting this study to focus on Junior High School Students at Charile Roman Catholic School. This study aimed to assess the extent of breast cancer awareness among Junior High School Students at Charile Roman Catholic School. Employing a descriptive survey design, the research selected a sample of 76 students through a combination of purposive and simple random sampling techniques. Data collection was facilitated through a structured questionnaire, and subsequent analysis utilized descriptive statistics, presenting results in frequencies and percentages. The findings illuminated a low level of breast cancer awareness among the students, accompanied by a significant lack of knowledge regarding the signs and symptoms of the disease among many students. Notably, the study highlighted a positive inclination among students to promptly report any detected abnormalities in their breasts to either peers or healthcare facilities, intending to mitigate delayed diagnoses. Recommendations emerging from the study underscored the necessity of incorporating breast cancer studies into the junior high school curriculum to enhance students' awareness levels.



CHAPTER ONE

INTRODUCTION

1.0 Background to the Study

Public awareness is critical to early discovery of breast cancer in low- and middle-income countries. In Ghana most of the cases are detected at late stages (Mena et al., 20013). Many publications on breast cancer in Ghana have studied the clinicopathologic features of breast cancer in Ghanaian women. Figures on breast cancer, derived from the Korle-Bu Teaching Hospital Cancer Register from 1972 through 1975, were first published in 1977. Breast cancer accounted for 7.5% of all cancers in Ghana and was the fourth most common cancer after liver carcinoma, cervix cancer, and Burkitt lymphoma. Successive publications found breast cancer to be common in young girls and women. It was noted that they presented late with large, advanced tumours with skin involvement, features associated with poor survival rates in studies outside Ghana (Edmund, Naaeder, Tettey, & Gyasi, 2013).

Breast cancer is the most common menace and primary cause of cancer death in women international, its worldwide pervasiveness is still on the rise and currently breast cancer is considered to be an increasing public health problem amongst populations in low- and middle-income countries (LMICs). Besides, a recent population-based study of cancer survival in Africa, Asia and Central America found excessively low breast cancer survival rates (Mena et al., 20013).

According to Sadoh et al. (2021), in developing countries, the risk of death from BC is higher due to late presentation in hospital, at such late stages only, palliative care can be offered. The late presentation has been linked to lack of awareness about BC. Also, cancer prevalence and mortality are quickly increasing globally. Attributable reasons are complicated and may be due to ageing, increasing population, late-stage

presentation, inaccessible diagnosis, treatment, etc (Mensah, 2020). Majority of cancers can currently be prevented by implementing evidence-based prevention strategies and early detection programs (Mensah, 2020). Most cancers, such as lymphoma, thyroid, and testicular cancer have a high survival rate if diagnosed early and adequately treated (Mensah).

1.1 Statement of the Problem

There is a lot of ignorant concerning breast cancer, many young women do not know about breast cancer especially young girls within the puberty age are unaware of breast cancer and its effect on the health of the individual. The signs of breast cancer are something women or girls if not educated carefully on can elude them which mostly led to late detection of breast cancer. The creation of awareness about breast cancer is a significant step in dealing with the late presentation of breast cancer among women and young girls.

Also, there have been studies on breast cancer related topics in other parts of Ghana and the world at large, but there seem to be nothing at all in the Wa West District of the Upper West Region of Ghana, particularly, Charile Roman Catholic School. It is upon these premises that the researcher aims to fill these knowledge and geographical gaps by assessing the level of breast cancer awareness among Junior High School Pupils in Charile Roman Catholic School in the Wa West District of the Upper West Region of Ghana.

1.2 Purpose of the Study

The main focus of the study is to assess the level of breast cancer awareness among Junior High School Pupils in Charile Roman Catholic School in the Wa West District of the Upper West Region of Ghana.

1.3 Objectives of the Study

Specifically, the study was designed to:

1. Create awareness of breast cancer among Junior High School pupils at Charile Roman Catholic School.
2. Investigate the knowledge about the signs and symptoms of breast cancer among Junior High School pupils at Charile Roman Catholic School.
3. Examine the measures to reduce the late reporting of breast cancer among Junior High School pupils at Charile Roman Catholic School.

1.4 Research Questions

The following research questions guided the study:

1. Are Junior High School pupils at Charile Roman Catholic School aware of breast cancer?
2. Are Junior High School pupils at Charile Roman Catholic School aware of the signs and symptoms of breast cancer?
3. What measures can be adopted to reduce the late reporting of breast cancer among Junior High School pupils at Charile Roman Catholic School?

1.5 Significance of the Study

This dissertation is very important due to the impact breast cancer has on the life of the individual and her family and the country at large. Firstly, through this study young girls in Charile Roman Catholic Junior High School would be educated on the breast cancer and the need to examine one's breast regularly to prevent late detection of breast cancer among women. Secondly, it would also help the young girls to know some of the signs and symptoms of breast cancer there by reducing the risk of breast cancer and its intended burden on the finances of the family and individual involve. Finally, the study will augment knowledge and serve as a reference point for further

enquiries into breast cancer awareness among women in Ghana and other parts of the world.

1.6 Delimitation of the Study

Because the study is broad, the researcher limited it to creating awareness of breast cancer among junior high school pupils, educating girls on the signs and symptoms of breast cancer and reducing the late reporting of breast cancer among young girls. In terms of geographical setting, the research was conducted in Charile Roman Catholic School in the Wa West District of the Upper West Region of Ghana.

1.7 Limitations of the Study

As a feature of every research work, this study also had its own limitations. Paramount among these limitations was the researcher's inability to use multiple research instruments like observations, interviews, etc. to collect data from respondents due to time constraints and other related factors. Thus, the use of only questionnaire limited the extent to which the respondents responded to the questions. Another limiting factor was time constraints couple with the researcher's busy work schedule.

Since the researcher was still a worker at the time of conducting the research, his busy work schedule affected the progress of the research. Finally, since the study was a case of Charile Roman Catholic School in the Wa West District of the Upper West Region of Ghana, the researcher could not generalize beyond the study area.

1.8 Organization of the Study

The research was structured into five (5) chapters. Chapter one (1) serves as the introduction of the study. It contains the background of the study, which talked about the statement of the problem, the purpose of the study, objectives of the study, research

questions, significance of the study, limitation, delimitation of the study and the organization of the study. Chapter two also covers literature review. It highlights concepts of awareness and breast cancer as well as what others have said about the problem. Chapter three on the other hand highlights the methodology of the study which comprises the research design, research population, sample and sampling technique, the data collection techniques and instruments, and methods of data analysis. Chapter four (4) deals with the presentation and analysis of the data collected and findings. Finally, chapter five (5) presents key findings, draws conclusions, make recommendations, and suggests possible areas for further studies.



CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

The chapter comprises of conceptual review and empirical review. The conceptual review revises concepts and issues bordering on the topic of study. The empirical on the other hand, re-examines works done by other researchers in the area of awareness, risk factors, signs and symptoms of breast cancer among women. These, to the researcher's opinion are relevant to the topic of the present study.

2.2 Conceptual Review

This section reviews concepts and issues bordering on the topic understudy. Specifically, it reviews issues such as prevalence of breast cancer, risk factors of breast cancer, signs and symptoms of breast cancer, breast self-examination, screening for breast cancer and clinical considerations and recommendations for breast cancer screening.

2.2.1 Prevalence of Breast Cancer (BC)

One type of cancer that begins in the breast is breast cancer. It may begin in either the left or right breast. When cells start to proliferate uncontrollably, cancer develops (American Cancer Society, 2022). Sung et al. (2021), citing Ginsburg and Love, 2011, state that worldwide, the incidence of breast cancer is increasing by about 3% per year, and the death rate is increasing by 1.8% per year. Over 18% of female malignancies worldwide are breast cancer-related.

For the first time ever, sub-Saharan Africa (SSA) reported 94,378 breast cancer cases in 2012. (Black & Richmond, 2019). The number of incidences of breast cancer in SSA is predicted to double by 2050 (Cumber, Nchanji & Tsoka-Gwegweni, 2017).

In comparison to high-income nations like the United States, which has an 86% survival rate, Sub-Saharan Africa has the highest breast cancer mortality rates globally (Sung et al., 2021) (Black & Richmond, 2019). Breast cancer is now the top cause of death from cancer in low-middle-income countries (LMICs), despite breast cancer mortality having significantly decreased over the previous 25 years in many high-income nations due to improvements in awareness, early detection, and therapies (Denny et al., 2017). Additionally, mortality rates in SSA have exponentially increased and are among the highest in the world, exposing the subpar health system and poor survival rates (Sung et al., 2021).

Breast cancer, with an incidence of 20.4% and a relatively high fatality rate, is the most common disease among women in Ghana, according to the World Health Organization's Cancer Country Profile of Ghana 2020 (WHO, 2011). It is projected that as Ghana's population ages and more women embrace western lifestyles, the prevalence of breast cancer would rise (Obrist et al., 2014). According to studies, breast cancer is growing more prevalent and manifests itself at an advanced stage in younger Ghanaian women (Ohene-Yeboah & Adjei, 2012; Scherber et al., 2014). Due to lack of knowledge about the disease at an early stage and stigma associated with the disease, patients may wait up to 10 months before seeking medical attention, which results in an advanced stage at diagnosis (Naaku, Anyanful, Elliason, Adamu & Debrah, 2016; Brinton et al., 2014; Anderson, Schwab & Martinez, 2014).

2.2.2 Risk Factors of Breast Cancer

According to studies, the majority of risk factors for breast cancer in Africa (such as age, race, genetic mutation, reproductive history, familial susceptibility, personal history of breast cancer or any other non-breast cancer, lifestyle choices, etc.) are

comparable to those in industrialized nations (Centre for Disease Control and Prevention, 2019; Dala et al., 2011). Data on risk factors, particularly those specific to Africa, such as environmental exposures and infections, are scarce and inconclusive (Brinton et al., 2014).

The chance of developing breast cancer may be significantly increased by pathogens like viruses, which have been linked to around a fifth of all malignancies (Gannon, Antonsson, Bennett & Saunders, 2018). Breast cancer has been linked to the human papillomavirus (HPV) and the human immunodeficiency virus (HIV) (White, Paganano & Khalili, 2014). According to reports, chronic infectious disorders, particularly lifelong exposure to malaria, cause a decline in cell-mediated immunity and encourage viral carcinogenesis, which has been seen in cervical cancer linked to the HPV virus. 46 According to DeSilva and Marshall (2012), Africa is a location where malaria is common, and the link between pesticide use and hormone receptor-positive breast tumors is still up for debate (Black & Richmond, 2019).

Another known risk factor for breast cancer is the use of contraception. Data from 54 epidemiological studies involving 53,297 breast cancer and 100,239 non-cancer patients were analyzed by the Collaborative group in hormonal factors in breast cancer, who found that current users of contraceptives had a 24% higher relative risk than never users and past users had a 7% higher relative risk than never users. In Sub-Saharan Africa, a population-based cross-sectional survey found that the average rate of contraceptive use was 17%, which is rather low, but the prevalence varied widely throughout the various nations (Ba, Ssentongo, Agbese & Kjerulff, 2019). This conclusion was reached using data on contraceptive use from 17 of the 48 Sub-Saharan African Nations' Demographic and Health Surveys (DHS). Since not all SSA regions were sufficiently covered, it's likely that actual contraceptive use is underreported. Since the

connection between the use of contraceptives and breast cancer cases has only been seen, the incidence of breast cancer cannot be fully explained by the use of contraceptives as a risk factor. Furthermore, once the recentness of usage has been confirmed, other criteria, such as length of use and age at which use first began, had no discernible impact on the overall risk. It's interesting to note that there hasn't been much of a difference in recent use between women with varied backgrounds (ethnicity and race), reproductive history, and breast cancer.

Breast-related diseases such atypical ductal hyperplasia and lobular carcinoma in situ have been linked to an increased risk of breast cancer (Anothaisintawe et al., 2013). It has been suggested that diabetes mellitus raises the risk of developing breast cancer (Anothaisintawe et al., 2013). Early menarche and menopausal status are two reproductive characteristics that have been identified as breast cancer risk factors; however, no link has been discovered between these risk factors and breast cancer in Senegalese women (Gueye, Gueye, Diallo & Gassama, 2015). Globally, postmenopausal BMI has been linked to some cases of breast cancer.

The importance of family history or predisposition as a breast cancer risk factor (Kabel & Baali, 2015). The SSA population has not been well studied with regard to familial predispositions, which may be suggested by early age at diagnosis and a positive breast cancer history. Compared to women without a family history, women with one or two first-degree premenopausal breast cancer relatives are at a 3.3-fold and 3.6-fold higher risk of developing breast cancer, respectively (Singletary, 2003). 13–19% of women with breast cancer who received a diagnosis had a first-degree relative who was affected. 54 People with the BRCA1 gene mutation and the BRCA2 gene mutation are included in this. Other major driver mutations have been linked to Li- Fraumeni syndrome, Cowden syndrome, and Peutz- Jeghers syndrome, respectively, including

those in tumor protein P53 (TP53), phosphatase and tensin homolog (PTEN), and serine/threonine kinase 11 (STK11) (Gage, Wattendorf, & Henry, 2012).

2.2.3 Signs and Symptoms of Breast Cancer

Breast cancer development is linked to a number of risk factors. Ageing, a healthy family history, early menarche, late menopause, physical inactivity, obesity, a history of benign disease (atypical hyperplasia), cancer in another breast, a diet high in saturated fats, excessive alcohol consumption, radiation exposure, use of oral contraceptives, hormone replacement therapy, mutations in the BRCA1 and BRCA2 genes, and tobacco use are risk factors. Breast cancer risk is reduced by continuing to breast-feed over the 12-month mark. Early breast cancer typically has no symptoms.

Additionally, most women with breast cancer have no early warning signs and are asymptomatic. Consequently, a screening mammography is used to diagnose the majority of breast cancer patients. The significance of routine mammography examinations is demonstrated by the fact that 1 in 20 persons will have breast pain as a first indicator of breast cancer. Although there are numerous disorders that can cause breast pain, some of them are less severe than others (Vaquera, 2022).

Breast cancer is the most prevalent malignancy in women around the world. There are over 1.4 million new cases of breast cancer each year. Numerous papers on Ghana's breast cancer epidemic have examined the clinicopathologic characteristics of the disease in female patients. Based on data from the Korle-Bu Teaching Hospital Cancer Register from 1972 to 1975, the first publication of breast cancer statistics appeared in 1977. Breast cancer, which made up 7.5% of all cancer cases in Ghana, was the fourth most common cancer after liver carcinoma, cervix cancer, and Burkitt lymphoma (Edmund et al., 2013).

Later papers revealed the prevalence of breast cancer in young women. In studies carried out outside of Ghana, they were noted to have delayed presentation, large advanced tumors, skin involvement, and other traits connected to dismal survival rates.

There are several explanations for why breast cancer patients arrive at medical facilities late. Ohene-Yeboah and Amanning uncovered additional causes, such as the lump's absence of pain and patients' views that it may go away. Clegg-Lampsey et al. reported that some were caused by misinformation or delays brought on by earlier medical visits.

These malignancies were primarily of the invasive ductal carcinoma (not otherwise specified [NOS]) subtype, had a high histologic grade, numerous lymph node involvement, and an advanced clinical stage at presentation, according to research conducted in Ghana and other countries. It's interesting to note that none of the earlier research conducted in Ghana discovered malignant phyllodes tumours, as described in other studies. However, if the breast cancer progresses, more symptoms may appear, including lumps in the breast or underarm region, changes in breast size or shape, redness or rashes on the breasts, and nipples that may leak fluid or curve inward, among other things (Sadoh et al., 2021).

2.2.4 Breast-Self Examination (BSE)

Breast self-examination (BSE) is described by Anderson et al. (1998) as "the practice by a woman of inspecting her breasts and their accessory structures for signs of changes that could suggest a malignant process." When the breasts are the smallest and cyclic nodularity is least noticeable, BSE is typically carried out one to ten days after the beginning day of the menstrual cycle. Throughout every stage of a woman's adult life, BSE is promoted. Women who carefully and routinely do BSE are more

likely to spot minor anomalies than women who are not familiar with their breasts (Anderson et al., 1998). Women can learn about the natural appearance and sensation of their breasts by performing BSE on a regular basis.

BSE is described by Weber and Kelly (2014) as a method by which women, beginning in their 20s, can become familiar with the characteristics of their breast tissue in order to recognize any changes. Women who decide to participate in BSE should have their practice assessed by a health specialist during their medical assessment. Breast cancer detection is only marginally impacted by BSE. Observing and feeling their breasts while washing or getting dressed is more comfortable for some women than performing BSE on a regular basis following their periods (Weber & Kelly, 2014). BSE is also an option for females who have undergone breast augmentation, breast reconstruction, or a lumpectomy. Despite being aware of the benefits and drawbacks of BSE, some women may still choose not to participate. There are five steps involved in effective breast self-examination according to breastcancer.org (2016). They are:

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

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

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

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

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

2.2.5 Screening for Breast Cancer

The three primary methods for finding breast cancer in screening are mammography, CBE, and BSE (CDC, 2013). For women 40 years of age and older, the American Cancer Society advises annual mammograms, whereas for those in their 20s and 30s, they advise three-yearly breast checks.

Educating women on the advantages of breast screening is very crucial; any changes to health or breast feel must be reported (ACS, 2013). Barriers on a personal and systemic level that are adversely connected to the rate of breast cancer screening have been blamed for the lower screening rates among African American women (Deavenport et al., 2011). The decision to get a mammogram may be limited by psychological concerns, whilst systemic constraints may include access issues to medical facilities as well as the price and accessibility of mammogram breast screening (Ahmed et al., 2009).

Every woman should be encouraged to practice preventive behaviors like CBE, BSE, and mammography. On the basis of the notion that early intervention and detection improve survival rates and should, therefore, be promoted, the American Cancer Society (2013) produced breast cancer screening recommendations for women in various age groups. In summary, African American women need to be informed on the causes of breast cancer, how it is diagnosed, and the appropriate screening tools.

2.2.6 Clinical Considerations and Recommendations for Breast Cancer Screening

2.2.6.1 Breast Cancer Risk Assessment

Medical professionals should frequently evaluate a patient's history to determine their risk of developing breast cancer. The different variables that can affect risk are combined to form the basis of the assessment of breast cancer risk. During the initial evaluation, questions about family history of cancer, ionizing radiation exposure, reproductive risk factors, and the outcomes of previous biopsies should be asked. Doctors should note the age of diagnosis and any incidences of breast, ovarian, colon, prostate, pancreatic, and other cancers linked to germline mutations in first-degree, second-degree, and possibly third-degree relatives. Further risk assessment should be performed on women whose initial medical history suggests an elevated risk of breast cancer. A validated assessment tool, such as the Gail, BRCAPRO, Breast and Ovarian Analysis of Disease Incidence and Carrier Estimation Algorithm, International Breast Cancer Intervention Studies (IBIS, also known as Tyrer-Cuzick), or the Claus model, is available online for conducting assessments (Amir, Freedman &, Seruga, 2010).

To inform counselling on breast cancer surveillance, risk reduction, and genetic testing, risk assessment is crucial to determining whether a woman has an average or elevated chance of developing breast cancer. Risk assessment should not be used to rule out a woman from age-appropriate screening. Instead, risk assessment should be used

to find women who might benefit from genetic advice, improved screening like magnetic resonance imaging screening, more routine clinical breast exams, or risk-reduction techniques. Information on risk reduction and screening for high-risk females is covered elsewhere (National Comprehensive Cancer Network, 2016; Hartman & Lindor, 2016).

Online, a variety of rapid risk assessment tools for breast cancer are easily accessible, and they can be used in a professional context. For particular risk factors and populations, some tools work better than others. Widespread use and validation of the Gail model may be found at www.cancer.gov/bcrisktool. Some women, such as those under the age of 35, those with a family history of breast cancer in second-degree or more distantly related family members or in paternal family members, as well as those with high-risk lesions on biopsy other than atypical hyperplasia and those with family histories of non-breast cancers (such as ovarian and prostate cancer) known to be associated with genetic mutations, may find it to be of limited use (e.g., lobular carcinoma in situ).

Other approved approaches, such as the BRCAPRO, Breast and Ovarian Analysis of Disease Incidence and Carrier Estimation Algorithm, IBIS, or Claus model, can be used to assess women who cannot be correctly assessed using the Gail model (Amir, Freedman & Seruga, 2010). According to one study, the IBIS model is more reliable than the Claus or Gail model for determining breast cancer risk based on family history (Evans et al., 2014). A referral for a more thorough hereditary cancer risk assessment is necessary if the patient's level of risk remains uncertain after the initial examination. A genetic counsellor or other healthcare professional with knowledge of cancer genetics conducts a hereditary cancer risk assessment, which entails gathering data on family history, risk assessment, education, and counselling (Hereditary cancer syndromes and

risk assessment, 2015). After receiving the proper counselling and consent, this assessment may, if wanted, involve genetic testing.

2.2.6.2 The Efficacy of Screening Breast Self-Examination for Women at Average Risk of Breast Cancer and Appropriate Actions Following the Detection of Breast Changes

Since there is no proof that it is beneficial and there is a danger of injury from false-positive test results, breast self-examination is not advised for women with average risk. Women at average risk should get advice on breast self-awareness and be urged to inform their healthcare provider if they see a change. The awareness of a woman's breasts' typical appearance and sensation is known as breast self-awareness. Breast self-examination is the routine, repetitive examination of a woman's breasts for the intention of identifying breast cancer. Breast self-awareness does not include a recommendation for women to examine their breasts methodically or regularly, in contrast to breast self-examination. Instead, it suggests that a woman stay alert to any changes in or potential issues with her breasts. Women should be informed about the symptoms and warning signs of breast cancer and encouraged to contact their doctor if they experience any changes, including pain, a mass, a new onset of nipple discharge, or redness in their breasts.

The U.S. Preventive Services Task Force recommended against teaching breast self-examination (grade D recommendation) in its 2009 breast cancer screening guidelines due to the absence of benefits research and the dangers of false-positive results (U.S Preventive Services Task Force, Screening for breast cancer, 2009). In the 2016 revision of its breast cancer screening recommendations, the U.S. Preventive Services Task Force left this advice unchanged (Siu, 2016). Because there is insufficient proof that breast self-examination leads to better outcomes, the ACS no longer advises it for women at average risk of developing breast cancer (Oeffinger et al., 2016).

Even if breast self-examination is no longer advised, the likelihood that breast cancer will be discovered by oneself is a compelling argument in favour of breast self-awareness in breast cancer detection. About 50% of breast cancer cases in women over 50 and 71% of cases in women under 50 are discovered by the patients themselves (Coates et al., 2001; Newcomer et al., 2002). For instance, 361 breast cancer survivors who took part in the 2003 National Health Interview Survey reported that 43% of them discovered their cancer on their own (Roth, Elmore, Yi-Frazier, Reisch, Oster & Miglioretti, 2011).

A study of low-income women who got breast cancer treatment through California's Breast and Cervical Cancer Treatment Program provides additional proof of the critical role that breast cancer self-detection plays in the disease. 64% of the 921 women in the cohort who had breast cancer had done so on their own (Thind, Diamant, Hog & Maly, 2009).

Patients should get advice regarding breast self-awareness despite the fact that there have been no studies conducted in the United States that specifically investigate the efficacy of breast self-awareness due to the high frequency of self-detected breast cancer. "Supports all patients being aware of changes in their bodies and addressing these changes with clinicians," the U.S. Preventive Services Task Force states (Siu, 2016). According to the ACS, doctors should advise women "about the significance of being aware of breast changes" (Oeffinger et al., 2015).

2.2.6.3 Routine clinical breast screening by practitioners in average-risk women

In the context of an informed, shared decision-making approach that acknowledges the uncertainty of additional benefits and the potential for negative outcomes of clinical breast examination beyond screening mammography, screening clinical breast examination may be provided to asymptomatic, average-risk women. For screening

purposes, it is normal to undergo the procedure every year for women over 40 and every one to three years for those between the ages of 25 and 39. The clinical breast examination is still advised as a component of the evaluation of high-risk and symptomatic patients.

On whether to undertake screening clinical breast exams in women at average risk of breast cancer, the National Comprehensive Cancer Network, the American Cancer Society, and the U.S. Preventive Services Task Force have different recommendations. There were no studies directly evaluating the relationship between clinical breast examination and mortality, according to a recent ACS systematic review (Myers et al., 2016). Two of the three studies that examined false-positive test results in conjunction with mammography for the systematic review highlighted that there are roughly 55 false-positive test findings for every instance of cancer that is found.

There was no evidence that the discovery of these additional cases of cancer improved patient outcomes, according to a supplemental systematic review on clinical breast examination performance characteristics carried out for the ACS recommendation report. Clinical breast examination is expected to detect 2-6% more invasive cancer cases than mammography alone (Oeffinger, 2015). The ACS no longer advises clinical breast examination due to the lack of benefit evidence and rise in false-positive test results. The U.S. Preventive Services Task Force also noted in its 2009 breast cancer screening recommendations that there was insufficient data to evaluate the advantages and disadvantages of the clinical breast examination (category I recommendation) (U.S. Preventive Services Task Force, 2009). Breast cancer screening; the 2016 update to the guidelines did not affect this recommendation (Siu, 2016). The National Comprehensive Cancer Network still advises asymptomatic, average-risk women aged 25 to 39 to

get a clinical breast exam every year, and those aged 40 and older should get one every 1-3 years.

2.2.6.4 Mammography screening in average risk women

Starting at age 40, women with an average risk of developing breast cancer should be provided screening mammography. Mammography screening for women with an average risk of breast cancer should begin no sooner than at age 40. If they haven't started screening in their 40s, they should start mammography screening as soon as they become 50. A joint decision-making process should be used to decide when mammography screening should start. Information on the potential advantages and disadvantages should be included in this discussion. Health care professionals and patients can benefit from using information sheets or decision aids in this conversation. Visit ACOG's online Breast Cancer Screening and Treatment Resource Overview for further details.

Age-related differences in a number of factors, such as the risk of breast cancer, the risk of breast cancer death, the likelihood that mammography screening will detect cancer, the risk of false-positive test results and other harms, and the balance between benefits and harms, all influence the recommendation for when to start screening. The number needed to screen, a measure of overall risk reduction useful for evaluating screening efficacy between groups, is one way to evaluate how effective breast cancer screening is. The amount needed to screen mostly depends on the reduction in mortality that screening results in as well as the prevalence of the disease in the community being screened. In order to develop their recommendation, the ACS and the U.S. Preventive Services Task Force thoroughly examined these issues (Nelson et al., 2016).

Starting in the 40s and continuing into the 50s, the distribution of breast cancer diagnoses and fatalities by age at diagnosis increases with age. As women become

older, breast cancer incidence also rises (Oeffinger et al., 2016). As women age, mammography seems to reduce death more effectively. With almost the same number of biopsies taken across age groups and a higher percentage diagnosing cancer in older women, the risks seem to be reducing (Siu, 2016). The frequency of side effects related with screening mammography is higher in comparison to the benefits (lives saved) in women under the age of 40 because breast cancer is less common in this age group. Age thereby improves the risk-benefit ratio. The results of the ACS's comprehensive evaluation showed that screening was successful for all age groups, but that screening effectiveness increased with age and assumed a reduction in mortality with screening. The ACS extracted relative risks and computed the number needed to screen by age group (Myers et al., 2015).

The consensus guidelines organizations in the United States have different recommendations for the age at which women with average risk should begin mammography. Although mammography beginning at age 40 is less effective and more frequently associated with hazards than in older women, the ACS and the U.S. Preventive Services Task Force acknowledge that it does save lives. Benefits and negative effects range along a continuum, and choosing a certain age to start screening is essentially a personal choice that weighs benefits and drawbacks in accordance with each woman's values and preferences.

Based on an analysis of benefits (measured by fewer breast cancer deaths and more life years gained) and various measures of harm over the lifetimes of women who underwent biennial screening starting at age 40 compared with those who underwent biennial screening starting at age 50, the U.S. Preventive Services Task Force decided on 50 as the starting age. According to the Task Force, mammography for women in

their 40s only marginally reduces breast cancer fatalities while proportionately increasing callbacks and benign biopsies. Notably, the anticipated years of life gained were significantly higher in women who started screening earlier than males, which makes sense given that this age group has the highest potential years of life lost through screening.

2.2.6.5 Treatment Options for Breast Cancer Surgery

Depending on the circumstances, surgery may be advised to remove the tumor solely, or it may also be advised to remove the mammary gland entirely (a procedure known as a mastectomy) (lumpectomy). It may be advised to remove both breasts at once in circumstances where there is a high probability of cancer in the second breast (or if it has already spread there). Lymph nodes where a tumor has spread are also removed during surgery. Following surgery, radiation is nearly typically used when only the tumor is removed rather than the entire breast (Cancer Research UK, 2014).

In many instances, doctors can create a temporary artificial implant that will treat a cosmetic flaw right away after the tumor has been removed. Such implants do not raise the risk of breast cancer and can be eventually replaced with long-lasting implants that fully restore breast shape (American Cancer Society, 2016).

Radiotherapy

X-rays are utilized in radiation therapy to irradiate the region where the tumor was and destroy cancer cells. When only the tumor is removed during surgery rather than the entire breast or when the tumors have the potential to spread to the lymph nodes or other organs, radiotherapy is typically recommended (Cancer Research UK, 2014).

Linear accelerators are used in intensity-modulated radiotherapy (IMRT) to deliver radiation to the tumour (Radiologyinfo.org, 2015). Another IMRT technique is

tomotherapy, which employs a different system for treatment planning. It is a novel method of administering radiotherapy in which the tumour is visualized using 3D imaging techniques (CT and MRI) to determine the strength of the radiation. It makes the treatment more accurate and keeps heavy radiation doses away from the heart and lungs. Cancer Treatment Centres of America, 2016; Jacob et al., 2012).

In pilot research conducted by University Medical Center Utrecht and Philips, CyberKnife used a novel form of therapy known as MR-guided High-Intensity Focused Ultrasound (MR-HIFU). The group responsible for developing the technology is led by Falko Busse, General Manager of MR-Therapy at Philips Healthcare, and is based in Helsinki, Finland. Without needing any incisions, this equipment heats tiny tumors up to 65°C, rendering them inoperable. The MRI is used for this operation so that the tumor can be seen in real-time and the settings can be adjusted (Philips, 2012).

Chemotherapy

Chemotherapy is a form of cancer treatment that uses medications to either kill or stop the division of cancer cells. Doctors may advise taking chemotherapy medications as tablets or through intravenous lines if you have breast cancer. Chemotherapy is typically administered in cycles. Multiple cycles make up a whole course of treatment, which may take several months.

Adjuvant refers to chemotherapy that is prescribed after surgery. To eradicate cancer cells that may still be present in women after surgery, such treatment is required. This therapy helps to eliminate tumor metastases and stop lumps from returning (Burstein et al., 2014).

Neoadjuvant refers to chemotherapy that is prescribed before to surgery. Typically, the major goal of this treatment is to shrink the tumor and make it simpler to

remove after surgery. Doctors will be able to arrange the use of additional medications if they find that this treatment did not cause the tumor to shrink.

Target Therapy

Using medications that obstruct the HER2 protein, target therapy is a novel approach to treating breast cancer. These medications have fewer negative effects than chemotherapy medications and are distinct from those used for that purpose. (Carney & others, 2007).

Target therapy requires the use of the medicines trastuzumab (Trastuzumab) and pertuzumab (Pertuzumab). They have an efficacy and safety profile and have been demonstrated to be a better combination of treatments for breast cancer (Managala et al., 2011) They are bound to the protein HER2, preventing it from doing its job and slowing the proliferation of cancer cells as a result. These medications are thought to aid the immune system's cells in eliminating cancerous cells (Cancer.net, 2016).

Trastuzumab is given intravenously by injection (1 time per week or 1 every 3 weeks). A yearlong therapy program is provided. The start of the treatment can occur either before or after surgery, and it may be supplemented with chemotherapy, depending on the circumstances. This procedure lowers the risk of the tumor returning and improves the efficacy of breast cancer treatment (Lin & Rugo, 2007).

Hormone Therapy

After completing the standard course of treatment, the patient may be offered treatment with specific medications that inhibit estrogen and progesterone if testing reveal that the cancer cells have receptors for these hormones. This is referred to as hormone therapy for breast cancer. Estradiol-only (ET) and estrogen-progesterone (EP) are

the two varieties (EPT). Hormonal therapy aids in lowering breast cancer recurrence and mortality risks (Cancer.net, 2016); Mikkola et al., 2016).

One of the most popular medications for chemotherapy is tamoxifen. It prevents female sex hormones from acting on breast tissue. It is applied in both preventative and therapeutic settings. This medication boosts estrogen receptors in the uterus and bones but suppresses estrogen receptors in breast cells, including cancer cells. The study discovered that taking tamoxifen for 5 years can reduce the likelihood of acquiring tumors by 45% or even more among women who have a high risk of developing cancer. Tamoxifen, however, may have unpleasant and extremely harmful side effects. As a result, a doctor should be consulted before using this medication (Narod & Nazarali, 2014).

Aromatase inhibitors are yet another type of medication used in chemotherapy (letrozole, anastrozole, exemestane). These medications are only used to treat women going through menopause because they prevent the generation of estrogen in adipose tissue. They lessen the chance of a cancer recurrence, much like tamoxifen. They can be combined with tamoxifen to increase the effectiveness of treatment (Breast-cancer.org, 2016).

2.3 Empirical Review

This section also re-examines works done by other researchers which are relevant to the present study. Specifically, it re-examines the works done by Liu et al. (2017), Prusty et al. (2020), Ullah, Khan, Din and Afaq (2021), Ranasinghe et al. (2013), Gebresillassie et al. (2018), Ndikubwimana et al. (2016), Nnebue et al., (2018) and Adjimah (2017). This enabled the researcher to draw a link between the results of this study and the previous ones.

A study conducted by Liu et al. (2017) investigated the awareness and knowledge level of breast cancer among Chinese participants. Design Case-control study. Settings This study was based on the database of the minister-affiliated hospital key project of the Ministry of Health of the People's Republic of China that included 21 Chinese hospitals between April 2012 and April 2013. Matched study was designed among 2978 participants with Han ethnicity aged between 25 and 70. Student's t-test, Pearson's X^2 test, reliability analysis, exploratory factor analysis, and univariate and multivariate logistic regression analyses were performed to know the level of breast cancer knowledge and find the breast cancer awareness-associated factors. The results showed that 80.0% (2383/2978) of the participants had poor awareness level of breast cancer. In-depth knowledge of breast cancer such as early symptoms and risk factors was poorly found among them. Television broadcast and relatives or friends with breast cancers were the main sources of information about breast cancer. Of all participants, 72.8% (2167/2978) had heard about breast cancer as a frequent cancer affecting women, and 63.3% (1884/2978) knew that family history of breast cancer was a risk factor for breast cancer. Over half of them were aware that a breast lump could be a symptom of breast cancer. Multivariate analysis identified the following variables that predicted awareness of breast cancer: young age (Odds Ratio=0.843, 95%CI 0.740 to 0.961), occupation (agricultural worker) (Odd Ratio=12.831, 95%CI 6.998 to 23.523), high household social status (Odd Ratio=0.644, 95%CI 0.531 to 0.780), breast hyperplasia history (Odds Ratio=1.684, 95%CI 1.273 to 2.228), high behavioural prevention score (Odds Ratio=4.407, 95%CI 3.433 to 5.657). The study concluded that most women were aware of breast cancer as a disease, but their in-depth knowledge of it was

poor. The study also suggested that more publicity and education programmes to increase breast cancer awareness are necessary and urgent, especially for the ageing women and agricultural workers.

Another study by Prusty et al. (2020) aimed to understand the knowledge of breast cancer symptoms and risk factors among women in a low socio-economic area of Mumbai. A cross-sectional study was conducted at Prabhadevi, Mumbai and primary data was collected from 480 women aged 18–55 years. Structured questionnaire was used to collect quantitative data pertaining to awareness, signs and symptoms of breast cancer. Bivariate and multivariate regression techniques were used for understanding of the socio-demographic differentials in breast cancer awareness among women. The study found that around half (49%) of the women were aware of breast cancer.

The women who were aware of breast cancer considered lump in breast (75%), change in shape and size of breast (57%), lump under armpit (56%), pain in one breast (56%) as the important and common symptoms. Less than one-fifth of the women who were aware of breast cancer reported early menstruation (5.6%), late menopause (10%), hormone therapy (13%), late pregnancy (15%) and obesity (19%) as the risk factors for breast cancer. The multivariate regression analysis showed women who had more than 10 years of schooling (Adjusted Odds Ratio: 3.93, CI: 2.57– 6.02, $P < 0.01$) were about 4 times more likely to be aware of breast cancer than women who had less than 10 years of schooling.

The study finally concluded that, knowledge of danger signs and risk factors of breast cancer were low among women in the community. This may lead to late detection of breast cancer among women in the community. Therefore, the study called for advocacy and larger intervention to enhance knowledge of breast cancer among women in the particular region with a special reference to women with low education.

Again, the study by Ullah, Khan, Din and Afaq (2021) aimed to determine knowledge, attitude, and practices related to breast cancer, the associated risk factors, and screening methods in women presenting to a health care facility from resource-poor settings in Pakistan. A cross-sectional study design was used, and participants were recruited phase-wise from three major outpatient departments (OPDs) (Gynecology and Obstetrics OPD, Medical OPD, and Surgical OPD). Data were collected through the validated “Breast Cancer Awareness Measure” developed by Cancer Research UK, King’s College London, and University College London in 2009. Data were analyzed through Statistical Package for Social Sciences software (SPSS) version 23.0. Students’ T-Test, ANOVA, and linear regression analysis were conducted.

A total of 430 women were invited for participation in the study from the 3 main OPDs, and 400 took part in the study (response rate=93.02%). The mean age of the women was 33.62 years \pm 12.3 years, and the mean years of formal education were 5.05 \pm 6.3 years. Less than a quarter of the participants were aware of the breast cancer warning signs, and 23.3% recognized the pain in the armpit or one of the breasts as a sign of breast cancer. The proportion of women aware of age-related and lifetime risk of getting breast cancer was 15.0%. Furthermore, only 2.5% performed breast self-examination at least once a month. Women identified many barriers like embarrassment, transport, and confidentiality issues in seeking medical help.

In addition, Ranasinghe et al. (2013) study assessed the knowledge, attitudes and practices regarding breast cancer with reference to screening, services available, breast self-examination, and sources of information, among adolescent schoolgirls in the Colombo District of Sri Lanka. The knowledge, attitudes and practices related to breast cancer were assessed among 859 adolescent girls in schools within the Colombo

District, using a self-administered questionnaire. Classes and students were selected using multi-stage stratified cluster sampling.

The results showed that of the total sample, approximately 60% of respondents identified 'history of breast lump', 'family history of breast cancer' & 'exposure to irradiation' as risk factors for breast cancer. Although most were aware that the presence of a breast lump was an important warning sign, awareness of other warning signs was poor. Only 35.6% identified mammogram as an effective screening method.

One third of the sample maintained that they are unaware of symptoms, diagnostics and treatment of breast cancer. Of those who were aware, 90.6% named surgery as a treatment option for breast cancer, 79.4% were unaware that chemotherapy is used. Of the total sample, 17.1% knew how to perform breast self-examination, and only 9.4% were aware of currently available breast cancer screening services. Knowledge was significantly better among students who had a relative with breast cancer. In conclusion, there were significant deficiencies in knowledge, attitudes and practices on breast cancer in the study population. In particular, knowledge on breast self-examination was poor. There is a need for awareness programs aimed specifically at this important target group.

Furthermore, Gebresillassie et al. (2018) conducted a study to assess the knowledge, perception and risk awareness about breast cancer among female medical and health science students of University of Gondar, Ethiopia. A cross sectional survey was conducted from May 03 to June 01, 2017 at University of Gondar, Ethiopia. Three hundred students were proportionally selected from nine departments using simple random sampling method. Using a structured questionnaire data on risk factors, symptoms and perception about breast cancer and its management approach was collected. Data were entered to and analyzed using SPSS version 21. The results indicated that a total

of 300 students had fully completed the survey making the response rate 95.24. The participants' mean age was 21.4 years with the standard deviation (SD) of 2.13 years.

The overall level of knowledge on breast cancer was low. Majority of the participants were unaware for complex risk factors such as first child after the age of 30 years (51%), early onset of menses (55.3%), and menopause after the age of 55 years (47.7%) are linked with breast cancer even though they acknowledged old age, family history, and smoking as possible risk factors for breast cancer. Pain in the breast region, change in the shape of the breast, and nipple discharge were the most frequently correctly identified symptoms of breast cancer. Majority of the study participants had also corrected beliefs about breast cancer management and its outcomes. However, they had negative perception of breast cancer treatment by considering it to be a long-term and painful process. In binary logistic regression analysis department ($p = 0.000$) and year of study ($p = 0.008$) were found to be independent predicting factors for knowledge among the study participants.

Also, Ndikubwimana et al. (2016) study assessed the level of early sensitization and education of adolescent high school girls in Rwanda about Breast Cancer (BC) and Breast Self-Examination (BSE) as one of strategic approaches to reduce the risk of late intervention and thence the BC related deaths. 239 girls aged 17-20 years old, randomly selected from Nyarugenge secondary schools during the academic year 2013-2014 participated in this prospective cross-sectional survey using a structured self-administered questionnaire.

The results indicated that overall, 94.6% of surveyed girls had heard about BC, but only few had limited knowledge about BC risk factors, diagnostic methods and BSE. Less than 24% practiced breast palpation and not more than 10% knew the correct

frequency and technique of BSE performance. No formal education is planned in educational curriculum. The awareness was acquired through mainly media (58.4%) and classmates (17.2%), and lightly from parents (5.4%). The level of parents' education, familial history of cancer and attendance to educational workshops may contribute to high alertness, according to the study.

Last but not least, Nnebue et al. (2018) conducted a study to determine the breast cancer awareness, knowledge and screening practices among female secondary school teachers in Owerri, Nigeria. This was a descriptive cross-sectional study of 284 female secondary school teachers in Owerri Nigeria selected by a multi-stage sampling technique. Data were collected using a pre-tested semi-structured self-administered questionnaire and were analysed with a statistical package for social sciences version 22.0. Statistical significance was identified using Fisher Exact and Chi-square tests at p value ≤ 0.05 . The results showed that majority of respondents, 273 (96.1%) were aware of breast cancer.

The key sources of information included: 111 (39.1%) health workers, 87 (30.6%) TV/Radio, the level of knowledge of breast cancer was poor, thus: 3(7.7%) aged 50-59; 8(3.3%) tertiary education attainment ($p=0.000$); 9(4.3%) currently married. Then, 236(90.1%) of them were aware of BSE, 199(70.1%), CBE and 120(42.3%), mammography. About 209(71.5%) reported ever practiced BSE (mostly the currently married ($p= 0.021$); 79 (27.8%), CBE and 45 (15.8%), mammography. In conclusion, this study found overall high awareness, poor knowledge of breast cancer and poor screening uptake. It subsequently recommended periodic but sustained quality health education programs targeted at improving awareness, knowledge of breast cancer and screening uptake among these teachers.

Finally, Adjimah (2017) study was conducted to find out whether women at Ho, in the Volta Region of Ghana have been engaging in breast examination practices for early detection of breast abnormality and also to find out about factors that would influence the women to examine their breasts. The study was a descriptive survey. Multi-stage sampling technique was used to select a sample size of 1,259 women. Descriptive statistics and binary logistic regression were used to analyse the data.

The result exhibited that about 57% (n = 715) of the sampled women at Ho had low level of knowledge of breast cancer. Also, 88% (n = 1,109) of the women had low level of awareness of breast examination practices. Extent of practice of Breast Self-Examination (BSE), Clinical Breast Examination (CBE) or mammography was equally low as 71% (n = 900) of the respondents did not engage in examination of their breasts. Advice by nurse/doctors [OR = 7.20, 95% CI = 5.11-10.13, p = .000], primary education [Odds Ratio = 2.51, 95% CI = 1.16-5.42, p = .019], breast health education at health care facilities [Odds Ratio = 2.47, 95% CI = 1.75-3.51, p = .000], short distance to breast examination centres [Odds Ratio = 2.11, 95% CI = 1.28-3.41, p = .003], fear of having breast cancer [Odds Ratio = 0.51, 95% CI = 0.37-.0.72, p = .000] and shyness of breast being touched by another person [Odds Ratio = 0.44, 95% CI = 0.29-0.66, p = .000] were respectively found to be strong significant influencing factors for practice of BSE, CBE and mammography. The study established that most women at Ho have not been examining their breasts.

To conclude, the above studies were all conducted in different geographical context with different population. Hence, the present study conducted at Charile Roman Catholic in the Wa West District sought to compare their results to ascertain whether similar or different conclusion could be drawn.

2.4 Summary of Literature Review

Chapter two reviewed concepts and other studies related to the level of breast cancer awareness among junior high school pupils of Charile Roman Catholic in the Wa West District of the Upper West Region of Ghana. Issues such as prevalence of breast cancer, risk factors of breast cancer, signs and symptoms of breast cancer, breast self-examination, screening for breast cancer and clinical considerations and recommendations for breast cancer screening. Also, works done by Liu et al. (2017), Prusty et al. (2020), Ullah, Khan, Din and Afaq (2021), Ranasinghe et al. (2013), Gebresillassie et al. (2018), Ndikubwimana et al. (2016), Nnebue et al. (2018) and Adjimah (2017) were thoroughly examined.



CHAPTER THREE

METHODOLOGY

3.0 Introduction

This chapter look at research methods that are suitable in order to achievement the purpose of the research work. It involves the research design, population, sample and sampling techniques. It explains the instrument used in data collection, the procedures used in data collection and analysis of data.

3.1 Research Approach

This study employed the quantitative research approach (Field, 2018; Patten & Newhart, 2018; Hahs-Vaughn & Lomax, 2020). Quantitative research is used to quantify behaviours, opinions, attitudes, and other variables and generalize from a larger population. Mohajan (2020). On the other hand, qualitative research is a method of conducting in-depth studies into social phenomena. It focuses on the "why" and "how" of social phenomena rather than the "what," and it is based on direct experiences of humans as meaning-making agents in their daily lives (Tan, 2015).

3.2 Research Design

Research design is the framework of research methods and techniques chosen by a researcher to conduct a study. The design allows researchers to sharpen the research methods suitable for the subject matter and set up their studies for success (Sileyew, 2019).

The research design used in this study is descriptive survey. According to Rubin and Rubin (2005), descriptive surveys are designed to portray accurately the characteristics of particular individuals, situations or group. It is used as a needs assessment tool to provide information on which to base sound decision and to prepare the background

for more constructive programme of education research. It also serves as a foundation for more vigorous and precise investigation. The data gathered in a survey are usually responses to predetermined questions that are asked of respondents (Rubin & Rubin, 2005).

3.3 Study Area

The Wa West District is one of the 261 Metropolitan, Municipal and District Assemblies (MMDAs) in Ghana, and forms part of the 11 of Municipalities and Districts in the Upper West Region. The Wa West District was carved out of the Wa Municipality and made an autonomous district by L.I 1746. The district is located in the western part of the Upper West Region, approximately between longitudes 9° 40' N and 10° 10' N and also between latitudes 2° 20' W and 2° 50' W. The administrative capital is Wechiau. The District Shares Boundaries with Sawla Tuna Kariba District to the south, Wa Municipal to the east Nadowli Kaleo District to the north and to the west with Ivory Coast. The population of the district according to 2021 population and housing census stands at 96,957 with 45,880 males and 51,077 females.

3.4 Study Population

According to Bhandari (2022), a population is the entire group that you want to draw conclusions about. The population is in two folds-- the target population and the accessible population. Target population refers to the whole group of individuals or objects to which researchers are interested in generalizing the conclusions. The target population represents the entire set of cases or individuals the researcher wishes to study. The accessible population consists of members of the target population who are willing to participate and will be available at the time of the study. This accessible population is a subset of the target population and is also known as the study population. It is from the accessible population that researchers draw their samples.

Therefore, the population for the study was made up of students in Charile Roman Catholic Junior High School in the Wa West District of the Upper West Region. Specifically, the target population consisted of all the girls in the school from Basic 7 to Basic 9. This population was selected because the topic under studied was ‘assessing the level of breast cancer awareness among junior high school pupils of Charile Roman Catholic in the Wa West District of the Upper West Region’. As a result, girls in Basic 7 to 9 were in a better position to provide the researcher with the data needed to conduct the study.

3.5 Sample and Sampling Procedures

A sample represents the selected participants from the population who partake in the study (Creswell, 2014). The sample size for this study was made up of 76 young girls in the school from Basic 7 to Basic 9. The sample size was determined by the intuitive method of sample size determination. In this method, the researcher intuitively determined percentages for the sampling frame of each selected class as the population in the three classes are not evenly distributed.

Table 1: Distribution of Respondents by class

Name of School	Sampling Frame	Percentage (%)	Sample Size
Basic 7	29	86	25
Basic 8	38	79	30
Basic 9	32	66	21
Total			76

Source: Field Survey (2022)

The study employed the use of the multi-stage sampling technique consisting of purposive and simple random sampling. At the initial stage, purposive sampling was used to select all the girls from the entire school population. Purposive sampling is ‘used to select respondents that are most likely to yield appropriate and useful information

(Kelly, 2010) and is a way of identifying and selecting cases that will use limited research resources effectively (Palinkas et al., 2015). However, at the final stage, simple random sampling technique involving the intuitive approach was used. Simple random sampling method is a method where all members or units of the population have an equal and independent chance of being included. This technique was adopted to ensure fair representation of the target population.

3.6 Data Collection Instruments

Data was collected using structured questionnaires to identify issues pertaining to breast cancer knowledge, awareness level, warning signs and symptoms, attitudes and practices related to breast self-examination. The questionnaires comprised of only closed ended questions. These questionnaires were self-administered to ensure consistency. The questionnaire was administered using the Dagaare and English language to ensure the students understand the questions. For the purpose of the study, the closed ended questionnaire was used to solicit the necessary information from respondents. The researcher personally administered the questionnaires.

3.7 Data Collection Procedure

Before administering the questionnaires, an introductory letter was obtained from the Department of Educational Foundations in the Faculty of Educational Studies, University of Education, Winneba. The researcher then visited the location of the study and sought permission from the headmaster.

The researcher also went to meet with the Wa West Director of Education on the first day to go through the reason for the visit. The selected school for the study was scheduled for meetings by the researcher. To conduct the questionnaire, the researcher returns at the designated times and dates.

On the day of arriving in the school on the schedule date, the researcher introduced himself as a student from the University of Education Winneba who is undertaking the research as part of his academic work. The data collection took 30 minutes in each class. Before the students started to fill the questionnaire, the researcher gave detail instructions, and the students were allowed to ask questions in the process in case they did not understand something. The respondents were also assured that all the results of the study would be applied to research work only and their responses would have nothing to do with their teachers' evaluation of them. Respondents were given twenty (30) minutes to fill the questionnaires and the questionnaires were taken immediately after completion.

3.8 Validity of the Data Collection Instrument

First, the questionnaire was piloted in school which has similar characteristics with the selected schools to evaluate its efficacy in terms of validity and reliability. Validity of a research instrument assesses the extent to which the instrument measures what it is designed to measure (Robson, 2011). In other words, it is the degree to which a study tool measures what it purports to measure. The aim of validity is to ensure that there are no systematic sampling errors, which mainly occur when some populations' characteristics are under-represented or over-represented (Verhoeven, 2011). A research instrument is valid if its content is relevant and appropriate to research objectives. Therefore, a normality test was performed on the research instrument to determine its validity. According to Byrne (2010), a data is normal if skewness is between -2 to +2 and Kurtosis is between -7 to +7.

3.9 Reliability

According to Yin (2018), instrument reliability is the ability of the tool to produce consistent and repeated findings of a study. Instrument reliability was ensured by

conducting a pilot test to ensure that the instruments to be used yielded consistent and reliable results. In addition, Cronbach's Alpha was computed to assess the reliability of the instrument which resulted in a reliability co-efficient value of .85. The reason for adopting these tests is to ascertain the internal consistency of the instrument (Cortina, 1993).

3.10 Data Analysis

Data analysis refers to the reduction and displaying of the data, verification and drawing of conclusions (Burns & Grove, 2011). The purpose of data analysis is to organize, provide structure to, and elicit meaning from research data. Therefore, the data collected were edited to check its completeness and accuracy of filling responses. The questionnaires were given codes according to the classes for easy sorting. The codes assigned as follows: Basic 7=B7, Basic 8=B8, and Basic 9=B9. SPSS (Statistical Package for Service Solution) version 22 was used to analyse the data. The data were transformed into descriptive statistics based on the objectives of the study. The descriptive statistics ensured comparison of frequencies, percentages and charts of various responses. Finally, inferences were drawn from the frequency tables, percentages, charts, and the results.

3.11 Ethical Consideration

As stated earlier, the researcher obtained a letter of introduction from the University of Education, Winneba. The obtained permit was delivered to the district education office of Wa West in order to get a letter of clearance for the collection of data in school. Data collection started after a prior visit to the school, when rapport has been established with both teachers and head teachers. The respondents were guaranteed complete anonymity and secrecy in order to uphold ethical considerations. Respondents were given the assurance that they have the freedom to leave the data gathering process

at any time and without repercussions. The researcher cited all of the information's sources, including books, peer-reviewed journal articles, theses that have been published and unpublished, as well as other study materials, in order to respect copy rights and avoid plagiarism.



CHAPTER FOUR

RESULTS AND DISCUSSION

4.0 Introduction

This chapter deals with the analysis and interpretation of the responses from questionnaires administered for the study. The chapter therefore gives detailed information of the textual data collected and the result obtained from the study.

4.2 Demographic Data

This section presents information on demographic data of the respondents who are also young girls in Charile Roman Catholic Junior High School in the Wa West District of the Upper West Region. The demographic datum of the respondents which are discussed in this section include age.

Table 2: Age Distribution of Pupils

Age	Frequency (N)	Percentage (%)
0-10years	0	0.0
11-15years	24	31.6
16-20years	47	61.8
21-25years	5	6.6
26years and above	-	-
Total	76	100.0

Source: Field Survey (2022)

Table 1 above shows the results of respondents on their age. From the table, majority of them 47(61.8%) were between 16-20years. Also, 24(31.6%) were between 11-15years, 5(6.6%) were between 21-25years whereas none of them were between the ages of 0-10years. The results imply that the majority of the respondents have reached

the age at which breast health is very important to them and therefore need to be aware of the breast cancer and its related complications.

4.3 Analysis of Main Results

This section deals with the presentation and discussion of the major findings that emerged from the study. The results are organized and discussed in accordance with each research question.

4.3.1 Research Question One: Have you ever heard of breast cancer?

Research question one sought to find out whether the pupil of Charile RC Junior High School in the Wa West District of the Upper West Region have heard of breast cancer. The results are presented in Table 3 below:

Table 3: Awareness of Breast Cancer among Junior High School Pupils Especially the Girls

Item	Responses	Frequency (N)	Percentage (%)
Have you ever heard of breast cancer?	Yes	57	75.0
	No	19	25.0
Have you ever received education on breast cancer?	Yes	34	44.7
	No	42	55.3
How did you hear about breast cancer?	Radio/Tv	31	40.8
	In School	27	35.5
	Family/friends	13	17.1
	Hospital/Clinic	5	6.6
Have you ever self-examined your breast for abnormalities?	Yes	31	40.8
	No	45	59.2

Source: Field Survey (2022)

Results in table 3 above show that 57(75.0%) of the respondents have heard of breast cancer before whereas 19(25.0%). These results imply that though majority of the respondents 57(75.0%) in the study area have heard of breast cancer, there still exists a percentage of the population that have never heard of it (i.e, 19(25.0%). This finding confirms the findings of Liu et al., (2017) study which also found out that of all participants, 72.8% (2167/2978) had heard about breast cancer as a frequent cancer affecting women, and 63.3% (1884/2978) knew that family history of breast cancer was a risk factor for breast cancer.

This findings of this study are also in line with the study by Ndikubwimana et al. (2016), which assessed the level of early sensitization and education of adolescent high school girls in Rwanda about Breast Cancer (BC) and Breast Self-Examination (BSE) as one of strategic approaches to reduce the risk of late intervention and thence the BC related deaths, and found out that overall 94.6% of the surveyed girls had heard about Breast Cancer, but only few had limited knowledge about BC risk factors, diagnostic methods and Breast Self-Examination.

Again, this study finding confirms the findings of Nnebue et al. (2018) which showed that majority of respondents, 273 (96.1%) were aware of breast cancer. However, the current study contradicts the findings of Prusty et al. (2020), Ullah, Khan, Din and Afaq (2021) and Gebresillassie et al. (2018) which found that the overall level of knowledge on breast cancer was low.

Again, the results show that, majority of the respondents in the study area, 42(55.3%) have not received education on breast cancer whilst few of them 34(44.7%) have. A similar result was reported by Liu et al. (2017). Hence, based on the result, Liu et al. (2017) recommend more publicity and education programmes to increase breast cancer awareness. The reason is that since majority of the respondents have not received

education on breast cancer, they may likely engage in behaviours and practices that may put them at risk of the disease thereby increasing its prevalence in the study area.

Furthermore, majority of those who have heard of breast cancer before 31(40.8%), said they heard about it from Radio/TV, followed by 27(35.3%) who said they heard about it from the school, with 13(17.1%) and 5(6.6%) responding they heard about it from family/friends and hospital/clinic respectively. The finding supports the study findings of Nnebue et al. (2018). In their study, it was found that the key sources of information included: 111 (39.1%) health workers, 87 (30.6%) TV/Radio, the level of knowledge of breast cancer was poor, thus: 3(7.7%) aged 50-59; 8(3.3%) tertiary education attainment ($p=0.000$); 9(4.3%) currently married. The study also confirms Liu et al., (2017) study which Television broadcast and relatives or friends with breast cancers as the main sources of information about breast cancer. Also, Ndikubwimana et al. (2016) study pointed out in their study that awareness of breast cancer was acquired through mainly media (58.4%) and classmates (17.2%), and lightly from parents (5.4%). The researcher can insinuate that the hospital which has the responsibility of informing the public about breast cancer is not doing enough. Also, pupils who do not have radio/TV in their homes may find it very difficult to know what breast cancer is. Since, pupils have direct contact with the school, creating awareness of the disease through the schools will not be a bad idea.

Finally, results in table 3 show that, only few of the respondents 31(40.8%) have self-examined themselves with the majority 45(59.2%) saying they have not. This result is in consonance with the findings of Ullah, Khan, Din and Afaq (2021) which also indicated that among the total of 430 women who took part in their study, only 2.5% performed breast self-examination at least once a month. Among the reasons given were

embarrassment, transport, and confidentiality issues in seeking medical help. This finding in the present study is not surprising because the results have already shown that students have not received education on breast before, hence, the students may not know they have to breast self-examine once to check for any abnormalities in their breasts.

4.3.2 Research Question Two: What are the signs and symptoms of breast cancer?

Research question two also sought to access pupils' knowledge about the signs and symptoms of breast cancer. The results are presented in Table 4 below:

Table 4: Educating Girls on the Signs and Symptoms of Breast Cancer

Item	Yes N(%)	No N(%)	I don't know N(%)
Breast cancer also present as a nipple discharge or bleeding, pain or swollen breast	34(44.7)	19(25.0)	23(30.3)
Breast cancer is common among old women	17(22.4)	19(25.0)	40(52.6)
Breast cancer present itself as painless lump in the breast	42(55.3)	23(30.3)	11(14.5)
Breast cancer also show as rashes under the armpit or under the breast	15(19.7)	12(15.8)	49(64.5)

Source: Field Survey (2022)

Table 4 also present pupils' responses on the signs and symptoms of breast cancer. The results showed that majority of them 34(44.7%) considered nipple discharge or bleeding, pain or swollen breast as a sign of breast cancer whereas 19(25.0%) of them were of opposing view with 23(30.3%) of them saying they did not know. This finding confirms the findings of Prusty et al. (2020) which found that the women who were aware

of breast cancer considered lump in breast (75%), change in shape and size of breast (57%), lump under armpit (56%), pain in one breast (56%) as the important and common symptoms of breast cancer.

Also, from table 4, few of the respondents 17(22.4%) were aware that breast cancer is common among old women whilst 19(25.0%) were of opposing opinion. However, majority of them 40(52.6%) did not know all. In the study by Gebresillassie et al. (2018), majority of the participants acknowledged old age, family history, and smoking as possible risk factors for breast cancer. But in the case of this study, majority of the respondents did not know, which is not surprising because majority of the pupils have indicated earlier on that they have not received any education on breast cancer.

In addition, majority of the respondents 42(55.3%) answered 'Yes' to the statement that, 'breast cancer present itself as painless lump in the breast' whereas few of them 23(30.3%) and 11(14.5%) answered 'No' and 'they don't know' respectively. This result affirms the findings of Ranasinghe et al. (2013) which revealed that most of their participants were aware that the presence of a breast lump was an important warning sign of breast cancer just that awareness of other warning signs was poor.

Finally, the results showed that majority of the respondents 49(64.5%) do not know breast cancer also show as rashes under the armpit or under the breast whereas only 15(19.7%) of them confirm they are aware with 12(15.8%) saying breast cancer does not show as rashes under the armpit or under the breast. Meanwhile, Sadoh et al. (2021) have highlighted that when the breast cancer becomes more advanced, more symptoms can develop such as lumps in your breast or underarm area, changes in the size or shape of your breast, redness or rashes on the breasts, nipples may leak fluid or turn inward among others. The study's participants' expression of ignorance on this show that they do not know much about the signs and symptoms of breast cancer. The

implication of this is that, when they start showing some of these signs and symptoms, they may not know it is breast cancer. This will in effect delay them from seeking for treatment.

4.3.3 Research Question Three: Have you ever received education on breast cancer?

Research question three also sought to find out from the pupils whether they have received education on breast cancer, and reduce the late reporting of breast cancer among girls of Charile RC Junior High School in the Wa West District of the Upper West Region. The results are presented in Table 5 below:

Table 5: Reducing the late reporting of breast cancer among girls

Item	Yes N (%)	No N (%)	I don't know N (%)
Would you report to your mother or family member if you see abnormalities in your breast?	69(90.8)	7(9.2)	-
Would you allow a health personnel to examine your breast for abnormalities?	65(85.5)	11(14.5)	-
Would you go to the hospital if you experience nipple discharge or bleeding, painless lump, swollen breast or rashes under your armpit or breast?	48(63.2)	28(36.8)	-
Breast self-examination is useful for early detection of breast cancer	26(34.2)	12(15.8)	38(50.0)

Source: Field Survey (2022)

Table 5 presents results on pupils' responses on reducing the late reporting of breast cancer among girls of Charile RC Junior High School in the Wa West District of the Upper West Region. The results showed that 69(90.8%) of the respondents said they

would report to their mother or family member or hospital if they see abnormalities in their breast whilst 7(9.2%) said they would not.

This means majority of the respondents confirmed that they would report to their mother or family member if they see abnormalities in their breast. ACS (2013) highlights that it is especially important to raise awareness among women about the benefits of breast screening; any changes in health or breast feel must be reported. This early detection and reporting of breast cancer sign will help women get immediate treatment.

In addition, majority of the respondents 65(85.5%) said they would allow health personnel to examine their breast for abnormalities whereas only few of them 11(14.5%) said they would not. The reason some of them said they will not allow health personnel to examine their breast for abnormalities might be as a result of shyness of breast being touched by another person, low self-esteem or related factors.

Last but not least, the majority of the respondents 48(63.2%) also said they would go to the hospital if they experienced nipple discharge or bleeding, painless lump, swollen breast or rashes under their armpit or breast with few of them 28(36.8%) saying they would not. Whereas the respondents are willing to go to the hospital if they experience nipple discharge or bleeding, painless lump, swollen breast or rashes under their armpit or breast, Ahmed et al., (2009) hint that system barriers such as difficulties in accessing health care facilities as well as the cost and affordability of mammogram breast screening may discourage women from going to the hospital when they see the warning signs of the disease.

Finally, the results showed that 26(34.2%) of the respondents know that breast self-examination is useful for early detection of breast cancer, 12(15.8%) said 'No' to

the statement whilst 38(50.0%) said they did not know breast self-examination is useful for early detection of breast cancer. Since majority of the respondents are ignorant of breast self-examination as useful for early detection of breast cancer, they may not seek early treatment.



CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.0 Introduction

This chapter summarizes the key findings of the study. Additionally, it draws conclusions and make recommendations from the key findings. Lastly, it makes suggestions for further studies based on the key findings that stemmed from this study.

5.1 Summary of Main Findings

The study sought to assessing the level of breast cancer awareness among junior high school pupils of Charile Roman Catholic in the Wa West District of the Upper West Region. Descriptive survey design was the research design employed in the study. Frequencies and percentages were used to examine and interpret the data collected. Below are the highlights of the study:

Firstly, it was discovered from the analyses that though pupils in the study have heard about breast cancer, they have not had any education on breast cancer before. This means the awareness of the disease in the study area is very low.

Secondly, the findings from the study pointed out that majority of girls in the study are ignorant of the signs and symptoms of breast cancer. As a matter of fact, they do not know the basic warning signs of the disease due to low awareness of the disease.

Finally, the findings of the study revealed though participants in the study do not have much information about breast cancer, they are willing to report any abnormality they see in their breast to other people or the hospital to reduce late detection of the disease.

5.2 Conclusions

From the findings of the study, it could be settled that young girls in Charile Roman Catholic in the Wa West District of the Upper West Region do not have adequate knowledge about breast cancer as majority of them have heard about it but have not ever received education on it. The study also established that the pupils' inadequate knowledge about breast cancer make them ignorant of the basic warning signs and symptoms of the disease. Finally, from the findings of the study, the researcher can also conclude that the pupils' inadequate knowledge about the various warning signs and symptoms of breast cancer make early detection of the disease difficult, hence, pupils report to the hospital late.

5.4 Recommendations

Based on the findings of the study, the following recommendations were made.

1. Breast cancer studies should be included in the Junior High school science curriculum to create awareness of the disease in the schools.
2. The Ghana Health Service should as a matter of urgency should embark on breast cancer awareness campaign particularly in schools to educate pupils on the various signs and symptoms of the disease.
3. Young girls should be encouraged to report to the hospital any abnormalities they see in their breast for early detection and treatment of breast cancer.
4. The government of Ghana should expand the building of hospitals to enable young girls have easy access to them.
5. Young girls should be encouraged to self-examine themselves for breast cancer for early detection and reporting of the disease.

5.5 Suggestions for Further Studies

The following suggestions were made for further studies:

1. In order to have a broader view of the level of breast cancer awareness among junior high school pupils, the researcher recommends that further study should be conducted using other Junior High School pupils in other districts or regions in Ghana.
2. Studies should be conducted on risk factors of breast cancer especially in the study area.
3. Studies should be conducted on treatment options for breast cancer.
4. Studies should be conducted on the effects of breast cancer on students' education.



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APPENDIX

UNIVERSITY OF EDUCATION, WINNEBA
FACULTY OF EDUCATIONAL STUDIES
DEPARTMENT OF EDUCATIONAL FOUNDATIONS
QUESTIONNAIRE FOR STUDENTS

The researcher is a Post graduate Diploma in Education (PGDE) student of the University of Education, Winneba who is researching on the awareness level of breast cancer among Junior High School pupils

NOTE

These questionnaires are solely for academic purpose, your privacy is assured, any information from these questionnaires would remain an academic information.

Kindly Tick the appropriate answer corresponding to the question.

It will take 15minutes to complete the questionnaires.

Biographic data

1. Age 0-10years [] 11-15years [] 16-20years [] 21-25years [] 26years above.
2. Form/Class. Basic 7 [] Basic 8 [] Basic 9 []

Section A: To create awareness of breast cancer among junior high school pupils especially the girls.

3. Have you ever heard of breast cancer? Yes [] No []
4. Have you ever received education on breast cancer? Yes [] No [] Somehow []
5. How did you hear about breast cancer? Radio/TV [] In School [] Family/friends [] Hospital/Clinic [].
6. Have you ever self-examination your breast for abnormalities? Yes [] No []

Section B: To educate girls on the signs and symptoms of breast cancer.

7. Do you know the signs and symptoms of breast cancer? Yes [] No []
8. Breast cancer is common among old women Yes [] No [] I don't know []
9. Breast cancer present itself as painless lump in the breast Yes [] No [] I don't know []
10. Breast cancer also present as a nipple discharge or bleeding, pain or swollen breast Yes [] No [] I don't know []
11. Breast cancer also show as rashes under the armpit or under the breast. Yes [] No [] I don't know []

Section C: To reduce the late reporting of breast cancer among women and girls.

12. Would you report to your mother or family member if you see abnormalities in you breast? Yes [] No []
13. Would you allow a health personnel to examine your breast for abnormalities? Yes [] No []
14. Would you go to the hospital if you experience nipple discharge or bleeding, painless lump, swollen breast or rashes under your armpit or breast? Yes [] No [] I don't know []
15. Breast self-examination is useful for early detection of breast cancer. Yes [] No [] I don't know []