

UNIVERSITY OF CAPE COAST

BREAST EXAMINATION PRACTICES OF WOMEN AT HO IN THE  
VOLTA REGION OF GHANA

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VOLTA REGION OF GHANA

BY

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## DECLARATION

### Candidate's Declaration

*I hereby declare that this thesis is the result of my own original research and that no part of it has been presented for another degree in this university or elsewhere.*

Candidate's Signature: ..... Date: .....

Name: Patience Wilhemina Adjimah

### Supervisors' Declaration

*We hereby declare that the preparation and presentation of the thesis were supervised in accordance with the guidelines on supervision of thesis laid down by the University of Cape Coast.*

Principal Supervisor's Signature: ..... Date: .....

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Co-supervisor's Signature: ..... Date: .....

Name: Prof. Joseph K wame Mintah

## ABSTRACT

The 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 engaged in examination of their breasts. Advice by nurse/doctors [OR = 7.20, 95% CI = 5.11-10.13,  $p = .000$ ], primary education [OR = 2.51, 95% CI = 1.16-5.42,  $p = .019$ ], breast health education at health care facilities [OR = 2.47, 95% CI = 1.75-3.51,  $p = .000$ ], short distance to breast examination centres [OR = 2.11, 95% CI = 1.28-3.41,  $p = .003$ ], fear of having breast cancer [OR = 0.51, 95% CI = 0.37-0.72,  $p = .000$ ] and shyness of breast being touched by another person [OR = 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. Stakeholders in breast health issues should therefore develop pragmatic strategies to execute the strong significant influencing factors identified in this study to motivate women at Ho to regularly engage in breast examination practices.

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**DEDICATION**

To my husband, Ben K. Besah, my son, Ezra S. Besah, and my late sister,

Evelyn Ama Sena Adjimah.

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## CHAPTER ONE

### INTRODUCTION

#### **Background to the Study**

When a woman's breast develops abnormalities, it puts her in a serious state of ill health (Burke, LeMone, & Mohn-Brown, 2007). These abnormalities can include cracked nipple, severe pain, benign lumps, purulent discharges, breast tissue hypertrophy, engorgement, mastitis and most seriously malignant lump/cancer (Kirby, 2005). The abnormalities can easily be discovered by periodic examinations of the breast through screening methods (Clegg-Lampsey, Dakubo, & Attobra, 2009).

Screening methods (breast examination practices) include Breast Self-Examination (BSE), Clinical Breast Examination (CBE) and mammography (World Health Organization [WHO], 2014). BSE, also known as breast awareness, is a simple, inexpensive, non-invasive procedure which involves the woman herself looking at and feeling each breast for possible abnormalities (Burke et al., 2007). BSE can be done by standing in front of a mirror by visual inspection for dimpling, unusual size, colour, bulging of the skin, redness, soreness, rash, swollen or inverted nipple; by manual palpation for changes in texture, lump, any discharges (fluids) from both nipples. BSE can also be done while in the shower or lying down (Breastcancer, 2014). It is recommended that women at 20 years should start doing BSE (3-4) days every month after menstruation when the breasts are no longer swollen or tender (America Cancer Society [ACS], 2012). CBE is physical examination of the

breast performed by trained medical personnel to check for lump or other changes in the breast (Burke et al, 2007). Women between the age of 20 and 39 are to have CBE as part of a periodic (regular) health examination every three (years in addition to monthly BSE (Smith, Cokkinides, Brooks, Saslow, & Brawley, 2010; ACS, 2012).

Mammography is X-ray examination of the breast which shows a breast lump before it can be felt (Burke et al., 2007). Mammography requires hospital visit, specialised equipment and expertise. Women at 40years and above are to undergo mammography every year in addition to CBE and monthly BSE (ACS, 20012; Chiarelli et al., 2009). These breast examination practices are usually done in combination to help in accurate detection of the breast abnormalities. The breast examination practices aids in early detection and diagnosis of breast abnormalities or cancer for prompt and appropriate treatment to reduce cancer mortality rate (ACS, 2012; WHO, 2014). Thus, the usefulness of breast examination practices is that they are preventive efforts to address the health needs of women.

The prevalence of breast cancer for example has become a major global health concern (GLOBOCAN, 2008; WHO, 2009). One woman dies of breast cancer every 69 seconds globally (Ferlay et al, 2010). It is estimated that over 508, 000 women died of breast cancer worldwide in 2011 (WHO 2013). In 2012 an estimated 41,150 women died of breast cancer in the United States of America (Center for Disease Control and Prevention [CDC], 2015). Sub-Saharan Africa recorded 35,427 breast cancer deaths in 2008 (GLOBOCAN, 2008). Statistics also recorded 3,000 deaths out of 8,000 new breast cancer cases annually in South Africa (CANSAs, 2010). Again,

Matatiele and Heever (2008) reported significant increase in breast cancer among young Black women of less than 35 years of age in South Africa. Similarly, in Nigeria, breast cancer constituted 22.41% of new cancer cases registered in 5 years period and accounted for 35.41% of all cancers in women (Afolayan, Ibrahim, & Ayilara, 2012). In Ghana, breast cancer is the leading cause of cancer related deaths and 1,021 deaths out of 2,260 new breast cancer cases are estimated annually (Clegg-Lampsey, 2015). The stark reality is many women who have died from breast cancer in Ghana reported late to the hospital at the advanced stages of the disease when little or no treatment can be rendered (Clegg-Lampsey, Dakubo, & Attobra, 2009).

Globally, the devastation that befalls women diagnosed of breast cancer remains inestimable (Olowokere, Onibokun, & Oluwatosin, 2012). The main factor that contribute to the mortality rate of breast cancer largely stem from lack of availability of early detection services (Jemal, Center, DeSantis, & Ward, 2010). Global efforts to control breast cancer have therefore focused on early detection through periodic breast examination for diagnosing at an early stage (WHO, 2014). Breast Cancer Awareness Creation through education, screening and treatment has been in progress for decades (WHO, 2011). Thus, the month of October is established as International Breast Cancer Month and dubbed 'Pink Month'. This celebration is to increase awareness of the disease and strategies for its early detection and treatment.

Similarly in Ghana, breast cancer awareness creation has been ongoing through international and non-governmental organizations, cooperatives and individuals' activities (Mena et al, 2013). For example, Breast Care International (BCI) Ghana, an (NGO), formed in 2002 is dedicated to increase

breast cancer awareness in the country with special focus in rural areas. Unique Trust (UT) Bank together with Cancer Society of Ghana, Breast Care International (BCI) and other partners launched an annual breast cancer campaign every October to November to increase awareness of the disease (UT Bank, 2013). Thus, education on breast cancer and breast examination for early detection and prompt treatment of the disease is being intensified through the print and electronic media every October to November throughout the country.

### **Statement of the Problem**

Research on breast examination practices indicated that majority of women older than 40 years in the USA indulge in breast examination or screening activities (Elmore, Armstrong, Lehman, & Fletcher, 2005). Kösters, and Gøtzsche (2008) also revealed that many women in Russia, Shanghai, Philippines, and Egypt will like to know the changes in the breast and will do breast self-examination or will wish to be taught the technique to examine their breast. Meanwhile, there is a low level of awareness of breast examination practices and low participation rates in breast cancer screening activities among Arab women living in Qatar (Donnelly et al., 2013). It is also recognized that socio economic factors influence Arab women's participation in breast examination programmes (Soskoline, Marie, & Manor, 2007). In addition, most women in Western Turkey have no knowledge of BSE and have never practiced it, had no CBE but had mammography done (Donmez, Dolgun, & Yavus, 2012).

Maree (2013) indicated that lack of awareness of utilizing BSE and CBE could impede black women's ability to recognize breast cancer in a poor

resourced community in South Africa. Also, Olowokere, Onibokun and Oluwatosin (2012) found that awareness of breast examination practices is high in some rural communities of Nigeria but the practice of BSE and CBE is very low. It was therefore suggested that health care professionals should empower women and enhance their skills to use the simple procedure of BSE to promote their health. In Ghana, Mena et al. (2013) reported high knowledge of breast examination practices among the rural folks in the Ashanti Region and the possibility that with the knowledge they will practice BSE. Whether women actually practice BSE or the other forms of breast examination (CBE and mammography) was not explored. Similarly, there is awareness of BSE as a screening method among female university students in the Ashanti Region (Sarfo, Awua-Peasa, Acheampong, & Asamoah, 2013). However, the findings did not indicate whether women have been practicing the BSE or the other forms of breast examination. All these studies conducted in Ghana also failed to find out about factors that would influence women's behaviour to examine their breast regularly.

Full blown breast cancer cases have been recorded at the health care facilities at Ho in the Volta Region (Hospital Cancer Registry, 2015). For example, 144 cases were recorded in 2013 and this had increased to 252 in 2015. Thus the chance of the women surviving from the disease at time of diagnosis was low. This could be attributed to inadequate knowledge of breast cancer and utilisation of breast cancer screening methods (BSE, CBE and mammography). In addition, there seems to be no evidence of any data or researches on breast cancer and breast examination practices of women at Ho.



### **Purpose of the Study**

The purpose of this research was to find out whether women at Ho have been engaging in breast examination practices for early detection of breast abnormality and also to find out what factors would influence women to examine their breasts.

### **Research Questions**

The following research questions guided the study:

1. What is the level of knowledge of breast cancer among women at Ho?
2. What is the level of awareness of breast examination practices among women at Ho?
3. To what extent do women at Ho practice breast examination?
4. What factors influence practice of breast examination among women at Ho?

### **Significance of Study**

Some studies have demonstrated strong correlation between health literacy and utilisation of health care programmes (Kutner, Greenburg, Ying, & Paulsen, 2006; Cutilli, & Bennett, 2009). Health literacy or knowledge of health issues is therefore one of the foundation for health behaviour that has special importance for empowerment of women for improvement of their health status. The result of this study may:

1. Encourage a sponsored periodic community sensitization, awareness, training and demonstration activities by health authorities and NGOs.
2. Make a positive contribution to changing women's breast health knowledge and screening practices in Ghana for early detection of breast cancer.

3. Help re-strategise activities of awareness creation of breast cancer and its screening processes to increase early detection, prompt therapy and reduction in the disease's mortality rate among women in Ghana. Thus, reporting on women's knowledge and practices of breast examination may be useful in the designing of appropriate interventions that would prevent breast cancer complications and death.
4. Serve as a reference material for other researches on breast examination practices as it may help to close some of the gaps in the previous studies of breast examination practices in Ghana. It may also create opportunity for further research.

### **Delimitations**

The study was conducted among only women of age 20-49 years who live at Ho township in the Volta Region.

### **Limitations**

The breast examination behaviour of only women between the ages of 20 to 49 years who live at Ho town might not reflect the behaviour of all women who are vulnerable to developing breast abnormality (cancer). This may place limitation on generalisation of the result. Also, the accidental sampling method used would hinder generalization of the study to all women who live in Ho.

### **Definition of Terms**

**Practice:** carrying out an activity, engagement, performing, doing.

**Practices:** methods, procedures.

**Breast examination:** Critical observation of the breast in specific and accepted manner to detect deviation from normal. It includes BSE, BCE and Mammography.

**BSE: Breast Self-Examination:** Examination to be done monthly by the woman herself.

**CBE: Clinical Breast Examination:** Examination to be done once every three years by trained health personnel.

**Mammography:** X-ray examination of the female breast to aid in early diagnosis of breast cancer.

**Breast examination practices/methods:** BSE, CBE and mammography.

**NGO:** Non- governmental organization.

**GLOBOCAN:** Global Cancer Statistics Center.

**Ribbon:** An international symbol of breast cancer awareness. Pink ribbons and the color pink in general identifies the wearer or promoter with the breast cancer brand and express moral support for women with breast cancer. The pink ribbons are most commonly seen during National Breast Cancer Awareness Month.

**Metastasis:** Spread of cancerous cells to other parts of the body.

## CHAPTER TWO

### REVIEW OF RELATED LITERATURE

The purpose of this chapter was to evaluate literature on breast examination practices of women. It was aimed at establishing the veracity of health care services and health behaviour of women to prevent complications and deaths relating to breast cancer. It was also to provide direction to the conduct of this study. The Health Belief Model (HBM) was conceptualised for this study. A number of studies on breast examination practices of women were reviewed. The report was presented under the following sub- heading to enhance easy reading: Prevalence of breast cancer, knowledge of breast cancer awareness of breast examination practices, practice of breast examination and factors that influence practice of breast examination. The conceptual framework developed from Health Belief Model concept was operationalised to assess the practices of breast examination of the women.

#### **Prevalence of Breast Cancer**

Breast cancer is a malignant tumor that starts in the cells of the breast and can grow into surrounding tissues or spread to distant areas of the body (metastasise). The disease occurs almost entirely in women, but can affect men too (ACS, 2016).

The prevalence of breast cancer has become a major global health concern (GLOBOCAN, 2008; WHO, 2009). It is estimated that one woman dies of breast cancer every 69 seconds globally and over 508, 000 women died

of breast cancer worldwide in 2011 (Ferlay et al., 2010; WHO 2013). In 2012, an estimated 41,150 women died of breast cancer in the United States of America (Center for Disease Control and Prevention [CDC], 2015). Sub-Saharan Africa recorded 35,427 breast cancer deaths in 2008 (GLOBOCAN, 2008). Also, in Ghana, breast cancer is the leading cause of cancer related deaths and 1,021 deaths out of 2,260 new breast cancer cases are estimated annually (Clegg-Lampsey, 2015). The devastation that befalls women diagnosed of breast cancer remains inestimable (Olowokere, Onibokun, & Oluwatosin, 2012). It is also evidenced that in Ghana, most women with breast cancer delayed in presenting the disease at the advanced stages when little or no benefit can be derived from any form of therapy (Clegg-Lampsey et al., 2009). This prevailing situation suggests that health behavior may be influenced by level of knowledge and awareness about breast cancer that includes its causative factors, symptoms, seriousness, methods of detection and forms of treatment.

Kenya Medical Research Institute 2006 cancer incidence report stated that Breast cancer is a multifaceted disease known to be caused by both Internal and external risk factors. The internal factors which may predispose one to cancer include hormone imbalances, inherited genetic mutations, immune disorder conditions and some metabolic disorders and the external risk factors may be tobacco, alcohol, numerous chemical substances, radiation, and some infectious organisms (Kenya National Bureau of Statistics, 2010). These causative factors may act together and or in sequence to initiate the development of cancer.

Similarly, some cancer publications indicates the incidence of breast

cancer to be higher in persons that have first degree relatives with a history of breast cancer, being a female, persons that have early menarche and late menopause and those that use oral contraceptives, persons who were exposed to radiation in youth age persons who do not breast feed and those women having their first birth after age 35 or nulliparous women. The incidence is also increased with increasing age of the woman, smoking, obesity, physical inactivity, radiation exposure, intake of alcohol and high fat diet ( ACS, 2015; 2016; Komen, 2016).

### **Knowledge of Breast Cancer**

Webster and Austoker (2015) revealed average knowledge level of vulnerability of breast cancer among the participants from a survey to find women's knowledge level of breast cancer risk and their views of the purpose and implications of breast screening among 1000 Australian women between age 49- 69 randomly selected. Forty-two percent of the respondents thought that it is not inevitable for the average woman to develop breast cancer. Only 58% agreed it is likely. Comparatively, though this finding indicated average knowledge level of vulnerability of the disease among the participants, the percentage of the women who did not know that any woman is susceptible to the disease is too high. This could negatively affect decision making to seek health care to prevent the disease to reduce its overall mortality rate. The study was quantitative and with the large sample size, ample representation of the study population could not be questioned. Nevertheless, information on the vulnerability and risk factors of breast cancer was sought from relatively an older age group and generalised to the entire Australian women while issues of breast cancer could have tremendous

health implications for the younger age women as well. The finding is similar to findings among Nepalese women and majority of some Ghanaian university students who understood that breast cancer can affect anyone (Bhatt et al., 2011; Sarfo et al., 2013). These results however are in contrast to a finding among 425 female secondary school teachers in Malaysia where 94.4% of them thought developing breast cancer is a problem that affects older women (Parsa, 2008). In order to make an informed choice about attending breast screening, women will need to know the lifetime risk of breast cancer to determine the likelihood of developing the disease

In India, through cross sectional survey, it was recorded that knowledge of risk factors for developing breast cancer varied among women. The most common identified susceptible factors were older age, having children at a late age and not breast feeding (80%) and smoking (74%) and most of them did not know about other causatives factors (Ahuja, & Chakrabarti, 2010). Likewise, in a study in Ghana and Nigeria, most of the participants were not able to identify hereditary as a risk cause for breast cancer (Mena et al., 2013; Humphrey, Helfand, & Chan, 2012). Linsell, Burgess and Ramirez (2008) in a survey of 712 British women between 67 to 73 years confirmed that about 75% of older women in Britain were not aware that age is a risk factor of breast cancer. This is highlighted in an evaluative study in Ghana where the knowledge about age as a risk factor was worse (25.4%) in the intervention than in the referent group (Mena et al., 2013). This finding is same as those recorded in the study conducted by Ranasinghe, Ranasinghe, Rodrigo, Seneviratne and Rajapakse (2013) in rural Nigeria, 19.6% and Robbins and Hunsaker (2012) in a hospital-based study in

Uganda, 20% respectively. In a study at Madina in the Middle East, none of the participants expressed knowledge about all established risk factors of the disease (Habib, Salman, Safwat & Shalaby, 2010). Gulshan et al. (2007) also established that Asian women in London had misunderstandings about the cause of the disease and perceived that it is a taboo and a stigma. This is similar to the perception of some rural folks in the Ashanti Region of Ghana that the cause of breast cancer is due to evil spirit (Mena et al., 2013). Likewise, through a survey in China, most women were not able to describe risk factors for breast cancer and this leads to more worry (Chen, Xia, Oakley, Jia, & Deng, 2007). All the studies were quantitative in nature such that the revelation of inadequate knowledge about causes of breast cancer may imply that women cannot perceive their vulnerability to the disease. This needs to be of great public concern for further public health education on associated risk factors of the disease in order for women to make an informed choice about examining their breast.

Similarly, a cross sectional surveys conducted by Saeedi, Al Amri, Ibrahim and Kassim (2014); Ghanem et al. (2011) among medical professionals in Saudi Arabia and Morocco respectively found almost all the participants identified family history (100%), late age at menopause (78%), radiation exposure, early menarche at less than 12 years, use of contraceptive pills and increase breast density as risk factors for breast cancer. The least factors known were old age, having first child at late age (44%) and nulliparity (48%). In contrast, Ibrahim and Odusanya (2009) cited that 95.6% of doctors in Nigeria recognized increasing age and 80% of them identified current use of oral contraceptive pills and only few of them



identified nulliparity and advanced age of having the first child as risk factors. The results of these studies revealed that health practitioners have limited knowledge about some aspects of breast cancer. More so, all these studies were surveys and large sample sizes were used to indicate ample representation of the populations studied. Hence the findings could be authentic revelation of insufficient knowledge of risk factors for developing breast cancer among even health professionals. There is therefore the need for them to upgrade their knowledge since their role is to provide professional information, skills and support for clients about breast cancer screening and prevention of its death.

The symptoms of breast cancer may include dimpling, unusual size and colour, bulging of the skin, redness, soreness, rash, swollen or inverted nipple, changes in texture, painless lump and discharges (fluids/blood) from both nipples dimpling (Breastcancer, 2014). The seriousness (terminal stage) of breast cancer is the severe pains, metastasis and death (Komen, 2016). A survey conducted by Bhatt et al. (2011) to assess breast cancer knowledge in Nepal using 100 participants systematically selected found average level of knowledge on breast cancer among sampled women due the influence of radio and television. However, there were many misconceptions about breast cancer among Nepalese women including highly educated ones. This included lack of awareness of painless nature and non-lump symptoms of breast cancer as well as the belief that traditional health care can be curative. Two-thirds of the participants understood that breast cancer can affect anyone but about 50% of the respondents did not know that breast cancer is a major health problem. Even though, it was found that 89% of the participants

knew that breast cancer usually presents as a lump, about 60% of the participants including highly educated women did not know that breast cancer's lumps are usually painless and breast cancer can be present without any lump. Although the study revealed diverse misconceptions on breast cancer, generalisation of the findings to the entire Nepalese women by using 100 sample sizes might have dented the study result. On the other hand, the result of this study shows that dissemination of basic information on breast cancer to all class of women could increase women's knowledge on the disease. This is because decision making for seeking early health care to prevent complications and mortality resulting from the disease could be problematic if women know less about breast cancer issues.

In a related study in a tertiary care hospital at Mumbai, India, Ahuja and Chakrabarti (2010) reported from a cross sectional survey an average level of knowledge on breast cancer among 80 groups of women. This was inferred to regular visit to family physician or gynaecologist. Most of the women knew that a palpable mass in the breast indicates breast cancer. Additionally, they identified a sore on the breast that does not heal and change in the texture of the skin over the breast as breast cancer symptoms. However, discharge of blood from nipple was least identified and redness and warmth over the breast also noted. While the study revealed that greater percentage of the participants had limited knowledge of signs and symptoms of breast cancer, the study found higher educational level, higher income level and women who visit their physician or gynecologists on a regular basis to be statically significant to knowledge of breast cancer. Average level of knowledge was also noted in

Iran and was attributed to the influence of family and friends (Montazeri et al., 2008).

A study in Nigeria revealed that due to low educational level of the participants, there was low level of knowledge on breast cancer (Okobia, Bunker, Okonofua, & Osime, 2006). Likewise, Oluwatosin and Oladepo (2006) reported that majority of women out of 420 participants in Ibadon, Nigeria were not aware of early warning signs of breast cancer. Only 1.9% acknowledged a painless lump as an early warning signs. In other studies, only 49.7% indicated skin changes as early warning signs of breast cancer (Habib et al., 2010). Also, cross sectional surveys undertaken in Pakistan and India noted nearly half of the women to mention pain as a symptom of breast cancer but only about 10% mentioned non-lump symptoms (Somdatta, & Baridalyne 2008; Gilani et al., 2010). The results of all these studies showed that women did not have correct knowledge about breast cancer. Meanwhile, basic knowledge of cardinal signs and symptoms of breast cancer could be essential to enhance women's perceptions of the complications and terminal nature of the disease. The inadequate knowledge on breast cancer symptoms may also imply that enough accurate information is not propagated publicly on community level and in the health care facilities. Decisions making for seeking prompt health care could therefore be problematic if awareness and knowledge of signs and symptoms of breast cancer are limited. The findings of these researches call for health education to lay emphasis on a painless lump and other cardinal signs and symptoms of the disease during breast cancer awareness programs by stakeholders in health issues.

Early detection of the disease is by examination of the breast and

treatment may include the use of drugs, hormones, radiotherapy or surgical interventions/removal of the breast and reconstruction (ACS, 2015). It is therefore implied that women will take appropriate action if they are well informed about their health problems. Bhatt et al, (2011) documented that 89% of Nepalese women knew that breast cancer can be detected in an early stage with examination of the breast and majority of them (95%) agreed that early detection can improve the outcome of treatment. This finding is consistent with Ameer, Abdulie, Pal, Arebo and Kassa (2014) reporting 60% female medical students in Ethiopia believing that breast cancer is curable and 85.7% supported that early detection improves survival.

In Nigeria, 90.7% of rural women in a study knew that breast cancer can be treated and they acknowledged some of the treatment modalities which include the use of drugs hormone replacement, surgery and combination of drugs, surgery and radiotherapy (Oluwatosin, & Oladejo, 2006). Most of them (52%) also agreed that early treatment of breast cancer might prevent death. Similar finding is reported in Ethiopia where 60% of female medical students believed that breast cancer is curable (Ameer et al., 2014). The high knowledge of the curability of the disease could be due to exposure to information per virtue of the participants' professional studies. This might not be the case for women from other circle of life. However, Ninety-seven percent of women in a study population in Nepal also believed that breast cancer can be curable when treated adequately and appropriately but 33% of the respondent assumed that traditional health care had been proven to cure the disease (Bhatt et al., 2011).

The various studies clearly showed that the participants had many

misconceptions of breast cancer which could imply that women visiting health care centers were often not educated or counseled regarding breast cancer. Community and public education may also not be enough. Association between knowledge of breast cancer and higher educational level and women who had regular medical checks were found to be statically significant by most of the researchers. These showed that the more people are exposed to health information on a disease condition the more sensitive and keen they may be able to assume responsibility for their own health care. This may help them change their health behaviour to seek early treatment and prevent complications and death (Webster, & Austoker, 2015; Linsell, et al. 2008; Oluwatosin & Oladepo, 2006; Bhatt et al., 2011).

#### **Awareness of Breast Examination Practices among Women**

Globally, breast cancer is the most common cancer among women and causes 522, 000 deaths in 2012; out of about 1.7 million new cases diagnosed (WHO 2013). There is evidence that regular examination of the breast (screening) for breast cancer has a favourable effect to reduce mortality from breast cancer worldwide (ACS, 2012; WHO, 2014). Thus, breast examination practices (methods) are vital steps for identifying tumours at an early stage for prompt treatment. The breast examination practices include Breast Self-Examination (BSE), Clinical Breast Examination (CBE) and mammography (WHO, 2014). Hence, thorough examination of the breast can have a crucial impact on early identification of breast cancer, its diagnoses and enhanced survival rate. It is therefore necessary for women to be aware of the breast examination practices (methods) and have the confidence to practice them.

A lot of researches have been conducted in both developed and

developing countries to assess women's awareness of the various breast examination practices (screening methods) regarding breast cancer. Olowokere et al. (2012) undertook a cross sectional survey to assess knowledge and awareness of screening practices for breast cancer among 180 women in selected rural communities of Nigeria revealed that due to inadequate public education general awareness and knowledge about breast examination was low. Some screening measures that are not within the conventional methods of early detection measures such as breast cleanliness, washing the nipples regularly, and traditional care were stated by the participants. Only 6.4% identified BSE, 1.2% identified clinical breast examination and none knew mammography as breast examination method for early detection of breast cancer. Just 13.3% agreed to have heard about BSE. The multi stage sampling procedure (purposive and simple random) used for selecting the sample size indicated equal representation of the study population and thereby rendering the findings authentic. Hence, the revelation of insufficient awareness and knowledge about breast examination practices can be of great public health concern. The same trend has been observed in Nepal where 68% of the participants including highly educated women had not heard of clinical breast examinations and 56% had not heard of mammography (Bhatt et al., 2011). Donnelly et al. (2013) also affirmed that awareness of breast examination practices among Muslim women in Qatar was low because of less public education. Balogun and Owoaje (2005) also documented that level of awareness breast self- examination among female traders in Ibadon, Nigeria was low. Likewise, in India, only 11% of women were aware of breast self-examination and only 3% knew about mammography (Somdatta, & Baridalyne, 2008). Also in Pakistan, only 28% of

women knew about breast self-examination (Gilani et al., 2010). Donmez et al. (2012) documented that majority (60.3%) of women in Turkey had no knowledge in BSE. All these findings are consistent with other findings reported by Jahan, Al-Saigul and Abdelgadir (2006); Karayurt, Özmen and Cetinkaya (2008); Ahuja and Chakrabarti (2010) where most of the study population were not aware of even the simplest breast examination method (BSE).

In contrast, a study conducted among medical students in Haramaya University in Ethiopia, majority of the respondents knew about the various breast examination practices. Almost 65% have heard of all the three methods (BSE, CBE and mammography) but even that only 4% identified BSE, 16.6% CBE and 11.9% mammography as screening methods (Ameer et al., 2014). The study was quantitative in nature and the result can be extrapolated to the population of interest. The major finding of high level of awareness of breast cancer screening methods among the participants could be an indicative of hope to facilitate engagement in breast examination since awareness and knowledge of screening means could be a key factor in women's predisposition to indulge in breast examination. Similarly in China, Nelson et al. (2009) documented high level of awareness of BSE, CBE and mammography as screening practices for early detection of breast cancer among women and this was attributed to public education by health care personnel and total national involvement. These findings correlated to results among women and university students from Riyadh, Saudi Arabia and Al Madinain the Middle East (Alam, 2006; Jahan, Al-Saigul, & Abdelgadir, 2006; Habib et al., 2010). This higher level of awareness may be due to the virtue of the participants being health profession students or

have been exposed to information on the subject matter. All these findings suggest that awareness and knowledge of BSE, CBE and mammography are important facilitators of practicing breast examination (Secginli, & Nahcivan, 2006). Thus, there is the need for more public education.

Conventional guideline for breast cancer screening stipulates that women at 20 years should start doing BSE (3-4) days every month after menstruation. Women between age 20 and 39 are to have clinical breast examination (CBE) every three (3) years in addition to monthly BSE and at age 40 and above are to undergo mammography every year in addition to yearly CBE and or monthly BSE (ACS, 2012; Smith et al., 2010; Chiarelli et al., 2009). However many studies revealed inadequate awareness of breast examination practices in terms of onset, frequency and procedure. Oluwatosin and Oladepo (2006) found out through survey and focus group discussion among 420 rural women in Nigeria that 64.4% of the participants did not know the proper way to perform breast self-examination. Similarly, in selected rural communities of Nigeria most of the women who have ever heard about BSE do not know the classic BSE technique (Olowokere et al., 2012). These deficiencies were also observed in Malaysia, though the level of awareness breast examination practices was found to be high owing to detailed media information. Most (85%) of the women indicated they were not taught how to perform BSE (Loh, 2011). These findings could be a major health concern in developing communities where BSE seems to be the only easily accessible early detection measure for breast abnormality. Hence it needs to be addressed through intensive community health education.



Results from other studies among both high school and university students were also found to be disappointing. In Turkey among the study population of 718 high school students, 66% of the respondent who have ever heard of BSE did not have knowledge about frequency of BSE, 75.4% did not know about appropriate time for BSE and 65.4% did not know of BSE procedure (Karayurt, et al., 2008). This supported the finding in Ghana by Sarfo et al (2013) where majority of the students (60%) were aware of BSE as a screening method but their knowledge and understanding of its frequency and procedure was very low and only few of them were aware of mammography (19%) and CBE (15%) as breast cancer screening methods. Likewise, among female medical student in Ethiopia, only 26.9% of the study participants knew the appropriate time to do BSE and demanded more information on BSE and breast cancer and wanted to receive more training on BSE (Ameer et al, 2014). This finding is also in line with Habib et al. (2010) in Al Madina Al Munawara Region where 43.3% of the student participants stated BSE is to be done biannually. None of the studies try to find out about both young and older women's' detail knowledge about CBE and Mammography. However, these findings suggested that young women need to become familiar with how their breasts look and feel through monthly BSE. In addition, health behaviors that are formed during younger age can enhance future health and have implications for the entire life course. Thus, there is need to increase knowledge of adolescent females about the risks of breast cancer and benefits of early detection. Health care professionals should develop effective breast health programs in adolescence to help adolescent females acquire good health habits from their youth.

Most researches conducted to assess sources for awareness and knowledge about breast examination and breast examination practices revealed varied issues. Mass media, health care providers and friends were cited as major sources of information on breast examination practices for early detection of breast cancer in the Arab world (Ahmed, 2010; Montazeri et al., 2008; Dandash, & Al-Mohaimeed, 2007). In a study by Ahuja and Chakrabarti (2010), 12% out of 80 participants had received information about breast cancer and screening practices from health professionals while majority (60%) stated sources of information to be family and friends. In Jordan, the picture is same with Suleiman (2014) reporting friends (51.8%). Another study also stated the leading source of information were elders, neighbors and friends while only 14.4% respondents acknowledged health workers as source (Oluwatosin, & Oladepo, 2006).

Other studies on the other hand reported the media to be the leading source of information about breast cancer and screening measures. In Malaysia the televisions, radio (38.2%) and in Al Madina Al Munawara Region of Malaysia, the printed material in journals and newspapers (34.8%) were their main sources of information (Loh, 2011; Habib et al., 2010). These findings are in line with studies among high school students, university nursing students and female medical students in Turkey, Ghana and Ethiopia respectively where the media and formal education are the leading sources of information BSE (Karayurt et al., 2008; Sarfo et al., 2013; Ameer et al., 2014). However, these reports are in contrast with findings from Nepalese women whose major source of such information (43%) was health workers and 25% friends or family members (Bhatt et al, 2011). This is similar to

Olowokere et al. (2012) noting health workers as the leading source of information about breast cancer and BSE among women in Nigeria.

The mention of health worker as the least source of information in most of the studies implies that health professionals may not be forthcoming in providing adequate, appropriate and timely information about breast cancer and breast examination practices to the public. This therefore challenges community health services to provide basic required information about breast cancer and breast examination. Also the findings indicated that the media continued to be one of the most important sources of information about breast cancer and screening practices and it seems to highlight the cooperation between public health educators and the media in dissemination of breast cancer information.

### **Practice of Breast Examination among Women**

The devastation that befalls women with breast cancer worldwide cannot be measured (Olowokere et al., 2012). The global efforts to control breast cancer and to reduce its mortality rate have focused on early detection through periodic breast examination for diagnosing at an early stage (WHO, 2014). Hence the month of October is established as International Breast Cancer Month to increase awareness of the disease and strategies for its early detection and treatment both in developed and developing countries. Thus several studies have been conducted to assess breast examination practices among women for early detection of breast abnormality.

Through cross-sectional survey, Bhatt et al (2011) found that only 10% of a study population of 100 Nepalese women examined their breasts within previous 2years. Only a small percentage of 44 women above 40 years

engaged in breast cancer screening either by clinical breast examination (7%) or mammography (2.3%). The women who did not examine their breasts cited different reasons for not practicing it including lack of knowledge of the breast examination methods(52%), not recommended or refereed to do so (83%), no perceived problem (35%), did not think it necessary (45), because of cost (10%), mere refusal, shyness or difficulty in receiving services. Counseling during medical visits and higher education level were significantly associated with better breast cancer knowledge and screening practice. Though the study design was quantitative only 100 participants of gynaecologic in-patients women at a University Teaching Hospital were sampled but the result was generalised to all the women population in Nepal. In agreement, just 15% out of 122 women visiting the outpatient clinic in a Niger Delta Hospital sampled in a survey ever had a CBE. Similarly, Obaji et al. (2013) identified that the practice of BSE was low among women in South Eastern part of Nigeria and only 0.4% out of those who even performed it did it regularly on the correct frequency. However, the reason for the low of practice BSE by women was not known and was thus suggested for further study. Also, only 9% of 299 women living in a resource poor community in South Africa had CBE (Sule, 2011; Maree, 2013). Nur (2010) also noted relatively low rate of practice of BSE, CBE and mammography among 468 sampled female teachers who work in Sivas, Turkey. The results of most of these studies might not be accurate enough for generalization due to the small sample sizes used but the revelations may be of grave health concern and therefore suggest that increase creation of awareness of these methods, their value, and how they should be conducted is needed. Level of knowledge about

breast cancer risk factors being married and having breast-related complaints were significantly associated to practicing breast examination (BSE, CBE and mammography). Conversely, in a cross sectional survey using 1,063 study participants, Donnelly et al. (2013) indicated that the general level of practice of breast examination among Arabic women was low. It was found that less than one third of Arabic women living in Qatar did not evaluate their breasts due to low level of awareness of breast cancer screening methods though health care services and gender- appropriate health care providers were available. This was supported by Kim et al. (2011) that 36.4% out of 770 women between the ages of 25 to 65 years never performed any of the breast cancer screening practices because they did not deemed it necessary. Same picture is presented in Beijing where only 43% out of 911 women over 35 years of age surveyed participated in any breast cancer screening practice (Zhao, Li, & Wang, 2008). Meanwhile, McCracken et al. (2007) documented that the target rate of adherence to mammography is expected to reach 70% for women within age 40 and above in America. All these revelations are consistent with Chen, Xia, Oakley, Jia and Deng (2007) reporting that most Shanghai women were aware of the benefits of early breast cancer screening, yet the rate of engagement in breast examination practices was very low. All these studies were quantitative and large sample sizes used were ample to render the various results authentic enough for generalization to all the populations in concern. Thus, the findings suggest provision of adequate breast health information at health care centers and at all level of education to increase women involvement in breast examination activities to reduce the devastation that results from breast cancer.

Other studies on the contrary, found that even some Arab women with adequate awareness and knowledge of breast cancer and its screening methods participated less in breast cancer screening; BSE, CBE and mammography (Montazeri et al., 2008; Bener et al., 2009; Alkhasawneh, Akhu-Zaheya, & Suleiman, 2009). These findings were respectively inferred to feeling of embarrassment, lack of referral and reminder by health care providers. The findings implied that knowledge alone may not stimulate women to get engaged in examination of their breasts. Other internal and external factors that can influence breast cancer screening practice need to be identified and addressed to help women. Similarly, despite free breast cancer screening service policy for those who cannot afford the expenses and 80% fee support for mammography in Korea, 37% of the study population have no experience in breast examination practices (Han & Chung, 2006).

Several studies among student also revealed an alarming low rate of BSE practice. Through across-sectional survey, Karayurt et al. (2008) reported that majority of 718 female high school students in Turkey did not perform breast self-examination. Only 6.7% of the students who practiced BSE were performing it monthly and 20.3% of them were performing it irregularly. The most common reason (98.5%) for not practicing the BSE was that they did not know how to perform it. Same situation was recorded in Korea where only 27% out of 2186 female university students engaged in BSE (Shin, Park & Kim, 2012). In contrast, Sarfo et al. (2013) documented that high proportion (76%) of 250 female nursing students at a university college in Ghana performed BSE. However, 20% of them did not know how to perform it correctly. Varied responses were given on number of times and

appropriate time BSE was performed such as every day, monthly, yearly, randomly before menstruation, during menstruation, some days after menstruation any time. Likewise, in Al Madina Al Munawara Region of Saudi Arabia, more than half (57.8%) of 301 female university students population practiced BSE but they did not do it according to classic technique (Habib et al., 2010). Developing breast examination habits in adolescence may be developing proper health habits in youthful age that could lead to maintenance of good health in adulthood as these habits can have profound and long-term ramifications on health.

Al-Azmy et al. (2013) through cross-sectional survey to determine the practice of BSE among 520 women attending primary health care centers in Kuwait found that only 21% of women attending PHC had ever practiced BSE. Although the BSE practicing women had sufficient level of knowledge about BSE only 35% of them followed the correct steps of the procedure. Similarly, in Malaysian, only 17% of Out of 66 women with breast cancer had ever performed BSE on regular bases as most of the women (85%) reported they were never taught about BSE (Loh, 2011). Same picture is reported at Nigeria where just 6.4% out of 420 rural women claimed to have examined their breasts by themselves to lack of awareness and knowledge of breast cancer and its early detection measures (Oluwatosin, & Oladepo, 2006). Likewise, Olowokere et al., (2012) reported that majority (72.8%) of 180 women randomly selected from rural community in Nigeria did not practice BSE which is most readily available breast cancer screening method due to inadequate awareness and knowledge about it. In consistent, Bi, Atashili, Fuh and Eta (2012) established that less than quarter of 120 of Cameroon women

from a semi urban area in Cameroon performed BSE as a result of less awareness and knowledge of it.

Additionally, other studies in Nigeria, India and Ghana established that owing to insufficient knowledge in risk factors, symptoms and basic techniques in detection measures, women in developing countries including Ghana did not practice BSE (Aderunmu et al., 2006; Akhigbe, & Omuenu 2009; Ahuja, & Chakrabarti, 2010; Mena et al 2013). Also in a study among 100 female secondary school teacher in a rural community in Nigeria, it was reported that majority (62%) of them did not perform BSE and even those who practiced it did it wrongly because they did not know what to look for (Faronbi, & Abolade, 2012). This study demonstrated that there is a gap in the knowledge and the practice of BSE. Teachers may constitute a group of professionals who could have regular contact not only with their students in schools but with the community members who may look at them as change agents and role models. Therefore if teachers are to fulfill their role as educators in their various communities, this knowledge gap needs to be filled to ensure that teachers are educated on health promotion activities such as BSE. More so, it was noticed in Nigeria that a lot of nurses who had knowledge on BSE and are supposed to teach BSE and promote its practice among women did not practice it as a result of poor attitude towards BSE. (Agboola et al., 2009).

On the contrary, Linsell et al. (2008) found that as result of awareness of breast cancer screening activities, majority (65.9%) of 712 British women practiced BSE even though at incorrect time (weekly and binary). This affirmed other findings in Nigeria that most women (45%, 54%) practiced



BSE and monthly or more frequently (Okobia et al., 2006; Sule, 2011). All the studies established that practice of BSE was significantly associated to knowledge about breast cancer screening program (Al- Azmy et al., 2013; Loh, 2011; Oluwatosin, & Oladepo, 2006; Bi et al., 2012; Mena et al 2013; Ahuja, & Chakrabarti, 2010; Akhigbe, & Omuenu, 2009; Aderunmu et al., 2006; Linsell et al., 2008). All these studies on the practice of breast examination were surveys where most of the authors used large sample sizes to establish accurate representative of the various study population of interest. Therefore, the general finding of poor participation in breast examination activities among the women is indicative of serious women health issue which needs to be addressed. This suggests that education programmes on breast health needs to emphasis on teaching about breast cancer, screening methods and strategies that would encourage women to religiously examine their breasts.

### **Factors that Influence Practice of Breast Examination**

Globally, breast cancer incidence is on the rise especially in developing countries (GLOBOCAN, 2008; WHO, 2009; Matatiele, & Heever, 2008; Jedy-Agba et al., 2012). In Ghana a high incidence of new breast cancer cases are estimated annually and women who have died from it as a result of reporting late to the hospital at the latest stages of the disease (Clegg–Lampsey et al., 2009).

WHO (2007) proposed that health promotion should provide curricula to empower women with competency in taking reproductive health actions including breast screening for early detection of breast cancer. However, many factors may affect breast screening among women. Therefore in order to more

effectively promote breast preventive medical care programmes, it is important to identify the key determinants of women's behavior regarding their decisions to examine their breasts for early detection of breast cancer. Several factors that may influence engagement of women in breast cancer screening activities could be knowledge of breast cancer and screening methods, health service characteristics, socio-economics, socio cultural and demographic, psychosocial and medial factors.

### **Knowledge factor**

Knowledge of breast cancer and benefits of breast examination practices is reportedly low in Africa and Arab countries (Oluwatosin, & Oladebo, 2006; Habib, et al. 2010; Olowokere et al., 2012; Ahmed, 2010). However, Montazeri et al. (2008) in Iran documented that providing more information about breast cancer and the benefits of screening for the disease is an important first step to encourage women to examine their breast. It was also noted that knowledge of the benefits of breast cancer screening is an important determinant of breast examination behavior among Arab women in Israel (Soskoline, Marie, & Manor, 2007). David and Rassaby, (2008) documented that breast health promotion provide knowledge that help women to take preventive actions to prevent breast cancer or if it has occurred to find it and treat it as early as possible. Thus, knowledgeable public carries out breast self-examination and talks to medical specialists about issues of breast screening.

Another study showed that teaching in social settings has also been shown to improve knowledge about breast cancer and screening involvement (Sarah, Anna, Lind-Say, Vicky, & Verna 2009). DePerez and DeRorero

(2007) also pointed decentralization of health promotion through personalised breast action plans in Cuba to achieved tremendous lifestyle changes, especially through face to face education. This keeps the public informed and creates opportunities for distribution and social exchange of breast health knowledge and engagement in breast examination practices. In Kenya, Breast Health Programme (BHP) educates women to care for their breasts through regular self-examination and organises workshops for exchange of information with the public (Neondo, 2006). Educational approaches such as; repetition, reinforcement and hands on learning have been demonstrated at health care facilities not only to increase mastery of BSE but also to generally increase engagement in breast cancer screening practices (Meissner, Breen, & Tubman, 2007). Similarly, Randolph and Viswanathan (2008) argued that breast health education is a vital step towards discussions about breasts, promoting breast cancer awareness and countering misconceptions about breast cancer screening so that women can actively patronize breast examination services. In consistent, Nevin, and Sakinelmemis (2007) demonstrated that BSE accuracy of the women increased after breast health education. Besides, their attitude towards and engagement in BSE improved. Hence the suggestions that the main factors that influenced women not perform BSE were lack of knowledge and motivation prior to education. Thus educational programs to provide complete knowledge on the disease and its early detection methods that aim to change behavior may be an effective approach to increase screening practices.

### **Health facility factor**

A literature review of breast cancer screening practices from Arab world indicated that professional recommendation through referral and

reminders motivated women to practice breast cancer screening and increased attendance in breast cancer screening clinics (Donnelly et al., 2013). This is similar to Lamyian, Hydamia, Ahamadi and Faghizadeli (2007); Soskoline et al. (2007) reporting that Arab women are more likely to take part in breast examination activities when they have been recommended to them to do so by health care providers. However, there seemed to be lack of proactive health care involvement. For instance, only 33% out of 80% of women who were willing to have CBE were offered and in Yemen, majority (74%) of female doctors did not refer women for mammographic examination stating that they would only refer them on the women's own request (Al-Naggar, Isa, Shah, Chen, & Kadir 2009; Bener, Ayub, Kakil, & Ibrahim, 2007). Another study also indicated lack of female physicians in health care facilities as variable barrier to breast cancer screening because women feel shy, deeply embarrassing and uncomfortable when male doctors examined their breast (Amin, Mulhim, & Al Meqihwi, 2009). Thus education and training of health care providers on breast health programmes would help them to be more sensitive to the needs of their clients.

Meissner et al. (2007), Cohen, Kessler and Gordon (2010) reported that intervention of a nurse through counseling is more likely than any factor to act as a motivator for breast screening and have a positive effect on patient compliance with breast screening. This finding is in contrast to the situation in some Arab countries and other developing countries like Ghana where nurses, health care workers and student nurses were found not to have sufficient knowledge of breast cancer risk factors and screening methods (Alkhasawneh et al., 2007; Jaradeen, 2010; Sarfo et al., 2013). This

knowledge deficiency on the part of the health workers may discourage the public's engagement in screen activities.

Other studies also cited failure of knowledgeable of health care providers to perform CBE for majority of their patients and only 5.1% recommended CBE to their clients (Sreedharan, 2010). In Kenya, many health care facilities do not have breast health protocols relating to detection of lumps in the breast and neither do they have mammogram facilities (Musimbi, 2008). These findings could be the situation at Ho, Ghana. There is therefore the need to find out whether the uptake of clinical breast examination and mammography at Ho, Ghana maybe associated to hospital factors as it is with other developing countries for purposes of improvement.

#### **Socio cultural and demographic factor**

Little documentation is found about the influence of culture and beliefs about breast cancer and its implications on preventive health behavior. However, cultural myths in Africa are the greatest impediment to breast cancer screening and many women are afraid to discuss the disease openly (WHO, 2006). Similarly, Gulshan et al. (2007); Mena et al. (2013) also established that perceptions of cancer and health behavior are influenced by cultural beliefs as such common themes among Asian women in London and Ashanti rural women in Ghana that cancer being a taboo subject, a stigma, evil spirit and caused by enemies denoted misunderstandings about the causation of breast cancer. In South East England, cultural beliefs and practices accentuate difficulties in understanding of breast cancer and screening (Moller, 2008). Sarah and Ann (2007) noted cultural attitudes about breast screening and perceived personal importance of breast screening as the

strongest predictors of attendance and non-attendance of breast cancer screening services. The revelations from all these studies thus made Baron et al. (2008) to suggest that cancer control strategies targeting women must include messages that are consistent with their beliefs, attitudes and experiences.

Lower educational level among women was found to be a vital variable associated with low breast examination practice among perimenopausal women in Hong Kong (Chan, Lam, Chan, Lau, & Chan, 2008). Age was also found as a significant predictor of screening mammogram in about 57% of the studies carried out among Latin American women in the USA (Weller, Patrick, McIntosh, & Dietrich, 2009). However, in Korea, Lee, Hyung, and Sang (2010) found a negative correlation between breast screening participation and the age of women. It may therefore be very informative to investigate the role of demographic characteristics on breast screening in developing country for comparison with the status in countries like Ghana.

### **Socio-economic factor**

Several studies demonstrated that engagement in breast cancer screening activities may be affected by socio – economic factors that include; income status and economic deprivation (Bouchardy, Verkooijen, & Fioretta, 2006; Alice, Diane, Jasmine, & Stephen, 2008). Socio– economic status has been shown to be a powerful driver to move women to go in for examination of their breast (Moser, Patrick, & Beral, 2009). WHO (2006) reported that the high cost of clinical breast examination and mammography especially in developing countries is a big hindrance to the utilisation of such services by

women. Cost and lack of health insurance were found to be barriers to breast examination practices in the U.S, Israel, Jordan, Iran, Turkey and other parts of the world contrary to Saudi Arabia and Qatar where mammography is either free or covered by insurance but most women did not patronise it (Amin et al., 2009; Bener et al., 2009; Lamyian et al., 2007; Azaiza, Cohen, Awad, & Daoud, 2010). This finding agreed with Bulaporn and Clark (2008) that the cost of screening and the distance to screening facilities play a major role in determining the utilization of screening services for early detection of breast cancer among Thai women. Thus the general cost of expenses may influence breast examination services especially, CBE and mammography.

In another study, Schueler, Chu, Smith and Bindman (2008) found a negative relationship between rurality and patronage of mammographic service. However, a review by Guessous, Dash, Lapin, Doroshenk and Smith (2010) found only 30% (3 out of 10) of the studies that rural residence was a significant barrier to the use of colorectal cancer screening. Transportation problems such as large distances between women's residence and health facilities and the absence of mass transit systems were pointed out to be barriers to regular breast examination in rural areas (Ackerson, Grete – beck, 2007).

Similarly, Maheswarab, Pearson and Jordan (2006) noted that usage of breast cancer screening services decreased significantly with an increase in travel distance to screening facility in the UK. Again, in a study of the association between breast cancer screening and socio-economic deprivation, travel distance, urban-rural status, location and type of screening unit, the strongest association was with socio- economic deprivation which

significantly lowered patronage from deprived areas. All these findings supported Cuthbertson, Goyder and Poole (2009) recording that socio-economically deprived populations seem to have later stage presentation in breast cancer in London. This may be the situation in Ghana as well since there seems to be very little researches done in Africa to establish the influence of socio-economic deprivation and income status on clinical breast examination and mammography by women.

### **Psychosocial factor**

The role of psychosocial variables in breast screening decisions among women in Africa has not been much look at in current researches. However, in other continents some of the variables were studied. In Iran, the fear of finding something wrong and the feeling that it is better not to know were barriers to breast cancer screening among Iranian women ( Lamyian et al., 2007; Cohen, & Azaiza, 2008; Ahmed, 2010). Similarly, Hay, McCaul, & Magnan (2006) reported a positive relationship between breast cancer worry and the screening behavior of women. In contrast, fear of breast cancer motivated Arab women to perform BSE occasionally excessively (Cohen, & Azaiza 2005; Azaiza, & Cohen, 2008).

Among sian American women, shyness, embarrassment and feelings of discomfort if mammography is conducted by a male or a strange health professional have been cited as barriers that prevent women to go for examination of the breast (Tzu-Yin, Hsing-Fang, & Brady, 2008). This finding is in agreement with Bener, Ayub, Kakil and Ibrahim (2007); Cohen and Azaiza (2005); Donnelly et al. (2013) respectively who reported that shyness was a hindrances to practice of CBC, mammography and BSE among



Jewish and Arab women in Israel respectively because breast cancer is deemed something shameful and should remain a secret.

Magai, Consedine, Neugut and Hershman (2007) also found that greater embarrassment predicted poorer screening when other variables were controlled (i.e. age, socioeconomic status, physician recommendation and anxiety) and that women with high embarrassment scores were 29% less likely to screen. The concern about the pain and discomfort associated with preventive procedures has also been cited as a deterrent for mammography usage in Latinas (Schueler et al., 2008). Aygul and Ayse (2011) observed that among elderly Turkish women neglect and postponement due to lack of physical signs and feeling of wellbeing were barriers in breast screening. Lamyian et al (2007); Cam and Gvmvs (2009) also supported neglect and forgetfulness as a significant barrier for breast examination. Other studies also recorded that lack of confident in performing self-screening and perceived ineffectiveness of breast cancer screening can discourage women from the practice (Lamyian et al., 2007; Soskolne et al., 2007; Baron-Epel, 2010).

### **Media factor**

Many studies have cited the mass media as the most leading source of information about breast cancer and breast examination practices for early detection of the disease (Loh, 2011; Habib et al., 2010; Karayurt et al 2008; Ameer et al, 2014). Advertisement and campaigns for breast screening have been demonstrated to increase breast cancer screening usage in the areas covered by the advertising campaign by 2-13% (Cohen, 2010). In Kenya, health promotion talks are given regularly on breast cancer screening by medical professionals through the media outlets but not every region of the

country receives the broadcasts (Musimbi, 2008). More so, such advertisements in Kenya and mass media campaigns have been less vigorous except during the breast cancer month of October but the awareness is majorly raised in urban centers and very little effort has been made to reach rural women whose breast health characteristics are unique.

Similarly, in Ghana, breast cancer related NGOs, cooperatives and individuals and other partners intensified education on breast cancer and breast examination for early detection and prompt treatment of the disease through the print and electronic media every October to November (Mena et al, 2013; UT Bank, 2013). Whether women at deprived areas are benefiting or not may be yet to be established. All these findings imply that the media may greatly affect engagement of women in breast cancer examination activities. Besides, it seems very little evaluation has ever been done to investigate the impact of mass media and advertisement on breast cancer screening in developing countries including Ghana. Hence Kim, Menon, Wang and Szalacha (2009) stated that since mass media campaigns keep the topic of breast screening in the public eye, educational interventions specifically designed to improve screening among women must be included media messages to discuss the need for screening and dispel misconceptions about cancer and screening.

### **Theoretical Model**

Health Belief Model (HBM) by Hochbaum, Leventhal, Kegeles and Rosenstock in the 1950s has been used in several studies as a theoretical framework to study BSE and other breast cancer detection methods. The model states that health-related behavior is influenced by a person's perception

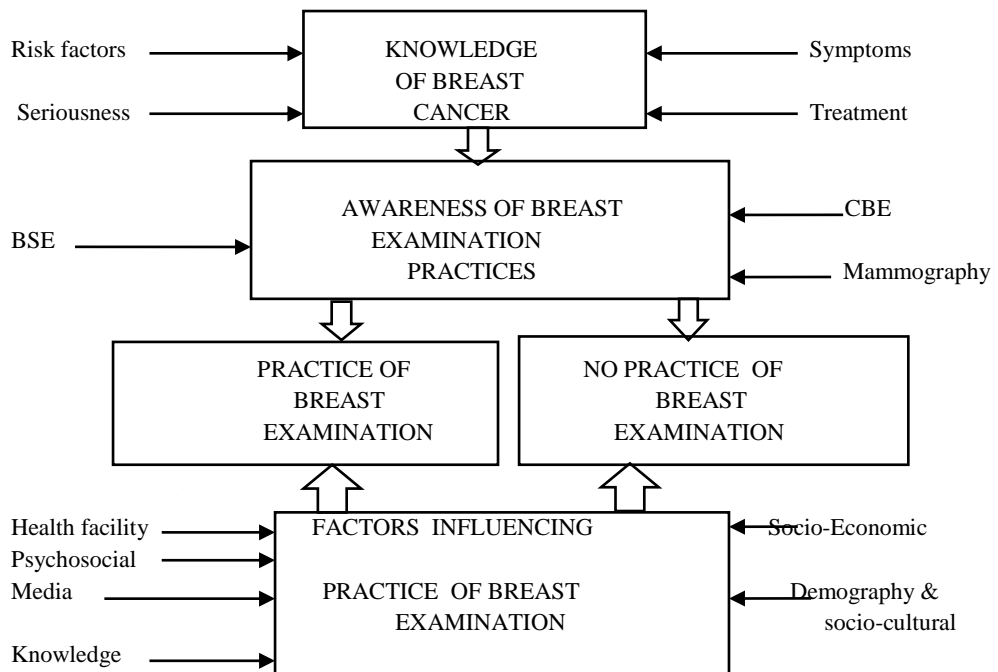
of the threat posed by a health problem and by the value associated with his or her action to reduce that threat (Becker, 1978).

The model suggests that changes in preventive health behaviour are originally based on perceived personal vulnerability to a health condition, perceived seriousness of the condition, perceived benefits of an action, perceived barriers related to an action (Rosenstock, 1966). Rosenstock, Strecher and Becker (1988) also identified the following additional concepts of the model: Health motivation (beliefs and behaviors) related to the state of general concern about health; confidence (belief that one can successfully execute a behavior) that will lead to a desirable outcome needed to trigger protective behavior; and the cues to action could be internal (perception of a body state) or external (the influence of mass media, along with demographic and structural variables) may trigger an individual's perception of susceptibility and seriousness of a disease and in turn may influence his or her behavior with regard to the desired practice. Thus women who believe that they are susceptible to breast cancer and that breast cancer is a serious condition that can result in death are more likely to engage in regular breast examination to help in its early detection. Similarly, women who perceive more benefits and fewer barriers from examining their breast are more likely to use breast cancer screening behaviors. Also, women who have been exposed to internal or external cues (body perception or the positive influence of a health care provider or the media) would also opt for BSE, CBE or mammography. In the same line, women who have health motivation (beliefs and behaviors) related to the state of general concern about health; are more

confident in their ability to detect abnormalities such as lump; more motivated to promote their health are more likely to perform BSE (Champion, 1993).

**Conceptual Framework**

Figure 1 below shows the possible relationships and interactions that exist between sociocultural characteristics of a woman and decision to take possible health actions (breast examination for early detection of abnormalities). This implies that if women know about pertinent issues and awareness of BSE, CBE and mammography, they may be influenced to either practice breast examination. Additionally, factors such as socio-economic and psychological variables including motivation from health care professionals and media may change women’s breast health behaviour for engagement in regular breast examination for early detection of breast abnormality.



**Figure 1:** Conceptual framework of breast examination practices of women. Developed from HBM concept (Rosenstock et al., 1988; Champion, 1993; Rosenstock 1966; Becker, 1978).

## Summary

Breast examination practices as a discrete form of breast cancer screening methods denote the healthy habit that helps improve women breast health. They are described to entails knowledge and skills that enable women to detect signs and symptoms of breast abnormalities at early stages for prompt treatment to prevent complications and death. Compliance to regular examination of breasts depends on multifaceted things that include knowledge of breast cancer: - its vulnerability, risk factors, presentation, diagnostic measures and treatment; awareness of breast examination methods and factors that positively or negatively affect the practice of breast examination by women.

Several cross-sectional survey studies have demonstrated the effect of inadequate awareness, knowledge and a lot of controllable factors on the utilization of breast cancer screening methods. Meanwhile many findings have put forward that the practice of evaluation of breast is a key determinant of reducing breast cancer mortality rate among women. Thus if breast cancer awareness among the general public is limited then people may be ill-equipped to make informed decisions about their health which may consequently lead to delayed presentation and poorer survival rate. There is therefore the call for pragmatic initiatives and programmes that aim to raise risk factors and symptom awareness to practice BSE, CBE and mammography to promote early presentation for appropriate treatment to improve women's health status at Ho and Ghana as a whole.

## **CHAPTER THREE**

### **METHODOLOGY**

This chapter focused on the research design, the population for the study, sample and sampling procedure, instrument for data collection. It also includes data collection procedure as well as data analysis plan.

#### **Research Design**

Descriptive survey was used. The descriptive method is useful for investigating a variety of health problems especially those concerned with assessment of awareness, practices and resources (Bowling, 2009). Again, with this design, large number of participants can be surveyed and standardised data can easily be collected to investigate prevalence of health problem. This study assessed health behaviour practice of examination of breast by women and factors that influenced it. More so, a large sampled size of 1,259 respondents was surveyed. Therefore, the design was appropriate for the study.

#### **Study Area**

Ho lies between Mountain Adaklu and Mountain Galenukui in the Volta Region of Ghana. It has five main traditional and political divisions (Ahoe, Bankoe, Dome, Heve, and Hliha) with averagely eight localities under each main division where women live (Asogli State Council, 2011). The total population of the study's age group of women in the town is 15, 375 (Ghana Statistical Service, 2014). Also, the household set up in Ho township is mostly

compound houses with few residential settings (flats and estates quarters) and squatters. Household composition is mixture of extended family and nuclear family with few women as household heads. Some of the women are married, in consensual relation, separated, widowed, living together, divorced and most of them never married. In addition, majority of the age group of women have not schooled beyond Senior Junior Secondary School (JSS)/Junior High Secondary (JHS). Hence most of the women are into petty trading, dressmaking, food selling, hair dressing, subsistence farming and catering business. More so, the town has a number of guest houses and hotels which employed some of the women as waitress, cooks and stewards as either casual workers or permanent employees. Few of the women are also still in school as Ho is endowed with a number of educational institutions ranging from secondary to tertiary such as universities, health professional training colleges and polytechnic. Thus, there is a kind of multi- socio-culture in the town as people come from all over the country to spend averagely three to four years to school. Also, some are into craft apprenticeship and little percentage of them are either government paid workers as bankers, educationists, health care providers and administrative officers or formal private sector employees. Few are also economically not active. The language spoken is mainly Ewe and English (Ghana Statistical Service, 2014). Also, there are five radio stations; one government and four private owned stations for broadcasting news in the town. There are seven healthcare facilities; namely, a regional hospital, one municipal hospital, one poly clinic which is also a specialised leprosy care center, and four private hospitals where women receive both general medical and obstetric & gynecological care (District Health directorate, 2015). Also,

there are number of reproductive health and child welfare outreach centres and some herbal and traditional clinics in the town.

### **Population**

The study population was all women aged 20 to 49 years who live in the Ho township. This age range of women was chosen because it is the recommended age group for breast examination practices for early detection of breast abnormality (ACA, 2012; WHO, 2014). Also this group of women is still within the reproductive age and in the active working group with variety of life styles. They are still menstruating (under the influence of oestrogen) and may be more exposed to other risk factors for developing breast cancer such as exposure to radiation, use of oral contraceptive pills and hereditary. They may also never breast fed or may have first baby after 30 years. They may be overweight and or not doing exercise/ physical activity.

### **Sampling Procedure**

Initial sample size proposed was 375 determined by table of Sample Size specification per population at  $p = 0.5$ ,  $CI = 95\%$  (Ogah, 2013). However, a sample size of 1,500 women from the five divisional areas at Ho which represented approximately 10% of the targeted population of 15, 375 women of the study's age range (age 20-49) was used for the study with 84% (1,259) return rate. This large sample size was used to ensure generalisation to an entire population and to cover up for any unreturned and incomplete questionnaire in a cross descriptive survey as recommended by (Bowling, 2009). Multi-stage sampling was employed to select the participants. First, all the five divisions in the town was used as clusters and the localities in each cluster was listed. Simple random sampling technique was used to select five



localities under each cluster. This was done by randomly picking the five names of localities from a box of each cluster. To have a good representation of the women, quota sampling was used to select a total of 60 women from each selected locality. Every household under the selected localities was included in the survey and accidental sampling technique was employed to identify the individual participants till the total sample size was obtained because of the age range of the population (women age 20-49). Also, only women who were permanent residents of the households were eligible. This ensured they were the women in Ho. This technique helped to save time and reduce cost of collecting the data as implied by (Cresswell, 2009).

Table 1 shows the educational background of the respondents. From the study, it is revealed that high percentage of the respondents had formal education as only 8.3% (n = 105) had no education. More so, more of the respondents, 28% (n = 357) had Senior High School education than the other formal levels of education.

**Table 1: Educational level of respondents**

Education	Frequency	Percentage
None	105	8.3
Primary	149	11.8
Junior high	301	23.9
Senior high	357	28.4
Tertiary	347	27.6
Total	1,259	100.0

Table 2 indicates marital status of the women. As illustrated, 43% (n = 547) of the respondents were single. The rest of the sampled women were in various form of relationships and as much as 41% (n = 511) of them were married.

**Table 2: Marital status of respondents**

Marital status	Frequency	Percentage
Single	547	43.4
Married	511	40.6
Cohabiting	119	9.5
Widow	49	3.9
Divorced	33	2.6
Total	1259	100.0

Table 3 depicts the occupation of the respondents. As showed in the table, it was noted that majority of the respondents were workers in both the private and the public sector. For example, though 26% (n = 330) of the respondents were students, the predominant occupations of the sampled women were trading, private sector job and government work. The largest proportion 27% (n=340) of the respondents were traders and the least proportion of the women, 2.9% (n=36) were doing other income generating jobs.

**Table 3: Occupations of respondents**

Occupation	Frequency	Percentage
Students	330	26.2
Private Job	176	14.0
Business woman/trader	340	27.0
House wife	149	11.8
Government worker	163	12.9
Farmer	65	5.2
Other	36	2.9
Total	1259	100.0

### Data Collection Instrument

A researcher generated-instrument, Adjimah Breast Examination Practices Instrument (ABEPI) was used to collect the data. The instrument was

validated by professional nurses at clinical sites and the study's supervisor with pre-test alpha coefficient reliability of 0.76. Each item on the questionnaire was directed in solving the research questions and it was guided by related literature and conceptual frame of the Health Belief Model. The instrument had 38 closed-ended items divided into two main parts (A-B). The respondents selected their choice by ticking in the appropriate boxes from responses given.

Part A constituted three items (1-3) on participants' characteristics. This included educational level, occupation and marital status. Part B consists of 35 items on the four research questions. Part B addressed the issues of the four research questions. Nine items (4-12) were on knowledge level of breast cancer (KLBC) covers definition of breast cancer, predisposing factors, signs/symptoms and cure with Yes/No, 'I don't know' and multiple choice responses.

Ten items (13-22) elicited information on awareness of breast examination practices (ABEPS). In this case, the existence of awareness of various methods of breast examination (BSE, CBE and mammography) were sought. The need to examine the breast, appropriate age to start each one of the various methods of breast examination and frequency for performing them were also included. The responses were multiple choices including 'I don't know'.

Information on practice of breast examination (BSE, BCE and Mammography) of women comprised eight items (23-30). This included the practice of breast examination; reasons for not engaging in breast examination; type/s of breast examination being practiced; frequency and appropriation of

performing the examination; and most recent time of assessment. This was also on multiple choice measurements including 'I cannot tell'. Eight items (31-38) assessed factors that would influence women to examine their breasts (FBEP). This included breast health education, media (electronic and print), role of health care givers, socio-economic, and psychological factors on Yes/No, multiple appropriate choices and 'I am not sure' responses (Yes = 1, appropriate choice = 1 and No/'I am not sure' = 0).

### **Validity**

Content and face validity of the instrument was assessed by M.Phil. Colleagues at the Department of Health, Physical Education & Recreation, teaching assistants at the department and nurses for grammatical correction, technical inputs and rearrangement. The instrument with the research questions was finally given to the project supervisor for his correction and approval. To test the effectiveness of the instruments for the study, a pre-test of the instrument was carried out using 60 women at Goil down at Bankoe. This area was chosen because it is one of the localities under one of the main traditional and political divisions at Ho where the women speak common language as with other areas in the town. This was to pre-test the instrument to detect errors and also to reduce ambiguity.

### **Reliability**

The instrument was pre-tested at Goil Down, Bankoe on 60 women. The internal consistency was calculated to ascertain the homogeneity of the instrument. The calculation of the interval consistency was done using Cronbach's alpha. The statistic yielded a reliability coefficient of 0.76. This showed that the instrument is reliable. The data from the final instrument was

similarly analysed and it yielded alpha value of 0.80. All these coefficient values are accepted by Fraenkel and Wallen (2000).

### **Data Collection Procedure**

An introductory letter was obtained from Department of Health, Physical Education & Recreation of University of Cape Coast to Institutional Review Board (IRB) of University of Cape Coast for permission to collect the data. The participants' consent was sought and confidentiality assured. A copy of the official permissions letters and consent form would be found in the appendix B.

Ten final year nurses' trainees were selected for a-day workshop to assist in the administration of the questionnaire. The questionnaire was self-administered by the researcher and research assistants and those who could not read were interviewed using the questionnaire. Non-market days were selected for the data collection to allow maximum participation of women. Eight weeks was used to collect the data and three days was allotted for a sampled locality with two trained assistants. Ten minutes was averagely spent by each participant on a questionnaire and 15minutes was used for the interviews using the questionnaire. Data was sorted out at the end of each day to check for incomplete and unreturned questionnaire. Most of the responses were collected on the same day and at the same time. Some were collected on followed up and some, several attempt to retrieve them failed due to misplacement. Hence the 84% (1, 259) returned rate being the final sample size for the study.

## Data Processing and Analysis

The data was processed and analysed. The processing involved serially numbering all the completed copies of the questionnaires and coding of the responses. Statistical Package for the Social Sciences (SPSS) software Version 20.0 was employed to run the data and screened by examining frequency distributions for the data in order to identify any inconsistencies and/or errors in data entry. Analysis of the output from the SPSS was carried out per research question using the same statistical software – SPSS Version 20.0.

The three items on the biographic data which included educational level, occupation and marital status were measured on nominal scale. All responses were coded and the analysis was in the form of frequency, percentages and tables with regards to each item response.

Research question one on level of knowledge on breast cancer which had nine items with Yes/No, 'I don't know' and multiple choice responses was analysed using descriptive statistics to determine the actual picture of level of knowledge on breast cancer among the women. The responses were scored as follow; Yes = 1, No/'I don't know' = 0, Correct choice = 1, Incorrect choice = 0. The overall score ranged from zero to nine. The total number of questions each respondent obtained correct from the nine items was determined, generated into score ranges and summarised into a binary outcome for low and high of knowledge on breast cancer. The score ranges were as follow; Score of 0-4 represented low level of knowledge and Score of 5-9 represented high level of knowledge.

Research question two which examined the level of awareness of breast examination practices had 10 items. The responses were multiple choice and 'I don't know'. This was also analysed using frequency distribution and percentages to determine the prevalence level of awareness of the breast examination practices. The responses were scored as follow: Correct choice = 1, Incorrect choice = 0 and 'I don't know' = 0. The overall score was over 10. The total number of questions each respondent obtained correct from the 10 items was determined, generated into score ranges and summarised into a binary outcome for low and high awareness of breast examination practices. The score ranges were as follow; Score of 0-4 represented low level of awareness and Score of 5-10 represented high level of awareness.

Research question three had eight items to evaluate the extent to which women at Ho have been engaging in breast examination practices. Responses were multiple choice and 'I cannot tell'. This was also analysed using frequency distributions and percentages to determine the prevalence of the practice of BSE, CBE and mammography, appropriate frequency and onset of their practice among women in the town. The responses were scored as follow: Appropriate response (Yes) =1, inappropriate responses (No) = 0, 'I have never done it' = 0, none and 'I cannot tell' = 0. Practices scores were generated over 10. The total number of questions each participant obtained correct from 10 appropriate responses was determined with SPSS generated into score ranges and graded into a binary outcome for low and high of practice of breast examination practices. The score ranges were as follow; Score of 0-4 represented low level of practice and Score of 5-10 represented high practice.

With research question four which assessed factors that would influence practice of breast examination, a binary logistic regression (McDonald 2014; Field, 2009) was used to determine the predicting factors (X) that exert significant influence on practice of breast examination (Y) at Ho. The binary logistic regression was expressed as

$$\ln Odds = \ln \left( \frac{\bar{Y}}{1-\bar{Y}} \right) = \alpha + \beta X + \epsilon,$$

where  $\bar{Y}$  was the predicted probability that the event of breast cancer examination practice will occur among women in Ho rather than not ( $1-\bar{Y}$ ) and this was calculated using SPSS Version 20. To satisfy the assumption for logistic regression, the outcome of research question three (practice) was regrouped into binary dependent variable ( $Y = 0$  or  $1$ ), where 0 represented low practice of breast examination (<50%) and 1 represents high practice of breast cancer examination ( $\Rightarrow$ 50%). On other hand, the predictor variables (independent variables (IV) remain unchanged (McDonald, 2014). The knowledge and awareness factors from research question one and two, the demographic factors and the nine factors from research question four were the explanatory variables. Hierarchical model was used to run the correlations among the variables. Thus logistic regression became the appropriate analytical tool to provide the strongest predictors that would influence women to practice examination of their breasts breast.

The reported statistics were the Wald (z), the beta ( $\beta$ ), odds ratio (OR), alpha coefficient at .05 (p-value < .05) and confidence interval (C.I.).

The Wald statistic tested the extent to which a predictor variable relates to the criterion. The higher the z, the more significant the IV to



predicting the DV. The  $\beta$  reported the absolute contribution of a predictor to the variance or change in the criterion variable. The higher the  $\beta$ , the more the odds of the predictor determining the group to which a member falls. The odds was the probability of change in the dependent variable with respect to a unit change in the independent variable. Taking the natural log of the equation above gives the odds (or probability) of breast examination prediction equation below.

$$\text{Odds} = e^{\alpha + \beta X}$$

The odds ratio was derived from the expectation of  $\beta$ ,  $\text{Exp}(\beta)$ , which can be computed by raising the base of the natural log to  $\beta^{\text{th}}$  power, where  $\beta$  is the slope or coefficient of the logistic regression. Moreover, the OR assessed the relative strength of predictors detecting the extent of low or high breast examination practices among the women. The OR of 1 indicated that predictor did not influence the membership of low or high breast examination practices. On other hand, OR of less than or greater than 1 revealed that the predictor was associated with the lower or higher odds of low or high breast examination practices among the women (Szumilas, 2010). Thus  $\text{OR} < 1$  of categorical predictor variable indicated low likelihood of practice of BSE, CBE and mammography and  $\text{OR} > 1$  shows high likelihood of practice of the breast examination practices among women at  $H_0$ . The p-value indicated the significant level of the Wald statistic and its corresponding  $\beta$ . The P-value also indicated the strength of the predictors. All significant levels were evaluated at  $p < .05$  at 95% CI.

## CHAPTER FOUR

### RESULTS AND DISCUSSION

The purpose of the study was to determine whether women at Ho have been engaging in breast examination practices for early detection of breast abnormality and also to find out factors that would influence women at Ho to examine their breasts. This chapter focused on the presentation of the results and discussion of the findings and is presented under each research question.

#### **Research Question 1: What is the Level of Knowledge of Breast Cancer among Women at Ho?**

Series of questions with “correct”, “incorrect”, "yes", "no", or "don't know" responses were designed to elicit participant's knowledge level in nine key areas of breast cancer. The data in Table 4 indicate the level of knowledge on the disease among the sampled women at Ho. The result of the study portrayed that the level of knowledge of breast cancer is low among the women. More than half, about 57% (n = 715) of the respondents had low knowledge on the disease.

**Table 4: Level of Knowledge on Breast Cancer among Women at Ho**

Level	Frequency	Percentage
High	544	43.2
Lo w	715	56.8
Total	1,259	100

This finding might partly explain the late presentation of the disease seen in most women with breast cancer at Ho (Hospital Cancer Registry, 2013). This result may probably imply that information on the disease might

not be forthcoming though Ho town has several health care facilities with corresponding health professionals and media stations (District Health Directorate, 2015; Ghana Statistical Service, 2014).

Also, traders and students form the larger proportion of women population in Ho (Ghana Statistical Service, 2014). Hence, they might have more pressing psychological pre-occupation and might not be interested in acquiring information on breast cancer from any source. The result of this study affirmed one in Nigeria where the level of knowledge on the disease was low but was inferred to be due to low educational level of the participants (Okobia et al., 2006). In contrast, average level of knowledge on breast cancer was revealed among sampled women in Iran (Montazeri et al., 2008); Nepal (Bhatt et al., 2011); India (Ahuja & Chakrabarti, 2010). This finding was respectively attributed to the influence of family and friends, radio, television and regular visit to family physician or gynaecologist.

Table 5 exhibits the responses on nine key items that assessed the knowledge of participants on breast cancer. Yes/correct responses were scored 1 and No/'I don't know'/incorrect responses scored 0. Frequency was run for the 1 and 0 scores and graded as correct and incorrect respectively. These showed evidence of wide range of knowledge deficiency and misconceptions relating to most of the issues on knowledge of the disease among the women. As much as 61% (n = 769) of the respondents did not know that breast cancer is a disease that affects mostly the breast of women. This confirmed the assertion made by Bhatt et al. (2011) that most women did not know that breast cancer is a major health problem.

**Table 5: Knowledge on Breast Cancer among Women at Ho**

Items	Correct Freq(%)	Incorrect Freq (%)
Definition of Breast Cancer	490 (38.9)	769 (61.0)
Seriousness of Breast Cancer	839 (66.6)	420 (33.3)
Risk factors for developing Breast Cancer	581 (46.1)	678 (53.8)
How to detect Breast Cancer at early stage	500 (39.7)	759 (60.3)
Signs and symptoms of Breast Cancer	621 (49.3)	638 (50.6)
Prevention of complications of Breast Cancer	481 (38.2)	778 (61.7)
Consequence of advanced stage of Breast Cancer	945 (75.0)	314 (24.9)
Cured on early detection	533 (42.3)	726 (57.6)
Possible cure for Breast Cancer	857 (68.0)	402 (31.9)

On the issue of possible risk factors for developing breast cancer, more than half 53.8% (n = 678) of the participants did not know that hereditary or being a female can make one vulnerable to the disease. They thought it can be due to injury to the breast. This finding means that most of the women may not seek breast health care unless there is injury to the breast. The implication is that they may not take preventive action to regularly examine their breasts to promptly report any abnormality for early treatment. This is similar to other studies in which high percentage of women did not know that any woman is susceptible to the disease and majority of the women were not able to indicate hereditary as a risk factor but rather attributed it to evil spirits (Webster & Austoker, 2015; Mena et al., 2013; Humphrey et al., 2012).

A greater proportion of the women, 60.3 % (n = 759) also did not know that regular examination of the breast can help in early detection of breast cancer. They pointed out that, it is just by regular observation of the breast. Again, only 49.3% (n = 621) of the women knew that painless lump in the breast or bloody discharge from the breast can be early warning signs of the disease. This means that majority of the women may not be able to recognise basic cardinal signs and symptoms of breast cancer that can guide them to seek early health care to prevent complications and terminal nature of the disease. This result ascertained a research finding in which about 60% of the respondents including highly educated women did not know that breast cancer's lumps are usually painless and breast cancer can be present without any lump (Bhatt et al., 2011).

More so, only few, 38.2% (n = 481) of the respondents indicated knowledge of the method of prevention of complications of breast cancer to be regular examination of the breast. Also, approximately 58% (n = 726) of the women sampled did not know that early detection of breast cancer easily helps to cure it. This corresponded with reports by Bhatt et al. (2011); Ahuja and Chakrabarti (2010); Oluwastin and Oladepo (2006); Humphrey et al. (2012) and Mena et al. (2013) which indicated limited knowledge and misunderstandings about issues of breast cancer among most of the sampled women in Nepal, India, Uganda, Nigeria and Ghana respectively.

In commemoration of International Breast Cancer Month, annual breast cancer campaign is launched every October to November by international organisations, NGOs, cooperatives and individuals to create and increase awareness of the disease in Ghana (Mena et al, 2013, UT Bank

Annual Report, 2013). Thus, education on breast cancer and means for its early detection and prompt treatment is intensified through the print and electronic media every October to November throughout the country. However, the revelation of the low scores of knowledge on most of the aspects of breast cancer in this study can imply that either detailed information on the disease was not being disseminated at Ho or the women did not understand the message.

Although the general level of knowledge on the disease was low, the study also revealed high scores on some of the issues. For example, approximately 67% (n = 839) of the women affirmed that breast cancer is a serious disease. Also, a large proportion of 75% (n = 945) of the women knew the consequences of advanced stage of the disease to be metastasis and death. This confirmed the report by Komen (2016) which indicated terminal stage of breast cancer to be severe pains, spread to other parts of the body and death. In comparison, this contrasted Oluwatosin and Oladepo (2006) who noted that respondents lacked knowledge on vital issues about breast cancer including consequence of advanced stage of the disease as a result of poor dissemination of information to the public by health workers. It was noted that most of the respondents 68% (n = 857) testified to possible cure for the disease such as surgical removal of the breast, use of radiation or chemotherapy. This result agreed with findings in some studies where majority of the women knew about the possible forms of cure for the disease (Ameer et al., 2014; Oluwatosin & Oladepo, 2006). On the contrary, the revelation opposed the result of a study in which almost one-third of the sampled women believed that traditional health care had proven to cure the disease (Bhatt et al., 2011). What might

account for the high scores on these aspects of the disease in this study may be that the participants might have heard about them in the media, from health workers, friends, or family members. This is because Ho is endowed with quite a number of media houses, health facilities with different cadre of health professionals and package of health provision services (District Health Directorate, 2015; Ghana Statistical Service, 2014). Also, some of the women are married and others are cohabitating. The implication of the high knowledge on these aspects of the disease is that, it can trigger majority of the women to develop health preventive behaviour (engagement in breast examination practices) to reduce the death toll of breast cancer as theorised by Rosenstock et al. (1988); Rosenstock 1966; Becker (1978) in Health Belief Model.

**Research Question 2: What is the Level of Awareness of Breast Examination Practices among Women at Ho?**

Table 6 presents awareness level of breast examination practices of women for early detection of any abnormalities. As depicted in the Table, the general level of awareness of breast examination practices among the sampled women at Ho is low because only about 12% (n = 150) of the women were aware of the breast examination practices.

**Table 6: Level of Awareness of Breast Examination Practices among Women at Ho**

Level	Frequency	Percentage
High	150	11.9
Low	1,109	88.1
Total	1,259	100

Table 7 indicates the response to the key items assessing awareness of the respondents on the breast examination practices. Correct responses were scored 1 and incorrect/I don't know responses scored 0. Frequency was run for the 1 and 0 scores and graded as correct and incorrect respectively. The result showed that awareness of issues of breast examination practices was very low among majority of the sampled women. For instance, regarding why women should examine their breast, 50% (n = 630) of the participants were aware that it would help in early detection of breast abnormality. Meanwhile, majority of 62.4% (n = 785) of the respondents had not heard about BSE and only 34.4% (n = 434) of the participants were aware that women need to start BSE at age 20. On frequency for engaging in BSE, quite an approximate of 78% (n = 977) of the women were not aware that it should be done once every month (3-4 days after menstruation).

**Table 7: Awareness of Breast Examination Practices among Women at Ho**

Items	Correct (%) Freq (%)	Incorrect (%) Freq (%)
Reason for breast examination	630 (50.0)	629 (49.9)
BSE	474 (37.6)	785 (62.4)
Age to start BSE	434 (34.4)	825 (65.5)
Frequency for engaging in BSE	282 (22.3)	977 (77.6)
CBE	341 (27.0)	918 (72.9)
Age to start CBE	158 (12.5)	1,101 (87.4)
Frequency for doing CBE	81 (6.4)	1,178 (93.5)
Where to do CBE	860 (68.3)	399 (31.6)
Mammography	223 (17.7)	1,036 (82.2)
Age to start mammography	63 (5.0)	1,196 (94.9)
Frequency for undergoing mammography	59 (4.6)	1,200 (95.3)
Where to go and do mammography	197 (15.6)	1,062 (84.3)



This finding could be due to inadequate dissemination of detailed information on BSE in the town by health care professional and both the electronic and the print media. The finding thus corresponded with other studies where most of the sampled women were not aware of BSE (Ameer et al, 2014; Olowokere et al., 2012; Ahuja & Chakrabarti, 2010; Karavurt et al., 2008; Jahan et al., 2006; Balogun & Owoaje, 2005). The result was attributed to less public education by health care providers and low educational level of the respondents. The revelation is also in accordance with other reports in which majority of the women did not know the onset and frequency for BSE due to provision of little information by family and friends and health care givers (Karayurt et al., 2008; Sarfo et al., 2013).

Breast self-examination, also known as breast awareness is breast examination method that demands women themselves to look at and feel each breast for possible abnormalities (Burke et al., 2007). More so, it is a simple, non-invasive and for which no money would be paid. Therefore, the implication of the deficiency in the awareness of BSE among the women in this study can be that most of the women may not be able to regularly examine their breast through this simple method. They may also not be able to do it well for correct detection of any abnormality for prompt intervention to reduce the devastation of breast cancer. Thus the finding in this study can be suggestive for a course to worry.

Concerning CBE, most of the respondents, 72.9% (n = 918) had never heard about it. More so, approximately only few 13% (n = 158) of the participants knew that CBE is supposed to be started between 20-39 years. Again, only 6.4% (n = 81) of the respondents were aware that it needs to be

done once every 3years. What might have accounted for this result could be less public awareness creation on CBE, little or no talk on it in formal education and lack of education on breast cancer screening during medical visits. This finding is similar to studies in Nepal, Turkey and part of Ghana respectively where majority of the participants including highly educated women were not aware of clinical breast examination (Bhatt et al., 2011; Karayurt et al., 2008); Sarfo et al., 2013). The reason for the result was that health care personnel were not forth coming with information on CBE and formal education was also silent on it. The finding in this study is however in contention with studies by Jahan, et al. (2006); Alam (2006); Habib et al. (2010) and Nelson (2009) in Saudi Arabia, Riyadh, and Al Madina in the Middle East, India and China respectively where most of the sampled women knew detailed information about CBE. This was because issues of breast cancer were of national priority and breast cancer counselling was done during medical visits.

Although only few of the participants agreed to have heard about CBE in this study, quite a number of 68.3% (n = 860) of the women were aware that it can either be done at health centres, hospital or mass cancer screening centres. Clinical breast examination is a physical examination that is performed by trained medical personnel to check for lump or other changes in the breast (Burke et al., 2007). Hence, what might have accounted for this high score could be due to assumption that examination of part of the body can be done at places where there could be health care professionals. In any case this result could be a good indication for facilitating engagement in breast examination since as the women knew where to seek for the service, they can

easily access it should they become aware of it and decided to examine their breast. This result is similar to studies in Saudi Arabia Al Madina in the Middle East respectively where majority of the respondents knew where to do CBE because they were informed of possible places for CBE during medical visits (Jahan et al. 2006; Habib et al. 2010).

With regard to mammography, a large proportion of 82.3% (n = 1,036) of the respondents had not heard of it. More so, only 15.6% (n = 197) of those who were aware of it knew where exactly it can be done. That is at health facilities which have mammography unit or at mass cancer screening centres. Also, just 5% (n = 63) of the women knew that mammography needs to be started at age 40. More so, on the frequency for undergoing mammography, a large proportion of 95.3% (n = 1,200) of the participants were not aware that it must be done once every year. The reason for this finding could be that public education on mammography at Ho by either the media or health care providers was very little. The finding confirmed reports by Somdatta et al. (2008); Karayurt et al. (2008) and Sarfo et al. (2013) in Nepal, Turkey and a part of Ghana respectively where majority of sampled women were not aware of mammography as a result of less public education on it. Also, in a selected rural community in Nigeria, none of the women knew about mammography because health care providers were silent about it (Olowokere et al., 2012). On the contrary, in Riyadh, most of the sampled women were fully aware of mammography due to high level of education and family history of breast cancer (Alam, 2006).

The reflection of low awareness level of breast examination practices in this study could generally be attributed to low level of awareness creation

and inadequate provision of detailed information on breast examination methods by both the media and health care givers. This finding is similar to studies in Qatar among Muslim women and women in selected rural communities in Nigeria respectively where there was low level of awareness of screening practices for early detection of breast cancer due to inadequate public education (Donnelly et al., 2013; Olowokere et al., 2012). The situation is however different in Malaysian, China and Saudi Arabia respectively where the level of awareness breast examination practices is high (Loh, 2011; Jahan et al. 2006; Nelson, 2009). This result was owned to detailed media information, pragmatic public education by health care personnel and total national involvement.

The finding in this study can hereby suggest that the women may not be able to regularly examine their breast through BSE, CBE or mammography correctly even if they can afford it. According to ACS (2012) and WHO (2014), breast examination practices aid in early detection and diagnosis of breast abnormalities or cancer for prompt and appropriate treatment to reduce cancer mortality rate. Thus, breast examination practices are useful preventive efforts to address the health needs of women. Hence, the findings in this study can be indicative of tremendous negative health implication for the women in terms of prognosis of breast cancer.

### **Research Question 3: To what Extent do Women at Ho Practiced Breast Examination?**

Table 8 indicates the extent to which the respondents practiced BSE, CBE and mammography. As portrayed, the general extent of practice of breast examination by women at Ho is low as majority of 71.5% (n = 900) of the respondents did not engage in examination of their breasts.

**Table 8: Extent of Practice of Breast Examination among Women at Ho**

Level	Frequency	Percentage
High	359	28.5
Low	900	71.5
Total	1,259	100

As noted in Table 9 those who even practiced breast examination did not follow the scientific process in terms of how often it should be done and the appropriate time for doing it. For example, a large proportion approximately 81% (n = 1,013) of the participants did not practice breast-self-examination. Only 7.2% (n = 91) of those who practiced it performed it frequently (once every month). More so, just 9.1% (n = 115) of the women performed BSE on the correct day of the month (3-4 days after menstruation) and 6.1% (n = 78) of them could not tell the last time they actually did BSE. This result could be evidenced that most of the respondents were not aware of BSE and those who were even aware did not know much about it. Another reason may be lack of support from partners (husbands), family members, friends and health care givers. The limited BSE activity could also be due to lack of requisite skills to perform it or may be the women were just not concern.

**Table 9: Practice of Breast Examination among Women at Ho**

Practices	Yes	No
	Freq (%)	Freq (%)
BSE	246 (19.5)	1,013 (80.4)
Frequency for engaging in BSE	91 (7.2)	1,168 (92.7)
Day of the month breast BSE was done	115 (9.1)	1,144 (90.8)
Last time BSE was done	78 (6.1)	1,181 (93.8)
CBE	109 (8.6)	1,150 (91.3)
Frequency for doing BSE	50 (3.9)	1,209 (96.0)
Last time CBE was done	19 (1.5)	1,240 (98.4)
Mammography	19 (1.5)	1,240 (98.4)
Frequency for undergoing mammography	9 (0.7)	1,250 (99.2)
Last time mammography was done	3 (0.2)	1,256 (99.7)

Al-Azmy et al. (2013), Loh (2011), Oluwatosin and Oladepo (2006) and Olowokere et al. (2012) also asserted that only few women ever practiced BSE in Kuwait, Malaysia and Nigeria respectively and were even not doing it regularly or correctly. This was found to be due to lack of knowledge of breast cancer and awareness of BSE because they were never taught about BSE. Similar finding is reported in semi urban area of Cameroon where less than one quarter of the sample women engaged in BSE due to lack of awareness of it (Bi et al., 2012). The finding is also consistent with studies in Nigeria, India and part of Ghana respectively that as a result of insufficient knowledge of risk factors, symptoms of breast cancer and basic techniques in detection measures women in developing countries did not practice BSE (Aderunmu et al., 2006; Akhigbe & Omuenu, 2009; Ahuja & Chakrabarti, 2010; Mena et al., 2013).

Likewise, it was identified in South Eastern part of Nigeria by Obaji et al. (2013) that the practice of BSE is low and only 0.4% out of those who even performed it did it regularly on the correct frequency. However, the reason for the low of practice BSE by women is not known was thus suggested for further study. Also according to Faronbi and Abolade (2012), majority of female teachers in a rural community of Nigeria who are supposed to be change agents in female health issues from the grass root had never performed BSE and even those who practiced it did it wrongly because they did not know what to look for. More so, in Nigeria, a lot of nurses who had knowledge on BSE and are supposed to teach BSE and promote its practice among women did not practice it (Agboola et al, 2009). This finding was attributed to their poor attitude towards BSE. Thus the finding that some of the female health workers did not practice BSE, suggests that there is a need for continuing educational programs to change attitude and behaviour towards BSE. On the contrary, Linsell et al., (2008) found that as result of awareness of breast cancer screening programs, majority of women in Britain practiced BSE. However, they did not perform it frequently and correctly as they were doing it weekly and binary.

In the case of clinical breast examination, as much as 91.3% (n = 1,150) of the respondents did not practice it. Only 3.9% (n = 50) of those who practiced it did it frequently (once every three years) and just about 2% (n = 19) of the participants remembered the last time they went in for CBE. It could be deduced from the study that majority of respondents might not be health educated on CBE. The result may also be due to lack of individual medical counseling and reminder by health care providers. It could also mean that

there are no specific CBE units or centres in the health care facilities and the communities respectively for easy accessibility. Another reason could be feeling of embarrassment or shyness of exposing the breast or negative attitude of care givers or lack of money. Similar revelations were made among community women in South Africa and part of Nigeria where only 9% and 15% of the respondents respectively had CBE (Maree, 2013; Sule, 2011). The reason was that majority of the respondents were not aware of CBE and those who were aware of it were not reminded to do it. Also according to Bhatt et al. (2011), in Nepal, just 7% of the respondents engaged in CBE. The finding was attributed to lack of knowledge of the breast cancer, recommendation by health care givers and shyness and embarrassment.

On the practice of mammography, only about 2% (n = 19) of the sampled women practiced it and just about 1% (n = 9) of them did it frequently (once every year) and only 0.2% (n = 3) of them could tell the last time they did mammography. The probable reasons for not undergoing mammography may include lack and inadequate awareness of mammography, lack of recommendation and referral by health care providers. It could also be that both the government and the private health care facilities in Ho did not have mammography machine or experts and accessibility to mammography units/center in terms of availability and cost might be difficult. Another reason could be fear of being diagnosed of having breast cancer. In contrast to this result, McCracken et al. (2007) reported that the target rate of adherence to mammography among American women is expected to reach 70% because a lot of them have been going for it due to high level of awareness of it, high concern for breast health and reminder by health care givers. Meanwhile, in



agreement to the finding in this study, Bhatt et al. (2011) noted that only 2% of the sampled women in Nepal underwent mammography due to high cost and difficulty in receiving the service. Likewise, Nur (2010) reported that though majority of female teachers in Turkey were aware of mammography, they did not engaged in it because it was not recommended to them by health care providers. In China, though most women knew about mammography, they did not adhere to practicing it because they found it too expensive and not necessary (Kim et al., 2011).

Generally, the devastation that befalls women diagnosed of breast cancer remains inestimable (Olowokere et al., 2012). Hence global efforts to control breast cancer focus on early detection through periodic breast examination for diagnosing at an early stage (WHO, 2014). Thus in Ghana, breast cancer awareness creation, through education, screening and treatment has been ongoing through international and non-governmental organizations, cooperatives and individuals' activities to empower women to regularly examine their breasts (Mena et al, 2013). Hence the general low extent of practice of the breast examination depicted in this study can be worrying as the consequences for women not examining their breast regularly can be enormous and devastating to women's health. This finding could generally be linked to lack of awareness of breast examination methods as evidenced by earlier finding of low level of awareness of breast examination practices in this study. Another reason could be lack of motivation from spouses, health workers as well as availability of functional breast examination facilities in the town. Shyness and embarrassment of exposing the breast or mere refusal may also be accountable for this result. Similarly, Qatar; Donnelly et al (2013)

noted that even with available health care services and gender- appropriate health care providers, the level of practice of breast examination among Arabic women was low due to low level of awareness of breast cancer screening methods.

On the contrary, other studies found that even with much awareness and knowledge of breast cancer and its screening methods in Arab world, the level of practice of breast examination is low (Montazeri et al., 2008; Bener et al., 2009; Alkhasawneh et al., 2009). The findings were attributed to feeling of embarrassment, lack of referral and reminder by health care providers. Likewise, though most women in Beijing and Shanghai respectively were aware of breast cancer screening and its benefits, the rate of engagement in breast examination practices was found to be low because the women did not see it as necessary (Zhao et al., 2008; Chen et al, 2007). Kim et al., (2011) also confirmed similar finding among Chinese women as they simply did not feel breast cancer screening was necessary and were too busy to engage in breast examination activities. In addition, they did not have the chance for breast examination which was too expensive and not convenient. These findings could imply that knowledge of breast cancer, means of its early detection and prevention alone may not stimulate women to engage in examination of their breasts. Other internal and external factors that can influence breast cancer screening practice need to be identified to help women. This affirmed the practical assertion in the theory of the Health Belief Model by Champion (1993) that women who have an internal cue (body perception) or who have been exposed to an external cue (e.g., the positive influence of a health care

provider or the media) would be motivated to regularly examine their breasts through BSE, CBE or mammography.

The finding in this study could therefore imply that warning signs of breast cancer may not be detected early or correctly leading to late report of the disease at advanced stage where nothing much can be done to save life. There is therefore the need to strategically address the situation.

#### **Research Question 4: What Factors influence Practice of Breast Examination among Women at Ho?**

A binary logistic regression was conducted to find out which factors would influence engagement and non-engagement in breast examination practices among women at Ho. The result in Table 10 showed statistical significant variations in the odds of engagement in breast examination practices within advice by nurses/doctors, formal education, breast health education at health care facilities, distance to breast examination centre, level of knowledge on breast cancer, level of awareness of breast examination practices, fear and shyness. For example, the result revealed that women who were advised by nurses/doctors are 7.2 times more likely to engage in breast examination practices than those who were not (OR = 7.196, 95% CI = 5.110-10.132,  $p = .000$ ). This implied that women who would not be advised by health care providers would be at more risk of consequences of not examining their breasts. This result is in agreement with results of studies in Arab world where it was noted that women who engaged in breast examination practices were recommended, referred and reminded by health professional for breast cancer screening practices respectively (Donnelly et al., 2013; Lamyian et al, 2007; Soskolne et al., 2007). It was concluded that these actions motivated

women to practice examination of their breast and increased attendance in breast cancer screening clinics.

**Table 10: Factors Influencing Engagement in Breast Examination Practices among Women at Ho**

Predictors	N	%	B	Wald	OR	p-value
(Constant)			-4.552	27.689	.011	.000
Educational level						
Tertiary (ref)	347	27.5				
Primary	105	8.3	.921	5.487	2.512	.019
Junior High	301	23.9	.557	4.336	1.745	.037
Secondary	357	28.3	.513	5.096	1.671	.024
None	149	11.3	.501	2.294	1.651	.130
Marital status						
Single (ref)	547	43.4				
Married	511	40.6	.107	.032	1.112	.858
Living together	119	9.5	-.078	.015	.925	.903
Widow	49	3.9	-.243	.105	.784	.746
Divorced	33	2.6	-.227	.089	.768	.730
Occupation						
House wife (ref)	149	11.6				
Student	330	26.2	.350	.394	1.418	.530
Private Job	176	13.9	.647	1.332	1.910	.248
Trader	340	27.0	.134	.059	1.143	.808
Government worker	163	12.9	.801	1.944	2.227	.163
Farmer	65	5.2	.580	.765	1.786	.382
Other	36	2.9	.551	.736	1.757	.385
Breast health education at health care facility						
No (ref)	909	72.3				
Yes	350	27.8	.905	25.865	2.473	.000

**Table 10 (Continued)**

<i>Predictors</i>	<i>N</i>	<i>%</i>	<i>B</i>	<i>Wald</i>	<i>OR</i>	<i>p-value</i>
Level of knowledge on breast cancer						
Low (ref)	715	56.8				
High	544	43.2	.099	6.001	.014	1.104
Level of awareness of breast examination practices						
Low (ref)	1,109	88.1				
High	150	11.9	.211	15.678	1.234	.000
Radio advertisement on breast health and breast examination practices						
No (ref)	626	49.7				
Yes	633	50.3	.302	2.732	1.352	.098
Affordability of breast examination services						
No (ref)	967	76.8				
Yes	292	23.2	.202	.182	1.223	.267
Distance to breast examination centers						
Long (ref)	217	17.2	.612	6.371	1.844	.012
Very long	300	23.8	.612	6.371	1.844	.012
Short	216	17.2	.736	8.601	2.088	.003
Very short	67	5.3	.651	6.342	1.918	.012
Fear						
No (ref)	821	65.2				
Yes	438	34.8	-.670	15.009	.512	.000
Feelings of breast being touched by another person						
Comfortable (ref)	323	25.7				
Embarrassed	412	32.7	-.397	3.590	.672	.058
Pain	86	6.8	.051	.020	1.052	.888
Shyness	438	34.8	-.831	14.881	.435	.000
Religion						
No (ref)	329	26.2				
Yes (ref)	930	73.8	-.019	.008	.981	.927
Advice by nurses /doctors for engagement in breast examination practices						
No (ref)	773	61.4				
Yes	798	38.6	1.973	127.727	7.196	.000

Likewise, McCracken et al. (2007) indicated reminder for engagement in breast examination practices by health care givers as one of the factors that contributed for 70% target rate of adherence to mammography among American women. Also, Meissner et al. (2007) and Cohen (2010) respectively noted that nurses' intervention by counseling women for engagement in breast examination practices is more likely than any factor to act as a motivator for breast screening activities and compliance. The finding in this current study thus means, when health care providers at various health care facilities at Ho increase their professional strategies to advise and remind women on breast cancer screening activities, the women would become more conscious to examine their breasts regularly.

The result also revealed that women who had primary education are 2.5 times more likely to examine their breast compared to those with tertiary education (OR = 2.512, 95% CI = 1.162-5.428,  $p = .019$ ). Again, women with junior high education are 1.7 times more likely to examine their breasts than those with further education (OR = 1.745, 95% CI = 1.033-2.948,  $p = .037$ ). This finding opposed Chan et al. (2008) who found lower educational level to be a hindrance to engagement in breast examination activities among perimenopausal women in Hong Kong. The result in this study therefore suggested that basic formal education is a very important factor that would aid women at Ho to develop and increase preventive behaviours to adhere to regular examination of their breasts.

Again, women who were educated on breast health and breast examination practices at health care facilities are 2.5 times more likely to get involve in breast examination activities than those who were not (OR = 2.473,

95% CI = 1.745-3.506,  $p = .000$ ). This result implied that women who would not be educated on breast health and breast examination practices at health care facilities at Ho are at more risks of the peril of not engaging in BSE, CBE and mammography. The finding affirmed a study by Meissner et al. (2007) which indicated that educational approaches such as repetition, reinforcement and hands on learning have been demonstrated at health care facilities to increase mastery of BSE and generally increase engagement in breast cancer screening practices. Also, Randolph and Viswanathan (2008) argued that breast health education is a vital step towards discussions about breasts, promoting breast cancer awareness and countering misconceptions about breast cancer screening so that women can actively patronize breast examination services. In Iran, provision of more information about breast cancer and the benefits of screening practices is an important first step to encourage women to examine their breast (Montazeri et al., 2008). David and Rassaby (2008) indicated that breast health promotion provide knowledge that help women to get more involve in preventive behaviours to prevent breast cancer or if it has occurred to find it and treat it as early as possible. Teaching in social settings on breast cancer has also been shown to improve engagement in screening practices (Sarah, Ann, Lind, Vicky, & Verna 2009). DePerez and DeRorero (2007) also found that decentralization of health promotion through personalised breast action plans in Cuba health care facilities through face to face education achieved tremendous lifestyle changes in distribution and social exchange of breast health knowledge and engagement in breast examination practices. In consistent, Nevin and Sakinelmemis (2007) documented that BSE accuracy of the women increased after breast health education. Besides, their

attitude towards and engagement in BSE improved. This finding in this study thus implies that an increase in health education activities such as health talks, video shows, and demonstrations on breast abnormalities and breast examination practices at health care settings at Ho would have a great impact on the women to be more active in assessing their breasts.

Another best predictor was travel distance. That is, women who travelled short distance to breast examination centres are 2.1 times more likely to engage in breast examination practices compared to those who travel long distances (OR = 2.088, 95% CI = 1.277-3.414,  $p = .003$ ). The implication of this result is that women who would travel long or very long distance to breast examination centers are at more risks of the consequences of not practicing BSE, CBC and mammography. The finding in this study agreed with Bulaporn and Clark (2008) that the distance to screening facilities plays a major role in determining the utilization of screening services for early detection of breast cancer among Thai women. In support to this, Maheswarab et al. (2006) noted that usage of breast cancer screening services decreased significantly with an increase in travel distance to screening facility in the UK. Thus, availability of breast examination centres at door steps at Ho could increase engagement in breast examination activities especially, CBE and mammography among the women. The general implication for these findings could be that any decrease in the strategy of these predicting factors could serve as barriers for engagement in breast examination practices among women at Ho. Besides, an increase in any unit of the factors could increase the likelihood of the women to develop breast health behaviour to regularly examine their breasts.



With regard to psychological factors on the other hand, fear of breast cancer is .512 times likely to cause reduction in engagement in breast examination practices among women at Ho (OR = 0.512, 95% CI = .365-.718,  $p = .000$ ). This meant that women who would be afraid of being diagnosed of breast cancer are at more risks of consequences of not performing BSE, CBE and mammography. The result in the study corresponded with a study in Iran where the fear of finding something wrong and the feeling that it is better not to know were barriers to breast cancer screening among Iranian women (Lamyian et al., 2007; Cohen & Azaiza, 2008; Ahmed, 2010). In contrast, fear of breast cancer motivated Arab women to perform BSE even excessively (Cohen, & Azaiza 2005; Azaiza, & Cohen, 2008). Similarly, Hay, McCaul and Magnan (2006) reported a positive relationship between breast cancer worry and the screening behavior of women. Thus the finding in this study means that any message or signal that would generate and increase fear in relation to being diagnosed of breast cancer can prevent women at Ho from engaging in breast examination activities and vice versa.

Also, feeling shy for breast being touched by another person for examination is .435 times likely to lead to reduction in performance of breast examination practices among the women (OR = .435, 95% CI = .285-664,  $p = .000$ ). This finding implied that shyness for breast being touched by another person would make women more prone to the perils of not engaging in breast examination practices. The result in this study is similar to the finding by Tzu-Yin et al. (2008) that shyness during mammography procedure by a male or a strange health professional served as a barrier that deterred Asian American women to go for examination of their breast. Also, Amin et al. (2009) noted

lack of female physicians in health care facilities to be a barrier to accessing breast cancer screening services because women feel shy when their breasts were examined by male doctors. Bener et al (2007); Donnelly et al. (2013) indicated that shyness is also one of the factors that hindered the practice of CBC, mammography and BSE among Jewish and Arab women respectively in Israel. The finding in this current study therefore implies that any attitude, strategies or signals by health care providers that would cause and increase feeling of shyness during breast examination procedures for women at Ho can discourage the women the more not to go for examination of their breast and vice versa.

There was however, no statistical significant variations found in the odd of engagement and non-engagement in BSE, CBE and mammography within the other variables such as exposure to radio advertisement on breast abnormalities and examination (OR = 1.352, 95% CI = .945-1.934,  $p = .098$ ) and affordability of breast examination services (OR = 1.223, 95% CI = .857-1.747,  $p = .267$ ) tested in the regression. This indicated that breast health behaviour change of women at Ho would not necessarily be influenced by these attributes of the respondents. Meanwhile, for instance, Bulaporn and Clark (2008); Amin et al. (2009); Bener et al. (2009); Lamyian et al (2007) respectively found that the cost of screening play a major role in determining the utilization of screening services for early detection of breast cancer among women in Thai, U.S. Israel and Jordan, Turkey and other parts of the world. Also, Cohen (2010) reported that media campaigns for breast screening have demonstrated to increase breast cancer screening usage in areas covered by the advertisement.

According to the assertion in the Health Belief Model by Rosenstock et al. (1988) and Champion (1993), women who perceive more benefits and fewer barriers from examining their breast are more likely to use breast cancer screening behaviors. Also, women who have an internal cue (body perception) or who has been exposed to an external cue (e.g., the positive influence of a health care provider along with demographic and structural variables) would also opt for BSE, CBE or mammography. Hence the revelation of the predicting factors to engagement in breast examination practices among the women in this study need to be explored. This could help the women at Ho to develop healthy preventive behaviours such as regular examination of breast for early detection of breast abnormalities and prompt treatment.

## CHAPTER FIVE

### SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

The preceding chapter presented the results on breast examination practices of women at Ho in the Volta Region of Ghana. This chapter contains the summary, conclusions and recommendations drawn from the findings of the study. It also includes suggested areas for further research.

#### **Summary**

Women's breast can develop series of abnormalities including breast cancer to put them in serious state of ill health and the devastation that befalls women diagnosed of breast cancer globally remains inestimable. As a result, efforts to control breast cancer focused on early detection through periodic breast examination for diagnosing at an early stage. Thus, the month of October is established as International Breast Cancer Month to increase awareness of the disease and strategies for its early detection and treatment. Similarly in Ghana, breast cancer awareness creation has been ongoing through several stakeholders' activities. Consequently, education on breast cancer and breast examination for early detection and prompt treatment of the disease is intensified through the print and electronic media every October to November throughout the country. Meanwhile, full blown breast cancer cases have been recorded at the health care facilities at Ho in the Volta Region where the chance of the women surviving from the disease at time of diagnosis was low.

This study hereby assessed breast examination practices of women at Ho in the Volta Region of Ghana. To arrive at solution to this problem, four research questions were formulated to direct the study. Descriptive survey was employed to collect data in this study with the aim to elicit purposeful information from the respondents. The population consists of women aged 20 to 49 years who live in Ho. Total sample size was 1,259. Multi-stage sampling technique was used to select the participant to have a representation of women from eight localities under each five main traditional and political division within the town.

A researcher-developed questionnaire based on reviewed literature and Health Belief Model was used to collect the data. The instrument had two main sections: A and B developed based on the women' demographic information and four research questions with 40 items. A pre-test of the instrument was conducted at Goil down area at Bankoe, Ho with 60 participants. This was to test the effectiveness of the instrument. The instrument yielded a reliability coefficient of 0.76. The main data was collected within 6 weeks. The respondents were given 20 minutes to complete the questionnaire for collection and there was 84% returned rate. The data was processed with SPSS Version 20 and analysed. The final instrument yielded coefficient value of 0.80. The main statistical tool used to analysis research question one to three was descriptive statistics. Research question four was also analysed with frequency and percentages in addition to binary logistic regression.

## Key Findings

The main findings were as follows:

1. More than half of the sampled women at Ho had low level of knowledge of breast cancer since most of the women knew little about possible risk factors for developing the disease, basic cardinal signs and symptoms, method for early detection and prevention of complications as well as important of early detection.
2. Majority of the sampled women had low level of awareness of breast examination practices as most of the respondents knew why there is the need for women to regularly examine their breast and where they can possibly go for assessment of their breast. However, majority of them were not aware of the various breast examination practices (BSE, CBE and mammography) as well as in the age at which to start and the frequency for performing them.
3. The extent of engagement in breast examination practices by the women was low since most of the women did not practice BSE, CBE or mammography. Those who even practiced any of them did not follow the correct process in terms of how often it should be done and the appropriate time for doing them. They could not even tell the last time they actually performed BSE, CBE or mammography.
4. Advice by health care professionals, basic formal education (primary), breast health education at health care facilities and short distance to breast examination centres were found to be the strongest factors that influenced women at Ho to engage in breast examination practices. Fear of having breast cancer and shyness of breast being touched by

another person were most likely to deter examination of the breasts among the women.

### **Conclusions**

This study assessed breast examination practices of women at Ho in the Volta Region of Ghana. Based on the findings of this study, it can be concluded that most women at Ho did not engage in BSE, CBE and mammography. However, the factors identified in this study would influence performance of breast examination practices. Therefore, increase or decrease in strategies for executing these factors may positively or negatively influence the women to take preventive actions to regularly examine their breasts for early detection of any abnormality.

### **Recommendations**

In view of the findings in this study, the under listed recommendations were made:

1. The Ministry of Health together with Ghana Health service, NGO, individuals and cooperate bodies should intensify public education on breast cancer and breast examination practices (Awareness creation on breast cancer and BSE, CBE and mammography should be constant throughout the year and not only during international cancer month/October).
2. Breast health issues should be incorporated into the circula educational programmes.
3. Health care professionals should counsel, recommend, refer and remind women of breast screening.

4. Strategies should be put in place at various health education units to reduce fear of breast cancer and shyness for breast examination procedures.
5. The Government and stakeholders like NGOs such as BCI, other agencies should collaborate with health care professionals to support and establish well equipped breast examination units/centres within the communities at Ho.

### **Suggestion for Further Research**

In order to expand the scope of knowledge on breast cancer, breast examination practices and factors that can motivate adherence to breast examination practices to prevent complication of breast abnormalities to safe women's life, the following studies can be carried out:

1. This same study should be done at other towns in the Volta Region and as well as other parts Ghana.
2. Subsequent study should also look at differences in breast examination practices between younger women and older women to help in the development and employment of age appropriate strategies to encourage engagement in BSE, CBE and mammography.
3. Evaluative studies can also be done on BSE and CBE in the town and other parts of the Volta region to ascertain the level of practices within the region.



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**APPENDICES**

**APPENDIX A**  
**UNIVERSITY OF CAPE COAST**  
**COLLEGE OF EDUCATION STUDIES**  
**DEPARTMENT OF HEALTH, PHYSICAL AND RECREATION**  
**QUESTIONNAIRE**

I am a Research Master Student in Health Education at the Department of Health, Physical Education and Recreation, University of Cape Coast. I am conducting a study on breast examination practices of women at Ho in the Volta Region. The result of this study would contribute to formulation of health policy that would improve breast evaluation practices of women in Ho for early diagnosis of breast abnormality/cancer for prompt treatment.

The research is purely academic and be sincere in answers to the questions. Your responses would be strictly private and confidential. It would take about ten (10) minutes per a person to complete answering the questions. You can please contact the following people for any question or clarification;

The principal investigator:

Name: Patience Wilhemina Adjimah

Telephone Number: 0200329084

The principal supervisor:

Name: Professor Joseph Kwesi Ogah

Telephone number: 0243102322

**PARTICIPANT'S CONSENT**

Do you agree to take part in this research?

Yes

No

**PART A**

**BACKGROUND INFORMATION**

**Instruction:** Please tick [√] the appropriate response for the following questions.

1. What is your level of education?

- None
- Primary school
- Junior secondary school
- Senior secondary school
- Tertiary

2. What work do you do?

- Student
- Private Job
- Business woman/trader
- House wife
- Government worker
- Farmer
- Other

3. What is your marital status?

- Single
- Married
- Living together
- Widow
- Divorced

**PART B**

**INSTRUCTION:** For question 4-38, please tick (✓) in the box provided the most appropriate response to the questions

4. What is Breast Cancer?

- It is a disease that affects mostly the breast of women
- It is a rare disease that affects the breast of women
- I don't know

5. Is breast cancer a serious disease that can affect women?

- Yes
- No
- I don't know

6. What can make women be at risk of having breast cancer?

- May be inherited from family
- Can be because of being a female
- May be due to having the first baby after 30 years/ at old age
- Can be the result of evil spirits
- May be due to breast feeding
- Can be due to breast injury

7. How can Breast Cancer be detected at early stage?

- By regular examination of the breast
- By regular blood testing
- By regular observation of the breast
- I don't know



8. What is the suggestive Sign/symptom of breast cancer?

- Painless lump in the breast
- Wound /cracks on the breast
- Boils on the breast
- Bloody or any discharge from the nipple
- I don't know

9. Can regular breast examination prevent complications of breast cancer?

- Yes
- No
- I don't know

10. What is the consequence of advanced stage of Breast Cancer?

- Can spread to other parts of the body
- Leads to death
- It can be cured
- I don't know

11. Can Breast Cancer be easily cured when it is detected early?

- Yes
- No
- I don't know

12. What is the possible cure for breast cancer?

- Surgery/removal of the breast
- Use of herbs/ traditional medicine
- Radiotherapy/use of radiation
- Use of drugs (chemotherapy)
- I don't know

13. Which breast examination practices have you heard of?

- Breast –self examination
- Clinical breast examination
- Mammography
- None

14. Why should women examine their breast?

- To help in early detection of breast abnormality/cancer
- To prevent any disease of the breast
- I don't know

15. At what age should women start breast-self-examination (BSE)?

- At 20years
- At 40years
- I don't know

16. At what age should women start clinical breast examination (CBE)?

- Between 20-39years
- Between 25-39years
- I don't know

17. At what age should women start mammography?

- At 20years
- At 40years
- I don't know

18. How often should women do breast-self-examination?

- Once every month (3-4 days after menstruation)
- Once every month (few days before menstruation)
- I don't know

19. How often should women do clinical breast examination?

- Once every 3 years
- Occasionally
- I don't know

20. Where should women do clinical breast examination?

- Home
- Community health centre
- Hospital
- Mass cancer screening center
- I don't know

21. How often should women do mammography?

- Once every year
- Twice every year
- I don't know

22. Where (place) should women do mammography?

- X-Ray centre
- Hospital which has mammography unit
- Mass cancer screening programme centre
- I don't know

23. Which of the breast examination methods have you been practicing?

- Breast-self-examination (BSE)
- Clinical breast examination (CBE)
- Mammography
- None

24. How often do you do BSE?

- Once a month
- Occasionally
- I have never done it

25. When have you been performing breast-self-examination?

- 3-4 days to menstruation
- During menstruation
- 3-4 days after menstruation
- I have never done it

26. When was the last time you performed BSE?

- Last month
- Last year
- I cannot tell
- I have never done it

27. How often do you go for clinical breast examination?

- Once every year
- Once every three (3) years
- I have never done it

28. When was your last clinical breast examination?

- Last four years
- Last three years
- I cannot tell
- I have never done it

29. How often do you go for mammography?

- Once every year
- Once every three years
- I have never done it

30. When was your last mammography?

- Last year
- Last three years
- I cannot tell
- I have never done it

31. Have you received health education on breast health and breast examination practices at health care facilities at Ho?

- Yes
- No
- I cannot tell

32. Have you heard any advertisements or education on radio on breast abnormalities and Breast examination practices at Ho?

- Yes
- No
- I cannot tell

33. Have you ever been advised by nurse/doctor to practice breast examination?

- Yes
- No
- I am not sure

34. Would the fear of having breast cancer disease prevent your decision to examine your breast?

- Yes
- No
- I don't know

35. Can you afford the cost for breast examination services?

- Yes
- No
- I am not sure

36. How far is the nearest place where you can do breast examination from where you live?

- 7.5km (very long)
- 4.9km (long)
- 2.6km (short)
- 1.4km (very short)

37. How would you feel if another person touches your breast to examine it for cancer?

- I will feel embarrassed
- I will feel shy
- I will feel pain
- I will feel comfortable

38. Does your religion/culture encourage you to practice breast examination?

- Yes
- No
- I am not sure

APPENDIX B

INTRODUCTORY LETTER

UNIVERSITY OF CAPE COAST  
CAPE COAST, GHANA  
COLLEGE OF EDUCATION STUDIES  
FACULTY OF SCIENCE AND TECHNOLOGY EDUCATION  
*Department of Health, Physical Education & Recreation*

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Cables & Telegrams:  
UNIVERSITY, CAPE COAST



Ref. No. ED/MHE/14/0007/8

7<sup>th</sup> September, 2016

The Chairman,  
Institutional Review Board,  
University of Cape Coast,  
Cape Coast.

**INTRODUCTORY LETTER : MS. PATIENCE ADJIMAH (ED/MHE/14/0007)**

The bearer of this letter is an MPhil student of the above department. In partial fulfilment of the requirements for the programme. She is conducting research titled "**BREAST EXAMINATION PRACTICES OF WOMEN AT HO IN THE VOLTA REGION OF GHANA**" and would need assistance from your outfit.

We would therefore be most grateful if permission could be given to her to carry out the research.

We count on your co-operation.

Thank you.

  
Dr. Charles Domfeh  
HEAD