# KNOWLEDGE, ATTITUDES AND ACCEPTABILITY OF BREAST CANCER SCREENING AMONG FEMALE STUDENTS IN TARABA STATE UNIVERSITY, JALINGO

**BY**

**BARAYA, AMINU KADUNA**

**REG. NO: 20184138778**

**A THESIS SUBMITTED TO THE**

**DEPARTMENT OF PUBLIC HEALTH**

**SCHOOL OF HEALTH TECHNOLOGY**

**FEDERAL UNIVERSITY OF TECHNOLOGY, OWERRI**

**NOVEMBER, 2023**

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**IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE AWARD OF MASTER'S DEGREE IN PUBLIC HEALTH (EPIDEMIOLOGY & BIOSTATICS)**

**NOVEMBER, 2023**

## CERTIFICATION

This is to certify that this work **"Knowledge, Attitudes and Acceptability of Breast Cancer Screening among female students in Taraba state University Jalingo "**was carried out by **Baraya Aminu Kaduna (Reg. No: 20184138778)** in partial fulfilment for the award of Master's degree in Public Health (Epidemiology and Biostatistics) in the Department of Public Health, School of Health Technology, Federal University of Technology Owerri, Imo state.

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## DEDICATION

This thesis is dedicated to my beloved daughter Miss Rubiyamisumma Dorcas Kaduna.

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## ABSTRACT

This study aimed to assess the level of knowledge, attitudes and acceptability of breast cancer screening among female students in Taraba state University, Jalingo. A cross sectional study design was adopted and a Multi-Stage sampling technique was used to select 206 respondents from 8 faculties for the study. The study was carried out in Taraba state University, Jalingo where a sample of five (5) faculties was drawn from the eight (8) faculties for the study. The sample size was determined using Cochrane method for calculating sample size. A structured questionnaire was used to collect data on Knowledge of breast cancer, Attitudes towards breast cancer screening, Methods of breast cancer screening as well as Acceptability of breast cancer screening. While Data analysis was done using SPSS version 21, results were presented on frequency distribution tables, standard deviation, and chi square were performed to ascertain the value of the variables. Findings on knowledge of breast cancer and breast cancer screening showed that majority of the respondents had accurate knowledge of breast cancer (78.4%) and breast cancer screening (88%) indicating a positive relationship between knowledge and the acceptability of breast cancer screening. Results also showed a significant relationship (P-value of <0.01) in the attitude of respondents towards acceptability of breast cancer screening in the study area as majority of the respondents indicates breast cancer screening as being beneficial. From the results, there was no relationship between age of a woman and breast cancer and acceptability of breast cancer screening. In conclusion, knowledge and attitudes were found to be key factors in influencing and determining the acceptability and proper utilization of any health-related programs such as breast cancer screening. The study therefore, recommends that breast cancer screening methods should be subsidized to enable women afford the service. Heads of institutions should laisse with government to establish breast cancer screening centers in schools. There should be a collaborative resources identification for training and retraining of professionals for breast cancer screening service uptake.



Keywords: Breast cancer, Prevalence, Incidence, Mortality, Screening, Diagnosis.

# CHAPTER ONE

# INTRODUCTION

## Background of the Study

Globally, breast cancer is the most common and leading cancer among women with over 2 million new cases being diagnosed accounting to 11.6% of all cancers (Heena, Durrani, Riaz, Alfayyad, Tabasim, Parvez & Abu-Shaheen, 2019). It is also reportedly the most prevalent cause of cancer-related deaths in women. It is no longer prevalent only in the developed part of the world but is commonly reported in the developing countries as well with the developed world having the highest incidence rate though varying from ethnicity and race. (WHO, 2021). According to the World Health Organization (2021), Breast cancer is currently the most common type of non-skin cancer worldwide, with 2.26 million cases recorded in 2020 and 685,000 deaths therefore, it is considered a major public health concern.

Of 184 countries in the world, breast cancer is the most diagnosed form of cancer in 140 countries (Abolfotouh, BaniMustafa, & Mahfouz (2015). According to a report from the International Agency for Research in Cancer (IARC), 14.1 million cancer cases were diagnosed worldwide in 2012, of which 8 million were from low-income countries (LICs). A total of 8.2 million deaths were recorded the same year from cancer and 5.3 million were from LICs; it is stated that by 2030 an estimated 21.7 million people will suffer from cancer. In 2018, 2.1 million incident cases of breast cancer were diagnosed worldwide (second most common cancer overall after lung cancer) representing nearly 24.2% of all cancer cases and an estimated 627,000 (15%) deaths occurred among women globally (Cumber, Nchanji, & Tsoka-Gwegweni, 2017).

The incidence of breast cancer in Sub-Saharan Africa (SSA) has been rising and yet many cases remain undetected. Studies reveal that the prevalence of breast cancer in most SSA countries does not give the true picture as many of these countries lack national cancer registries and the exact burden of the disease is therefore not quantified. (Cumber et. al, 2017). Nigeria is the most populous country in Africa, with approximately 20% of the continent‟s population and slightly more than half of West Africa. It was therefore not surprising that of the estimated 681,000 new cases of cancer occurred in Africa, Nigeria contributed 15%, with about 100, 000 new cases of cancer occurring every year. This figure likely underrepresented the true number of incident cases of breast cancer since they were mostly based on reports from medical institutions as opposed to the incidence studies; nonetheless, this suggested that substantial reduction in the breast cancer burden for all of sub-Saharan Africa could be achieved if breast cancer burden in Nigeria is reduced. In Nigeria, before now breast cancer cases were low however today, there are reported increase in the incidence of the disease as a result of urbanization and changing lifestyle. It has become the leading cause of cancer deaths currently in the country, representing about 23% of all cancer cases, with more over 100,000 cases per year and approximately 18% percent of deaths are attributed to it in the country. The rate of mortality has doubled that of the North America, with an estimated 80% of Nigerians incurable on diagnosis. Studies have shown that the majority of Nigerian women, both in rural and urban areas have little or no knowledge about risk factors and symptoms of the disease consequently leading to high incidence in the country (Motilewa et al., 2015, Olayide et al., 2017). Although there has been immense progress in the treatment of breast cancer, prognosis remains poor in developing countries including Nigeria. An important reason for the poor prognosis could be a delay in diagnosis. When breast cancer is diagnosed early, prognosis is believed to be good with reduced morbidity and mortality

(Heena et. al, (2019). Breast cancer screening is a positive initiative targeted at the women to reduce morbidity and mortality due to breast cancer. Public communications about breast cancer screening tended to use persuasive techniques aimed at maximizing uptake (Stiggelbout, Coppa, Jacklyn, Jansen, Liefers, Mccaffery & Hersch, 2020). Enhancing breast cancer screening in developing countries is pivotal in improving women's health. Screening is defined as the process of looking for signs of disease, such as breast cancer, before a person has symptoms. Although screening cannot prevent breast cancer, it can help find breast cancer early, when it is easier to treat (CDC, 2020). The goal of screening tests is to find cancer at an early stage when it can be treated and may be cured. Sometimes a screening test finds cancer that is very small or very slow growing. These cancers are unlikely to cause death or illness during the person's lifetime.

According to CDC, (2020), breast cancer is the second leading cause of death from cancer in American women. Women in the United States get breast cancer more than any other type of cancer except for skin cancer. Breast cancer is more likely to occur as a woman ages. It occurs more often in White women than in Black women, but Black women die from breast cancer more often than White women.

Screening includes employing simple tests to identify individuals with cancer even before symptoms appear. Breast self-examination (BSE), clinical breast examination (CBE), and mammography are well recognized screening methods for breast cancer. Breast self-examination is a simple and zero-cost screening tool that can be used or carried out on a regular basis and at any age. It is convenient and important especially when used in combination with regular physical examination by a doctor, mammography, and in some cases ultrasound and/or MRI (WHO, 2021).

Each of these screening tools works in a different way and has strengths and weaknesses. Screening helps in early detection of cancer and early diagnosis and timely treatment of breast cancer lead to a better prognosis. For effective screening and early diagnosis, adequate knowledge and awareness are of utmost importance.

**Statement of the Problem**

Breast cancer is the most frequently occurring life-threatening malignancy and the most common cause of morbidity and mortality among women worldwide. Generally, breast cancer rate is higher in the developed world than the developing countries, which may be as a result of certain lifestyles and reproductive factors that are more common in the developed world. (Al-Mousa, Alakhras, Hossain, Al-Sa‟‟di, Al-Hasan, Al-Hayek & Brennan, 2020). In Africa, an estimated 882 900 cases in LICs were diagnosed, of which 324 300 women died (Bray, 2018).

A balanced approach is required for breast cancer control in SSA, which will include prevention, early detection, effective treatment and palliative care (Cumber *et al.,* 2017). In theory, diagnosing early-stage tumors should reduce mortality. The issue of concern is to determine who should be screened. There could be some slow-growing tumors that do not become clinically evident during the patient's life. Therefore, risk stratification, the age to begin screening, and the age to stop screening are critical for the appropriate screening of breast cancer. The practice of breast cancer screening among women in the developing world is unsatisfactory. most especially in Taraba state where this study is carried out, it is almost unknown in practical terms. As a result, many cases are diagnosed at advanced stages leading to poor outcomes including mortalities (Osei-Afriyie, Addae, Oppong, Amu, Ampofo & Osei, 2017). It has been discovered according to the Daily Independent/All Africa Global Media in 2014, that in Taraba state, breast

cancer screening service has not scaled up and the turn ups in the few screening programs carried out was neither encouraging nor satisfactory this may be due to gap in awareness as well as negative attitude towards breast cancer screening among residents leading to a considerable increase in incidence of breast cancer across the state.

Knowledge, awareness and attitudes play a vital role in early detection and optimal treatment of breast cancer. This gap in knowledge and awareness of breast cancer screening has consequently affected the WHO Global Breast Cancer Initiative (GBCI) of reducing global breast cancer mortality by 2.5% per year, thereby averting 2.5 million breast cancer deaths globally between 2020 and 2040, thus this study aims to address this gap by assessing and exploring the knowledge and attitude towards breast cancer screening among of female students in Taraba state university as well as the factors that contribute to its acceptability. The findings of this study will provide valuable information for public health interventions aimed at improving breast cancer screening and its awareness and reducing the burden of breast cancer with a focus on elimination

## Objectives of the Study

### General Objective of the Study

The general objective of this study is to assess the knowledge, attitudes and acceptability of breast cancer screening among female students in Taraba state University.

## Specific Objectives

The specific objectives for this study include;

I. To assess the knowledge level of breast cancer screening among female students in Taraba state University, Jalingo

II. To determine the attitudes of female students towards breast cancer screening in Taraba state University, Jalingo

III. To identify breast cancer screening methods frequently used by the female students‟ in Taraba State University, Jalingo.

IV. To determine the acceptability level of breast cancer screening among female students in Taraba state University, Jalingo

**Research Questions**

I. What is the level of knowledge of breast cancer screening among female students in Taraba state University Jalingo?

II. What is the attitude of female students towards breast cancer screening in Taraba state University, Jalingo?

III. What are the breast cancer screening methods frequently used among female students in Taraba State University Jalingo?

IV. What is the level of acceptability of breast cancer screening among female students in Taraba state University Jalingo?

**Research Hypothesis**

The following null hypothesis were formulated to guide the study:

Hypothesis 1: There is no significant relationship between level of knowledge a woman has concerning breast cancer screening and its acceptability.

Hypothesis 2: There is no significant relationship between attitudes a woman has and the acceptability of breast cancer screening

Hypothesis 3: There is no significant relationship between socio-demographic characteristics and the acceptability of breast cancer screening.

**Significance of the Study**

In the study of the Knowledge, Attitude and Acceptability of breast cancer screening among female students in Taraba state University Jalingo, the following significance was proffered:

The study will add to the existing body of knowledge on how female students of tertiary institutions can access and utilize breast cancer screening programs. Women with this eye opening opportunity, will put in to practice the fundamentals of breast self-examination which is the basis of breast cancer screening process. To the heads of institution of higher learning, the study will serve as a guide to collaborate with health experts in order to set up breast cancer screening services or centres in schools where female students can be guided appropriately. To future researchers, this study will serve as a reference point and to the government, it will guide them to channel their resources correctly to support breast cancer screening programs.

**Scope of the Study**

This study was delimited to the knowledge, attitudes and acceptability of breast cancer screening among female students in Taraba state University Jalingo.

# CHAPTER TWO

# LITERATURE REVIEW

## Introduction

This chapter will be discussed under the following sub-headings viz; conceptual framework, theoretical studies/framework and empirical review of related literatures.

## 2. 1 Conceptual framework

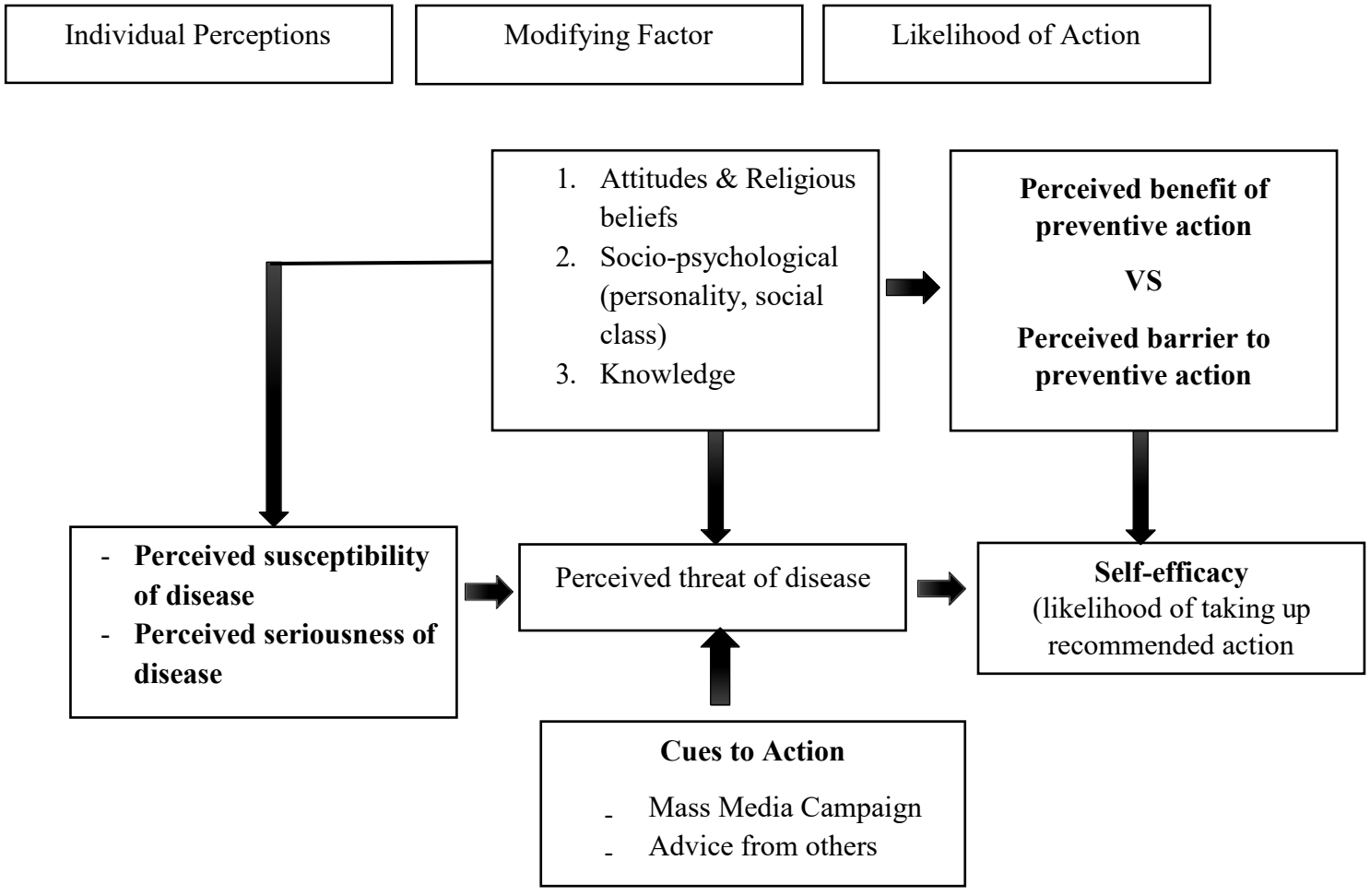


**Fig 2.1: Conceptual framework using Health Belief Model**

Abolfotouh, *et al.,* (2015), opined that the Health Belief Model (HBM) has provided a useful conceptual framework to prevent health behaviors. According to HBM, threat perception and behavioral evolution are the two main components which are derived from expectancy-value theory (Dewi, Massar, Ruiter & Leonard, 2018). Threat perception included two key beliefs: perceived susceptibility and anticipated severity of contracting health conditions. As identified from the HBM, individuals are more likely to engage in preventive health behaviors if they perceive themselves to be susceptible to a certain disease/illness (perceived susceptibility), perceive the condition to have potentially serious consequence (perceived severity), believe that a course of action will produce positive outcomes (perceived benefits), or perceive that obstacles or barriers to taking actions are outweighed by the benefits (Abdel-Aziz, Amin, Al-Gadeeb, Alhassar, Al-Ramadan & Al-Helal, 2018). The model states internal and external cues such as body states and environmental factors which may also promote or inhibit health enhancing behavior (cues to action), the confidence that one can successfully practice the behavior required to produce the outcome (self-efficacy), and the desire to maintain good health status (health motivation) were added to the model. HBM has been widely used for recommended breast cancer screening compliance. The Health Belief Model (HBM) explains health behavior as being determined by personal beliefs or perceptions about the disease, and the strategies available to an individual to reduce the occurrence of the disease. Specifically, according to this model, a person‟s beliefs and perceptions influence their health behavior, such that when individuals perceive they are at risk for the disease they will perform the health behaviors necessary if they are reminded of these behaviors and expect positive outcomes – in terms of risk reduction and feasibility from performing these behaviors (Dewi, Massar, Ruiter & Leonard, 2018). In the most modern conceptualization of the HBM the following components are included:

**perceived susceptibility:** one‟s perceived personal vulnerability to the risk of incurring the health condition;

**Perceived severity:** one‟s perceived personal harm if one were to incur the health condition; **Perceived benefits:** perceived positive attributes of performing a certain health behavior; **Perceived barriers:** perceived costs or negative attributes of performing a health behavior;

**Cues to action:** a diverse range of internal or external triggers that encourage the performance of the health behavior; and

**Self- efficacy:** the confidence of an individual in his/her ability to perform the health behavior.

In 1980s, Champion developed scales to early detection of breast cancer, based on the HBM. Champions Health Belief Model Scales (CHBMS) have been translated into several languages and tested in a number of cultures and populations. Champion first applied the HBM framework to investigate the beliefs of women regarding breast cancer and breast screening behavior, including

BSE and mammography, and developed Champion‟s Health Belief Model Scale (CHBMS). This scale has been widely used to predict breast cancer screening, and has been adapted by many languages and cultural settings. HBM has therefore been widely recommended for use in breast cancer screening compliance and other related behavioral change programs. (Dewi, Massar, Ruiter & Leonard, 2018).

Researchers have found that the fatalistic attitudes are the major barrier to recommended breast cancer screening uptake. Fatalism is identified as a doctrine of fate, a philosophical doctrine held

by individuals who believe that all events are fated to happen and that human beings have no control over their futures and are unable to change their outcomes. Fatalism is the belief that situations, including illnesses or catastrophic events, happen because of a higher power (such as God) or they are just meant to happen and cannot be avoided (Charkazi, Samimi, Razzaghi, Kouchaki, Moodi, Meirkarimi, Kouchaki, & Shahnazi, 2013). Therefore, women should be encouraged to perform Breast Self-Examination (BSE) as this is a step towards breast cancer screening. By practicing BSE, women take responsibility for themselves, become familiar with their breasts at different times, can see and feel changes over time and as they age, and can immediately report any abnormal changes. One of the main challenges in this regard is to educate young women about breast cancer and to promote their participation in health behaviours (Abolfotouh, et. al, 2015, AlAssiri, Al-Juhani & Alaskar, 2015).

**Theoretical framework**

A theoretical framework is an amalgamated interrelated concept in which a researcher chooses to assist his or her research by guiding and giving an explanation of an event or a research problem (Abolfotouh, *et al.,* 2015). Public health programs and interventions were developed with a clear theoretical foundation by combining multiple theories and concepts as they are perceived to be far more effective compared to those without a theoretical base (Glanz & Bishop, 2010). The constructs from this theory is expected to have an impact on health behaviour as it can help to ascertain why an individual chooses to participate in breast cancer screening practices. The theory can potentially improve the understanding of the stage of behavioural change amongst women in BSE and mammography screening behavioural adoption. The Health Belief Model (HBM) is used as the primary theory for the theoretical framework. Being one of the oldest

health behavioral theories, the HBM is selected as it can explain and predict women‟s behavior in adopting breast cancer screening practices. It also one of the most frequently used theoretical models in health behaviour change studies (Abdel-Aziz et. al, 2018). The HBM assumes that health behavior is influenced by the individuals‟ perceptions, expectancies and value beliefs. Individuals are likely to adopt a health behaviour if the individuals consider themselves predisposed to circumstances that have possibly severe impediments. Additionally, the individuals must perceive that the proposed behaviour benefited in the threat reduction of getting the disease. The individuals must also perceive that the probable advantages derived from the action taken outweighed the obstacles and the act could be carried out successfully.

The major constructs of the HBM in the theoretical framework are susceptibility, severity, benefits, barriers, and self-efficacy (Abdel-Aziz *et al.,* 2018) whilst behavioural intention mediates between the perception of the threat and behavioural change to adopt BSE and mammography screening. Perceived benefits and perceived barriers are assumed to have an impact on the behavioural intention which would influence the decision in adopting the screening behaviours. This is in congruent with studies carried out on women in Korea, Turkey and Iran which indicated there was a positive association between perceived benefit of early detection and screening behaviour (Secginli & Nahcivan, 2006; Hatefnia *et al.,* 2010; Ahmadian & Samah, 2012; 2013). Nevertheless, studies conducted in Turkey found that BSE practice was associated with low perceived barriers (Khiyali et al., 2017) and women who claimed to have undergone mammography perceived higher benefits and fewer barriers compared to those who have never had mammography (Secginli & Nahcivan, 2006; Hatefnia et al., 2010; Allahverdipour et al., 2011).

The combination of health beliefs constructs as depicted in the framework are believed to enable behavioural stage of adoption of breast screening practices (Abdel-Aziz, Amin, Al-Gadeeb, Alhassar, Al-Ramadan & Al-Helal, 2018) whilst adequate self-efficacy would challenge the psychosocial obstacles to adopt the behaviour (Ahmadian & Samah, 2012; 2013). It is because self-efficacy serves as a primary mechanism which governs an individual‟s ability in adopting specific behaviours (Ahmadian & Samah, 2013). This is indicated in previous studies conducted among women in Malaysia and Iran which indicated that self-efficacy has a positive correlation with practices of BSE and intention to practice BSE (Ahmadian *et al.,* 2016; Khiyali *et al.,* 2017).

This fact is further supported by studies conducted in Iran that suggest the association of women‟s adherence to mammography and self-efficacy of mammography practice (Ahmadian & Samah, 2012; 2013). This is also in line with the concept of HBM, that if an individual has high selfefficacy but low perceived barriers, it is more likely for that individual to adopt the behavior (Champion & Scott, 1997; Ahmadian *et al.,* 2016).

The survival rate depends largely on the stage at diagnosis in which the best survival (81.7%) is at stage 1 which could further be improved to 90% or more by adopting early breast cancer detection practices (Yip et al., 2006). Presently, Sub-Saharan women especially Nigerian women present with late stages of breast cancer due to lack of awareness as well as low uptake of breast self-examination (BSE), clinical breast examination (CBE) and mammography screening (Bevers, Helvis, Bonaccio, Calhoun, Daly & Farrar, 2018). Although BSE, CBE and mammography are believed to be suitable and efficient ways to ensure breast cancer can be

detected earlier nevertheless, breast screening facilities in Sub-Saharan African countries especially Nigeria are still underutilized due to the lack of breast cancer awareness.

Breast cancer screening would aid in early detection and hence reduce morbidity and mortality due to the disease. This in turn aids to improve the likelihood of survival and cure (Bray, 2018). Therefore, women need to be assisted to clear any misconceptions about breast cancer screening so that the benefits of early detection methods and timely treatment are well understood (AbdelAziz, Amin, Al-Gadeeb, Alhassar, Al-Ramadan & Al-Helal, 2018). Further, personal beliefs and knowledge pertaining to early breast cancer detection can drive health-related behaviours that will influence the decision in seeking medical care (Burhans, 2018). Health beliefs and attitudes are the two main factors indicated by researches that can affect the decision of women to be screened for breast cancer (Erbil & Bolukbas, 2014; Akhtari-Zavare et al., 2015). In Asia, women perceived benefits of screening were positively related to early detection behaviours and the lack of it resulted in them ignoring their health care needs (Ahmadian & Samah, 2013). It was convincingly indicated that culturally-based attitudes and religious beliefs play an important role in defining women‟s screening behaviours (Kwok et al., 2015). Arab women for example believe that health and illness are determined by the will of God (Donnelly et al., 2013; Kwok et al., 2015). Similarly, many Chinese women believed that screening measures are meaningless and their destiny will not change if they were fated to have cancer (Kwok et al., 2015; Shang et al., 2015). The low rate of participation amongst Asian women in mammography for example, is attributable from their intention or attitude and these attitudes are possibly enhanced by their beliefs about the foreseeable outcomes from the screening accomplishments (Ahmadian & Samah, 2013).

Understanding women‟s health beliefs regarding breast cancer screening behaviour will help health care professionals choose more effective public health programs to improve women‟s screening practices (Parsa et al., 2011). It is indicated that Public health research often focuses on changing an individual‟s behaviour by changing their beliefs and knowledge. Additionally, incremental behaviour changes that focus on certain beliefs at each stage often use theoretical based studies such as stages of behaviour change theory (Lee-Lin et al., 2016). Since there are only a few theoretically based studies conducted in predicting BSE and mammography screening practices on women, there is a need to explore the literature and interrelated theories to aid in formulating a theoretical framework in demonstrating how various concepts and factors are linked that impacts the intention of women to participate in breast cancer screening. According to the HBM, a woman who perceives that she is susceptible to breast cancer and that breast cancer is a serious disease would be more likely to perform regular breast examinations. Similarly, a woman who perceives more benefits of and fewer barriers to BSE would be more likely to practice BSE. The Health Belief Model ((HBM) has been used in several studies as a theoretical framework to study BSE and other breast cancer detection behaviours. The HBM has been translated, tested and used for women of different cultural beliefs. The model stipulates that health-related behaviour is influenced by a person‟s perception of the threat posed by a health problem and by the value associated with his/her action to reduce that threat. In previous studies, Breast cancer screening has been linked to perception of risk, perceived benefits, barriers, confidence, having heard/read about breast cancer, motivation, susceptibility, knowledge of breast cancer screening issues, employment, demographic characteristics and regular visits to physician

## Empirical Review of Related Literatures

### Knowledge of Breast Cancer Screening

In a study conducted by Stiggelbout *et al.,* 2019, on women‟s acceptance of over-detection in Breast Cancer Screening. The study design is an online survey among women aged 45-75 years from the general public in the Netherlands and Australia. The major findings in this study included; there were high knowledge level and that the participants accepted over-detection as a means of breast cancer screening. The study concluded that increased knowledge level among women enhances and increases the acceptability of breast cancer screening and any preventive health measure. In another study by Othman, Ahram, Al-Tarawneh, & Shahrouri in 2014, on the knowledge, attitudes & practices of breast cancer screening among women in Jordan. It was a population-based study where participants were randomly selected to participate in the study. It was discovered that women in the study area shared or have limited knowledge about breast cancer screening, with a few that does screening for early detection. Majority of those that do screening were being forced by physicians. The major challenge in most Sub-Saharan African (SSA} countries is that of lack of awareness. Most women have limited or no knowledge/information, especially those in rural areas as observed in a study carried out by Cumber et. al, (2017) on breast cancer among Sub-Saharan Africa: prevalence and situational analysis. A systematic review design was adopted and prisma method applied to select few among the literatures. Their findings were in line with the above facts that women in SSA have little or no knowledge about breast cancer screening. There is also a lack of knowledge on breast self examinations (BSE) and who should conduct them, especially in rural areas (Nwaneri, 2016, Oladimeji, 2015). The lack of knowledge regarding breast cancer among women in SSA is high.

Signs and symptoms most commonly noticed are nipple discharge, change in size and shape of breast, discoloration of the breast, nipple itches, breast pains, tenderness and inflammation. With proper education of women in both rural and urban areas and affordable screening programmes developed, the chances of survival can be increased. Also, in a cross-sectional study by Heena et. al. (2019) where a simple random sampling technique was employed to select participants, it was opined that attitudes are germane to women accepting breast cancer screening procedure. However, it was concluded that adequate knowledge among the women can greatly influence the acceptability of breast cancer screening. In yet another cross-sectional study on the application of the Health Belief Model in breast self-examination by Iranian female university students carried out by Pirzadeh in 2018. A sample of 384 female students was selected by a simple random sampling to participate in the study. The researcher discovered that majority of the students had inadequate knowledge about some risk factors for breast cancer and as such were reluctant to participate in any screening exercise aimed at early detection of breast cancer. A good knowledge of breast cancer and breast cancer screening is a prerequisite for the adherence to breast cancer screening among women. A low level of knowledge among women in different parts of the world is linked to a low practice rate of breast cancer screening (Pirzadeh, 2018). Various international studies and guidelines have stressed the significance of public health interventions as necessary components of effective breast cancer screening programs in order to encourage breast cancer screening and reduce the burden of the disease among women (Qu, Brand, Chao & Ilbawi, 2020). Alshahrani, Alhammam, Munyif, Alwadei, Alwadei, Alzamanan & Aljohani, (2019) in their study on Knowledge, Attitudes and Practices of breast cancer screening methods among female patients in Primary health care centers in Najran, Saudi Arabia. A cross-sectional survey design was adopted where 500 female patients were selected randomly

to participate in the study. It was observed that there was gross inadequacy of knowledge about breast cancer, breast cancer screening methods and breast self-examination. Majority of the participants claiming that they were not aware of any screening method. The researchers therefore recommended that more public health measures have to be put in place to increase awareness of breast cancer screening and methods as this may influence its acceptability among the female fold. In another study conducted by Ikechukwu, Amari & Nnenna, (2015) on the topic Breast Cancer Knowledge among Women in Ebonyi State, Nigeria: Implication for Women Breast Cancer Education. A cross-sectional descriptive design was adopted and a multistage sampling technique was used to sample participants for the study. The findings indicated an average knowledge level among the respondents and this differ according to educational level of the individual respondent.

**Attitudes of Females in the Acceptability of Breast Cancer Screening**

According to a case-controlled study carried by Adebamowo & Adekunle (1999), a systematic review design acknowledged the increase in the incidence of breast cancer rapidly in Nigeria. The study discovered that the increased in incidence is due to changing demographic profile, acquisition of western lifestyle and the changing socioeconomic profile of the country. These are risk factors and efforts can be employed to put them in control. Breast cancer awareness is crucial in reducing the chances of developing the disease. In a retrospective study conducted by

Balekouzou *et al.,* (2016). Primary data was collected in an anatomy laboratory to enable the researchers to address the lack of epidemiological evidence on BC, the absence of an operational plan for the fight against cancer and the lack of a support structure as well as national registry, with the main aim to understand the epidemiological characteristics of BC among women over

15 years old living in Bangui and to identify clinical histopathological trends in the last 12 years (2003–2015). According to the findings of the study, BC disease is common and affected most of the women. Epidemiological trends are more or less common to those of developing countries, with a predominance of invasive ductal carcinoma. However, most of the women studied live in an urban area and developed the disease in advanced stage. It is obvious that the implementation of the National Cancer Registry could facilitate the study of the evolution of the tendency of cancer by age group in the future, to achieve an appropriate screening system and provide training to people at risk. This will help public health personnel monitor the disease in the community. Given that knowledge of BC trends and its common morphologies in the country can help to reduce its incidence rate in the population, via good planning. In a related study, some women were ignorant about certain changes in their breasts that are usually associated with breast cancer. In cases where women are aware of these, there is hesitation in seeking healthcare which results in untimely death. Several myths are held dear by some of these women, which also affects their health-seeking behaviour, in which case many presentations at diagnosis are in the late stages (Cumber et. al, 2017). Religious, economic and socio-cultural factors have shown to play a part in women‟s attitude towards the disease (George et al., 2019, Pruitt et al., 2014). Al-Mousa, Alakhras, Hossain, Al-Sa‟di, Al-Hasan, Al-Hayek & Brennan (2020) in a study titled Knowledge, Attitudes and Practices around Breast Cancer & Mammography Screening among Jordanian women. A cross-sectional design was adopted and stratified sampling technique was used to select participants. The attitudes of the women included; there is no need for breast cancer screening after a previous breast examination, they have no information about breast cancer screening, being afraid of the outcome of the screening results and it causes embracement. In a systematic review carried out by Che Mohammed & Moey (2021), on the theoretical

framework of Health Beliefs Model on the stages of behavioural adoption of Breast Self-Examination and Mammography Screening. Health beliefs and attitudes were the main factors identified as affecting the decision of women to be screened for breast cancer. The study concluded by observing that culturally-based attitudes and religious beliefs greatly affects the decision of the women to be screened for breast cancer. Most religious women believed that health and illness are determine by God. The belief system of these women is a major challenge in breast cancer management. Moreover, many displayed ignorance about breast self-examination, and believed breast cancer was an affliction and the will of God. The Chinese women according to this review, believes that breast cancer screening measures are meaningless since their destiny was already pre-determine by God. In another systematic review by Black & Richmond (2019), on Improving early detection of breast cancer in Sub-Saharan Africa: Why Mammography may not be the way forward. Findings of the review is; other strategies might be equally important in reducing mortality from breast cancer particularly in low resource settings. They also opined that only the women who participated before in breast cancer screening and are educated are more likely to go for mammography. In a qualitative design study titled Determinants of breast cancer early detection for cues to expanded control and care: the lived experiences among women from Western Kenya carried out by Kisiangani, Baliddawa, Marinda, Mabeya, Choge, Adino & Khayeka-Wandabwa, (2018). A convenience sampling technique was employed to select respondents for the study. It was noted that majority of the women perceived breast cancer as a very fatal disease and often entertain great fear for its screening procedure. Also most rural women preferred self-prescribed medications and the use of alternative medicine for long than subjecting themselves to unnecessary breast examination and screening. Urban women on the other hand argued that little or nothing is said about breast cancer screening like

infectious diseases in the media. And at such they don‟t consider breast cancer screening as important issue to be bothered about. Moreso, in a community surveybased study conducted by Olasehinde, Alatise, Arowolo, Mango, Olajide, Omisore, Boutin-Foster, Kingham (2019), on barriers to mammography screening in Nigeria: A survey of two communities with different access to screening facilities. There was a negative experience of respondents in both communities, with many of those who knew people with breast cancer reporting those they knew had died despite medical care. This may contribute to the belief held in some quarters that medical treatment offers little benefit irrespective of disease extent. This belief may affect patients‟ attitudes toward early detection and must be addressed. It is also interesting to note that despite mammography service availability in Ife Central, majority (about 88.2%) of the respondents were unaware of its existence due to non-chalant attitudes. It is therefore not surprising that mammography uptake in Ife Central and Iwo were equally poor. This suggests that factors beyond geographic proximity contribute to low uptake. In another cross-sectional survey study carried out by Olasehinde, Boutin-Foster, Alatise, Adisa, Lawal, Akinkuolie, Adesunkanmi, Arije, & Kingham (2017) where multi-stage sampling was utilized to select participants, it was observed that the breast is a private area of the body and because of the various social and religious factors that may hinder the acceptance of clinical breast examination (CBE), seeking the opinion of the target population about such intervention becomes imperative. This is particularly important because approximately 99% of respondents in this study ascribed to some religious affiliation. It is encouraging that more than two thirds of the respondents were willing to have regular CBEs. However, responses from women who declined such examination suggest that with proper education and awareness, many more women are likely to be won over, given that the reasons for non-willingness were related to lack of perceived need. Such

perceptions are probably based on the misconception of the essence of screening as a test meant only for those who know they have the disease.

**Breast Cancer Screening Methods**

In a study by Heena et. al. (2019) on knowledge, attitudes and practices related to breast cancer screening among female health care professionals: a cross-sectional study design was adopted and 395 respondents were randomly selected to participate in the study. Major findings from the study included common methods utilized by women during breast cancer screening. These methods included Breast Self-Examination, Clinical Breast Examination by a professional, Mammography, Breast Ultrasound, MRI, Biopsy. However, the study reported women using one or more methods in the past which has proven effective. In a study conducted by Qaseem, Lin, Mustafa, Horwitch & Wilt (2019) on Screening for Breast Cancer in Average-Risk Women: A Guidance Statement from the American College of Physicians**.** The study utilizes a systemic review design, prisma method adopted to select all national guidelines published in English between 1 January 2013 and 15 November 2017 in the National Guideline Clearinghouse or Guidelines International Network library. In addition, other guidelines commonly used in clinical practice were also selected and their updates thoroughly checked for guidelines. The study concluded that certain guidelines are to be bored in mind where ever breast cancer screening is to be conducted. These guidelines include the following,

**Guidance statement 1:** In average-risk women aged 40 to 49 years, clinicians should discuss whether to screen for breast cancer with mammography before age 50 years. Discussion should include the potential benefits and harms and a woman's preferences. The potential harms outweigh the benefits in most women aged 40 to 49 years.

**Guidance statement 2:** In average-risk women aged 50 to 74 years, clinicians should offer screening for breast cancer with biennial mammography.

**Guidance statement 3:** In average-risk women aged 75 years or older or in women with a life expectancy of 10 years or less, clinicians should discontinue screening for breast cancer.

**Guidance statement 4:** In average-risk women of all ages, clinicians should not use clinical breast examination to screen for breast cancer. Qaseem, Lin, Mustafa, Horwitch & Wilt (2019). For women younger than 40 years at average risk for breast cancer, there have not been randomized studies done to suggest a benefit to screening. The various expert groups have not reached a consensus among them, but several recommend a clinical breast exam (CBE) every 3 years and a discussion about breast awareness (ie, encouraging women to be familiar with their breasts and to promptly report any changes to their health care provider).

For women age 40 years and older who are at average risk for breast cancer, many expert groups recommend CBE annually. With respect to imaging, in the past the most widely recommended screening approach in the United States for this group has been annual mammography, starting at age 40 years. Increasingly, however, guidelines are advising clinicians to discuss the benefits and risks of mammography with patients and offer the option of starting screening at age 40, but do not strongly recommend starting screening until age 45 or 50. Current guidelines also offer conflicting recommendations on whether to perform mammography annually or biennially.

Recommendations regarding discontinuation of mammography vary as well, with both age typically, 75 years and life expectancy as criteria. For example, the American College of Radiology recommends annual screening mammography until the life expectancy is less than 5

to 7 years, based on comorbidities. Since the last American Cancer Society (ACS) breast cancer screening update for average-risk women was published in 2003, new evidence has risen from long-term follow-up of the randomized clinical trials (RCTs) and observational studies of organized, population-based screening programs. There is now greater emphasis on estimating harms associated with screening, assessing the balance of benefits and harms, and supporting the interplay among values, preferences, informed decision making, and recommendations. In 2011, the ACS incorporated standards recommended by the Institute of Medicine (IOM) into its guidelines development protocol to ensure a more trustworthy, transparent, and consistent process for developing and communicating guidelines. In accordance with the new guideline development process, the ACS organized an interdisciplinary guideline development group (GDG) consisting of clinicians, biostatisticians, epidemiologists, economists, and patient representatives. The GDG developed five key questions using the general approach of specifying populations, interventions, comparisons, outcomes, timing of outcomes, and settings (PICOTS) for each question.[9] After evaluating available methods to grade the evidence and the strength of recommendations, the GDG selected the „Grades of Recommendation, Assessment, Development, and Evaluation" (GRADE) system. GRADE is an accepted approach with a defined analytic framework, an explicit consideration of values and preferences in addressing patient-centered outcomes, the capacity for flexibility in evaluating results from observational studies, and separation between quality of evidence and strength of recommendation. For women in their 20s and 30s, it is recommended that clinical breast examination be part of a periodic health examination, preferably at least every three years. Asymptomatic women aged 40 and over should continue to receive a clinical breast examination as part of a periodic health

examination, preferably annually. Women should have an opportunity to become informed about the benefits, limitations, and potential harms associated with regular screening

Women should have the opportunity to begin annual screening between the ages of 40 and 44 years. Women should undergo regular screening with mammography beginning at age 45 years. Women who are ages 45 to 54 years should be screened annually. Women who are 55 years and older should transition to biennial screening or have the opportunity to continue screening annually. Women should continue screening mammography as long as their overall health is good and they have a life expectancy of 10 years or more. As long as a woman is in reasonably good health and would be a candidate for treatment, she should continue to be screened with mammography. Although mammography guidelines have been in place for over 30 years, 20-30% of women still do not undergo screening as indicated. In a study conducted by Smith, Andrew, Brooks, Fedewa, Baptiste & Saslow (2017) on breast cancer guidelines, it was discovered that the two (2) most significant factors in determining whether a woman undergoes mammography are physician recommendation and access to health insurance. The implication is that Non-white women and those of lower socioeconomic status remain less likely to obtain mammography services, and these women are more likely to present with life-threatening, advanced-stage disease. Notwithstanding, the frequently used and beneficial methods during breast cancer screening are discussed below,

**Breast Self-Examination**

Breast Self-Examination may be done by women or men to check their breasts for lumps or other changes. According to Dewi, Massar, Ruiter & Leonardi (2017), if one feels any lumps or notice any other changes in the breasts, she should talk to the doctor. Conducting regular breast self-

exams has not been shown to decrease the chance of dying from breast cancer. Being familiar with how ones‟ breasts look and feel can help one notice symptoms such as lumps, pain, or changes in size that may be of concern.

**Steps in conducting Breast Self-Examination**

**Step 1:** Begin by looking at your breasts in the mirror with your shoulders straight and your arms on your hips.

Important things a woman should look for during breast self-examination:

- Breasts that are they usual size, shape, and color
- Breasts that are evenly shaped without visible distortion or swelling

However, if the following changes are noticed, it is advisable to see the doctor:

- Dimpling, puckering, or bulging of the skin
- A nipple that has changed position or an inverted nipple (pushed inward instead of sticking out)

Redness, soreness, rash, or swelling

**Step 2:** In this step the woman raises her arms and look for the same changes already mentioned above.

**Step 3:** While standing at the mirror, she looks for any signs of fluid coming out of one or both nipples (this could be a watery, milky, or yellow fluid or blood)

**Step 4:** Next she feels her breasts while lying down, using her right hand to feel her left breast and then her left hand to feel her right breast. Using a firm, smooth touch with the first few finger pads of her hand, keeping the fingers flat and together. Using a circular motion, about the size of a quarter, she covers the entire breast from top to bottom, side to side from her collarbone to the top of her abdomen, and from her armpit to her cleavage. Following a pattern to be sure that she covers the whole breast. She can begin at the nipple, moving in larger and larger circles until she reaches the outer edge of the breast. She can also move her fingers up and down vertically, in rows, as if she was mowing a lawn. This up-and-down approach seems to work best for most women.

**Step 5:** Finally, feel the breasts while standing or sitting. Many women find that the easiest way to feel their breasts is when their skin is wet and slippery, so they like to do this step in the shower. Covering her entire breast, using the same hand movements described in step 4. (Qu, Brand, Chao & Ilbawi, 2020). Alshahrani, Alhammam, Munyif, Alwadei, Alwadei, Alzamanan & Aljohani, (2019)

**Clinical Breast Examination**

A clinical breast exam is an examination of the breast by a doctor or other health professional. He or she will carefully feel the breasts and under the arms for lumps or anything else that seems unusual. It is not known if having clinical breast examinations decreases the chance of dying from breast cancer.

**Thermography**

This is a procedure in which a special camera that senses heat is used to record the temperature of the skin that covers the breasts. Tumors can cause temperature changes that may show up on the thermogram. There have been no randomized clinical trials of thermography to find out how well it detects breast cancer or the harms of the procedure. However, a rised in temperature could be a pointer for breast cancer.

**Tissue sampling (Biopsy)**

Breast tissue sampling is taking cells from breast tissue to check under a microscope. Breast tissue sampling as a screening test has not been shown to decrease the risk of dying from breast cancer

**Mammogram**

According Black & Richmond, (2019), a mammogram is an X-ray of the breast examination. It is used to detect and diagnose breast diseases in women who either have breast problems, such as a lump, pain, or nipple discharge, as well as for women who have no breast complaints. Several studies have proved that mammograms are the best way to detect breast cancer early for majority of women, when it is easier to treat and before it becomes a big enough to feel or cause symptoms. CDC, (2021), Jacklyn, Howard, Irwig, Houssami, Hersch & Barratt, (2017) in their study suggested that having regular mammograms can lower the risk of dying from breast cancer. They also opined that is the best way to find breast cancer for most women.

## Breast Magnetic Resonance Imaging (MRI)

According to the American College of Radiology (2021), a breast MRI uses magnets and radio waves to take pictures of the breast. MRI is used along with mammograms to screen women who are at high risk for getting breast cancer. Because breast MRIs may appear abnormal even when there is no cancer, they are not used for women at average risk. (Qu, Brand, Chao & Ilbawi, 2020).

Alshahrani, Alhammam, Munyif, Alwadei, Alwadei, Alzamanan & Aljohani, (2019).

## Acceptability of Breast Cancer Screening

In a study conducted by Pashayan, Antoniou, & Widschwendter, (2020), on personalized early detection and prevention of breast cancer: ENVISION consensus statement. A randomized health service trial design was adopted and stratified sampling technique employed to select participants. Acceptability has been described as a complex and poorly defined concept. The level of uptake is one index of the acceptability of a risk assessment. It was opined that the level of acceptability of breast cancer screening was very low among the women. However, the study concluded that the attitudes of the stakeholders and their willingness to learn and change may enhance the acceptability of breast cancer screening among women in the society. In another systematic review study by Azubuike, Muirhead, & Hayes L et al. (2018) there is evidence suggesting that breast cancer in Africa tend to occur in relatively younger age groups and among premenopausal women compared to the western population. For example, a low mean age of 48 years among Nigerians and a median age of 46 years among blacks compared to 67 years among white British women had been reported However, they further observed that the dominant young age profile of cases, the predominant aggressive clinical course, and the high fatality rate

that characterized African breast cancer cases might reflect the demographic structure of the African population (which tends to be younger) rather than intrinsic biological vulnerability as had been suggested. It seemed therefore that the picture of breast cancer incidence in Africa is still unfolding, and it might take some time before a valid conclusion could be drawn. There is a need for the promotion of more quality studies in order to determine exactly the true picture of breast cancer incidence in sub-Saharan Africa and by extension the entire continent. Azubuike, Muirhead, & Hayes L et al. (2018). The low coverage of breast cancer screening among this study population could perhaps be explained by their young age as breast cancer has been known to be common among older women Balekouzou, Yin, Pamatika, et al. (2016). In another systematic review by Black & Richmond (2019), on Improving early detection of breast cancer in Sub-Saharan Africa: Why Mammography may not be the way forward. Findings of the review is; other strategies might be equally important in reducing mortality from breast cancer particularly in low resource settings. They also opined that only the women who participated before in breast cancer screening and are educated are more likely to go for mammography. It was observed that Mammography is not available in most hospitals in Nigeria. Furthermore, they argued that where is available, can only be accessible by women in urban. The only breast cancer screening option that is accessible by women in Sub-Saharan Africa is the Breast Self-Examination (BSE).

While the effectiveness of BSE to detect breast malignant tumour remains debatable, its importance in breast self-awareness creation in resource-limited countries with non-existent population screening programmes cannot be overemphasis, thus deserves consideration. The level of BSE practice in this study is, however, higher than that reported among over 10,000

undergraduate students from 24 countries across Africa, Asia and America. (9.1%), and that of other studies among students in Ethiopia (39.4%), Cameroon (3%), Libya (23.5%) Azubuike, Muirhead, & Hayes L et al. (2018). The rising trends in the incidence of breast cancer in Africa may be explained by the lack of health consciousness of young women to examine themselves for the timely identification of any breast abnormality. Some experts had attributed the rising incidence to increasing population and life expectancy with many African women living long enough for the disease to manifest Anyigba, Awandare, & Paemka, (2021). It had also been suggested that it might reflect a growing awareness of breast cancer and change in health seeking behaviours, as well as improvement in screening and diagnostics technology. However, many studies had reported poor awareness and poor availability of screening services, diagnostic skills and technology. Furthermore, in a community-based survey conducted by Olasehinde, Alatise, Arowolo, Mango, Olajide, Omisore, Boutin-Foster, Kingham (2019), on barriers to mammography screening in Nigeria: A survey of two communities with different access to screening facilities. The participants from the two communities were randomly selected for the study. It was observed that Mammography is the main standard for breast cancer screening in developed countries with some evidence showing improved survival particularly among women 50–69 years in some randomized controlled trials in developed countries where breast cancer prevalence is high. Whether the same benefits will be recorded in parts of the world with lower prevalence of breast cancer however remains contentious. In the United States, Women with average risk of breast cancer are recommended to undergo annual screening mammography starting at age 45years up to age 54 years after which they should transition to biennial screening or continue screening annually. It is also recommended that women between ages 40 and 44 years should have the opportunity to begin annual screening. Nigeria currently has no National

breast cancer screening guideline, as such screening recommendations are made based on international guidelines. Reports from various parts of Nigeria show very low mammography screening uptake and its acceptability is lacking across the country. The study also noted that lack of geographic access may be suggested as a factor limiting uptake and the acceptability in areas with no mammography services, reasons for poor uptake in places with geographic access are not well understood. A possible explanation is lack of financial access, given that health costs are largely out of pocket with less than 5% of the population covered by the National Health Insurance Scheme. There are reasons however, to believe that other factors aside cost contribute significantly to poor mammography uptake given that other forms of inexpensive or free screening similarly demonstrate poor uptake. Understanding the drivers of poor mammography screening is therefore key for planning an effective breast cancer screening and interventional programme. It is also interesting to note that despite mammography service availability in Ife Central, 88.2% of the respondents were unaware of its existence. It is therefore not surprising that mammography uptake in Ife Central and Iwo were equally poor. This suggests that factors beyond geographic proximity contribute to low uptake. According to another cross-sectional survey study carried out by Olasehinde, Boutin-Foster, Alatise, Adisa, Lawal, Akinkuolie, Adesunkanmi, Arije, & Kingham (2017) where multi-stage sampling was utilized to select participants, it was observed that CBE practice, although poor, is acceptable to the majority of women in the studied population with few social concerns contrary to other studies depicting its non-acceptance. Creating awareness with educational programs is needed to correct erroneous perceptions about breast cancer and the need for screening. Another Systematic review study by Mascara, & Constantinou, (2021) on Global Perceptions of Women on Breast Cancer and Barriers to Screening. After reviewing several literatures, it was observed that disparities in

screening exist not only between different countries but also between local and immigrant populations within a particular country. Another finding of this work was the assertion that low screening in most countries was due to lack of public awareness as well as numerous social, psychological and geographical barriers to screening.

# CHAPTER THREE

# MATERIALS AND METHODS

## Study Design

The design for this study is a cross sectional descriptive study design which involves the interviewing of female students with well-structured questionnaire.

## Study Area

Taraba state was carved out from the then defunct Gongola state (now Adamawa state) on the 27th August 1991, by the then Military Administration of General Ibrahim Babangida. The state derived its name from one of the three major rivers in the state and it has a land area of 59400 square kilometers with the headquarter situated in Jalingo. The state is made up of 16 local government areas namely, Ardo Kola, Bali, Jalingo, Zing, Yorro, Lau, Karim Lamido, Wukari, Ibi, Gassol, Gashaka, Sardauna, Kurmi, Donga, Takum, Ussa L.G.A. The state is shared boundaries with Adamawa state in the northern part, Benue state in the south while Gombe occupies the eastern part and republic of Cameroun lies at the Western part of the state. Taraba state is predominantly a Christian state with few Muslims and traditional worshippers. This study was carried out in Taraba state University, Jalingo in Ardo Kola LGA of Taraba state. The University is a public university founded in 2008 by the then Pharm. Danbaba Suntai‟s administration to provide access to higher education for the people of Taraba State and promote economic growth and development in the state and the country at large. The university offers various undergraduate and postgraduate programs and conducts research in various fields of learning and human endeavors within 8 faculties which include Faculty of education, Faculty of Agriculture, Faculty of Social and Management Science, Faculty of Science, Faculty of Arts and

Faculty of engineering with several departments where different programs are offered, as well as a medical health facility (Taraba state University clinic) which provides health services to the university population. The university is led by the vice-chancellor who supervises the academic and administrative operations of the university under the directive and /or advice of relevant committees. The university currently has a population of 8000 students admitted through both UTME and direct entry admission as well as pre-degree programs.

**Study Population**

The study population consist of five faculties which is made up of 8000 female students in Taraba state University Jalingo.

**Sample and Sampling Technique**

**Sample size**

The required sample size was determined using Cochrane sample size formula

$$n = \frac{\quad}{\quad} \text{ (Obogo, 2016)}$$

Where

n = Desired sample size

z = Alpha level of 95% confidence interval = $1.96^2$

P = Proportion of occurrence = 85% (0.85) (Obogo, 2016)

q = Proportion of non-occurrence = 1-P (1-0.85)

d = Margin of error = 5% (0.05)

n = $\frac{\quad}{\quad}$

= $\frac{\quad}{\quad}$

= $\frac{\quad}{\quad}$

= 195.92 = 196

To account for a non-response rate of 5%, 95% response rate is anticipated

nz = $\frac{\quad}{\quad}$

= $\frac{\quad}{\quad}$ = 206.3

Sample size = 206.

**Selection Criteria**

Selection criteria refers to the list of characteristics that designate the specific attributes of the target population by which people are selected for inclusion in a study. Selection of the study participants was based on inclusion and exclusion criteria,

**The inclusion criteria are;**

i Female students of Taraba State University who are 18 years above that were present at the time of the study.

ii Female students of Taraba State University that gave in their consent for the study.

**The Exclusion criteria are;**

i Female students of Taraba State University who are not in school during the course of the study.

ii Female students of Taraba State University who are lunatic or psychologically affected

iii Female students of Taraba State University who did not give an informed consent to be part of the study.

**sampling method**

A Multistage sampling technique was employed to select the study participants.

**First stage**: **Selection of Faculties**

A total of five (5) faculties in the university were selected as the sampling frame through simple random sampling via balloting, Numbers were assigned to each faculty that make up the university, folded and put in a basket, shuffled and five were picked randomly one after the other without replacement. The faculties picked were faculty of Law, Health Sciences, Agriculture, Social Sciences and Education.

**Second stage: Selection of departments**

4 departments each from the 5 selected faculties was selected using simple random sampling via balloting. Again, Numbers were assigned to each department that make up each selected faculty, folded and put in a basket, shuffled and four were picked randomly one after the other without

replacement. This was done 5 times for each of the selected faculties making the total number of departments selected to be 20.

**Third stage: Selection of Respondents**

All participants eligible for the study were selected via a probability sampling until the minimum sample size was reached to ensure that the appropriate respondents were selected. 10 female participants were selected from each department, in total, 41 participants were selected from each faculty.

## Instruments for Data Collection

The instruments for data collection is a self-administered structured questionnaire. The instrument was subdivided into four sections as follows;

**Section A:** Socio-demographic characteristics of respondents.

**Section B:** Knowledge of breast cancer and breast cancer screening.

**Section C:** Attitudes of respondents towards breast cancer screening.

**Section D:** Methods of breast cancer screening.

**Section E:** Acceptability of breast cancer screening.

## Validation of the Instrument

The face and content validity of research instruments was established after vetting by the supervisors and it was sent to two experts in BioStatistics and public health option of the department of public health. They critically crosschecked the test items contained in the

questionnaire to make sure that they are simple, clear with understandable language, comprehensive to achieve the research objectives, questions and hypotheses. Their constructive modifications and suggestions helped to produce the final draft of the instrument.

**Reliability of the Instrument**

Reliability of the instrument was determined using pre-test method. The pilot test was carried out on 41 female participants in Adamawa State University, Mubi. This school shared similar characteristics with Taraba State University that was used for this study. The Cronbach's reliability technique is an advanced method for establishing reliability and was adopted to test the reliability of the instrument. It was done based on the reason that if the subjects for the trial test could respond appropriately to the instrument, then the subjects would equally respond appropriately. The reliability coefficient for the questionnaire was determined at 0.82 and was considered reliable for the study. This was considered high enough in line with Kerlinger (1986) who noted that reliability coefficient of 0.50 and above is appropriate for any measuring instrument.

**Method of Data Collection**

Data was collected by the researcher himself with the help of trained research assistants. 4 field assistants were trained for five days and the best two were selected. The minimum qualifications of the field assistants were senior secondary school certificates and they were trained on the objectives of the research work, its significance, how to interact with the subjects, how to get informed consents from respondents, how to conduct balloting and administration and collection of questionnaires. English language was mainly used as the respondents were students. The information from the respondents was obtained face to face and explanation on the contents of

the research instruments was given to the participants and participants individual consent obtained before administration was carried out.

## Methods of Data Analyses

The data was collated by the researcher manually and the entries were made into computer by a statistician. The data was analyzed using SPSS software version 21 based on research questions and hypothesis and was presented in tables. Qualitative data was presented with mean, frequency and percentages while inferential analysis were done using anova. Differences were considered significant at $p<0.05$. to test the relationship between knowledge, attitudes and age to the acceptability of breast cancer screening.

### Ethical consideration and informed consent.

Approval to carry out the research was obtained from the Management of Taraba state University, Jalingo. The consent of all the study participants was obtained after a brief explanation about the purpose of the study before the commencement of the data collection.

# CHAPTER FOUR

# RESULTS

**Table 4.1: Socio-demographic characteristics of respondents**

| Parameter | Num. Respondent (n= 206) | Percentage (100%) |
|---|---|---|
| **Age (years)** | | |
| 16-20 | 76 | 37.1 |
| 21-25 | 90 | 43.7 |
| 26-30 | 14 | 6.6 |
| 31-35 | 14 | 6.6 |
| 36-40 | 12 | 6 |
| **Total** | **206** | **100%** |
| | | |
| **Level of study** | | |
| 100 | 37 | 18 |
| 200 | 66 | 32.3 |
| 300 | 61 | 29.3 |
| 400 | 20 | 9.6 |
| 500 | 10 | 4.8 |
| PG | 12 | 6 |
| **Total** | **206** | **100%** |
| | | |
| **Marital status** | | |
| Single | 167 | 81.4 |
| Married | 36 | 17.4 |
| Divorced | 3 | 1.2 |
| **Total** | **206** | **100%** |
| | | |
| **Religion** | | |
| Christianity | 173 | 84.4 |
| Islam | 31 | 15 |
| Pegan | 2 | 0.6 |
| **Total** | **206** | **100%** |

From table 1 above, the socio-demographics of the respondents revealed that majority of the participants 43.7% (90) are of ages 21-25 years, and 16-20 years 37.1% (76) age range. The participants cut across all levels of study year from the departments selected during balloting, 32.3% (66) were from 200L, 29.3% (61) from 300L and 18% (37) from 100 level while 6% (12) were from the post graduate school. From the table above, majority of the respondents 81.4% (167) are single, 17.4% (36) are married and 3 (1.2%) were divorced. Most of the participants 84.4% (173) were of the Christian faith, 15% (31) were of Islam faith while 0.6% (2) identified as Pagans. There is no significant relationship between religion and acceptability of breast cancer screening among female students as P-value is greater than 0.05. In other word, religion of students does not determine if a student will accept to be screened for BCS.

**Table 4.2: Knowledge of breast cancer and breast cancer screening**

| Parameter | Num. Respondent (n= 206) | Percentage (100%) |
|---|---|---|
| **Breast cancer definition** | | |
| One breast is bigger than the other | 19 | 8 |
| Both breast are equal in size | 17 | 5.3 |
| Tumor in either one or both breast | 162 | 76.3 |
| Abnormal fluids coming out | 25 | 10.4 |
| **Total** | **206** | **100%** |
| | | |
| **Clinical manifestation** | | |
| Fluids coming out of the breast | 11 | 5.4 |
| Lump in one or both breast, pain, fluid, redness | 166 | 80.8 |
| Wound in one or both breast | 12 | 6 |
| Having excruciating pains | 17 | 7.8 |
| **Total** | **206** | **100%** |
| | | |
| **Causes of Breast Cancer** | | |
| When a man touch and sucks the breast | 20 | 9.6 |
| When the gods of the land are angry with the woman | 16 | 7.8 |
| Divine punishment from God | 10 | 5 |
| Urbanization and western life style | 146 | 70.8 |
| Having excruciating pains | 14 | 6.8 |
| **Total** | **206** | **100%** |

| | | |
|---|---|---|
| **Individuals Subcept to BC** | | |
| Females in schools | 28 | 13.4 |
| Single (Runs girl) | 34 | 16.4 |
| All female | 114 | 55.4 |
| Married females only | 30 | 14.8 |
| **Total** | **206** | **100%** |
| | | |
| **Have you heard about Breast cancer** | | |
| Yes | 181 | 88 |
| No | 25 | 12 |
| **Total** | **206** | **100%** |
| | | |
| **Where?** | | |
| School | 83 | 40.1 |
| Internet | 42 | 20.4 |
| Have not Heard | 21 | 10.2 |
| Health centre | 60 | 29.3 |
| **Total** | **206** | **100%** |

From the study as shown In Table 4.2 above on the level of knowledge of breast cancer and breast cancer screening, results showed that majority of the participants 76.3% (162) defined breast cancer as a presence of tumour in one or both breast while 10.4% (25) defined breast cancer as discharge of fluids from the breast, 8% (19) participant suggest that breast cancer occurs when one breast is bigger than the other. 80.8% (166) can state the accurate sign and symptoms of breast cancer while 7.8% (17) indicated that the clinical manifestation of breast cancer is having excruciating pains. When asked the causes of breast cancer, majority of the participants 72.8% (150) indicated that Urbanization and western life style is the major cause of Breast cancer, 8% (17) and 11.4% (23) indicated the causes to be divine punishment from God and when a man doesn‟t touch and suck the breast often respectively. On the perceived individual susceptibility to breast cancer, majority of the respondents 55.4% (114) accept that all females were susceptible to breast cancer, while 16.4% (34) respondents indicated single ladies (runs girls) to be more susceptible to breast cancer and 14.8% (30) respondents suggest that only married females were susceptible to breast cancer. When asked if they have heard of breast cancer screening, majority of the respondents 88% (181) have heard about breast cancer screening either in the school 40.3% (83), internet 18.4% (38) or in the health centre 29.3% (60) where they visited in the past. And about 55.4% were able to state that all females are at risk of breast cancer. There is significant relationship between level of knowledge a woman has concerning breast cancer screening and its acceptability as the p-value is less than 0.05.

**Table 4.3: Attitudes of female students to breast cancer screening**

| Parameter | Num. Respondent (N= 206) | Percentage (%) |
|---|---|---|
| **Definition of BSE** | | |
| Group of women examining the breast | 15 | 7 |
| A husband examining the breast | 12 | 6 |
| Self-conscious examination of the breast | 169 | 82 |
| A baby sucking her mother's breast | 10 | 5 |
| **Total** | **206** | **100%** |
| | | |
| **Views about BCS** | | |
| Means collecting revenues from women | 16 | 6 |
| Means of exposing a woman to sexual desires | 40 | 15 |
| It does more harm than good | 53 | 27.5 |
| It is beneficial | 94 | 51.5 |
| **Total** | **206** | **100%** |
| | | |
| **Views on women with BC** | | |
| They are destined by God | 12 | 5.4 |
| They have committed abomination | 16 | 7.8 |
| They are the scape goat | 27 | 13.2 |
| Is a normal disease process | 151 | 73.7 |
| **Total** | **206** | **100%** |

| | | |
|---|---|---|
| **Views on outcome** | | |
| It creastes fear and tention | 71 | 34.7 |
| It shortens ones' lifespan | 64 | 31.1 |
| It causes more harm than good | 43 | 21 |
| It sends men away from one | 28 | 13.2 |
| **Total** | **206** | **100%** |
| | | |
| **Screening religious terms** | | |
| Its a taboo to talk about it | 19 | 9.5 |
| My religion does not permit it | 20 | 9.6 |
| it does not affect my relationship with God | 153 | 74.3 |
| My religious leader said is a sin | 14 | 6.6 |
| **Total** | **206** | **100%** |

From the study as shown In Table 4.3 above on the attitude of female students towards breast cancer screening and examinations, results indicated that majority of the participants 82% (169) rightly defined breast self-examination as the conscious examination of the breast while 6% (12) respondents indicated BSE as a husband examining his wife‟s breast. On the views about breast cancer screening, majority of the respondents 51.5% (94) believe breast cancer screening programs are beneficial to the woman-fold while 27.5% (53) indicate it does more harm than good. 15% (40) respondents and 6% (16) respondents indicate that breast cancer screening is a means of exposing women to sexual desires and also a means of collecting revenues from women

respectively. When asked their views and opinions on breast cancer disease, majority of the respondents 73.7% (151) indicated it was a normal natural disease process that can happen to any women, 13.2% (27) respondents said women who are victims of breast cancer must have committed an abomination. While 5.4% (12) respondents view such diseases were destined by God. About the possible outcome of Breast Cancer Screening, 34.7% (71) respondents indicate that breast cancer screening creates fear and tension, 21% (43) indicate it does more harm than good while 31.1% (64) and 13.2% (28) respondents view breast cancer screening as shortening like as well as sends men away respectively. 74.3% of the respondents‟ view breast cancer screening religiously as not affecting their relationship with God.

**Table 4.4: Methods of breast cancer screening among female students**

| Parameter | Num. Respondent (N= 206) | Percentage (%) |
|---|---|---|
| **BC screening practiced** | | |
| Breast self-examination | 149 | 72.4 |
| Mammography &MRI only | 10 | 4.8 |
| Breast Ultra sound & Biopsy | 27 | 13.2 |
| All of the above | 20 | 9.6 |
| **Total** | **206** | **100%** |
| | | |
| **Method preferred** | | |
| Mammography | 9 | 4.2 |
| Breast self-examination | 80 | 38.9 |
| Breast Ultra sound & Biopsy | 28 | 13.8 |
| Clinical breast examination | 89 | 43.1 |
| **Total** | **206** | **100%** |
| | | |
| **Cheapest method** | | |
| Clinical breast examination | 25 | 12 |
| Breast self-examination | 165 | 80.2 |
| Mammography | 6 | 3 |
| Breast Ultra sound & Biopsy | 10 | 4.8 |
| **Total** | **206** | **100%** |

| | | |
|---|---|---|
| **Effective method** | | |
| Breast self-examination | 28 | 13.8 |
| Clinical breast examination | 96 | 46.7 |
| Mammography | 57 | 27.5 |
| Breast ultrasound | 25 | 12 |
| **Total** | **206** | **100%** |

From the study as shown In Table 4.4 above on the method of breast cancer screening among female students, the results revealed that 72.4% (149) of the respondents practiced breast self-examination while 9.6% (20) respondents practiced both breast self-examination and other screening methods such as mammography, breast ultra-sound and biopsy. Majority of the respondents 43.1 (89) preferred clinical breast examination to other methods, while 38.9% (80), 13.8% (28) and 4.2% (9) preferred breast self-examination, breast ultrasound and mammography respectively. When cost is being considered, majority of the respondents 80.2% (165) viewed breast self-examination as being the cheapest method employed during screening process of breast cancer followed by 12% (25) respondents who indicated clinical breast examination. However, 46.7% (96) of the respondents opined that Clinical Breast Examination by a doctor or a health professional and Mammography are the most effective methods of breast cancer screening.

**Table 4.5: Acceptability of BCS among female students of Taraba state University**

| Parameter | Num. Respondent (N= 206) | Percentage (%) |
|---|---|---|
| **Would you recommend Breast Cancer Screening to friend or family?** | | |
| Yes | 194 | 94.6 |
| No | 12 | 5.4 |
| **Total** | **206** | **100%** |
| **How often do you practice Breast self-examination?** | | |
| Yearly | 48 | 23.4 |
| Twice a year | 68 | 32.9 |
| Don't do it | 70 | 34.1 |
| Once every two years | 20 | 9.6 |
| **Total** | **206** | **100%** |
| **Age to commence screening?** | | |
| 20 years | 133 | 64.6 |
| 30years | 33 | 16.2 |
| 40 years | 30 | 14.4 |
| 50 years and above | 10 | 4.8 |
| **Total** | **206** | **100%** |

| | | |
|---|---|---|
| **Improving screening** | | |
| Should be compulsory | 23 | 11.4 |
| Centre for screening should be establish | 47 | 22.7 |
| Seminar and lectures should be routinely given | 100 | 48.5 |
| Female should be encouraged | 36 | 17.4 |
| **Total** | **206** | **100%** |

From the study as shown In Table 4.5 above on the acceptability of breast cancer screening among female students in Taraba state University, the results revealed that majority of the respondents 94.6% (194) attested to the fact breast cancer screening is beneficial and would eagerly recommend breast cancer screening to friends and family while 5.4% (12) will not. Also, about 56.3% (116) practiced breast cancer screening yearly either once or twice in a year, 9.6% (20) practiced breast screening once every two years while 34.1% (70) do not participate breast cancer screening. On the appropriate age to begin screening, Majority of the respondents 64.6% (113) recommended that women should commence breast cancer screening at 20years of age, 16.2% (33) suggest the appropriate age to be 30 years, while 14.4% (30) and 4.8% (10) recommend 40 years and 50 years respectively. About 48.5% (100) of the respondents advocated that routine seminar and lectures should be organize in the institutions to create awareness of Breast Cancer and Breast Cancer Screening programs while 22.7% (47) respondents suggested the establishment of screening centres to improve on screening services.

### 4.1 Hypotheses Testing

In this study, three null Hypotheses were tested to determine which of the predictor variables produced greater influence on the outcome variable of knowledge, attitudes and age in the acceptability of breast cancer screening. Chi square analysis was used in conducting this test at 0.05 level of significance. Decision rule applied was that if $P \leq 0.05$, then the Null Hypotheses will be rejected in favor of alternative hypotheses and if $P \geq 0.05$, then the Null Hypotheses will be accepted and the alternative rejected.

**Table 4.6: Association between Knowledge And Acceptability Of Breast Cancer Screening**

| Knowledge of Breast Cancer screening | No. Respondent (n= 206) (%) | No. that accept BSC | Chi-square | P-value |
|---|---|---|---|---|
| **Breast cancer definition** | | | | |
| One breast is bigger than the other | 19(8) | 15 | 15.69 | 0.01 |
| Both breast are equal in size | 17(5.3) | 1 | | |
| Tumor in either one or both breast | 162(76.3) | 131 | | |
| Abnormal fluids coming out | 25(10.4) | 20 | | |
| **Clinical manifestation** | | | 14.938 | 0.002 |
| Fluids coming out of the breast | 11(5.4) | 9 | | |
| Lump in one or both breast, pain, fluid, redness | 166(80.8) | 135 | | |
| Wound in one or both breast | 12(6) | 10 | | |
| Having excruciating pains | 17(7.8) | 13 | | |
| **Causes of Breast Cancer** | | | 35.918 | 0.01 |
| When a man touch and sucks the breast | 20(9.6) | 16 | | |
| When the gods of the land are angry with the woman | 16(7.8) | 13 | | |
| Divine punishment from God | 10(5) | 10 | | |
| Urbanization and western life style | 146(70.8) | 123 | | |

| | | | | |
|---|---|---|---|---|
| **Have you heard about Breast cancer** | | | 1.315 | 0.002 |
| Yes | 181(88) | 147 | | |
| No | 25(12) | 20 | | |

**Ho: 1.** There is no significant relationship between knowledge and acceptability of breast cancer screening among female students in Taraba State University, Jalingo.

**HA: 1.** There is significant relationship between knowledge and the acceptability of breast cancer screening among female students in Taraba State University, Jalingo

Results from the above analysis showed a significant relationship with correlation coefficient analysis of knowledge to acceptability with P- Value of <0.01. This is an indication of a significant relationship between knowledge and acceptability of breast cancer screening. Hence, we reject the Null hypothesis and accept the alternate hypothesis.

**Table 4.7: Association between Attitudes And Acceptability Of Breast Cancer Screening**

| Attitude towards breast cancer screening | No. Respondent (N= 206) (%) | No. that accept BSC | Chi-square | P-value |
|---|---|---|---|---|
| **Views about BCS** | | | 21.222 | 0.01 |
| Means collecting revenues from women | 16(6) | 10 | | |
| Means of exposing a woman to sexual desires | 40(15) | 25 | | |
| It does more harm than good | 53(27.5) | 46 | | |
| It is beneficial | 94(51.5) | 86 | | |
| **Views on women with BC** | | | 4.085 | 0.025 |
| They are destined by God | 12(5.4) | 9 | | |
| They have committed abomination | 16(7.6) | 13 | | |
| They are the scape goat | 27(13.2) | 22 | | |
| Is a normal disease process | 151(73.7) | 123 | | |
| **Views on outcome** | | | 17.068 | 0.01 |
| It creastes fear and tention | 71(34.7) | 58 | | |
| It shortens ones' lifespan | 64(31.1) | 52 | | |
| It causes more harm than good | 43(21) | 35 | | |
| It sends men away from one | 28(13.2) | 22 | | |
| **Screening religious terms** | | | 2.824 | 0.42 |

| | | |
|---|---|---|
| Its a taboo to talk about it | 19(9.5) | 16 |
| My religion does not permit it | 20(9.6) | 16 |
| it does not affect my relationship with God | 153(74.3) | 124 |
| My religious leader said is a sin | 14(6.6) | 11 |

**Ho: 2.** There is no significant relationship between attitudes and acceptability of breast cancer screening among female students in Taraba State University, Jalingo.

**HA: 2.** There is a significant relationship between attitudes and acceptability of breast cancer screening among female students in Taraba State University, Jalingo.

Results from this study showed a positive significant relation with correlation coefficient analysis of attitudes to acceptability with P- Value of <0.01 This is an indication of a significant relationship between attitudes and acceptability of breast cancer screening. Hence, we reject the null hypothesis and accept the alternate hypothesis.

**Table 4.8: Association between Socio-Demographic Characteristics (Age) and Acceptability Of Breast Cancer Screening**

| Parameter | Num. Respondent (n= 206) (%) | Num. that Accept BCS | Chi-square | P-value |
|---|---|---|---|---|
| **Age (years)** | | | | |
| 16-20 | 76(37.1) | 62 | | |
| 21-25 | 90(43.7) | 73 | | |
| 26-30 | 14(6.6) | 11 | **5.289** | **0.259** |
| 31-35 | 14(6.6) | 11 | | |
| 36-40 | 12(6) | 10 | | |

**Ho: 3** There is no significant relationship between socio-demographic characteristics (age) and acceptability of breast cancer screening among female students in Taraba state University, Jalingo

**HA: 3** There is a significant relationship between socio-demographic characteristics (age) and the acceptability of breast cancer screening among female students in Taraba state University, Jalingo

Results from this study showed a negative significant relation with correlation coefficient analysis of socio-demographic characteristic (age) to acceptability with P- Value of >0.2 This is an indication of no significant relationship between socio-demographic characteristics and acceptability of breast cancer screening. Hence, we accept the null hypothesis and reject the alternate hypothesis. There is no significant relationship between age and acceptability of breast cancer screening among female students as P-value is greater than 0.05. In other word, age of students does not determine if a student will accept to be screened for BC.

# CHAPTER FIVE

# DISCUSSION, CONCLUSSION AND RECOMMENDATIONS

## 5.1 Discussion

### The knowledge level of breast cancer and breast cancer screening among female students in Taraba state University

Breast cancer has become a common disease of public health concern causing cancer among women across the world with over 2 million new cases being diagnosed. The availability and utilization of breast cancer screening services plays a vital role in ensuring early detection, treatment and management of breast cancer. However, various factors can significantly influence the attitude towards and acceptability of breast cancer screening services among women across all age group. Understanding these factors is essential for designing effective interventions and policies to improve breast cancer screening outcomes. This discussion will explore the knowledge, attitude and acceptability of breast cancer screening among female students in Taraba state university, examining their importance of breast cancer screening service utilization and highlighting the implications for the burden of breast cancer. By analysing the knowledge, attitude and acceptability of breast cancer screening services, we can gain valuable insights into the challenges faced by women and identify strategies to address disparities and improve overall breast cancer screening outcomes.

On the level of knowledge of participants, majority of respondents 88% reported as having heard about breast cancer and breast cancer screening which indicates high level of knowledge of among the participants this correlates with the findings of previous studies by Stiggelbout et. al, (2019), where the average participant have knowledge of breast cancer and its screening. They

opined that having an averaged knowledge about breast cancer screening can influence and increase its acceptability among the women. Another study done in Jordan on knowledge, attitudes & practices of breast cancer screening among women, by Othman et. al, (2014) showed that 79.4% of the participants had a good quality of knowledge regarding breast cancer and its screening. Majority of them seen undergoing breast cancer screening were being forced by the physicians. The implication is that a woman may not have the knowledge about breast cancer screening and yet undergo screening as an instruction or prescription from her physician. However, according to the study by Cumber et. al, (2017) on knowledge, attitudes & practices of breast cancer screening, its findings supported the above statement, that the women in the Sub-Saharan Africa especially those in the rural areas have limited or no knowledge and consequently do not practiced breast cancer screening.

The use of the different sources of information may generate different levels of individuals‟ knowledge of leprosy. The sources of information on on breast cancer in this study were varied (Table 4.2). The most important sources of information were from school, internet/social media and community health workers in the health centre. In Nigeria universities, community health workers are important stake-holders in community health programmes like vaccination, community distribution of essential drugs against infectious diseases and distribution of treated bed nets in the fight against malaria (Ogban, 2020). This highlights the important role the school authority and CHW have in shaping the perception of people towards a disease. From our findings, an intervention to address improve knowledge and acceptability of breast cancer screening through the school could be the most effective approach.

Only 80.8% of the participants knew the clinical manifestation of breast cancer. This is not comparable to the 19.26% reported in Ekiti (Dahiru et al, 2022). The other of our participants wrongly cited as causes of breast cancer to be: constant excruciating pain or a curse from the gods or punishment for sins and "No idea" (Table 4.2). Similar misconceptions have been reported in the northwest of Nigeria (Dahiru et al, 2022). In Ethiopia it is believed that breast cancer is linked to curse/punishment by god, heredity, bad blood, and immoral conduct (Urgesa et al, 2020), while in eastern Sudan it has been linked mainly to some food types (Sharma et al, 2015). These misconceptions are clearly grounded in the customs and beliefs of the communities concerned, and are common to cultures in Africa, Asia and South America (Ngozi et al, 2020).

**The attitudes that may influence the acceptability of breast cancer screening among female students in Taraba state University, Jalingo**

27.5% of the respondents‟ view breast cancer screening as causing more harm to the women than good, 6% are of the opinion that it as just a means of generating revenue by the government and the health care facilities, 15% view it as a means of unnecessaryly exposing women to increased sexual desires and about 73.7% of the respondents viewed breast cancer as a natural disease process that happens to every human on this planet earth. The findings of this study is in congruent with that of Adebamowo & Adekunle (1999) in a study on the incidence of breast cancer among women in Nigeria, acknowledged that the rapid increase in the incidence of breast cancer in Nigeria is due to western lifestyle and changing socioeconomic profile of the country. The implication is that the more our women try to live like the white or as our level of social development as a country increase, the more likely the incidence of breast cancer will increase. The study by Che Mohammed & Moey (2021) on the theoretical framework of Health Belief

Model on the stages of behavioural adoption, also supported the findings of this study. According to study, the women believed that health and illness are determine by God, therefore practicing breast cancer screening doesn‟t stop what God has destined to happen to one. Also, a study by Cumber et. al, (2017) posits that the outcomes of breast cancer screening often causes embracement. This means acceptability of breast cancer screening may reduce with time if this continue in the study area.

**Methods of breast cancer screening frequently used amongst female students in Taraba state University**

Results showed that 72.4% have used Breast Self-Examination, Breast Ultrasound (13.2%), Mammography and MRI (4.8%), while 9.6% indicated using all the methods. This is comparable with a study conducted in south eastern Nigeria and Cameroon, where majority of the participants have carried out Breast Self examnination (Olasehinde et al, 2015). However, 43.1% of the respondents shows preference to Clinical Breast Examination by a doctor or health professional to other methods. 38.9% prefer Breast Self-Examination and 13.8 are in love with Breast Ultrasound to other methods earlier mentioned above. This is in agreement with a study conducted in United States of America, where participants preferred clinical breast examination because of the professional services that comes with it (Smith et al, 2017). In our sample, majority of the respondents (80.2%) agreed that Breast Self-Examination is the cheapest of all the breast cancer screening methods, while 12% are of the opinion that Clinical Breast Examination by the doctor or health personnel is the cheapest method. This study acknowledged that majority of the respondents were conversant with many varied methods of breast cancer screening. This contradicts the findings of Alshahrani, Alhammam, Munyif, Alwadei,

Alzamanan & Aljohani, (2019), on knowledge, attitudes & practices of breast cancer screening methods among female patients in Primary health care centers in Najram, Saudi Arabia. It was observed that there was inadequacy of breast cancer screening methods and Breast Self-Examination, with the majority of the women claiming that they were not aware of any screening method available for use. The study therefore, concluded that more Public health measures needs to be put in place in order to increase access to breast cancer screening methods.

**The extent of acceptability of breast cancer screening among female students in Taraba state University, Jalingo**

The study showed that 94.6% of the respondents accepted that breast cancer screening is beneficial and eagerly agreed to recommend it to family and friends. This is in congruent with studies carried out on women in Korea, Turkey and Iran which indicated there was a positive association between perceived benefit of early detection and screening behaviour and women who claimed to have undergone mammography perceived higher benefits and fewer barriers compared to those who have never had mammography (Secginli & Nahcivan, 2006; Ahmadian & Samah, 2012).

This study shows that a significant number of the respondents 56.3% are practicing breast cancer screening either yearly, twice a year or once in every two years. This shows that they may be at risk of late detection as the survival rate depends largely on the stage at diagnosis in which the best survival (81.7%) is at stage 1 which could further be improved to 90% or more by adopting early breast cancer detection practices (Yip et al., 2006). This is in agreement with Nigerian a study by Bevers et. al, 2018 reporting Sub-Saharan women especially Nigerian women present

with late stages of breast cancer due to lack of awareness as well as low uptake of breast self examination (BSE), clinical breast examination (CBE) and mammography screening. Although BSE, CBE and mammography are believed to be suitable and efficient ways to ensure breast cancer can be detected earlier nevertheless, breast screening facilities in Sub-Saharan African countries especially Nigeria are still underutilized due to the lack of breast cancer awareness. About 48.5% (100) of the respondents advocated that routine seminar and lectures should be organize in the institutions to create awareness of Breast Cancer and Breast Cancer Screening programs while 22.7% (47) respondents suggested the establishment of screening centres to improve on screening services in and around the school. This will help to increase the level of awareness of breast cancer in and around the school. This is in agreement with Cumber et. al, (2017) who observed that the major challenge in most Sub-Saharan African (SSA} countries is that of lack of awareness. Most women have limited or no knowledge/information, especially those in rural areas. There is also a lack of knowledge on breast self examinations (BSE) and who should conduct them, especially in rural areas (Nwaneri, 2016, Oladimeji, 2015).

## Conclusion

Effective breast cancer screening in a *sine qua non* for the management and treatment of breast cancer. There is need for adequate knowledge about breast cancer screening, affordable methods to be use during the routine process, having the right attitudes that will foster compliance and willingness to accept it as part of our daily life. This study addressed the problem of knowledge, attitudes in the acceptability of breast cancer screening among female students in Taraba state University, Jalingo. Knowledge of breast cancer and breast cancer screening was found to be averagely high among the study respondents. There is high level of acceptability of breast cancer

screening among female students in Taraba state University with majority reporting varied utilization of various breast cancer screening methods. Various Methods of screening frequently used include Mammography, Breast self-examination, Breast Ultra sound & Biopsy and Clinical breast examination while attitudes towards these services were positive as majority of the respondents believe breast cancer screening programs are beneficial to the woman-fold. Information obtained from the study also showed that there is a significant relationship between knowledge and the acceptability of breast cancer screening. Having adequate knowledge about breast cancer screening and right attitudes can influence or increase the acceptability of breast cancer screening programs among females.

**Lessons Learnt/Contribution of study**

This study has provided new insight into the dynamics of breast cancer screening among the female fold in a way that will produce expected behaviour practice. In this study, evidence demonstrates that for optimal adherence to the behavioural practice of breast cancer screening having adequate knowledge about the measure, awareness of the availability of screening methods, willingness to avoid certain negative attitudes, will stimulate and sustain behaviour change. However, imposing routine practice of breast cancer screening will go a long way to avert its ill consequences on the women and the society. Furthermore, breast cancer screening should no longer be restricted to older women ages 40 and above. Those below this age range should be encourage to participate in routine breast cancer screening.

**Recommendations**

The study recommended that the willingness of the stakeholders to learn and change their attitudes will enhance the acceptability of breast cancer screening among women in the society.

Many recommendations are drawn from the results of this study and are as follow

i Women should be encouraged to start breast cancer screening early at young age and breast cancer screening methods should be subsidized to enable women of all age group and economic strength afford and utilize it.

ii Routine seminar should be organized and delivered in order to sensitized the females to practice Breast Self-Examination as often as possible so as to be familiar with their breast and report any changes noticed to a physician or specialist.

iii For sustainable breast cancer screening services, there should be collaborative resources identification and mobilization for training and retraining of professionals for breast cancer service uptake.

iv There is need to develop strategies to address the economic challenges faced by women, such as poverty and low income levels which may prevent them from accessing screening services. This may include implementing financial support programs, providing subsidies for breast cancer screening services, and exploring options for health insurance coverage to alleviate the financial burden on women and their families.

v Heads of institutions should liaise with Government to Improve the accessibility and availability of breast cancer screening services by investing in health infrastructure and expanding service delivery locations, particularly in schools, remote or underserved areas. This can reduce the barriers related to proximity and ensure that women/ladies have convenient access to quality breast cancer screening services.

vi Encourage the active involvement and support of husbands or partners in breast cancer screening matters. This can be achieved through educational campaigns targeting men,

providing information on the importance of frequent breast cancer screening, and creating supportive environments that promote shared decision-making and joint responsibility.

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## OPERATIONAL DEFINITION OF TERMS

**Knowledge:** Is the ability to have facts, information and skills acquired through experience or education, the theoretical or practical understanding of a subject.

**Attitudes:** This is simply a settled way of thinking or feeling about something.

**Acceptability:** Is defined as the quality of being tolerated or allowed I e the willingness to allow something to be part of you.

**Breast:** This is the tissue overlying the chest (pectoral) muscle muscles made of specialized tissue (glandular tissue) that produces milk

**Cancer:** This is a disease in which some of the body‟s cells grow uncontrollably and spread to other parts of the body

**Screening:** This is a preventive approach or strategy used to look for as yet-unrecognized conditions or risk markers

**Mammography:** This is the process of using low-energy X-ray to examine the human breast for diagnosis and screening aimed at early detection of breast cancer.

**Breast Self-Examination:** This is the conscious self-examination of the breast by the woman herself in order to identify any signs of breast cancer or report any abnormality‟

**Breast Clinical-Examination:** This is the examination of a woman breast by a doctor or health professional

# APPENDIX

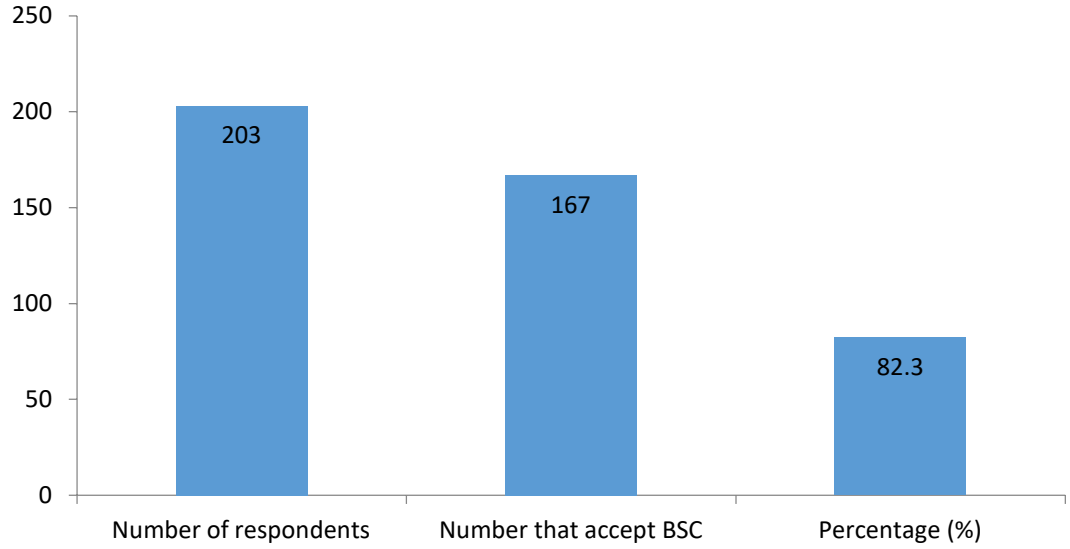


**Figure1: A Bar chart showing prevalence of breast cancer screening of respondents**

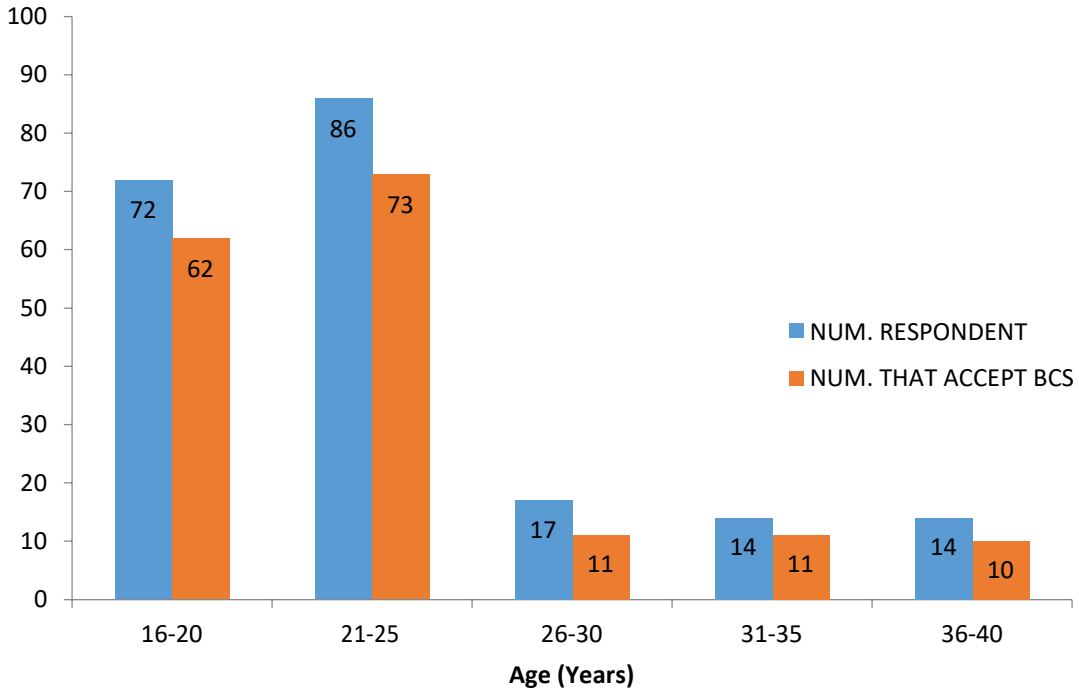


**Figure 2: A Bar chart showing respondents acceptability of BCS by age**

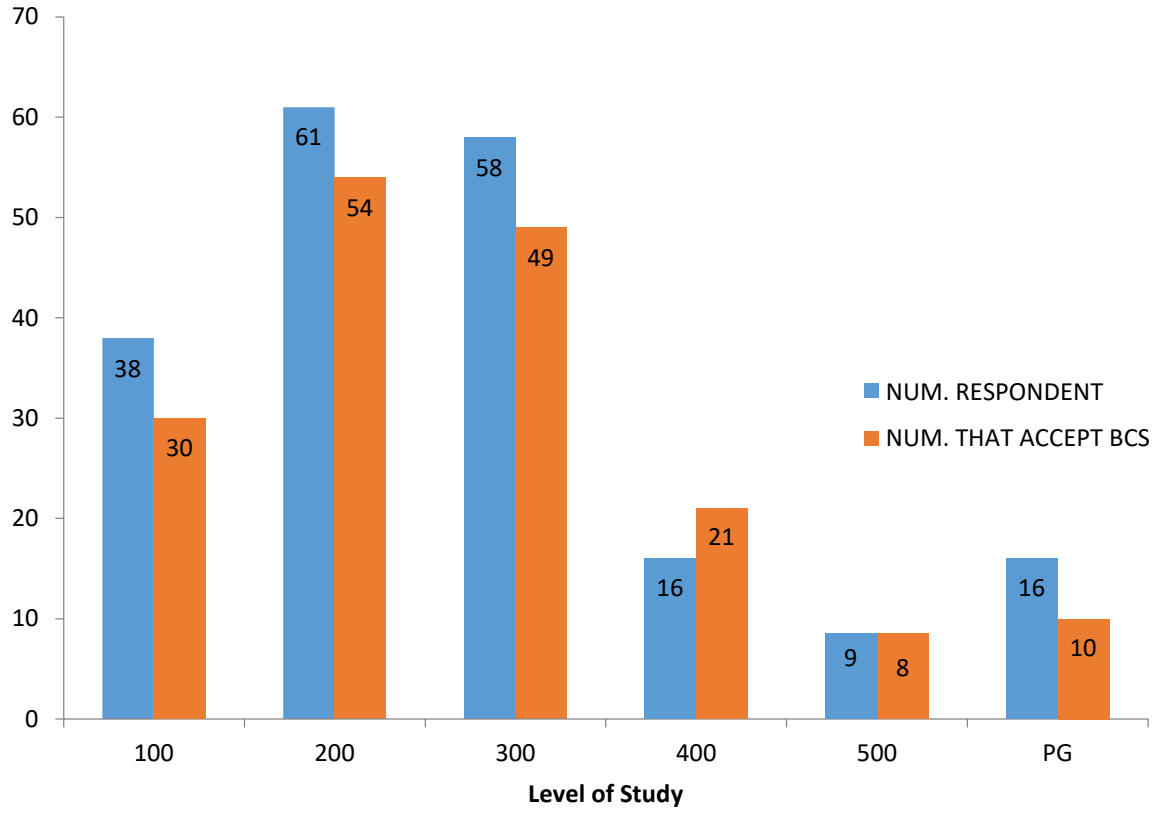


**Figure 3: A Bar chart showing respondents level of acceptability by year of study**

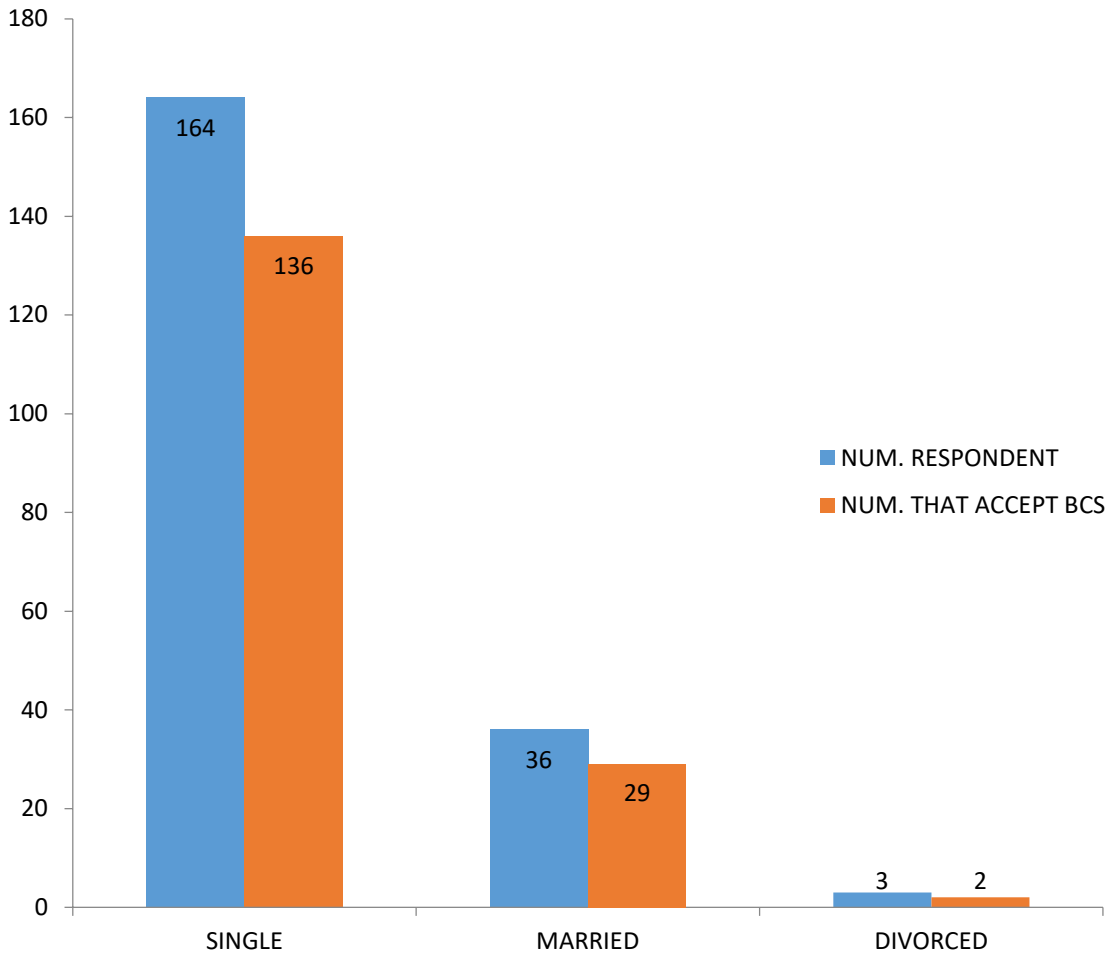


**Figure 4: A Bar chart showing respondents acceptability of BCS by marital status**

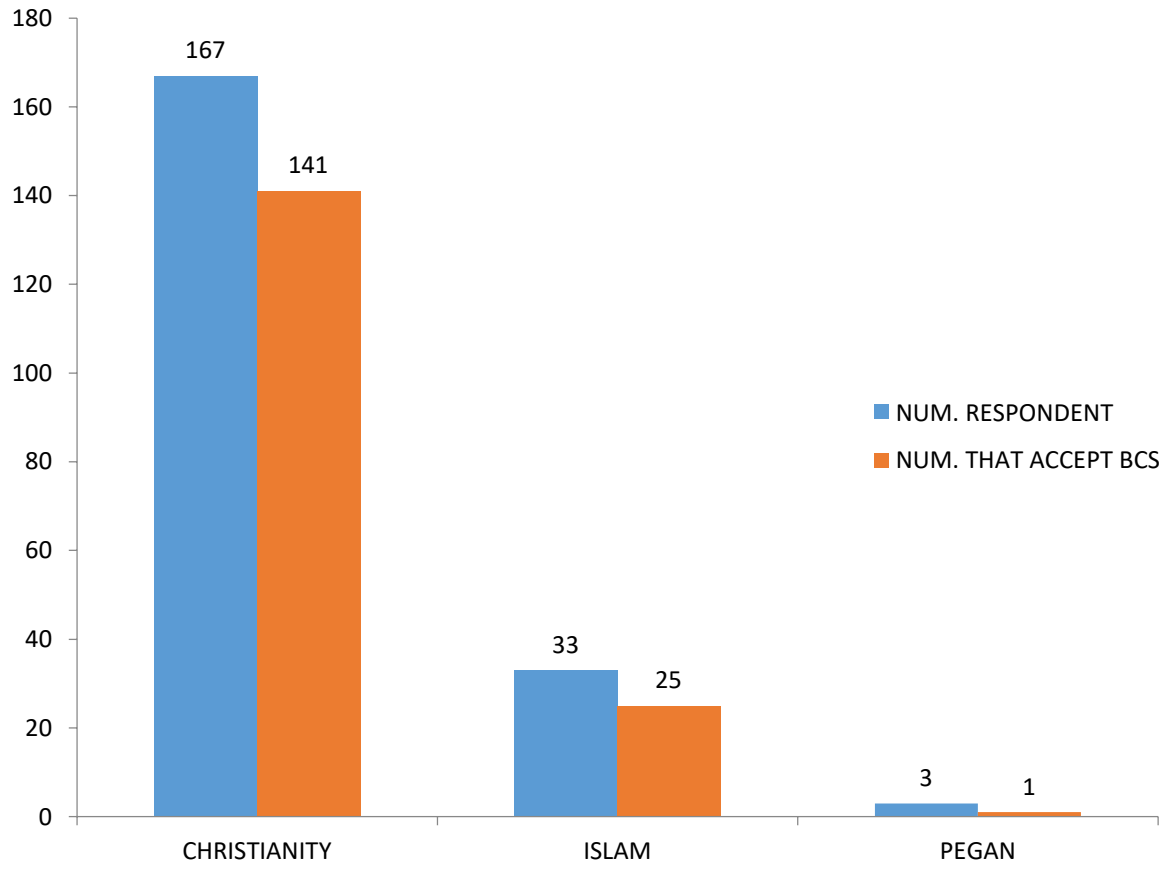


**Figure 5: A Bar chart showing level of acceptability of BCS by religious affiliation**

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/ b

## QUESTIONNAIRE

Dear respondent,

I am Baraya Aminu Kaduna, a postgraduate student in the department of Public Health, Federal University of Technology Owerri, Imo state. The purpose of this questionnaire is to enable the researcher gather information about the knowledge, attitudes in the acceptability of breast cancer screening among female students in Taraba state University, Jalingo.

**DO NOT WRITE YOUR NAME.** Your participation in this study is voluntary and the responses provided will strictly be used for academic purpose. There is no right or wrong answer, instead, it is desired that you give your truthful and honest responses. Your willingness to complete the questionnaire implies you have given consent to participate in this study.

Thank you for your anticipated cooperation

**Instruction:** Tick the appropriate answer in the options provided for each question below in each section

### SECTION A: SOCIO-DEMOGRAPHIC CHARACTERISTICS OF THE RESPONDENTS

1. What is your age range? (a) 16-20 years ( ) (b) 21-25 years ( ) (c) 26-30 years ( ) (d) 31-35 years ( ) (e) 36-40 years ( )

2. What is your current year of study? (a) 100L ( ) (b) 200L ( ) (c) 300L ( ) (d) 400L ( ) (e) 500L ( ) (f) Post graduate student ( )

3. What is your marital status? (a) Single ( ) (b) Married ( ) (c) Divorced/separated ( )

4 What is your religious affiliation? (a) Christianity ( ) (b) Islam ( ) (c) Pagan ( )

### SECTION B: KNOWLEDGE OF BREAST CANCER AND BREAST CANCER SCREENING

5. Which of the following will you consider as being breast cancer definition?
(a) One breast is bigger than the other ( )
(b) Both breast are equal in size ( )
(c) Tumour or abnormal growth in either one breast or both ( )
(d) Abnormal fluid coming out of the breast ( )

6. Which of the following will you consider as being the signs and symptoms of breast cancer?
(a) Fluids coming out of the breast only ( )
(b) Lump in one or both breast, pain, fluid & redness ( )
(c) wound in the one or both breast ( )
(d) Having excruciating pain in both breast only ( )

7. Which of the following groups of individuals will you consider breast cancer to be most common? (a) Females in school ( ) (b) Single runs girls ( ) (c) All females ( ) (d) Married females only ( )

8. Have you heard of Breast cancer screening? (a) Yes ( ) (b) No ( )

9. Where did you hear about breast cancer screening? (a) School ( ) (b) Internet ( ) (c) Have not heard it before ( ) (d) Health centre ( )

**SECTION C: ATTITUDES OF FEMALE STUDENTS TO BREAST CANCER SCREENING**

10. Breast cancer occur as a result of…….

(a) When men touch & suck one‟s breast ( )

(b) When the gods of the land are angry with the woman ( )

(c) Sign of divine punishment from God ( )

(d) Urbanization and western lifestyle ( )

11. What would you say about Breast cancer screening?

(a) Breast cancer screening is a means to collect revenue from women ( ) (b) Is a means of exposing a woman to sexual desire ( ) (c) It does more harm than good (d) It is beneficial

12. What would you say about those women with breast cancer? (a) They are destined by God ( ) (b) They have committed abominable act ( ) (c) They are the scape goat ( ) (d) Is a normal disease process ( )

13. What is your view on the outcome of breast cancer screening? (a) It creates fear & tension () (b) It shortens one‟s life span ( ) (c) It causes more harm in the body ( ) (d) It sends away men from one ( )

14. How would you consider breast cancer screening in the light of your religious belief? (a) Is a taboo to talk about it ( )(b) My religion does not permit it ( ) (c) Is okay since it doesn‟t affect my relationship with God ( ) (d) My religious leader said is a sin against God ( )

**SECTION C: METHODS OF BREAST CANCER SCREENING AMONG FEMALE STUDENTS**

15. Which of the following methods of Breast cancer screening have you practice?

(a) Breast self-examination ( )
(b) Mammography & MRI only ( )
(c) Breast ultrasound & Biopsy ( ) (d) All of the above ( )

16. Which method of breast cancer screening do you prefer?

(a) Mammography ( ) (b) Breast Self-Examination ( ) (c) Breast ultrasound ( ) (d) Clinical breast examination by a doctor or health professional ( )

17. Which of the methods would you consider as the cheapest? (a) Clinical breast examination by a doctor ( ) (b) Breast Self-Examination ( ) (c) Mammography ( ) (d) Breast ultrasound

18. Which of the methods would you consider as being effective? (a) Breast Self-Examination ( ) (b) Clinical breast examination by a doctor ( ) (c) Mammography ( ) (d) Breast ultrasound

19. How would you explain Breast Self-Examination as a method of screening?

(a) Group of women examining the breast of a woman ( ) (b) A husband examining the breast of his wife ( ) (c) Self-Conscious way by which a woman examine her breast regularly for any sign of breast cancer ( ) (d) When a baby sucks her mother‟s breast

**SECTION D: ACCEPTABILITY OF BREAST CANCER SCREENING BY FEMALE STUDENTS**

20. Would you say that breast cancer screening is beneficial?

(a) Yes ( ) (b) No ( )

21. Would you like to recommend breast cancer screening to a friend or family member?

(a) Yes ( ) (b) No ( )

22. How often do you practice breast cancer screening?

(a) Yearly ( ) (b) Twice in a year ( ) (c) I don‟t do it ( ) (d) Once every two years ( )

23. At what age would you recommend a woman to commence breast cancer screening?

(a) 20 years ( ) (b) 30 years ( ) (c) 40 years ( ) (d) 50 years & above ( )

24. How can Breast cancer screening be improved in this institution?

(a) Should be made compulsory for all females ( ) (b) Centre for screening should be establish in the school ( ) (c) Seminars & lectures on breast cancer & screening should be given routinely ( )

(d) Females should encourage to practice Breast Self-Examination ( )