ASSOCIATION BETWEEN FAMILY HISTORY OF BREAST CANCER AND SCREENING AMONG WOMEN IN SELECTED COMMUNITIES IN IBADAN

BY

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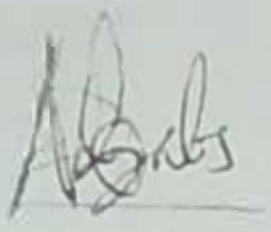
CERTIFICATION

This is to certify that this research work was carried out by Afolabi Oluwatobiloba Toyosi in the Department of Epidemiology and Medical Statistics, Faculty of Public Health, College of Medicine, University of Ibadan under my guidance and supervision.



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DEDICATION

This project is dedicated to the Almighty God, My late mum, my amazing dad, my awesome brothers and to my wonderful supervisor.

ACKNOWLEDGEMENT

I just want to use this medium to thank everyone that has helped in my course of study and have made this journey easy and contributed in no small measure to the success of the completion of this program.

My sincere appreciation goes to the Almighty God, for his faithfulness and everlasting love. To my supervisors Dr Adedokun for his great contributions towards this work and Dr Bamgboye for his help. To all my lecturers, who has groomed and taught me and has shown great support to my course of study, to all entire staff of the Department of Epidemiology and Medical Statistics and Faculty of Public Health, University of Ibadan has a whole.

I would like to take out time to thank, my wonderful brothers, and my awesome dad for their love, support, and encouragement, I love you.

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ACRONYMS

BC	-	BREAST CANCER
CRC	-	COLERECTAL CANCER
FH	-	FAMILY HISTORY
FHBC	-	FAMILY HISTORY OF BREAST CANCER
ACS	-	AMERICAN CANCER SOCIETY
LGA	-	LOCAL GOVERNMENT AREA
BSE	-	BREAST SELF EXAMINATION
CBE	-	CLINICAL BREAST EXAMINATION
AICR	-	AMERICAN INSTITUTE FOR CANCER RESEARCH
ISQN	-	INFORMATION & SUPPORT NEEDS QUESTIONNAIRE
HBOC	-	HEREDITARY BREAST & OVARIAN CAANCER

ABSTRACT

The incidence of breast cancer has progressively increased over the last couple of years and now constitutes important causes of morbidity and mortality in sub Saharan Africa. Women with a family history are at increased breast cancer risk and prevention programs based on family history could reduce breast cancer incidence among women with an affected relative with breast cancer. The objective of this study is to determine the association between family history of breast cancer and breast cancer screening practices and risk perception among women in Ibadan.

A cross sectional study design was used for the study. Eight hundred and fifty women in selected communities were selected using a 4-stage cluster sampling. An interviewer-administered semi-structured questionnaire was used to obtain data on socio-demographic characteristics, lifestyle data, reproductive history, medical history of breast cancer and other cancer types among relatives, breast cancer knowledge and risk perception, and screening practices. The items on knowledge about breast cancer were combined to generate a knowledge score. Association between family history of breast cancer or any cancer and screening were tested using the Chi square test and multiple logistic regression at 5% level of significance

The mean age was 40.6 years (SD = 11.9) and 68.1% were currently married. The highest proportion of the respondents attained secondary level of education (41.8%) followed by those with tertiary education (41%). The proportion of respondents that reported a family history of cancer was 8%. More than one third of the respondents (34.8%) reported to have had self-breast examination, while only 8.8% have had their breast examined by a doctor, also 3.1% of the respondents has done mammography. Women with a family history were 2.33 times more likely than those without a history to have recent CBE, however the association was not statistically significant (95% CI = 0.96 – 5.68). There was also no significant association between family history and mammography on logistic regression. However, there was a significant association between family history of breast cancer and medium/high perceived breast cancer risk (OR = 2.79, 95% CI = 1.23 – 6.32).

There was a higher perceived risk of breast cancer among women with a family history of cancer. Cancer risk clinics need to be set up in oncology centres where relatives of breast cancer patients can be counselled about opportunities that exist for cancer screening and lifestyle modification.

CHAPTER ONE

INTRODUCTION

1.1 Background

Breast cancer is the most common malignancy among women and is the most important cause of cancer mortality among women. In 2012, there were an estimated 1.7 million new cases constituting a quarter of all cancers in women and 522,000 deaths, 15% of cancer deaths in women (World cancer report, 2014). The incidence of breast cancer has progressively increased over the last couple of years and now constitutes important causes of morbidity and mortality in sub Saharan Africa (Kantelhardt et al 2015).

The incidence of breast cancer is higher in developed World, however mortality rates are lower due to population wide cancer screening for all eligible women, prompt detection and follow up of diagnosed women, and access to effective and targeted treatment (Pace & Shulman 2016, Fregene & Newman 2005). Additionally, most women with cancers of the breast in low resource countries present at the late stage of the disease, and only palliative care can be offered (Lopes et al 2015, Unger Saldana 2014, Scherber et al 2014).

Moreover, most of the technologies required for screening and treatment such as mammography and genetic screening for breast cancer, radiotherapy, and new anti-cancer drugs are not affordable by many health institutions in low resource settings of sub-Saharan Africa (Pace and Shulman 2016) and prevention appears to be the most promising approach to cancer control (Sylla and Wild 2012). In spite of the enormous challenges for breast cancer control faced in low resource settings, secondary prevention by early detection of breast cancer through population based screening have huge potentials to reduce cancer incidence and improve survival rates among those detected early (Lingwood et al 2008 and Brinton et al 2014).

Family history predisposes women to increased breast cancer risk and opportunities for prevention exist in developed countries where such women are offered genetic counseling and testing to determine the presence of inherited mutations. The management of such women has served to reduce breast cancer incidence and mortality. In resource poor countries such breast cancer prevention opportunities are currently not operational. However, opportunities exist to focus on women at higher risk of breast cancer based on their family history. Breast cancer

prevention programs for such women identified based on family history could reduce breast cancer incidence among women with an affected relative with breast cancer.

1.2 Problem statement

There are wide disparities in the prevention of breast cancer and mortality from the disease between women in the developed world and developing countries such as Nigeria. The disparity in breast cancer prevention and outcomes in developing countries such as Nigeria can be explained by lack of government policies for cancer control (Price et al 2012, Busolo & Woodgate 2014, Sitas et al 2008), low level of awareness and knowledge about cancer prevention (Price et al 2012), poor access to screening services (Morhason-Bello et al 2013), unavailability of skilled personnel and infrastructure such as equipment for screening (Kingham et al 2013), and limited options for treatment of diagnosed cases (Boyle & Howell 2010, Pace & Shulman 2016).

However, the awareness and utilization of prevention services in Nigeria is poor. For example, recent estimates from the 2012 National HIV AIDS household survey, a nationally representative survey reported that about 53% had ever heard about cancer of the breast (FMOH 2013). The survey also showed that 55% knew about breast self examination. Several other studies among Nigeria women report generally low level of awareness and knowledge about breast cancer (Bello et al 2011, ●luwatosin & ●ladepo 2006, ●ladimeji et al 2015) while utilization of screening services were low, even among female health workers (Bello et all 2011, Akhigbe & ●muemu 2009, Ibrahim & ●dusanya 2009).

1.3 Justification

Information about family history of breast cancer among women and its role on screening behaviours is urgently needed in developing countries such as Nigeria for a number of reasons. First, it will provide background information about the level of women's awareness of their family history of cancer that will help plan measures to improve awareness levels. Secondly, the difference in breast cancer knowledge by family history of cancer will serve as an indicator of how seriously women who know about such histories seek information about breast cancer etiology, prevention and treatment. A related information is whether there is an association between reported family history and breast cancer screening practice. The findings

about the association between family history and utilization of screening services will guide interventions focusing on women at high risk for breast cancer due to their family history.

1.4 Broad objective

To assess the family history of breast cancer among women in selected communities in Ibadan and the influence of such history on breast cancer screening practices and risk perception.

1.5 Specific objectives

1. To assess the proportion of women with family history of breast cancer in selected communities in Ibadan.
2. To determine the breast cancer screening practices of the women

1.6 Hypotheses

1. There is no association between family history of breast cancer and breast cancer screening practices
2. There is no association between family history of breast cancer and breast cancer risk perception

CHAPTER TWO

LITERATURE REVIEW

2.1 Breast Cancer Epidemiology

Breast cancer is the commonest cancer and remains the most lethal malignancy in women across the world. (Nwaneri et al 2017). Although it also occurs in men, it's a major public health concern has there is over 1 million new cases diagnosed yearly resulting in 1.67million deaths and about 4.4 million women are living with the diseases .

The breast cancer burden differs between countries and regions showing variations in incidence, mortality and survival rates (Coughlin and Ekwueme, 2009; World Health Organization, 2009). The incidence varies widely with rates highest in North America and Western Europe and low in Japan, China and black Africa (Parkin et al., 1999). The global burden of breast cancer diagnosed was 1.38 million which is the second most deadly of all cancers, after lung cancer. Incidence of breast cancer is increasing by the day both in developed and developing countries, in more developed countries the incidence and mortality of breast cancer were 692,242 and 189,488 respectively, while that of developing countries is 691,281 and 268,879 respectively, age standardized incidences and mortality rates for breast cancer was 39 and 2.5 per 100,000 respectively (Thun et al., 2011).

The epidemiology of breast cancer among women of sub-Saharan Africa is similar to that of African-American women as both groups have relatively low incidence rates, paradoxically higher mortality rates, increased prevalence of early-onset disease, and advanced stage tumors. (Alero & Lisa 2004). The incidence rate of breast cancer among West African women is quite low compared to that of African-Americans and Whites but it has gradually risen in recent times such that the incidence in premenopausal age group is now higher than those of whites (Taiwo and Eral, 1998).

2.2 Breast cancer in Nigeria

Breast cancer is already a well-known health problem in Nigeria with about 1 death in every 25 reported cases (Olaleye, 2013). A major worry about breast cancer in Nigeria is the continuous rise in the number of cases and deaths (Cancer Epidemiology, 2012).

In Nigeria, the number of women at risk for breast cancer increase steadily from approximately 24.5 million in 1900 to approximately 40 million in 2010 and is projected to rise to over 50 million by 2020. (Akarolo et al, 2010). On the burden of cancer in Nigeria, Lambo (2007) explained that there is likely to be 100,000 new cases each year, and that by 2010 there may be 500,000 new cases.

Oluwatosin and Oladimeji 2006 conducted a study on rural women of Ibadan, Nigeria and found that 73.7% of the respondents claimed that they did not know any warning signs of breast cancer. Only 1.9% identified that painless lump could be a warning sign. Majority (90.7%) of the respondents did not know anything about treatment of breast cancer. More than half of the participants (55.2%) however agreed that early detection and effective treatment can prevent death. Moreover, only 6.4% identified that BSE while 1.2% identified Clinical breast examination and no one could identify that mammography is an early detection measure. In response to the question "Have you ever examined your breast for early detection of breast cancer?" only 10.9% answered yes. Among the 300 sample size only 54 claimed that they had ever heard of BSE and the leading source of information was "elders" "neighbors" and "friends". Only 22 referred the source of information was radio.

Lois et al (2015) did a study designed to determine demographic differences in the knowledge of breast cancer among women in Ebonyi State, Nigeria. The findings showed that breast cancer knowledge of women in Ebonyi State is on the average and associated significantly with education, but not with age and location of residence of the women.

Adetifa and Ojikutu 2009 did a study that examined the trends in the prevalence of breast cancer in Lagos State, Nigeria from a population consisting of women between the ages of 15 and 60 years spread across the 20 Local Government Areas (LGAs) of the State it was

found that prevalence of breast cancer differs across age groups with the age range 26 to 45 having the highest prevalence. It was also observed that there is significant difference in prevalence across the years with 2007 recording the highest prevalence. Moreover, the study shows that women's occupation or profession is important to whether they are diagnosed with breast cancer or not. The study shows steady growth in prevalence of breast cancer over years.

Table 1 reveals that in Nigeria, between 1960 and 1980, Cervical Cancer had 19.9% prevalence while breast cancer had 11.2% but between 1981 and 1995, breast cancer has taken over the lead with 25.7% while cervical cancer followed closely with 22.7%. These statistics which are the most recent shows breast cancer to be rated first in all among all other cancers and majority of cases occurred in pre-menopausal women with the mean age at occurrence ranging between 43 – 50 years across the regions. The youngest age recorded in Lagos State was 16 years (Adebamowo and Ajayi, 2006)

Table 1: Showing Cancer rates in Nigeria

Site	**Frequency %**	**Site**	**Frequency%**
	1960 – 1980		1981 – 1995
Cervical	19.9	Cervical cancer	22.7
Breast cancer	11.2	Breast cancer	25.7
Colorectal	8.5	Colorectal	2.8
Ovary	6.1	Ovary	4.0
Connecting tissues	3.7	Connecting tissues	3.4

World Global Cancer Rates (2006) Cancer Report.

2.3 Breast cancer prevention and screening

Breast cancer is essentially preventable. An estimated 30% of cancers can be prevented by avoiding exposure to tobacco (Kishi et al 2012). An additional 30--40% of cancers can be prevented by modifying other lifestyle factors such as physical activity and diet [AICR 2007]. For some cancers,mortality can further be reduced through preventive screening at recommended age-specific intervals, designed to detect cancer at an earlier, potentially more treatable stage.. Early detection of lump remains the most acceptable and surest means of breast cancer prevention. Some other action can be taken to ensure the prevention of breast cancer.

This action involves the adoption of three screening approaches, namely,

Breast Self-Examination (BSE): this involves physical examination of the breast ny self, using fingers to rub the breast to check for lumps and any other symptoms. Clinical Breast Examination (CBE): involves, breast examination by a medical personnel eg doctor or nurse and mammography: this is the xray of the breast (Modeste et al, 1999). While the practice of BSE is recommended for women starting from 20 years and should be practiced monthly, CBE is recommended for women aged 20-39 every three years. Women 40 years and above are expected to have it done yearly (Badar, et al 2007). As for mammography, the procedure is recommended for women over 40 years (every one or two years) and, after age 50, screening should be annual (Richard, et al 2004).

Breast cancer screening practices were evaluated by self-report conducted by Halbert et al (2006) at the University of Pennsylvania in Philadelphia. Women were recruited to participate in the study: the results of this study suggest a complex pattern of breast cancer screening practices among African American women at increased risk for hereditary breast cancer.

Isaacs et al (2002) conducted a study in women with a family history of cancer demonstrate a wide variability in the uptake of cancer screening measures. Little data exist regarding the breast and ovarian cancer screening practices of women who are members of hereditary breast cancer families and the result showed there was no association between cancer worries/distress and either breast or ovarian cancer screening was found, also the breast and ovarian screening uptake in healthy women from hereditary breast cancer families is suboptimal, even for women over age 50, for whom annual mammography is clearly

indicated. These findings indicate a need for better education about screening guidelines for high-risk women.

A cross-sectional study was conducted by (Matusbara et al 013) based on baseline data from the Japan Nurses' Health Study collected to examine lifestyle habits and cancer screening behavior in relation to a family history of cancer among Japanese women, the findings indicated that Having a family history of cancer was associated with cancer screening behavior, but not health promotive behaviors

Some cancers are largely preventable through modification of certain behavioral risk factors and preventive screening, even among those with a family history of cancer. (Bostean et al 2013) examined the associations between: family cancer history and cancer screening: also family history and cancer preventive lifestyle behaviors: and, cancer screening and lifestyle behaviors. Findings show the fact that family history of cancer is not associated with better lifestyle behaviors may reflect shared behavioral risks within families, or the lack of knowledge about how certain lifestyle behaviors impact personal cancer risk. .

A study examined whether women with a family history of cancer were more likely to use breast, colorectal, or skin cancer screenings compared with those without such a family history by Shah et al (2007). The data for this study came from female respondents who participated in the 2000 National Health Interview Survey. The age range of the study subjects and the definitions of cancer screening were determined based on the American Cancer Society recommendations on cancer screening. Women with a family history of cancer were more likely to have colorectal, breast, and skin cancer screening examinations. This may be a result of more physicians' recommendations and higher personal motivation for getting cancer screening, suggesting that the efficacy of national guidelines has been increasing somewhat.

Ponce et al (2012) evaluated whether breast cancer (BC) and colorectal cancer (CRC) disparities varied by family history risk using a large, multiethnic population-based survey. the 2005 California Health Interview Survey, BC and CRC screening were evaluated separately with weighted multivariate regression analyses, and stratified by family history risk. Knowledge of their family history widened the Latino-white gap in CRC screening among adults. More aggressive interventions that enhance the communication between

Latinos and their doctors about family history and cancer risk could reduce the substantial Latino white screening disparity in Latinos most susceptible to CRC.

A study collected data which included patient demographic and risk information and receipt of screening mammography and/or one of four modalities to screen for colorectal cancer, too examine whether patients with a documented family history of breast or colorectal cancer, either positive or negative, were more likely to receive breast or colorectal cancer screening services than those with no documentation. (Carney et al, 2013) The results showed that colorectal cancer and screening were low in the rural communities; recording family history of cancer was associated with up-to-date cancer screening, even if the family history was negative. Establishing clinical routines to obtain family history could improve appropriate use of cancer screening

(Bird et al 2010) conducted a cross-sectional study, used to assess differences in breast cancer knowledge, attitudes, and screening practices between Hispanic women with (FH+) and without (FH−) a family history of breast cancer in three U.S.-Mexico border counties. The study indicated U.S. Hispanic women with a family history of breast cancer constitute an at-risk group for which adhering to preventive screening guidelines could substantially reduce breast cancer mortality.

(West et al 2003) conducted a study to examine breast cancer attitudes and practices among African American women aged 50 who had not had a mammogram. Phone survey data from female clients of low-income, rural primary care clinics (91% African American) was collected, and it reported that neither knowledge of a positive family history nor perceived relative risk of breast cancer was associated with either increased or decreased early detection practices among these low-income, rural, African American women who have underused mammography. Furthermore, a substantial proportion of FH women had not ever participated in screening mammography.

(Harber et al 2012) examined the strength of association between family history of breast cancer and family history of other cancers with breast cancer risk perception and repeat mammography. Multinomial logistic regression assessed the association between family history of cancer and breast cancer risk perception. Structural equation modeling estimated the relationship between family history of cancer and repeat mammography. It was found out that Breast cancer risk perception was associated with the type of cancer found in first-degree

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relatives and with the person's relationship to the family member with cancer. Family history of breast cancer affected repeat mammography behavior.

2.4 Risk factor for breast cancer

A risk factor could be anything that increases your chances of developing a disease, for breast cancer some of the risk factors include, smoking, drinking, and majorly family history, but having risk factor does not necessarily means you will develop the disease, it just shows there is a higher probability of developing that disease. (Muhammad.S 2007) .Some risk factors include:

1. Gender : a female is at higher risk of developing breast cancer compared to the male, men account for approximately 1% of all breast cancer cases (16)Age : As you grower older there is higher probability of developing breast cancer, growing , age is the greatest risk for developing breast cancer, incidence of breast cancer is low before 40. About 17% of the invasive breast cancer diagnoses are women in their 40s (Muhammad.S 2007)
2. Family history: result has shown that women with a family history of breast cancer have a higher risk for developing breast cancer. Either in the first degree relative which includes (parents, siblings or children) or second degree relative (uncles, aunts, nephews, nieces, grandchildren, grandparents, siblings, and double cousins) or third degree relative (great grandparents, half uncle or aunt, half niece or nephew). (Kelsey & Gammon, 1990)
3. Genetic predisposition: Recent studies have shown that 5-10% of breast cancer cases are inherited due to mutations. The most common mutation are BRCA1 and BRCA2 genes (Muhammad.S 2007)
4. Smoking and alcohol consumption: studies have showing alcohol consumption and smoking increases the risk of breast cancer.
5. Reproductive history: Early age at menarche, late menopause, delaying childbirth, or remaining childless increases the risk of developing breast cancer (Muhammad.S 2007).

2.5 Breast cancer risk perception

Breast cancer risk perception is a subjective judgment made by an individual level regarding the characteristics and severity of a risk and their knowledge about their risk of developing such a disease (Haber et al 2012). Two studies found white women to be more aware of their elevated

breast cancer risk as a result of family history compared to black women (Audrain et al 1995; Hughes et al 1996). These results suggest there are racial differences in beliefs about breast cancer risk factors which, in turn, affect risk perceptions.

Other factors found to affect risk perception are personal history of benign breast disease, breast cancer worry, and perceived control (Gerend, et al., 2004; Hopwood, 2000). Availability and representative cognitive heuristics have been identified as correlates to perceived risk (Gerend, et al., 2004; Hopwood, 2000; Kahneman, Slovic, & Tversky 1982).

Spector et al (2009) conducted a qualitative study that explored factors involved in formulation of perceived breast cancer risk and the association between risk perception and lifestyle behaviors in white and black women with a family history of breast cancer. The result showed many women were unaware of associations between lifestyle behaviors and breast cancer risk. Eleven women, six black and five white, reported making healthy lifestyle changes because of family history; dietary change was most frequently reported.

A study was conducted to assess the knowledge of breast cancer risk factors and early detection measures among women in a high risk group. A cross sectional survey of one hundred and thirty one women relatives of breast cancer patients was carried out. By Subramanian et al (2013). Participants were selected through purposive sampling, during hospital visits. A self-administered questionnaire was used for data collection. The findings show inadequate knowledge of breast cancer risk factors and poor cancer screening practice among women with family history of breast cancer. Poor knowledge and practice of breast screening are likely to lead to late stage presentation of breast cancer disease. Some important

predictors of breast cancer screening behaviour among women with positive family history of breast cancer were identified.

A study examined cancer-related distress and breast cancer risk perception, and further examines the predictors of these outcomes, in the sisters of newly diagnosed patients with breast cancer without a previous family history of the disease which was conducted by Metclafe et al (2013). It shows Cancer-related distress is high in the sisters of newly diagnosed patients with breast cancer in whom there is no other family history of breast cancer. Specifically, women with a perceived lifetime risk of breast cancer of > 20% experienced the highest levels of distress.

In year 2006 Gramling et al investigated whether risk-related feedback delivered by one's primary care physician is associated with self-ratings of risk among women found to have a first-degree family history of breast cancer on office screening questionnaires. The study was conducted using a Mailed survey of women registered with the Cancer Genetics Network having a first-degree family history of breast cancer. The result showed Physician feedback following the identification of a first-degree family history of breast cancer appears to influence whether or not women categorize themselves to be at high risk and trust is an important modifier of this association.

Thewes et al (2003) did a study aimed to survey the unmet support needs of women at increased risk of developing breast cancer, women with a family history of breast cancer completed a 28-item purposely-designed mailed survey However, a higher degree of interest was expressed in internet-based information and supportive interventions. Amongst those interested in attending a support group, discussion, and receiving further information were the most preferred activities. Higher levels of unmet support needs were significantly associated with interest in attending groups. No demographic variables were found to predict interest in attending a support group.

Evans et al (1994) assessed risk perception by questionnaire in 517 new referrals to a family history clinic and 200 women returning to the clinic at least 1 year after counselling. It was found out that Post-counsel women were significantly more likely to retain information if they were sent a post-clinic letter or if they assessed their personal risk as too high initially.

2.6 Association between family history and screening practices

Warner et al (2003) used a before-after descriptive study to evaluate an "information aid" for women with a family history of breast cancer, result reported knowledge improved significantly; worry about breast cancer did not increase. The information aid is a useful resource for women and primary care physicians and could facilitate appropriate risk assessment and management of women with a family history of breast cancer.

The relationship between family history of breast cancer (FHBC) and health-related behavior and medical management, using a cross-sectional analysis of 685 women, based on self-report was explored by Ochoa et al (2010). The result reported women with FHBC are more likely to have had a mammography and colonoscopy or sigmoidoscopy. These women have about twice the probability of performing more intense physical exercise, contrasting with high-risk women whose consumption of fibre is lower and sweets is higher. No significant association was found between alcohol consumption or Body Mass Index and family history.

Also Spector et al (2011) a cross sectional study was conducted which examined lifestyle behaviors among non-Hispanic Black and White women with a family history of breast cancer and determine the extent to which they meet American Cancer Society (ACS) Nutrition and Physical Activity Recommendations for Breast Cancer Prevention. It was shown that after the study despite an elevated risk for breast cancer due to a family history of breast cancer, the majority of women were no more likely than women in the general population to engage in healthy lifestyle behaviors. These women may benefit from lifestyle behavior risk-reduction counseling.

Lipkus et al (1999) did a very little research exploring the relationships among perceptions of, and concern about, getting breast cancer and interest in genetic testing for breast cancer among African-American women with and without a family history of breast cancer. This study explored these issues among 130 and 136 African- American women with and without a family history of breast cancer, respectively. Women with a family history reported having greater perceived breast cancer risks and concerns than women without a family history of breast cancer. Women with a family history of breast cancer expressed greater interest in genetic testing for breast cancer susceptibility than women without a family history, although interest in testing was high overall. Overall, the results suggest that: (a)

African-American women with a family history are more concerned about and do recognize their greater risk of breast cancer; (*b*) knowledge of risk factors and attributions of risk are not directly related to interest in genetic testing; and (*c*) concerns, rather than beliefs about one's risk, are more powerfully related to interest in genetic testing, independent of family history status.

Chalmers et al (2003) aim of this study was to describe the information and support needs of women who have primary relatives with breast cancer. The Information and Support Needs Questionnaire (ISNQ) was developed and revised from previous qualitative and pilot studies. The findings document women's priority information and support needs. The information need most frequently identified as very important was information about personal risk of breast cancer. Other highly rated needs addressed risk factors for breast cancer and early detection measures. Generally, the women perceived that their information and support needs were not well met. These findings illuminate needs of women for more information and support when they have close family relatives with breast cancer and opportunities for primary care providers to assist women in addressing their needs.

To examine knowledge about hereditary breast and ovarian cancer (HBOC) among Mexican, Puerto Rican, and Cuban women. Women (age range, 18–65 years) with a personal or family history of breast or ovarian cancer were recruited by Vadaparampil et al (2010) to a mixed methods study using community-based approaches. Exploratory analysis revealed lower knowledge in women with a personal history of cancer, the study provides important information about characteristics associated with lower levels of knowledge and specific areas related to HBOC where additional education may be warranted in the Hispanic community.

Townsend et al 2013 did a study which his purpose was to compare health behaviors and cancer screening among Californians with and without a family history of cancer. The result showed women with a family history of breast or ovarian cancer were more likely to be up to date with mammography as compared with women with no family history of cancer.

CHAPTER THREE

METHODOLOGY

3.1 Study Area

The study was carried out in Ibadan, the capital of Oyo state. Oyo state, an inland state in south-western Nigeria is one of the 36 states in the most populous black African nation. It was created in 1976 out of the old Western region and has an estimated population of 6,617,720 in 2016. It is bounded in the south by Ogun State, in the north by Kwara State, and in the west partly by Ogun State and partly by the Republic of Benin while in the east it is bounded by Osun State. Ibadan has a population of about 3.1 million according to the 2016 projection estimates with basic social amenities such as good roads, potable water, recreational centres such as parks, malls and zoos. It has over 50 health facilities with primary, secondary and tertiary health centres in which University College Hospital is also located. It has over 100, schools (both public and private schools) spread across the city.

Ibadan is divided into 11 Local Government Areas (LGAs) and each of which is further divided into wards. The study was carried out in the five urban LGAs (Ibadan North, Ibadan SW, Ibadan NW, Ibadan SE, Ibadan NE LGAs).

3.2 Study design

A community based cross sectional study design was used for the study.

3.3 Dependent and independent variables

The screening practice of women in the communities (breast self examination, clinical breast examination) were the dependent variables.

The main independent variable was family history of breast cancer while a secondary independent variable was family history of any cancer.

3.4 Study population

Women aged 25 years and above in selected communities in Ibadan were studied due to the fact that they are at a reproductive age, could be at a risk of developing breast cancer with a sound knowledge of family history of cancer in their family or relatives as a whole.

3.5 Sampling method

A cluster sampling method was used for selection.

1. In the first stage, three urban communities were selected from the five urban LGAs in Ibadan using simple random sampling (balloting).
2. At the second stage one community each was selected from the three LGAs also by balloting. Using proportional allocation, the calculated sample size was shared among these selected communities.
3. In the third stage, a sample of streets was selected from the communities.
4. In stage four of the selection, houses were selected by systematic random sampling. All women in each house were studied.

3.6 Sample size determination

The minimum sample size for this study was determined using the sample size formula for estimating single proportions with a stated precision.

$$n = \frac{DZ_{\alpha}^{2}PQ}{d^{2}}$$

Where n is the minimum sample size

Z_{α} is the standard normal deviate corresponding to a 2-sided level of significance of 5% = 1.96

P is the proportion with the outcome of interest. The proportion of women practicing breast self examination was used = 62.1% (Ogunbode *et al.*, 2015)

Q = 1-P

d is the desired level of precision = 5%

D is the design effect = 1.2

The minimum number of subjects is 723 from the calculations. Allowing for a non-response adjustment of 15%, the minimum number of teachers to be studied is 850

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The minimum number of subjects is 723 from the calculations, Allowing for a non-response adjustment of 15%, the minimum number of teachers to be studied is 850

3.7 Data collection

An interviewer-administered semi-structured questionnaire was used to obtain data. The questionnaire was divided into six sections A to H. Section A includes questions on socio-demographic characteristics, Section B: Lifestyle data, and Section C: Reproductive history. Items on medical history of breast cancer and other cancer types among relatives was included in Section D. Sections E and F will contain items on breast cancer knowledge and risk perception, and screening practices respectively, while section G contain question on attitude towards genetic testing for breast cancer risk, the questionnaire was pretested among women in other communities outside the five LGAs to be used for the study. The internal consistency of the questionnaire items was assessed using the Kappa statistic. The questionnaire was also be revised based on the responses to the question

3.8 Data management and analysis

Data from this study was analysed electronically using the Statistical Product and Service Solutions (SPSS) version 16 (IBM Inc). The questionnaires were edited on a daily basis during data collection. Further cleaning of data was done before analysis. Frequency distribution of each variable was generated and examined for implausible entries that were later corrected. A variable on the knowledge about breast cancer was created from the open ended variable and was coded as correct and wrong answers and was categorized as good knowledge or poor knowledge

Summary statistics such as means, median and standard deviation was used to summarize quantitative variables depending on the type. Association between family history of breast cancer or any cancer and screening, association between self-perceived rating of chances of getting breast cancer and family history of cancer association between knowledge that breast cancer can be caused by inheriting bad genes and family history of cancer, association between awareness of genetic testing and family history of cancer, association between willingness to have genetic testing and family history of cancer and association between willingness to utilize cancer risk clinic services and family history of cancer was tested using the Chi square test. Multiple logistic regression was used to determine adjusted estimates of odds ratios of the association between variables. Level of significance for all tests was at 5%.

3.9 Ethical considerations

Confidentiality of the study participants was ensured and all data collected from them was treated as confidential. Only serial numbers was used to identify participants and only the investigator will have access to the data and it was safely kept. There are no invasive procedures that could cause harm or injury, only interviews were conducted. The informed consent form was explicitly state the right of the participant to refuse to give consent or withdraw from the study at any point and also that he/she could decline to answer any question. The participants were also told that refusal to participate will not in any way affect how the survey team will treat the participant. Ethical approval was obtained from the Oyo State Research Ethical Review Committee On the 12th September

CHAPTER FOUR

RESULTS

4.1 Socio demographic and lifestyle characteristics

There were 850 women who participated in this study with a mean age of 40.6 years (SD = 11.9). The socio-demographic characteristics of the respondents are shown in Table 2 The age distribution shows that the highest proportion of respondents were in their thirties (34%), while slightly less than 25% were more than 40 years old and about 19.2% and 21.1% were less than 30 years and greater than 50 years respectively. About two thirds (68.1%) were currently married, while (15.2%) have never being married, with 9.6%, 4.7%, and 2.4% are widowed, divorced or widowed and cohabiting respectively. Most of the respondents are Christians, (65.2%) and Muslims (34.5%). More than 85% of the respondents have father and mother from ethnic background that is Yoruba followed by Ibo with more than 9%, Hausa has about 1.5% for both mother and father ethnic background.

The highest proportion of the respondents attained secondary level of education (41.8%) followed by those with tertiary education (polytechnic/OND/colleges of education 20.9%) and university/PG (20.1%), followed by those with primary education (11.3%) and those with no formal education (5.9%).

Table 2: Socio- demographic characteristics of women in selected communities in Ibadan on family history of cancer and breast cancer.

Socio- Demographic Characteristics Variables	Frequency (n)	Percentage (%)
Current age		
< 30	163	19.2
30 – 39	297	34.9
40 – 49	211	24.8
> 50	179	21.1
Marital status		
Married	579	68.1
Never married/Not living with a partner	129	15.2
Widowed	82	9.6
Cohabiting	20	2.4
Divorced/Separated	40	4.7
Religion		
Christian	554	65.2
Muslim	293	34.5
Others (Specify)	3	0.4
Father ethnic background		
Yoruba	744	87.5
Ibo	82	9.6
Hausa	13	1.5
Others (Specify)	11	1.3
Mother ethnic background		
Yoruba	730	85.9
Ibo	94	11.1
Hausa	12	1.4
Others (Specify)	14	1.6

Level of education		
None	50	5.9
Primary	96	11.3
Secondary/ Vocational/technical	355	41.8
Polytech/OND/Colleges of education	178	20.9
University/PG	171	20.1

Table 3 shows the lifestyle data of the respondents. More than two third of the respondents (67.2%). has had alcoholic beverages. Furthermore 18.4% have taken alcoholic beverages in the last 1 month. A large majority of the respondents had never taken cigarettes or other tobacco products as 97.2% and 2.8% reported to have smokes cigarettes or any other tobacco products.

Table 3 : Lifestyle data of the women in selected communities on family history of cancer and breast cancer.

Lifestyle Variable of the respondents	Frequency (n)	Percentage (%)
Alcoholic beverage		
Yes	571	67.2
Alcoholic beverage in last 1 month		
Yes	156	18.4
Cigarettes or other tobacco products		
Yes	24	2.8

4.2 Medical history of participants

Chart 1 & Table 4: this is showing the medical history of cancer of any relatives to the respondents.

Majority of the women responded that they don't have any relatives with previous history cancer. Almost all (97.2%) respondents reported to have no mother with previous history of cancer, while only 2.5% respondents reported their mom has a history of breast cancer and (0.4%) do not know if their mother has an history of cancer. majority of the respondents also revealed they have no father (97.5%), no sister (97.6%), no half sister (93.5%), no daughter (99.8%) no mother sister's (92.5%) no father's sister (91.9%) and any relative with any previous history of cancer or breast cancer while a very small proportion reported to have a father (1.5%), a sister (1.3%) any half sisters (0.7%), any daughter (0.0%), any mother sister's (0.9%), any father sister's (0.0%) or any other relative (1.4%) with history of cancer. Overall, 8% of respondents reported any family history of cancer.

Chart 1: Medical History Of Cancer Of The Respondent.

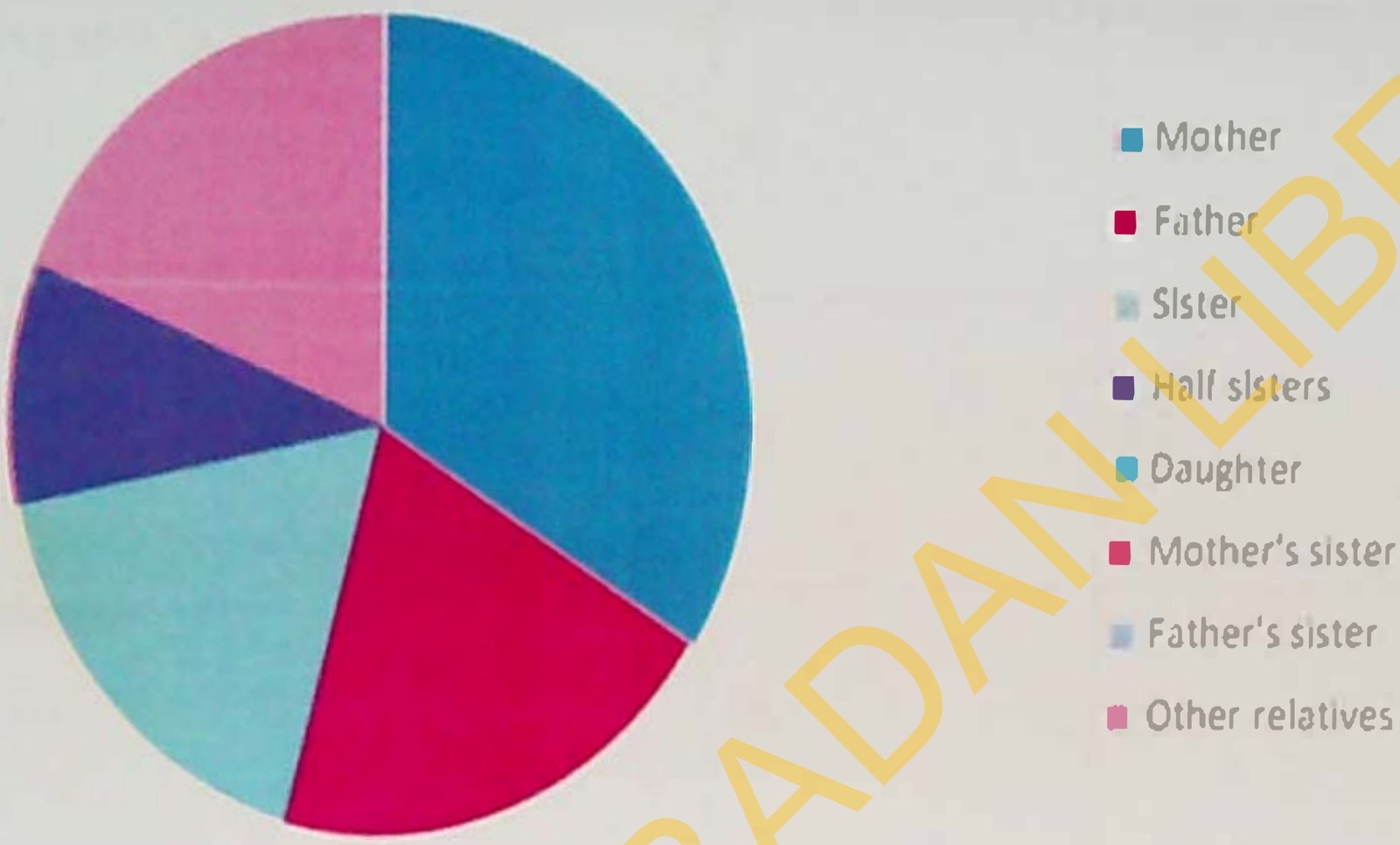

Table 4:

Medical history of respondents.	Frequency (n)	Percentage (%)
Cancer in any relative		
Yes	69	8.1
Breast or ovarian cancer in any relative		
Yes	43	5.1
Cancer in first degree relative		
Yes	44	5.2
Cancer in other relative		
Yes	26	3.1

Table 5 shows the data of the respondents on issues of benign breast condition or ovarian problem, only a small proportion responded to have been treated for benign breast condition (4.5%) and ovarian problem (0.7) also a very small proportion (0.7%) responded to have done breast biopsy up until a year ago.

Table 5: Data of Respondents on issues of Benign Breast Conditions & Ovarian Problems and knowledge of breast cancer

Variable	Frequency	Percentage (%)
Diagnosed or treated for any benign breast conditions		
Yes	38	4.5
No	789	92.8
Don't know	23	2.7
Diagnosed or treated for an ovarian problem or had surgical removal of a pelvic mass		
Yes	6	0.7
No	821	96.6
Don't Know	23	2.7
Up until one year ago did you have a breast biopsy?		
Yes	6	0.7
No	808	95.1
Know risk factor for breast cancer		
Yes	199	23.4
No	651	76.6

4.3 Breast cancer screening practices of the women

Chart 2: showed various breast cancers screening practices and if the respondents have actually been practicing. More than one third of the respondents (34.8%) reported to have had self breast examination. while only (8.8%) have had their breast examined by a doctor, also 3.1% of the respondents has done x-ray of their breast (mammography). and 14.5% Of the women revealed they haven't done any of breast cancer screening practices.

Chart 2 : Breast cancer screening practices among women in selected communities.

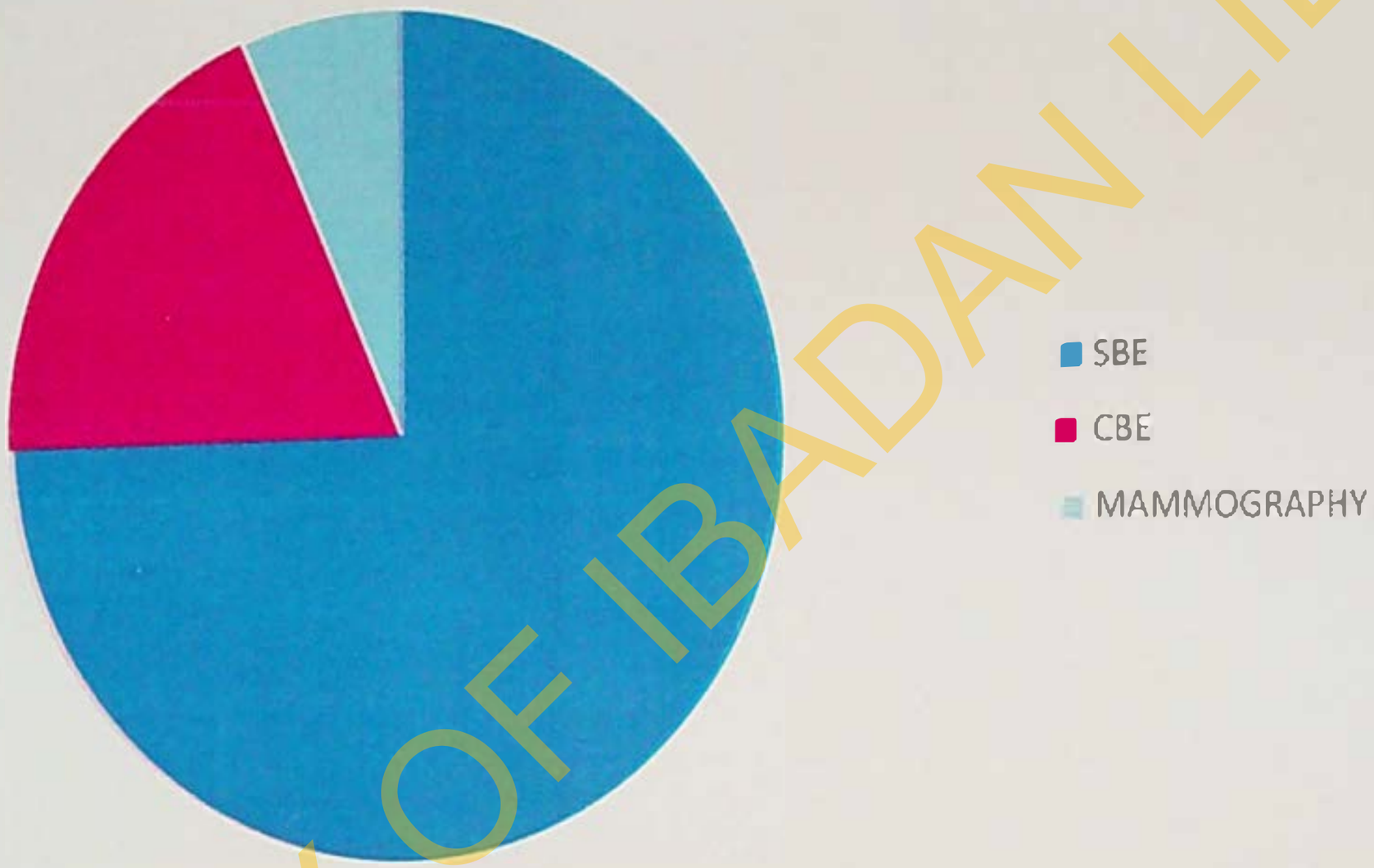

Table 6 explains if the respondent has had a recent screening practices in the last one to two years, majority of the respondents claimed they done one or two types of screening practices in the last to two years, about two third of responded to have perfomed self breast examination in the last one year, while majority (92.7%), (96.8%), and (95.5%) claimed they have had their breast examined by a doctor, done xray of the breast and done any other breast screening practices respectively in the last two years.

Table 6: Types of breast cancer screening practices done by the respondent in the last one to two years.

Variable	Frequency	Percentage (%)
Last one year, performed self breast examination?		
Yes	580	68.2
Last two years, breast examined by a doctor		
Yes	788	92.7
Last two years, has an xray of your breast		
Yes	823	96.8
Last two years, did any other form of breast screening		
Yes	812	95.5

4.4 Breast cancer risk perception and attitudes towards genetic testing

Table 7: shows the attitude towards genetic testing for breast cancer risk and (42.6%) of the respondents actually believe breast cancer can be caused by inheriting bad genes from one's parents. About two third (65.9%) knows nothing about genetic testing and few (3.8%) know a lot about genetic testing and got to know about it mostly from friends (36.6%). Three quarter (75.4%) of the respondents are willing to have genetic testing for breast cancer risk and 44.1% are willing to utilize the services if referred to a breast cancer high risk clinic.

Furthermore most of the respondents believe they have low chances (86.6%) of getting breast cancer and only a few (0.8%) believes they have high chances of getting breast cancer.

Table 7: Respondents' awareness about hereditary of breast cancer, genetic testing, chances of developing breast cancer and willingness to utilize cancer risk clinic services.

Variable	Frequency (n)	Percentage (%)
How would you rate your chances of getting breast cancer		
Low	736	86.6
Medium	72	8.5
High	3	0.4
Know breast cancer can be caused by inheriting bad genes from one's parents		
Yes	362	42.6
No	152	17.9
Don't know	336	39.5
How much did you know about genetic testing		
Nothing	560	65.9
Some	258	30.4
A lot	32	3.8
Source of information about genetic testing (n =290)		
Magazine	25	8.6
Newspaper	24	8.3
Television	76	26.2
Friends	106	36.6
Others	21	7.2
No response	38	13.1
Willing to have genetic testing for breast cancer risk		
Yes	641	75.4
No	176	20.7
Don't know	33	3.9
Willing to utilize breast cancer high-risk clinic if referred *		
Not willing	175	20.6
Willing	375	44.1
Very willing	279	32.8

*missing data for 21 cases

Table 8: shows the association between self-perceived rating of chances of getting breast cancer and FH of cancer. There was a significantly higher proportion of women with FH of cancer in any relative (24.2) had a self perceived rating of chance of developing breast cancer compared to (7.9%) without a FH of cancer in any relative, p value (>0.001). While only a very little proportion (4.0) of women with cancer in other relative has a self perceived rating of chance of developing breast cancer compared to (9.4) without a FH of cancer of other relative with P value of 0.358.

4.5 Association between family history of cancer and outcomes

Table 8: Association between self-perceived rating of chances of getting breast cancer and family history of cancer

	Rating of breast cancer risk				
	Medium/High (%)	Low (%)	Total	X^2	P value
FH cancer in any relative					
Yes	16(24.2)	50(75.8)	66	19.25	<0.001
No	59(7.9)	686(92.1)	745		
FH breast/ovarian cancer in relative					
Yes	9(22.0)	32(78.0)	41	8.30	0.004
No	66(8.6)	704(91.4)	770		
FH cancer 1st degree relative					
Yes	15(35.7)	27(64.3)	42	36.97	<0.001
No	60(7.8)	709(92.2)	769		
FH cancer other relative					
Yes	1(4.0)	24(96.0)	25	0.85	0.358
No	74(9.4)	712(90.6)	786		

Table 9 shows the Association between knowledge that breast cancer can be caused by inheriting bad genes and family history of cancer. About half of the women (49.3%) with family history of cancer in any relative have the knowledge that breast cancer can be caused by inheriting bad genes. However the association was not statistically significant (p value = 0.293)

Table 9: Association between knowledge that breast cancer can be caused by inheriting bad genes and family history of cancer

	Know Breast Ca can be inherited					
	Yes (%)	No (%)	Don't know (%)	Total	X^2	P value
FH cancer in any relative						
Yes	34(49.3)	8(11.6)	27(39.1)	69	2.45	0.293
No	328(42.0)	144(18.4)	309(39.6)	781		
FH breast/ovarian cancer in relative						
Yes	20(46.5)	8(18.6)	15(34.9)	43	0.42	0.809
No	342(42.4)	144(17.8)	321(39.8)	807		
FH cancer 1st degree relative						
Yes	25(56.8)	3(6.8)	16(36.4)	44	5.50	0.064
No	337(41.8)	149(18.5)	320(39.7)	806		
FH cancer other relative						
Yes	9(34.6)	5(19.2)	12(46.2)	26	0.73	0.696
No	353(42.8)	147(17.8)	324(39.3)	824		

Table 10 shows a significant Association between awareness of genetic testing and family history of cancer. about (53.6%) of respondents with family history of cancer in any relative had no knowledge of genetic testing and only (44.9%) had some knowledge about genetic testing and very few proportion had a lot of knowledge on genetic testing (p value = 0.018).

Table 10: Association between awareness of genetic testing and family history of cancer

	Knowledge of genetic testing					
	Nothing (%)	Some (%)	A lot (%)	Total	X^2	P value
FH cancer in any relative						
Yes	37(53.6)	31(44.9)	1(1.4)	69	8.04	0.018
No	523(67.0)	227(29.1)	31(4.0)	781		
FH breast/ovarian cancer in relative						
Yes	20(46.5)	22(51.2)	1(2.3)	43	9.29	0.010
No	540(66.9)	236(29.2)	31(3.8)	807		
FH cancer 1st degree relative						
Yes	24(54.5)	19(43.2)	1(2.3)	44	3.70	0.158
No	536(66.5)	239(29.7)	31(3.8)	806		
FH cancer other relative						
Yes	13(50.0)	13(50.0)	0(0)	26	5.45	0.066
No	547(66.4)	245(29.7)	32(3.9)	824		

Table 11 shows there is no significant association between willingness to have genetic testing and family history of cancer. A large proportion of the respondents in any relative. (76.8%), 1st degree relative (76.7%) and other relative (76.9%) are willing to have genetic testing, while only a small proportion of the respondents in any relative (2.9%) 1st degree (4.7%), other relative (3.8%) do not know if they are willing to have genetic testing. (p value =0.899, 0.916. 0.818. 0.982) respectively

Table 11 : Association between willingness to have genetic testing and family history of cancer

	Willing to have genetic testing					
	Yes (%)	No (%)	Don't know (%)	Total	X^2	P value
FH cancer in any relative						
Yes	53(76.8)	14(20.3)	2(2.9)	69	0.213	0.899
No	588(75.3)	162(20.7)	31(4.0)	781		
FH breast/ovarian cancer in relative						
Yes	33(76.7)	8(18.6)	2(4.7)	43	0.18	0.916
No	608(75.3)	168(20.8)	31(3.8)	807		
FH cancer 1st degree relative						
Yes	33(75.0)	10(22.7)	1(2.3)	44	0.40	0.818
No	608(75.4)	166(20.6)	32(4.0)	806		
FH cancer other relative						
Yes						
No	20(76.9)	5(19.2)	1(3.8)	26	0.04	0.982
	621(75.4)	171(20.8)	32(3.9)	824		

Table 11 : Association between willingness to have genetic testing and family history of cancer

	Willing to have genetic testing					
	Yes (%)	No (%)	Don't know (%)	Total	X^2	P value
Fll cancer in any relative						
Yes	53(76.8)	14(20.3)	2(2.9)	69	0.213	0.899
No	588(75.3)	162(20.7)	31(4.0)	781		
Fll breast/ovarian cancer in relative						
Yes	33(76.7)	8(18.6)	2(4.7)	43	0.18	0.916
No	608(75.3)	168(20.8)	31(3.8)	807		
Fll cancer 1st degree relative						
Yes	33(75.0)	10(22.7)	1(2.3)	44	0.40	0.818
No	608(75.4)	166(20.6)	32(4.0)	806		
FH cancer other relative						
Yes						
No	20(76.9)	5(19.2)	1(3.8)	26	0.04	0.982
	621(75.4)	171(20.8)	32(3.9)	824		

Table 12: shows the association between willingness to utilize cancer risk clinic services and family history cancer. (22.1%) of women with family history of cancer in any relative are not willing to utilize cancer risk clinic while about one third of the women are willing and 44.1% of them are very willing to utilize the cancer risk clinic. Majority of the respondents are very willing to utilize the cancer risk clinic while only a few proportion are not willing.

Table 12: Association between willingness to utilize cancer risk clinic services and family history of cancer

	Willingness to utilize cancer risk clinic					
	Not willing (%)	Willing (%)	Very willing (%)	Total	X^2	P value
FH cancer in any relative						
Yes	15(22.1)	23(33.8)	30(44.1)	68	4.57	0.102
No	160(21.0)	352(46.3)	249(32.7)	761		
FH breast/ovarian cancer in relative						
Yes	9(21.4)	14(33.3)	19(45.2)	42	3.15	0.207
No	166(21.1)	361(45.9)	260(33.0)	787		
FH cancer 1st degree relative						
Yes	11(25.6)	15(34.9)	17(39.5)	43	1.97	0.373
No	164(20.9)	360(45.8)	262(33.3)	786		
FH cancer other relative						
Yes	5(19.2)	8(30.8)	13(50.0)	26	3.42	0.181
No	170(21.2)	367(45.7)	266(33.1)	803		

4.6 Multiple logistic regressions of outcomes on family history and socio-demographic variables and breast cancer knowledge

Table 13 shows the results from the logistic regression of CBE in the last years before survey on family history of breast cancer, adjusting for knowledge of risk factors for breast cancer and socio-demographic characteristics. Women with a family history were 2.33 times more likely than those without a history to have recent CBE, however the association was not statistically significant (95% CI = 0.96 – 5.68). Women with at least university education were significantly more likely to have had CBE compared to those with primary or no formal education (OR = 2.7, 95% CI = 1.03 – 7.05). Knowledge of risk factors for breast cancer was also significantly associated with breast cancer (OR = 2.17, 95% CI = 1.23 – 3.85).

Table 13: Logistic regression analysis of clinical breast examination two years before interview and family history of breast cancer, knowledge and socio-demographic characteristics

Variable	Odds ratio (OR)	95% CI OR	P value*
Family history of breast/ovarian cancer			
Yes	2.33	0.96 – 5.68	0.062
No (ref)	1		
Age (years)			
<30 (ref)	1		
30-39	0.94	0.36 – 2.50	0.906
40-49	1.00	0.35 – 2.85	0.999
50+	2.62	0.92 – 7.52	0.072
Education			
None/Primary (ref)	1		
Secondary	1.44	0.60 – 3.46	0.410
Polytechnic	1.69	0.64 – 4.48	0.292
University/higher degree	2.70	**1.03 – 7.05**	**0.043**
Marital status			
Currently married (ref)	1		
Never married	0.67	0.24 – 1.87	0.438
Others	0.99	0.48 – 2.05	0.970
Know breast cancer risk factor			
Yes	2.17	**1.23 – 3.85**	**0.008**
No (ref)	1		

*Significant results are in bold

Table 14 shows there was no statistically significant association between recent mammography and family history of breast cancer (OR = 2.45, 95% CI = 0.73 – 8.23) on multiple logistic regression. However, women aged 50 years or older were significantly more likely than those less than 30 years (95% CI = 1.80 – 215.70), and those with knowledge of breast cancer risk factors 2.7 times more likely to have had mammography (95% CI = 1.07 – 6.81).

Table 14: Logistic regression analysis of mammography two years before interview and family history of breast cancer, knowledge and socio-demographic characteristics

Variable	Odds ratio (OR)	95% CI OR	P value*
Family history of breast/ovarian cancer			
Yes	2.45	0.73 – 8.23	0.147
No (ref)	1		
Age (years)			
<30 (ref)	1		
30-39	0.80	0.06 – 11.20	0.866
40-49	1.14	0.08 – 17.08	0.922
50+	19.68	**1.80 – 215.70**	**0.015**
Education			
None/Primary (ref)	1		
Secondary	1.19	0.43 – 3.30	0.738
Polytechnic	0.65	0.15 – 2.77	0.560
University/higher degree	1.58	0.42 – 6.03	0.502
Marital status			
Currently married (ref)	1		
Never married	0.76	0.07 – 8.47	0.759
Others	0.97	0.39 – 2.38	0.967
Know breast cancer risk factor			
Yes	2.71	**1.07 – 6.81**	**0.035**
No (ref)	1		

*Significant results are in bold

Table 15: Odds ratios and confidence intervals of the logistic regression analysis of self-perceived breast cancer rating on socio-demographic and family history variables are shown in Table 17. There were significant associations for family history of breast cancer (OR = 2.79, 95% CI = 1.23 – 6.32), education and marital status.

Table 15: Logistic regression analysis of medium/high self-perceived rating of risk of breast cancer and family history of breast cancer, knowledge and socio-demographic characteristics

Variable	Odds ratio (OR)	95% CI OR	P value*
Family history of breast/ovarian cancer			
Yes	2.79	**1.23 – 6.32**	**0.014**
No (ref)	1		
Age (years)			
<30 (ref)	1		
30-39	1.68	0.72 – 3.92	0.234
40-49	1.51	0.60 - 3.82	0.381
50+	1.38	0.50 – 3.79	0.536
Education			
None/Primary (ref)	1		
Secondary	2.65	**1.06 – 6.67**	**0.038**
Polytechnic	3.63	**1.36 – 9.69**	**0.010**
University/higher degree	3.32	**1.20 – 9.17**	**0.021**
Marital status			
Currently married (ref)	1		
Never married	0.99	0.42 – 2.35	0.985
Others	2.40	**1.26 – 4.58**	**0.008**
Know breast cancer risk factor			
Yes	0.81	0.45 – 1.46	0.478
No (ref)	1		

*Significant results are in bold

CHAPTER FIVE

DISCUSSION AND CONCLUSION

5.1 Family history of cancer

In this study, about 8% of the respondents reported a family history of cancer. This proportion is similar to what has been reported in some recent Nigerian studies. Among breast cancer patients, Ogundiran et al (2013) reported that 5.1% of women with breast cancer reported a family history. Huo et al (2008) in a case control study of parity and breastfeeding reported a family history of breast cancer among 8.4% among cases and 4.7% among controls. In another case control study among women in 4 teaching hospitals in Midwestern and southeastern Nigeria, 6% of cases and 0.4% among controls (Okobia et al 2006) reported family history of breast cancer. In 1999, Adebamowo & Adekunle reported 2% among breast cancer cases and 0.4% among controls. In a Moroccan study, 7.3% of cases and none of the control group (Laamiri et al 2016) had positive family history of cancer among those less than 40 years.

Balekouzou et al 2017 found that 34.5% of cases and 16.1% of controls reported a family history. In Barbados, Nemesure et al (2009) found that 58.6% of case and 42.1% of controls reported history of any cancer while the proprotions were 20.7% and 7.9% respectively for family history of breast cancer.

in the United States, the proportion reporting a family history of breast cancer in a relative was 8%, similar to what was found in this study. A higher proportion was reported among Mexican immigrants in the United States where 24.2% reported a family history of breast cancer (Bird et al 2011).

The 8% found for family history in this study could be an underestimation due to the low level of awareness of cancer in Nigeria. Also, in many hospitals, there are no facilities for adequate investigation and diagnosis of cancer and there are possibilities that some cases are misclassified as other diseases or other diseases managed as cancer.

The commonest cancer types reported in this study were breast cancer and prostate cancer. The predominance of breast cancer over cervical cancer is in line with the higher occurrence of breast cancer in Sub Saharan Africa (World Cancer Report 2014).

5.2 Breast cancer screening practices and knowledge

In this study. only about a third of women ever practice SBE and less than a tenth ever had CBE or mammography. Other studies in different parts of Nigeria and other African countries reveal similar poor cancer screening practices. Less than 10% of women in other studies have had CBE.

et al (2017) reported 4.4% of women reporting CBE in a community based interventional study. In a Kenyan study Wachira et al (2014) also found 7% had CBE. Also, Okobia et al (2006) found that 9.1% had CBE in the past year.

Madubogwu et al (2017) studied female tertiary health workers in South east Nigeria and found that 35.9%, 22.5% and 1.9% respectively correctly practiced BSE, CBE and mammography. Obaji et al (2013) studied market women and found that 21.8% ever practised BSE. Odusanya & Tayo (2001) studied nurses in Lagos and found that 30% had had a CBE and 8% had a mammogram. Similarly, Obajimi et al (2013) similarly reported only about 1% of women had had mammography. In other studies, Gabriel et al (2016) found that 31.8% of nurses practised BSE while Pengpid & Peltzer (2014) found that 40.7% of university students from 25 countries had ever practised BSE in the year before interview.

Bello et al (2011) studied nurses and lay women in southwest Nigeria and found that 22.9% and 15% respectively had had a mammogram. There is a need for campaigns to educate of women about the benefits of early detection of breast cancer.

The knowledge of the respondents about breast cancer aetiology was poor in this study. Less than a quarter of the respondents correctly mentioned the cause of breast cancer. Several studies have reported similar poor knowledge of breast cancer (Nwaneri et al 2017, Obaji et al 2013. Okobia et al 2006. Aluko et al 2014). There is an urgent need for improvement of knowledge of etiology and features about breast cancer at population level. Such intervention measures will enable more women take personal measures to prevent cancer.

5.3 Risk perception about breast cancer risk, knowledge and attitudes to genetic testing

Almost nine in ten women in this study rated their breast cancer risk as low. This could be explained by poor knowledge of the rising incidence of breast cancer or its risk factors in sub Saharan Africa.

In this study, less than half (43%) of the women knew that breast cancer could be inherited. This proportion of 43% appears encouraging given the poor knowledge about breast cancer generally. The figure could be related to the general knowledge that many disease conditions are hereditary.

In this study, about a third had at least some knowledge of genetic testing with most getting information from friends and television. The absence of health workers or hospitals as a common source of genetic testing supports the point that hospitals in SSA may not be involved in any form of genetic counselling for cancer care. Genetic counselling is available for some common diseases such as Sickle Cell Disease in selected centres across Nigeria. The high level of willingness of women in our study (three quarters) to have genetic testing for breast cancer if such services were available further supports the argument for the establishment of genetic counselling and testing clinics in Nigeria. About three quarters of the women studied were willing, and a third very willing to utilize cancer risk clinic services if referred for the services available. This result indicates that high risk women are likely to utilizer cancer risk clinics services if available.

5.4 Association between family history of cancer and genetic testing knowledge, CBE

There was a significant association between having a relative with cancer and knowledge of genetic testing. This could be an indication that women with family history of cancer have been more curious about services available for finding out their risk of having cancer. Also, there was a significant association between ever having CBE and a family history of cancer. A significant association was also found for recent SBE, CBE and mammography. However, there were no significant associations on multiple logistic regression. The association between family history and breast cancer screening has been reported by other studies (Matsubara et al

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2013, Anthill et al 2006, Cook et al 2009, Gierisch et al 2009, Madlensky et al 2005, Oran et al 2008, Townsend et al 2013, Ochoa et al 2010). In some other studies there was no significant association (Bostean et al 2013, Bird et al 2011).

The study has some limitations. First the cross sectional design does not allow proper evaluation of temporality of associations. Secondly, the reports of family history may not very reliable, especially given the generally low knowledge about cancer. Another limitation related to low level of knowledge about cancer in the populace is that responses about intentions to have genetic testing may not be well informed.

5.5 Conclusion

Less than a tenth of women reported a family history of cancer. About a third ever practised SBE while less than a tenth ever had CBE or mammography. There was a significant association between family history of cancer and recent SBE, CBE and mammography though not on multiple logistic regression. Women with a family history of cancer were also more likely to rate their cancer risk as medium as high compared to those without a family history of cancer.

5.6 Implications

These findings may be important for future developers of breast cancer education programs for women with a family history of breast cancer. Findings from this study highlight the importance screening practices and understanding perceptions of risk about causal attributes of breast cancer among women with a family history.

5.7 Recommendations

1. Population based breast cancer awareness and screening campaigns should focus more on women with a family history of cancer.
2. Health education campaigns need to be intensified including use of print and electronic media to improve knowledge about breast cancer, correct misconceptions and get more women to screen for breast cancer.
3. Government should provide more necessary infrastructure for cancer prevention, diagnosis and management in oncology clinics in Nigeria.

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ASSOCIATION BETWEEN FAMILY HISTORY BREAST CANCER AND SCREENING AMONG WOMEN IN SELECTED COMMUNITIES IN IBADAN.

INFORMED CONSENT FORM

My name is Afolabi Oluwatobiloba, a M.sc student of the Department of Epidemiology and Medical Statistics, University of Ibadan, Ibadan. I am conducting a research on Association Between Family History Of Breast Cancer and Screening Among Women In Selected Communities In Ibadan.

I will be asking some questions some of which are personal but I implore you to be sincere with your responses to the questions. Please note that your responses will be kept very confidential. You will be given a number and your identity cannot be linked to the information obtained during this interview. Participation in this study is voluntary as you are free to decline participating. You also have a right to withdraw at any time you choose to during the study. I will greatly appreciate your help in responding truthfully to the survey questions as your responses will help improve the quality of service given to People with family history of cancer and breast cancer, Thank you.

Consent: Now that the study has been well explained to me and I fully understand the consent of the study process, I will be willing to take part in the study

_____ _____

Signature/Thumbprint of participant Interview date

AJOSEPO LAARIN ITAN-EBI IDILE ATI ARUN JEJERE OYAN AYEWO LAARIN AWON OBINRIN NI AGBEGBE TI O YAN NI ILU IBADAN.

IWE ATILEYIN

Orukọ mi ni Afolabi Oluwatobiloba, ọmọ ile-ẹkọ ọlọgbọn ti Department of Epidemiology and Medical Statistics, University of Ibadan, Ibadan. Mo n ṣe iwadi lori iwadi nipa "Ajosepo laarin Iba-ẹbi Ìdilé ti Ọdọ Ọdọmọ Ọmu ati Ṣisayẹwo laarin Awọn Obirin Ninu Awọn Yan Agbegbe Ni ilu Ibadan.

Emi yoo beere awọn ibeere diẹ ninu awọn ti o jẹ ti ara ẹni ṣugbọn mo bẹ ọ pe ki o jẹ otitọ pẹlu awọn idahun rẹ si awọn ibeere naa. Jọwọ ṣe akiyesi pe awọn idahun rẹ yoo wa ni ipamọ pupọ. A yoo fun ọ ni nọmba kan ati pe idanimọ rẹ ko le sopọ mọ alaye ti a gba lakoko ijomitoro yii. Ipadii ninu iwadi yii jẹ atinuwa bi o ti jẹ ominira lati kọ kopa. O tun ni ẹtọ lati yo kuro ni eyikeyi igba ti o ba yan lati nigba iwadi naa. Mo ṣe iranlọwọ gidigidi fun iranlọwọ rẹ ni idahun otitọ si awọn ibeere iwadi bi awọn idahun rẹ yoo ṣe iranlọwọ lati mu didara iṣẹ ti a fi fun Awọn eniyan ti o ni itanjẹ ẹbi ti akàn ati oyan aisan, Ṣeun.

Atilẹyin: Nisisiyi pe iwadi naa ti ṣalihan fun mi daradara ati pe mo ni oye iyọọda ilana iwadi naa, emi yoo jẹ ipinnu lati ṣe alabapin ninu iwadi naa

IFOWO SI WE OLUKOPA NINU IWADI

_____

OJO IWADI

_____

ASSOCIATION BETWEEN FAMILY HISTORY BREAST CANCER AND SCREENING AMONG WOMEN IN SELECTED COMMUNITIES IN IBADAN.

I am Tobi Afolabi, a postgraduate student of the Department of Epidemiology and Medical Statistics, University of Ibadan conducting a research on Association Between Family History Breast Cancer And Screening Among Women In Selected Communities In Ibadan. My project supervisor is Dr Babatunde Adedokun. I will be asking some questions some of which are personal but I implore you to be sincere with your responses to the questions. Your identity cannot be linked to the information obtained during this interview and the forms will be kept strictly confidential. Participation in this study is voluntary as you are free to decline participating. You also have a right to withdraw at any time you choose to during the study. I will greatly appreciate your help in responding truthfully to the survey questions. Thank you.

A. SOCIO-DEMOGRAPHIC DATA

I would like to begin by asking for some background information about you and your family

Q1. What is your current age? _____ (years)

Q2. What is your current marital status?

1. Widowed 2. Never married/Not living with a partner 3. Cohabiting 4. Married 5. Divorced/Separated.

Q3. Which of the following religions do you currently practice?

1. Christian 2. Muslim 3. OTHERS (SPECIFY)_____

Q4. Which of the following choices best describes your father's ethnic background?

1. Yoruba 2. Ibo 3. Hausa 4. OTHERS (SPECIFY)

Q5. Which of the following choices best describes your mother's ethnic background?

1. Yoruba 2. Ibo 3. Hausa 4. OTHERS (SPECIFY)

Q6. What was the highest level of education you completed?

1. None 2. Primary 3. Secondary 4. Vocational/Technical 5. Polytechnic/OND/Colleges of education 6. Bachelor's degree/HND 7. Postgraduate degree 8. OTHERS (SPECIFY)

B. LIFESTYLE DATA

Now I will be asking you about alcoholic beverages environmental exposures and physical activities

Q7. Have you ever had any alcoholic beverages (whisky, wine, local gin, palmwine, beer)?

1. Yes 2. No

Q8. Have you had any alcoholic beverages in the last 1 month (whisky, wine, local gin, palmwine, beer)? 1. Yes 2. No

Q9.

		How often are you involved in the following activities?	Never	Rarely	Sometimes	Often
A.	House related activities	**Light house work** *(Light house activity makes you breathe normally)* E.g. sweeping, cooking and dusting	__	__	__	__
		Moderate house work *(Moderate activity makes you breathe hard)* E.g. washing clothes, mopping and child care	__	__	__	__
		Vigorous house work *(Vigorous activity makes you breathe much harder)* E.g. pounding yam and chopping wood	__	__	__	__
B.	Job related activities	**Light activity** *E.g. standing, slow walking and all sitting activities*	__	__	__	__
		Moderate activity *E.g. carrying loads, continuous walking*	__	__	__	__
		Vigorous activity *E.g. digging and farming*	__	__	__	__
C.	Exercises	Leisure walking	__	__	__	__
		Jogging	__	__	__	__
		Light dancing	__	__	__	__
		Vigorous dancing	__	__	__	__
		Football, handball, etc	__	__	__	__
		Aerobics exercise/class	__	__	__	__
		OTHERS (SPECIFY)				

Q8b. Have you ever smoked cigarettes or other tobacco products? 1. Yes 2. No

REPRODUCTIVE HISTORY

The following questions are about, menstruation, pregnancy and the use of hormonal contraceptives.

Q10. At what age did you have your first menstrual period? AGE __

Q11. Excluding the time when you were using contraceptives, how many days in total is between your first day of menstrual period to the first day of your next menstrual period in a month. __

days

Q12a. Have you ever been pregnant? 1. Yes 2. No

Q12b. How many pregnancies have you had? ___

Q12c How many live births have you had? ___

Q13 Has your menstrual period stopped for 1 year or more? Please do not include times when your periods stopped because of pregnancy, breast-feeding, serious illness or strenuous exercise. 1. Yes 2. No

Q14 Have you ever used hormonal contraceptive, in the form of birth control pills, implants or injections? 1. Yes 2. No

Q15. How many years in total did you take hormonal contraceptive, in the form of birth control pills, implants or injections? YEARS ___

D. MEDICAL HISTORY

Now I have some questions about history of cancers, benign breast (non-harmful) disease, ovarian conditions, X-rays and breast biopsy.

Q16a. Has any of your relatives a previous history of cancer?	Q16b. What type (s) of cancer and how old was he/she when this cancer was first diagnosed?	Q16c If breast cancer, did he/she have it one or both breast?	Q16d. Living/Deceased
Your mother ☐1 Yes ☐2 No ☐3 Don't Know	Type / AGE ☐1 Breast ___ ☐2 Ovarian ___ ☐3 Cervical ___ ☐4 Uterine/Endometrial ___ ☐5 Colon ___ ☐6 Lung ___ ☐7 Don't know ___ ☐8 Other ___	☐1 Left ☐2 Right ☐3 Both ☐4 Don't know	☐1 Alive ___ ___ AGE ☐2 Dead ___ ___ AGE
Your father ☐1 Yes ☐2 No ☐3 Don't Know	Type / AGE ☐1 Breast ___ ☐2 Prostate ___	☐1 Left ☐2 Right ☐3 Both	☐1 Alive ___ ___ AGE

☐3 Testicular ___ ☐4 Colon ___ ☐5 Lung ___ ☐6 Don't know ___ ☐7 Other ___		☐4 Don't know	☐0 Dead ___ ___ AGE
Any sister ☐1 Yes ☐2 No ☐3 Don't Know If yes, how many sisters? ___	Type / AGE ☐1 Breast ___ ☐2 Ovarian ___ ☐3 Cervical ___ ☐4 Uterine/Endometrial ___ ☐5 Colon ___ ☐6 Lung ___ ☐7 Don't know ___ ☐8 Other ___	☐1 Left ☐2 Right ☐3 Both ☐4 Don't know	☐1 Alive ___ ___ AGE ☐0 Dead ___ ___ AGE
Any half-sisters (with common father or mother) ☐1 Yes ☐2 No ☐3 Don't Know If yes, how many half-sisters? ___	Type / AGE ☐1 Breast ___ ☐2 Ovarian ___ ☐3 Cervical ___ ☐4 Uterine/Endometrial ___ ☐5 Colon ___ ☐6 Lung ___ ☐7 Don't know ___ ☐8 Other ___	☐1 Left ☐2 Right ☐3 Both ☐4 Don't know	☐1 Alive ___ ___ AGE ☐0 Dead ___ ___ AGE

Q16a. Has any of your relatives a previous history of cancer?	Q16b. What type (s) of cancer and how old was he/she when this cancer was first diagnosed?	Q16c If breast cancer, did he/she have it one or both breast?	Q16d. Living/Deceased
any daughter 1 Yes 2 No 3 Don't Know	Type / AGE 1 Breast ___ 2 Ovarian ___ 3 Cervical ___ 4 Uterine/Endometrial ___ 5 Colon ___ 6 Lung ___ 7 Don't know ___ 8 Other ___	1 Left 2 Right 3 Both 4 Don't know	1 Alive ___ AGE 0 Dead ___ AGE
any mother's sisters 1 Yes 2 No 3 Don't Know If yes, how many mother's sisters?	Type / AGE 1 Breast ___ 2 Ovarian ___ 3 Cervical ___ 4 Uterine/Endometrial ___ 5 Colon ___ 6 Lung ___ 7 Don't know ___ 8 Other ___	1 Left 2 Right 3 Both 4 Don't know	1 Alive ___ AGE 0 Dead ___ AGE

...ny father's sisters ☐1 Yes ☐2 No ☐3 Don't Know ...f yes, how many father's sisters? ___	Type ☐1 **Breast** ☐2 **Ovarian** ☐3 **Cervical** ☐4 **Uterine/Endometrial** ☐5 **Colon** ☐6 **Lung** ☐7 **Don't know** ☐8 **Other**	AGE ___ ___ ___ ___ ___ ___ ___ ___	☐1 Left ☐2 Right ☐3 Both ☐4 Don't know	☐1 Alive ___ ___ AGE ☐0 Dead ___ ___ AGE
...ny other relatives? ...ow related___ ___ ☐1 Yes ☐2 No ☐3 Don't Know ...f yes, how many other relatives? ___	Type ☐1 **Breast** ☐2 **Ovarian** ☐3 **Cervical** ☐4 **Uterine/Endometrial** ☐5 **Colon** ☐6 **Lung** ☐7 **Don't know** ☐8 **Other**	AGE ___ ___ ___ ___ ___ ___ ___ ___	☐1 Left ☐2 Right ☐3 Both ☐4 Don't know	☐1 Alive ___ ___ AGE ☐0 Dead ___ ___ AGE

Q17. Have you ever been diagnosed or treated for any benign (non harmful) breast conditions such as a non-cancerous cyst or a breast lump? 1. Yes 2. No 3. Don't Know

Q18. Have you been diagnosed or treated for an ovarian problem or had surgical removal of a pelvic mass that was not cancer? 1. Yes 2. No 3. Don't Know

ny father's sisters ☐1 Yes ☐2 No ☐3 Don't Know f yes, how many father's sisters? ___	Type ☐1 Breast ☐2 Ovarian ☐3 Cervical ☐4 Uterine/Endometrial ☐5 Colon ☐6 Lung ☐7 Don't know ☐8 Other	AGE __ __ __ __ __ __ __ __	☐1 Left ☐2 Right ☐3 Both ☐4 Don't know	☐1 Alive __ __ AGE ☐0 Dead __ __ AGE
ny other relatives? low related___ ____ ☐1 Yes ☐2 No ☐3 Don't Know f yes. how many ther relatives? ___	Type ☐1 Breast ☐2 Ovarian ☐3 Cervical ☐4 Uterine/Endometrial ☐5 Colon ☐6 Lung ☐7 Don't know ☐8 Other	AGE __ __ __ __ __ __ __ __	☐1 Left ☐2 Right ☐3 Both ☐4 Don't know	☐1 Alive __ __ AGE ☐0 Dead __ __ AGE

Q17. Have you ever been diagnosed or treated for any benign (non harmful) breast conditions such as a non-cancerous cyst or a breast lump? 1. Yes 2. No 3. Don't Know

Q18. Have you been diagnosed or treated for an ovarian problem or had surgical removal of a pelvic mass that was not cancer? 1. Yes 2. No 3. Don't Know

Q19. Up until one year ago did you have a breast biopsy? *A procedure in which a suspicious area of the breast is removed and examined using needle or cut.* *1. Yes* *2. No*

E. BREAST CANCER SCREENING PRACTICES

The next questions are about some of the steps you might have taken to have a better understanding of your breast.

Q20a. Which of the following breast cancer screening have you ever had? (check all that apply). IF NO GO TO QUESTION 25.	Q20b. Was the breast cancer screening method recommended to you?		Q20c. Who recommended the breast cancer screening to you?			
	Yes	No	Campaign/outreach	Medical doctor	Nurse	Others (specify)
Self-breast examination	①	⓪				
Breast examined by a doctor or other health worker	①	⓪				
X-ray of your breast (mammography).	①	⓪				
None	①	⓪				
Others	①	⓪				

In the last one year, did you perform self-breast examination? 1. Yes 2. No

In the last two years, did you have your breast examined by a doctor or other health care workers?

1. Yes 2. No

In the last two years did you have an x-ray of your breast (mammography)? 1. Yes 2. No

In the last two years did you have any other form of breast screening? 1. Yes 2. No

F. BREAST CANCER RISK PERCEPTION

Kindly tick the option that best suit you. There are no wrong or right answers.

Q25 What does having one of the following persons with breast cancer mean for <u>your</u> risk?	Much higher risk	Slightly higher risk	No difference in <u>your</u> risk	Slightly lower risk	Much lower risk	Don't know
Mother						
Father						
Sister or brother						
Half-sisters or halFbrothers						
Children						
Mother's sisters or brothers						
Fathers sisters and brothers						

Q26. Breast cancer risk becomes higher:	True	False	Don't know
The more blood relatives you have who have been diagnosed with breast cancer.			
The closer your blood relationship with the person with breast cancer.			
The younger your relatives when they were first diagnosed with breast cancer, especially if they were under the age of 40.			
If your relative had breast cancer which affected both breasts.			
If your male relative developed breast cancer			
If both breast and ovarian cancer run in your family			
If certain other uncommon cancers have developed in your family when under the age of 45 years			

Q 27. List the factors which you feel causes breast cancer below

_____

_____

_____

Q28. How would you rate your chances of getting breast cancer ?

1. Low 2. Medium 3. High

G. ATTITUDE TOWARDS GENETIC TESTING FOR BREAST CANCER RISK

The following questions are to know how you feel about testing your blood to know your breast cancer risk

Q29. As far as you know, can breast cancer be caused by inheriting bad genes from one's parents?

1. Yes 2. No 3. Don't know

Q30a. *Genetic test means using your blood to identify changes in genes that could lead to breast cancer.* Before today, how much did you know about genetic testing?

1. Nothing 2. Some 3. A lot

Q30b. If you know about genetic testing where did you learn about it?

1. Magazine 2. Newspaper 3. Television 4. Friends 5. Others

_____

Q31. Are you willing to have genetic testing for breast cancer risk?

1. Yes 2. No 3. Don't know

Q32. If not willing to have genetic testing for breast cancer risk, please specify the reason (s) why not.

_____

Q33. If referred to a breast cancer high-risk clinic, how willing are you to utilize the service?

1. Not willing 2. Willing 3. Very willing

END OF QUESTIONS. THANK YOU VERY MUCH FOR YOUR TIME.

AJOSEPO LAARIN ITAN-EBI IDILE ATI ARUN JEJERE OYAN AYEWO LAARIN AWON OBINRIN NI AGBEGBE TI O YAN NI ILU IBADAN.

Oruko mi ni Tobi Afolabi, akeko gboye agba ni agbon awon ti hun se iwadi arun ti o hun tan kale ni awujo ati eto isiro nipa ilera ni ile eko yunifasiti ti ilu Ibadan ti o se iwadi nipa "ajosepo laarin itan-ebi idile ti arun jejere oyan ayewo laarin awon obinrin ni agbegbe ti o yan ni ilu ibadan.". oruko alabojuto iwadi yi ni Dokita Babatunde Adedokun.

Awon ibeere ti hun oma beere yii o ni se pelu enikookan wa. mo row a lati je olooto nipa awon idahunsi awon ibeere wonyii, bi o ti leje pe o ni fi idanimo wa han pelu awon iwadi yi ki se afipase, eyi tumo si wipe e ko se mo nigbakugba ti o ba wu yin ti iwadi yi lo lowo. Sugbon inu mi yi odun gididi ti eba le fowosowopo pelu mi lati ranmi lowo nipa iwadi yii. papa julo nipa, jije olooto sii awon ibeere won yi. Ese gan.

A. ABALA TI ONI SE PELU RE ATI AGBEGBE RE.

Ma fe lati beere nipa bibeere ti oni se pelu re ati molebi

Q1. Kini iye ojo ori yin nibayi .....(odun)

Q2. Kini ipo ti ewa nipa ti idile?

1. Opo 2. Eti gbeyawo ri/e ko gbe pelu enikeji yi 3..E gbe pelu eniyan 4. E loko 5. Eti pinya pelu oko yin/e si lodo oko mo 6. Apon ni yin.

Q3. Ewo ninu awon esin yii ni e nse ?

1. Onigbagbo 2. Musulumi 3. Esin miran (edaruko).....

Q4. E wo ninu awon eya yi lo so ibi ti baba yin tiwa?

1. Yoruba 2. Ibo 3.Hausa 4. Awon eya miran (edaruko).....

Q5. Ewo ninu awon eya yi loso ibi ti iyavyin ti wa?

1. Yoruba 2. Ibo 3.Hausa 4. Awon eya miran (edaruko).....

Q6. Iwe melo leka?

1. Mi o kawe rara 2. Alakobere 3. Ile-eko girama 4. Ile-eko onise owo 5. Ile-eko gbogbonise/ie eko awon oluko agba 6. Yunifasti/ile eko agba gbogbo nise. 7. Ile-eko to gaju 8. Imiran (cdaruko).....

B. IBEERE NIPA IGBE AYE YIN

Nigbayi hun o ma beere nipa awon oti ti e maa nmu ati awon ohun ti e ma nse gege bi ise.

Q7. Nje e ti fi igba kan mu oti lile ri (ogogoro. oti oyinbo, Emu)?

1. Beeni 2. Becko

Q8. Nje emu oti lile osun kan seyin?

1. Beeni 2. Beeko

Q9. Nje e mu siga ri tabi ohun ti ofi ara jo

1. Beeni 2. Beeko

Q10. Bawo ni e se ma nse awon nkan wonyi si			E o seri	Boya lekan kan	Nigba miran	Lemo lemo
A	Awon ise ti o nise pelu ile	Awon ise kekeke ninu ile (awon ise ile kekeke yi ma n ranmi lowo lati mi daradara) apeere: gbigbale. sise ounje. gibanle				
		Awon ise ile to mo ni won tabi to ye (Awon ise yi ma nje ki ati mi mo nira) apeere, aso fifo, ile ninu ati omo titoju				
		Awon ise ile to le die (Awon ise yi ma nje ko ni ara gidu lati mi) apeere : iyan gigun ati igi lila				

B	Awon tio nise pelu ise ti onse	Awon ise ti ko le, apeere nina duro, ririn kiri, ki afi gbogbo igba na joko				
		Eyi ti ko le ju tabi to mo niwon , apeere : eru gbigbe ki eniyan sama rin kiri				
		Eyi to le lopolopo, apeere ile gbigba ati ise agbe/oko dida				
C	Ere idaraya	Irin gbefe				
		Ere sisa pelu odiwon				
		Iji jijo ti ko gba pakaleke				
		Ijo pakaleke				
		Booolu gbigba (alafesegba). Boolu alafowogba ati beebelo				
		Ere idaraya a ti onise pelu agbara				
		Awon miran				

C. ITAN TO NISE PELU OMO BIBI

Awon ibeere wonyi ni sepelu nkan osu. pyum nini ati lilo awon ogun kan tabi ekeji ti o le di oyun nin lowo.

Q10. Omo odun melo ni yin nighba tie se nkan osun akoko? Odun .....

Q11. Yato si igba tie lo ogun ti odi oyun lowo. baami ni igba ti e fi ma nse nkan osu se gun to si omiran (ojo akoko si ojo akoko miran ti e se nkan osu)?..... ojo

Q12. Nje eti loyun ri ? 1. Beeni 2. Beeko

B	Awon tio nise pelu ise ti onse	Awon ise ti ko le, apeere nina duro, ririn kiri, ki afi gbogbo igba na joko				
		Eyi ti ko le ju tabi to mo niwon , apeere : eru gbigbe ki eniyan sama rin kiri				
		Eyi to le lopolopo, apeere ile gbigba ati ise agbe/oko dida				
C	Ere idaraya	Irin gbefe				
		Ere sisa pelu odiwon				
		Iji jijo ti ko gba pakaleke				
		Ijo pakaleke				
		Booolu gbigba (alafesegba). Boolu alafowogba ati beebelo				
		Ere idaraya a ti onise pelu agbara				
		Awon miran				

C. ITAN TO NISE PELU OMO BIBI

Awon ibeere wonyi ni sepelu nkan osu. pyum nini ati lilo awon ogun kan tabi ekeji ti o le di oyun nin lowo.

Q10. Omo odun melo ni yin nighba tie se nkan osun akoko? Odun .....

Q11. Yato si igba tie lo ogun ti odi oyun lowo, baami ni igba ti e fi ma nse nkan osu se gun to si omiran (ojo akoko si ojo akoko miran ti e se nkan osu)?..... ojo

Q12. Nje eti loyun ri ? 1. Beeni 2. Beeko

Q13. Nje nkan osu yin ti duro dfun odun kan tabi jube lo ri? Ejo wo e ma ka awon ihgba to duro nitori oyun , nigba tie n fun omo loyan, nigba ti ara yin koya tabi e se waala gidigi.

1. Beeni
2. Beeko

Q14. Nje eti fi igba kan lo ogun ti ko je ki oyun duro, boya nipa fifi eto somo bibi tabi abeere?

1. Beeni
2. Beeko

Q15. Odun melo laapapo ni igba ti e fi lo, boya eyi ti anfi soju ara tabi alabere odun.....

D. ITAN ETO ILERA YIN

Nibayi, mo ni ibeere lori itan jejere, ibecre arun oyan ipo ti oju ara wa, aworan inu ara, yiyo awon nkan ti ko dara pupo ninu oyan.

Q16a.	Q16b.	Q16c.	Q16d.
Abala a. nje enikankan ninu molebi yi ni itan arun jejere	Iru arun jejere wo wti wipe odun melo ni eni yen gba ti won se ayewo re?	Ti o ba je arun jejere oyan, se apa kan ni abi mejeji	Se eni yi siwa tabi o ti ku?
Se iya yin? 1. Beeni 2. Beeko 3. Mi o mo	Iru arun jejere Odun 1. Oyan ..... 2. Oju ara ..... 3. Ile omo ..... 4. Ile ito ..... 5. Odo abe ..... 6. Ona ofun ..... 7. Emi o mo ..... 8. Awon miiran	1. Apa osi 2. Apa otun 3. Mejeji 4. Emi o mo	Owa laye/ oti ku Odun 1. Owa laye ..... 2. Oti ku .....
Se baba yin? 1. Beeni 2. Beeko 3. Mi o mo	Iru arun jejere Odun 1. Oyan ..... 2. Oju ara ..... 3. Ile omo ..... 4. Odo abe ..... 5. Ona ofun	1. Apa osi 2. Apa otun 3. Mejeji 4. Emi o mo	Owa laye/ oti ku Odun 1. Owa laye ..... 2. Oti ku .....

	6. Emi o mo ..... 7. Awon miiran		
Igbon obirin? 1. Beeni 2. Beeko 3. Mi o mo	Iru arun jejere Odun 1. Oyan ..... 2. Oju ara ..... 3. Ile omo ..... 4. Ile ito ..... 5. Odo abe ..... 6. Ona ofun ..... 7. Emi o mo ..... 8. Awon miiran	1. Apa osi 2. Apa otun 3. Mejeji 4. Emi o mo	Owa laye/ oti ku Odun 1. Owa laye ..... 2. Oti ku .....
Awon egbon obinrin (baba kanna sugbon iya otooto)? 1. Beeni 2. Beeko 3. Mi o mo	Iru arun jejere Odun 1. Oyan ..... 2. Oju ara ..... 3. Ile omo ..... 4. Ile ito ..... 5. Odo abe ..... 6. Ona ofun ..... 7. Emi o mo ..... 8. Awon miiran	1. Apa osi 2. Apa otun 3. Mejeji 4. Emi o mo	Owa laye/ oti ku Odun 1. Owa laye ..... 2. Oti ku .....
Omo obinrin? 1. Beeni 2. Beeko 3. Mi o mo	Iru arun jejere Odun 1. Oyan ..... 2. Oju ara ..... 3. Ile omo ..... 4. Ile ito ..... 5. Odo abe ..... 6. Ona ofun ..... 7. Emi o mo ..... 8. Awon mitran	1. Apa osi 2. Apa otun 3. Mejeji 4. Emi o mo	Owa laye/ oti ku Odun 1. Owa laye ..... 2. Oti ku .....
Awon egbon iya ti oje obinrin? 1. Beeni	Iru arun jejere Odun 1. Oyan ..... 2. Oju ara	1. Apa osi	Owa laye/ oti ku Odun 1. Owa laye .....

2. Beeko 3. Mi o mo Ti o ba je beeni meloo ni won je	3. Ile omo ..... 4. Ile ito ..... 5. Odo abe ..... 6. Ona ofun ..... 7. Emi o mo ..... 8. Awon miiran	2. Apa otun 3. Mejeji 4. Emi o mo	2. Oti ku .....
Awon egbon baba ti oje obinrin? 1. Beeni 2. Beeko 3. Mi o mo	Iru arun jejere Odun 1. Oyan ..... 2. Oju ara ..... 3. Ile omo ..... 4. Ile ito ..... 5. Odo abe ..... 6. Ona ofun ..... 7. Emi o mo ..... 8. Awon miiran	1. Apa osi 2. Apa otun 3. Mejeji 4. Emi o mo	Owa laye/ oti ku Odun 1. Owa laye ..... 2. Oti ku .....
Molebi? Bawo ni won se je..... 1. Beeni 2. Beeko 3. Mi o mo 4.	Iru arun jejere Odun 1. Oyan ..... 2. Oju ara ..... 3. Ile omo ..... 4. Ile ito ..... 5. Odo abe ..... 6. Ona ofun ..... 7. Emi o mo ..... 8. Awon miiran	1. Apa osi 2. Apa otun 3. Mejeji 4. Emi o mo	Owa laye/ oti ku Odun 1. Owa laye ..... 2. Oti ku .....

Q17. Nje ati se ayewo ti osi fi idi re mulempe oyan yin kosi ni ipo to ye tabi kokoro wa ninu oyan yin ri 1. Beeni 2. Beeko 3. Mi o mo

Q18. Nje e ti fi igba kan ni arun oju ara ri tabi ati fi igba kan yo ohun kan ni obeberu yin ri nipa ise abe sugbon ti ki se arun jejere? 1. Beeni 2. Beeko 3. Mi o mo

Q19. Titi bi odun kan seyin, nje ali igba kan yo ohun Kankan ninu oyan yin ri boya nitori aisan kan tabi omiran? Nipa sis ayewo lori akiyesi awon ibi kan ti asi lo abeere tabi ti age

1. Beeni 2. Beeko 3. Mi o mo

E. AYEWO LORI ARUN JEJERE OYAN

Awon ibeere wonyi da lori awon ese ti eti gbe lori ati mo si, lori ipo ti oyan yin wa

Q20a	Q20b	Q20c
Ewo ninu awon ayewo yi leti se lori arun jejere ri? (ewo gbogbo eyi ti o je).	Nje liana ti egba se ayewo yi je imoran tabi alasile fun yin rin	Tani o la liana yi sile fun yin?

	Beeni	Beeko	Awon olupolongo	Dokita	Noosi	Elomiran (edaruko)
Ayewo aladase fun ra eni	1.	0.				
Onisegun/dokita lo se ayewo tabi awon onise isegun oyibo miiran	1.	0.				
Ayewo inu ara (x-ray) ti oni se pelu oyan	1.	0.				
Ko si Kankan ninu awon ti adaruko yi	1.	0.				
Awon miiran (edaruko)	1.	0.				

Q21. Boya bi odun kan seyin, nje e se ayewo aladase lori oyan yin 1. Beeni 2. Beeko

Q 22. Bi odun meji seyin, se dokita tabi awon elcelo ilera miiran bayin se ayewo lori oya yin?

1. Beeni 2. Beeko

Q 23. Bi odun meji seyin, nje e se ayewo inu ara (x-ray) ti o ni se pelu oyan yin?

1. Beeni 2. Beeko

Q24. Bi odun meji seyin, nje e se ayewo miran lori oyan yin?

1. Beeni 2. Beeko

F. EWU TO FARAPE ARUN JEJERE OMU

Fi pelepele mu eyi ti o ro, ko si eyi ti o dara beeni kosi eyi ti kodara

Q25. Bawo ni ewu to wa ninu ki eniyan ni okan ninu awon eniyan yi ti o ni arun jejere se kanwa.	Ewo to po	Ewo to farape eyi topo	Koosi iyato ninu ewu re	Kosi ewu to po	Kosi ewu rara	Emi o mo
Iya						
Baba						
Egbon obinrin tabi okunrin						
Egbon okunrin/obinrin ti kise baba kanna tabi iya kanna						
Awon omo						
Egbon iya obirin tabi okunrin						
Egbon baba obinrin tabi okunrin						

Q26. Arun jejere yi ti di toro fankale bayi	Koribe rara (iro pata gba ni)	O fara jo iro	O dabi enipe otita ni	Otito ni eyi	Emi o mo
Becni awon molebi wa ti oni arun jejere tii nposi papa julo arun jejere oyan					
Beeni awon eje wa nsumo awon to oni arun jejere oyan					
Beeni awon molebi wa ti okere lojo ori sese ko ni arun, papa julo awon towa labe ogoji odun					
Ti ikankan ninu molebi wa bani arun jejere oyan nioyan mejeji					
Ti molebi wa to je okunrin bani arun to ohun fi han pe oni arun jejere oyan					
Boya arun jejere oyan ati ti oju are bawa ninu ebi re					
Boya awon jejere ti kowo po tiwa ninu molebi re ni abe odun marunlelogoji					
Q27. E daruko awon tie rope ohun fa arun jejere oyan.....					

Q28. Niti igbelewon ida ogorun. Bawo le se ro wipe ipo yin wa lati ni arun jejere? Nibiti igbelewon odo tini ida ogorun so wipe osese ki e ma ni arun jejere oyan yi ati wipe ogorun igbelewon nso wipe kosi aniani, dajudaju afi gbagban wipe eko le se aimani
0%--10%--20%--30%--40%--50%--60%--70%--80%--90%--100%

G. IHUWASI TI OHUN TOKASI EWU TOWA NINU ARUN JEJERE OYAN

Awon ibeere wonyi felati mo bi yio se ri lara yin nigbati e base ayewo eje yin lati mo ipo ti ewa nipa arun jejere oyan.

Q29. (Ibeere mokandinlogbon)

Gege bi ti se mo. arun jejere le je okunfa iran ati ohun mi?

1. Okunfa iran 2. Ohun miran 3. Mi o mo

Q30. (Ibeere ogbon)

Ayewo eje yi tumo si wipe lati lo eje yin lati mu iyipada ba iran ni eyi ti o le fa arun jejere oyan ki o di oni, bawo le se mo nipa ayewo eje ti onise pelu iran yi si?

1. Mi o mo nkankan 2. Mo mo die 3. Mo mo pupo

Q30b. Ibeere ogbon abala b)

Ti e ba mo nipa ayewo eje iran, nibo leti ko nipa re?

1. Magazine 2. Iwe iroyin 3. Ero mohunmaworan 4. Ore 5. Ona miran ?

Q31 (Ibeere mokanlelogbon)

Ni ori agbelewon odo-si mewa, bawo le se fe lati se ayewo eje iran ti o nise pelu arun jejere? Nibiti odo (0) ti duro fun 'hun o nife si' ati mewa si duro fun 'moni fe si dada'

0.....5.....10

Q32. (Ibeere kejilelogbon)

Ti e ko ba ni fe si ayewo eje iran jejere oyan, e jowo e so idi tabi awon idi to romo.

.....

....

Q33. (Ibeere ketalelogbon)

Ti a ba dari yin si ile-iwosan lati se ayewo arun jejere oyan lekunrere, bawo ni e o se lo eto yi si?'0' duro fun 'hun o nife si' ati mewa si duro fun 'mo nife si daradara'

0.....5.....10

TELEGRAMS.....

TELEPHONE.....

MINISTRY OF HEALTH

DEPARTMENT OF PLANNING, RESEARCH & STATISTICS DIVISION

PRIVATE MAIL BAG NO. 5001, OYO STATE OF NIGERIA

Your Ref. No.....

All Communication should be addressed to

the Honourable Commissioner quoting

Our Ref. No. AD 13479/526

12th September, 2017

The Principal Investigator,
Department of Epidemiology and Medical Statistics,
Faculty of Public Health,
College of Medicine,
University of Ibadan,
Ibadan

Attention: Afolabi Oluwatobiloba

ETHICAL APPROVAL FOR THE IMPLEMENTATION OF YOUR RESEARCH PROPOSAL IN OYO STATE

This is to acknowledge that your Research Proposal titled "Family History of Cancer, Breast Cancer Awareness and Screening among Women in Selected Communities in Ibadan" has been reviewed by the Oyo State Ethical Review Committee.

2. The committee has noted your compliance in the light of this. I am pleased to convey to you the full approval by the committee for the implementation of the Research Proposal in Oyo State, Nigeria.

3. Please note that the National Code for Health Research Ethics requires you to comply with all institutional guidelines, rules and regulations. In line with this, the Committee will monitor closely and follow up the implementation of the research study. However, the Ministry of Health would like to have a copy of the results and conclusions of findings as this will help in policy making in the health sector.

4. Wishing you the best

Dr. [illegible] Gbolahan
Director, Planning, Research & Statistics
Secretary, Oyo State Research Ethical Review Committee