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Correlates of non-adherence to preventive breast cancer screenings among women in Lagos State

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Abstract: Despite the fact that breast cancer is a public health concern the uptake of preventive screening for the disease remains an obstacle to its prevention. This article investigates the "Correlates of Non-Adherence to Preventive Breast Cancer Screenings (PBCS) among women in Lagos state." The article specifically investigates the relationship between levels of education and knowledge of PBCS:- determines the relationship between religion and attitude to PBCS:- and establishes the relationship between levels of income and attitude to PBCS. The study adopted a non- experimental research design, and employed a cross-sectional survey method. Quantitative data was collected from a sample of 300 women using a simple random sampling technique. Data was analyzed using the Statistical Package of Social Sciences (SPSS) version 20.0. Findings showed that most of the respondents (68.8%) had heard about PBCS; and the information was obtained mostly from health workers. Only a few respondents (24.4%) had ever practiced PBCS. Financial restraints, lack of knowledge, and negative history of breast cancer in the family were some of the reasons given by the respondents who never visited a clinic for screening. Findings further indicated that place of residence is the only factor that does not determine respondents' attitude to PBCS (X2=0.001, d.o.f =1, p value=0.974). It concluded that levels of education, religion and income play a fundamental and crucial role in the practice of PBCS among women in Lagos State.

Keywords: Attitude, Breast Cancer, Factors influencing Non-Adherence, Practice, Preventive screenings

1. INTRODUCTION

Breast cancer accounts for 24.2% of all new cancer cases diagnosed in women globally, or one in every four instances recognized. Of the 185 countries included by GLOBOCAN 2018, a total of 154 had the highest prevalence of breast cancer. Breast cancer is a disorder characterized by uncontrolled proliferation of breast cells; and is the most common malignancy and the leading cause of cancer mortality in women in France and Europe at large (Dyba et al., 2021; Bray et al., 2018). Usually, the cells develop into a lump that can be felt or seen on X-rays. Women are almost always affected by breast cancer, although men can also get it. Moreover, the great majority of breast lumps do not turn malignant. Even though they are not life-threatening, some benign breast lumps can raise a woman's chance of getting breast cancer. The only known risk factor for breast cancer in many cases of affected

women is their gender. According to (Mayo Foundation for Medical Education and Research, 2019) risk elements include:

- Sex, whereby women are far more likely than men to develop breast cancer.
- Age, whereby the risk increases with age.
- Personal history of breast cancer whereby breast cancer in one breast increases the likelihood of acquiring cancer in the other.
- Family history of breast cancer. If a woman's mother, sister, or daughter was diagnosed with breast cancer, especially at a young age, her risk of developing breast cancer increases. Nonetheless, the vast majority of patients diagnosed with breast cancer have no family history of the condition.
- Early menstruation whereby the onset of menstruation before the age of 12 increases a woman's risk of breast cancer.

It is widely acknowledged that early diagnosis of breast cancer is essential for both prognosis and disease therapy (El Saghir et al., 2011). Awareness, attitudes, and screening practices are some of the elements that affect disparities in severity and survival rate. For example, breast cancer in developing or low-income nations, like Nigeria, is usually characterized by advanced stages of the disease or late clinical presentations, with only palliative treatment and chemotherapy being offered, and a high death rate (Adeniji, 1999; Anyanwu, 2000; Parkin et al., 2008). Research from both affluent and socioeconomically disadvantaged populations have demonstrated that the consequences of late detection of breast cancer on survival can differ (Jack et al., 2009; Downing et al., 2007). Effective awareness campaigns are essential since many developing countries have poor levels of knowledge and health-seeking habits (Khokhar, 2009; Montazeri et al., 2008). According to the findings of an international survey, university students in 23 countries were less knowledgeable than older women about the risk factors linked to breast cancer (Peacey et al., 2006).

2. LITERATURE SURVEY

2.1. Early detection of breast cancer

According to the American Cancer Society, annual screening mammography should begin at 40 years of age; a clinical breast exam (CBE) every 3 years for women aged 20-30 and every year for women over 40; and Breast self-examination (BSE) every year for women aged 20. Screening mammography is largely the most effective way to detect early breast cancer (Islam & Aziz 2012). In the developed world, screening breast cancer is widely used (Onwere, 2009; Kerlikowske, 2011; Smith, 2003). However, in low-income countries, such as Nigeria and other LDCs, screening is not widely used due to the high cost of the procedure (Egwuonwu, 2012). Breast screening reduces breast cancer-related mortality and morbidity, and can diagnose the disease at an early stage (Austoker et al., 2009). Breast screening improves treatment and prognosis (Chong et al., 2002, Harmer, 2008), improves survival rate, and minimizes invasive treatment (No et al., 2004). The two most important techniques to improve prognosis are early diagnosis and screening, and prompt intervention (Burgess et al., 2009, Abulkhair et al., 2010, Forbes et al., 2011).

The primary purpose of a breast cancer screening program is to reduce disease mortality. The establishment of a breast cancer screening program in some communities has led to an increase in the proportion of cancers detected at an earlier stage, increased disease survival rates, and, ultimately, lower breast cancer mortality. Improved diagnostic and treatment options have been linked with the decline in mortality in many Western countries in recent decades; nevertheless, increased "breast awareness" among women may also have contributed (Joke et al., 2017). Despite the availability of certain simple screening alternatives, women in Nigeria continue to underutilize them.

2.2. Literature survey

This research applied the Health Belief Model in addition to the Reasoned Action and Planned Behaviour theory. A cognitive model known as the health belief model (HBM) holds that beliefs about different dangers to a person's health, as well as the effectiveness and outcomes of specific activities or behaviours, have an impact on behaviour (Hochbaum, 1958; Rosenstock, 1966; Becker, 1974; Sharma & Romas, 2012). Certain model designs also include the idea of self-efficacy in addition to behavioural beliefs (Bandura 1997). An additional stimulus to action, or "cues to action," which encourage the adoption of real behaviour, further reinforces these beliefs. According to the Health Belief Model, a person's knowledge, attitudes, and sociodemographic traits all affect the way they behave in terms of their health. The model also advocates that influencing people's own beliefs is necessary to motivate behaviour change. People balance advantages against the alleged costs and constraints of change.

For the change to happen, the potential rewards must exceed the disadvantages. . Beliefs about the schedule and location of breast cancer screening, as well as other information like scheduling work leave and transportation, will increase mammography use among women (Gollwitzer, 1993; Rutter et al., 2006). Some socio-cultural attitudes, such as the technician touching the breasts, and being exposed to X-rays, can also improve mammography performance (Motano et al., 1991). Similarly, cultural and religious beliefs have been associated with breast cancer screening (such as mammography use) among women. For example, most women prefer to be examined by a female doctor (Ahmadian, 2011). It is known that barriers to screening behaviours include fear of breast cancer (Hay et al., 2006), low-risk perceptions (Petro-Nustas et al., 2013), insufficient motivation, perceived benefits, and self-efficacy (Hajian-Tilaki & Auladi, 2014), lack of perceived benefit, and low motivation to undertake breast cancer screening (Veena et al., 2015, Dündar et al., 2006). It is thus of utmost importance to remove these obstacles and raise women's perceived motivation and self-efficacy in order to encourage them to seek breast cancer screenings.

Fishbein (1975) and Ajzen (1980) proposed the concept of reasoned action, which is based on the assumption that humans are generally rational and make systematic use of the knowledge available to them. According to the theory, a person's behavioural aim is defined by both their attitude toward the behaviour and subjective norms. Accordingly, if someone intends to behave in a certain way, they are likely to do so. Non-adherence to preventive breast cancer screening can be explained by the reasoned action theory. Specifically, the practice of breast cancer screening can be explained using the three major components of the theory of reasoned action: behavioural goal, attitude, and subjective norm. The intensity of a woman's desire to have a breast cancer screening is referred to as behavioural intention. It determines whether or not they will do it. However, according to the concept of reasoned action, behavioural purpose is determined by two factors: attitude and subjective norm. The potential effects of women's breast cancer screening practices, as well as their perception of the consequences, impact their behaviour. For example, if people believe that breast cancer screening is really beneficial to them, they are more likely to undergo the screening, and vice versa.

3. PROBLEM STATEMENT

Nigeria has an elevated rate of breast cancer incidence and death, similar to other low- and middle-income nations (Jedy-Agba et al., 2012; Pruitt et al., 2015). Nigeria has significant obstacles when it comes to delayed treatment and early disease detection (Oluwatosin, 2010). Women may encounter a variety of obstacles when pursuing treatment for early-stage breast cancer symptoms, such as misconceptions about the condition and its prognosis, financial and logistical limitations (Anyanwu et al., 2011; Egwuonu et al., 2011), and socioeconomic and cultural aspects like stigma and limited access to care (Bell, 2012; Pruitt et al., 2015).

In the years to come, it has been projected that there will probably be a rise in the prevalence of breast cancer worldwide. This will be caused by population growth and inadequate infrastructure in emerging countries, in addition to the dramatic increases in incidence rates observed in some of these countries. Moreover, global

incidence and mortality could rise by 50% between 2002 and 2020 due to demographic shifts alone (Anderson et al., 2008). The limited data on emerging countries points to an increase in the age-specific incidence and death rates of breast cancer, which is partially attributable to the adoption of Western lifestyles. These styles frequently encourage lower parity, delayed childbearing, reduced physical activity, and nutritional choices associated with early menarche.

4. RESEARCH METHODOLOGY OR METHODS

4.1. Research design

Non-experimental research design was used for this study since it does not include an experimental or control group and was, therefore, suitable for a sociologically motivated study. The survey method was used in data collection, specifically the cross-sectional survey, since the study only sought to descriptively analyse the Correlates of Non-adherence to Preventive Breast Cancer Screening (PBCS) with emphasis and focus on women in Lagos State.

4.2. Study location

The study was conducted in two local government areas in the Lagos West Senatorial District, namely: Oshodi-Isolo Local Government Area and Mushin Local Government Area of Lagos State. The Oshodi-Isolo Local Government Area (LGA) of Lagos State lies between has the Latitude of 6°33'38.4" (6.5607°) North and Longitude of 3°20'7.1" (3.3353°) East, with an elevation of 28 metres (92 feet) above the sea level (geonames.org). The locality covers an area of 45km2 and is bordered by Orile-Oshodi and Mafoluku Areas of Lagos State, which is part of the Ikeja division of Lagos State, and has a population of about 621,509 people. According to the 2006 general population census; and an estimated population of 1,000,506 million (as at 2017) (National Population Commission of Nigeria, (web), National Bureau of Statistics, (web)). Orile-Oshodi, Mafoluku, Oshodi, Ewu, Shogunle, Papa Ajao, and Ilupeju are among the communities that make up the Oshodi-Isolo Local Government Area (wikipedia.org/wiki/Oshodi-Isolo; March 3, 2016: 20:00hrs).

The Mushin Local Government Area of Lagos State lies between the Latitude 6°31'59.99" (6.5333o) North and longitude of 3°20'59.99" (3.3499986o) in the East (geonames.org). It is bordered to the North by Oshodi/Apapa express way; and to the South by Surulere Local Government Area; and to the East by the Agege motor road. It is a suburb of Lagos City, and its inhabitants are mostly Yoruba people with a population of 633,009 people, according to the 2006 general population census; and an estimated population of 833, 543 (as at 2016) (National Population Commission of Nigeria, (web), National Bureau of Statistics, (web). It is home to a sizable industrial complex whose businesses include cotton spinning and weaving, shoe making, bicycle and motorcycle assembly, and powdered milk manufacture. In the spacious central market, agricultural goods are brought for sale (wikipedia.org/wiki/Mushin). There is a hospital and a number of secondary schools in the town. Mushin is located at the intersection of the Lagos, Shomolu, and Ikeja roads as well as the railway.

4.3. Population, sample size and sampling procedure

The target population for this study comprised adult women who had reached the reproductive and legal age of eighteen (18) years and above working and living in Oshodi/Isolo and Mushin local government Areas of Lagos State. The proportion of the total population of the two local governments combined, considered for this study was 0.024 percent. Therefore, the sample size for this study is 300. The sample was drawn from women in Oshodi-Isolo and Mushin local government areas.

This study employed a multi-stage sampling technique, which utilized both probability and non-probability procedures involving multiple sampling steps. Based on prior knowledge, the first stage involved the use of purposive sampling to select the Lagos West senatorial district (because it has the highest number of local

governments and population in Lagos State) with ten local government areas. According to the Lagos State Ministry of Health, there are only four working mammography units in Lagos. Mammography is rarely used, and the majority of women are ignorant of its utility as a screening tool (Lagos State Ministry of Health, 2014).

The second stage involved the selection of the local government areas. A simple random method (lottery) was used to select the two local governments (Oshodi/Isolo and Mushin) for the study. Still using a simple random method (lottery) for the third stage, three major areas were selected from each local government. The selected areas for Oshodi Isolo Local Government Area are Orile-Oshodi, Mafoluku, and Ilupeju while that of Mushin local government includes Ojuwoye, Palm Avenue and Itire. This brings the selected areas to six. The fourth stage involves the selection of the streets. Still using the simple random method, five streets were selected from each of the six selected areas. This brought the total number of streets to thirty (fifteen streets from each local government).

The fifth stage involved the selection of respondents from each street. The Accidental (also called convenience) sampling was used to choose the respondents that are available during the administration of the questionnaire in all the selected streets. Since 300 respondents were selected in all and 30 streets were used, thus, 10 respondents were selected from each street and 150 respondents from each local government area.

4.4. Data collection

A structured questionnaire was used to collect data. The questionnaire comprised which contained both close-ended and open-ended questions with a total of 60 questions that addressed the objectives of the study. The questionnaire consisted of seven major sections: the Socio-Demographic Profile of Respondents, practice of preventive breast cancer screening among women, women's education and their level of knowledge of preventive breast cancer screening, religion and attitude to preventive breast cancer screening, and women's level of income. Other sections pertained to:- age and practice of breast cancer screening, place of residence and influence on adherence to preventive breast cancer screening

5. DATA ANALYSIS AND DISCUSSIONS

The gathered data was edited and screened for possible errors. The Univariate and , bivariate analyses were attempted and results were tabulated in relation to the variables and hypotheses. The Statistical Package for Social Sciences (SPSS) was used to aid the analysis. Open-ended responses were revised and reclassified, while closed-ended responses were coded into numbers for convenience of computation. The hypotheses were tested using the Chi-Square test.

The use of Chi-square analysis given as ($\chi 2$) is ideal in testing the relationship between two variables.

Furthermore, Chi-square ($\chi 2$) formula was given as:

$$\chi^2 = \sum \frac{(o-e)^2}{e}$$

Where, χ^2= Chi-square

o = Observed frequency

e = Expected frequency

$\sum$=Summation

5.1. Findings

This section presents the findings of the study based on the analysis of the data collected from the field on Correlates of Non-adherence to Preventive Breast Cancer Screenings (PBCS) among Women in Lagos State. The section begins with socio-demographic characteristics of the respondents, Including, age, religion, ethnicity, employment status, level of education, and residence. This is followed by findings based on the objectives of the study and the hypothesis tested. Three hundred women received the questionnaires, except for five (5) respondents who did not fill the questionnaire. Consequently, the researcher was left with 295 instruments after five (5)

respondents failed to turn in their questionnaires. Therefore, the data obtained from 295 women who participated in the study served as the foundation for the discussion and conclusions.

5.2. Socio-demographic characteristics of respondents

This section presents the percentage distribution of respondents by socio-demographic attributes. As regards the age, respondents fell under different age groups: 18-22 (29.5%), 23-27 (21.7%), 28-32 (19.7%), 33-37 (9.5%), 38-42 (12.9%), 43-47 (2.0%), 48-52 (3.4%), and 53-57(1.4%). Majority of the respondents were Yoruba 157 (53.2%), Igbo 83 (28.1%), Hausa 36 (12.2%), Efik/Ibibio 7 (2.4%), Edoma/Tiv 4 (1.4%), and Urhobo/Ijaw/Itshekiri 8 (2.7%). In terms of residence, 147 (49.8%) resided in Oshodi/Isolo while 148 (50.2%) resided in Mushin.

Regarding levels of education, respondents with no formal education were 18 (6.1%), those with primary/intermediate education were 26 (8.8%), and those who had attended secondary/trade school were 71 (24.1%). Respondents with, tertiary education were 168 (56.9%) while 12 (4.1%) did not disclose their educational qualifications. The distribution of respondents by marital status reveals that 160 (54.2%) were single, 125 (42.2%) were married while 10 (3.4%) are widowed/divorced/separated. As regards employment status, the employed were 109(36.9%), Unemployed were 68 (23.1%), self-employed were (35.3%), House wives were 4 (1.4%) while 10 (3.4%) did not reveal their employment status.

The respondents' religious affiliation was as follows: Christianity 218(73.9%), Islam 54 (18.3%), Traditionalists 4 (1.4%), others 11 (3.7%) while 8 (2.7%) did not respond. Respondents with family history of breast cancer totalled 36 (12.2%) while those who did not have family history of breast cancer were 259 (87.8%). Further analysis was carried out in line with the objectives.

5.3. Distribution of Respondents by Preventive Breast Cancer Screening (PBCS) Practice

Table 1 shows the distribution of respondents by preventive breast cancer screening practice

Table 1: Respondents Preventive Breast Cancer Screening (PBCS) practice

Indicators	Frequency	Percent
Ever heard of Preventive Breast Cancer Screening (PBCS)?		
No	92	31.2
Yes	203	68.8
Total	295	100.0
If yes, which one do you know?		
Breast self-examination	61	20.7
Clinical breast examination	72	24.4
Chemoprevention drugs(tamoxifen & raloxifen)	8	2.7
Mammographic screening	26	8.8
Ultrasonography	23	7.8
Prophylactic mastectomy	26	8.8
Not applicable	79	26.8
Total	295	100.0
How did you know about PBCS?		
Through a friend/spouse	56	19.0
Radio	16	5.4
Television	53	18.0
Health workers	103	34.9
Social media	4	1.4
Not applicable	63	21.4

Total	295	100.0
Ever practiced PBCS?		
No	223	75.6
Yes	72	24.4
Total	295	100.0
If yes, have you visited any clinic for screening?		
No	90	30.5
Yes	119	40.3
No response	4	1.4
Not applicable	82	27.8
Total	295	100.0
If no, why?		
Busy	18	6.1
No reason	47	15.9
Financial restraint	12	4.1
Not aware	6	2.0
Because i don't fall ill	30	10.2
Not interested	4	1.4
I do self-examination	4	1.4
No history of cancer in my family	2	.7
No response	40	13.6
Not applicable	132	44.7
Total	295	100.0
Have you ever practiced breast self-examination?		
No	229	77.6
Yes	66	22.4
Total	295	100.0
Ever practiced clinical breast examination?		
No	219	74.2
Yes	76	25.8
Total	295	100.0
Ever used chemoprevention drugs(tamoxifen and raloxifen)		
No	262	88.8
Yes	33	11.2
Total	295	100.0
Have you ever practiced mammographic screening?		
No	260	88.1
Yes	35	11.9
Total	295	100.0

Have you ever practice ultrasonography?		
No Yes	258 37	87.5 12.5
Total	295	100.0
Have you ever practiced prophylactic mastectomy? No Yes	260 35	88.1 11.9
Total	295	100.0

Source: Field Data (2019)

Table 1 reveals the percentage distribution of respondents by preventive breast cancer screening practice. The table shows that 203(68.8%) of the respondents were aware of preventive breast cancer screening while 92 (31.2%) were not. The table further indicates that only 72 (24.4%) had ever practice PBCS while 223(75.6%) had never practiced PBCS. Regarding whether respondents had ever visited a clinic for breast cancer screening, 90 (30.5%) claimed they had never visited any clinic while 199 (40.3%) claimed they had visited, and 4 (1.4%) did not respond to the question. The question was not applicable to 82 (27.0%) as they had already claimed to have "Never heard" and never considered visiting a clinic for breast cancer screening.

As regards the practice of preventive breast cancer screening, 77.6% of the respondents had never practiced BSE while 22.4% had practiced. On CBE, 74.2% had never practiced while 25.8% had practiced. Also, regarding Chemoprevention drugs, 88.8% had never used tamoxifen and raloxifen while 11.2% had used the drugs. On the practice of mammographic screening, 88.1% had never practiced it while 11.9% had ever practiced it. Also, regarding ultrasonography, 12.5% claimed they had ever practiced it while 87.5% had never practiced it. The proportion of the respondents who had ever practiced prophylactic mastectomy was 88.1% while 11.9% had never done a prophylactic mastectomy.

5.4. Relationship between Level of Education and Knowledge of PBCS

The purpose of this objective was to find out if respondents' level of education determines their practice of preventive breast cancer screening. Findings are illustrated in Table 2.

Table 2: Level of Education and Knowledge of PBCS

Educational Qualification	Have you ever heard of preventive breast cancer screening?		Total
	No	Yes	
No formal education	6(33.3%)	12(66.7%)	18(100%)
Primary/intermediate	22(84.6%)	4(15.4%)	26(100%)
Secondary/trade school	22(31.0%)	49(69.0%)	71(100%)
Tertiary education	32(19.1%)	136(80.9%)	168(100%)
No response	10(83.3%)	2(16.7%)	12(100%)
Total	**92(31.2%)**	**203(68.8%)**	**295(100%)**
X^2=61.365, d.o.f= 4, value= 0.000			

Source: Field Data (2019)

Based on the information provided above, the chi-square test result for the number of women who had heard of PBCS according to their educational attainment is 61.365, with a P-value of 0.000. The null hypothesis will be rejected and the alternative hypothesis will be accepted because the p-value is 0.000, which is less than the 0.05 level of significance. This suggests that among women in Lagos State, attitudes toward PBCS and educational attainment are significantly correlated. Thus, it can be deduced that among women in Lagos State, there is a relationship between educational attainment and attitudes regarding PBCS.

5.5. Relationship between Religion and Attitude to PBCS

The purpose of this objective was to find out if respondents' religion determines their practice of preventive breast cancer screening. Table 3 is illustrative.

Table 3: Religion and Attitude to PBCS

Religious affiliation	If yes, have you visited any?			Total
	No	Yes	No response	
Christianity	70(32.1%)	92(42.2%)	56(21.7%)	218(100%)
Islam	16(29.6%)	20(37.1%)	18(33.3%)	54(%)
Traditional	4(100%)	0(0%)	0(0%)	4(100%)
None/Love	4(21.1%)	7(36.8%)	8(42.1%)	19(100%)
Total	**94(31.9%)**	**119(40.3%)**	**82(27.8%)**	**295(%)**
X^2=86.115, d.o.f= 12, value= 0.000				

Source: Field Data (2019)

Based on the information provided above, the chi-square test result for the number of women who had heard of PBCS according to their educational attainment was 61.365, with a P-value of 0.000. Subsequently the null hypothesis was rejected and the alternative hypothesis was accepted because the p-value was 0.000, which is less than the 0.05 level of significance. This suggests that among women in Lagos State, attitudes toward PBCS and educational attainment are significantly correlated. Therefore, we conclude that religion influences attitude toward PBCs among women in Lagos State

5.6. Relationship between level of income and attitude to PBCS

The purpose of this objective was to find out if respondents' level of income determines their practice of preventive breast cancer screening. Findings are summarized in Table 4.

Table 4: Level of Income and Attitude to PBCS

Income	If yes, have you visited any?			Total
	No	Yes	No response	
₦5000-₦49999	24(28.5%)	25(29.8%)	35(41.7%)	84(100%)
₦ 50000-₦99999	19(37.3%)	26(51.0%)	6(11.7%)	51(100%)
₦ 100000-₦149999	2(11.1%)	12(66.7%)	4(22.2%)	18(100%)
₦ 150000-₦199999	2(20.0%)	8(80.0%)	0(0%)	10(100%)
₦ 200000-₦249999	0(0%)	4(66.7%)	2(33.7%)	6(100%)
₦ 250000 and above	47(37.3%)	44(34.9%)	35(27.8%)	126(100%)
Total	**94(31.9%)**	**119(40.3%)**	**82(27.8%)**	**295(100%)**
X^2=37.460, d.o.f= 15, value= 0.001				

Source: Field Data (2019)

Based on the cross tabulation above, the P-value is 0.001, less than the significance level of 0.05, and the computed value ($\chi 2$ cal) is 37.460. Therefore, we accept the alternative hypothesis and reject the null hypothesis. Thus, we draw the conclusion that among women in Lagos State, level of income and attitude toward PBCS are significantly correlated.

5.7. Relationship between Place of Residence and Practice of PBCS

The purpose of this objective was to find out if respondents' place of residence determines their practice of preventive breast cancer screening. Table 5 shows the findings.

Table 5: Place of Residence and Practice of PBCS

Local Government Area of residence	Have you ever practiced any of the preventive breast cancer screening?		Total
	No	Yes	
Oshodi/isolo	111(75.5%)	36(24.5%)	147(100%)
Mushin	112(75.7%)	36(24.3%)	148(100%)
Total	**223(75.6%)**	**72(24.4%)**	**295(100%)**
X^2=0.001, d.o.f= 1, value= 0.974			

Source: Field Data (2019)

Based on the information provided above, the chi-square test result for the female PBCS practitioners according to their residence is 0.001, with a P-value of 0.974. The alternative hypothesis was rejected and the null hypothesis was accepted since the p-value is 0.974, which is more than the 0.05 criterion of significance. Therefore, we draw the conclusion that there is no connection between a woman's place of residence and her practice of PBCS in Lagos State.

This study investigated the Correlates of Non-Adherence to Preventive Breast Cancer Screening among Women in Lagos State. It was found that knowledge of PBCS was statistically associated with the social media, health workers, friends, television and radio. Moreover, the study has unveiled the factors that hinder the adherence to PBCS among women in Lagos state. It has also highlighted the socio-demographic and other determinant factors such as age, ethnic group, level of income, educational qualification and place of residence.

6. RESEARCH IMPLICATIONS

Due to the health burden, social and economic implications of breast cancer, and the role of early detection in pathogenesis, prevention, and care, every effort should be directed toward effective and efficient breast cancer screening. This is because screening intervention remains critical to prevention and cure. The study's findings have implications for screening through increasing PBCS education and campaigns, as well as developing more accessible centres.

7. CONTRIBUTIONS TO SCIENTIFIC COMMUNITY AND FUTURE RESEARCH

Breast cancer poses a significant challenge to development and health policy. Adherence to preventive screening is seen as a crucial preventive strategy in the fight against the growing pandemic. The contribution of this study includes its influence on societal policy, its significance to knowledge and further research findings, and its relevance to the Lagos state authority. This study will help in the formulation and implementation of other strategies such as creating awareness about the available screening centres and services, and mobile and door-to-door preventive breast cancer screening education. This will serve to increase public awareness of preventive breast cancer screening and ultimately increase the rate at which people get tested for the disease. The authority of Lagos state can also employ this method by taking (PBCS) to women in their various localities. It helps to detect

those who are at risk of breast cancer; and to also encourage them to take up proper treatment on time. It educates those who are at average risk on the various means of developing the disease and how to prevent it from occurring. The findings will also help the government to improve the quality, accessibility and availability of the service with a focus on vulnerable groups; to increase the number of breast cancer screening centres and staff; to develop policies to integrate breast screening into family planning, and to also help married women in getting the support of their husbands and family members and that of the state through provision of free screening and health care facilities for all women.

8. RECOMMENDATIONS

Based on the study's findings and the subsequent discussion, a number of recommendations are made. First: more creative women-friendly centres should be established in all local governments in Lagos State; and throughout Nigeria. Education is an effective preventative factor towards breast cancer and thus, should be encouraged. Second, both radio and television jingles featuring influential people like celebrities and actresses should be used to promote the use of PBCS services. Third, women should be engaged in the screening intervention design in order to ensure that programs are relevant to them. Fourth, health providers should encourage younger women to speak with their parents or other trusted adults about the uptake of PBCS.

9. CONCLUSION

The study has shown that a greater percentage of the respondents are aware of PBCS. Majority of these respondents have the knowledge of PBCS but do not use the service, some of them due to ignorance, fear of being positive, cost of the services, and inadequate number of screening centres and negative history of breast cancer, which also constituted major hindrances to adherence to PBCS. Based on the findings of the study and the discussion arising there from, a number of conclusions could be drawn.

The study findings have indicated deficiencies in screening processes even among women who were aware of the screening procedures. There is a significant disparity in women's awareness of PBCS in Lagos State; while more women are aware of the service, there is a huge difference in PBCS practice, which indicates a very low adoption of the services. Knowledge of PBCS is significantly correlated with educational attainment. This suggests that among women in Lagos State, PBCS adoption is influenced by education. The respondents' attitudes toward PBCS and their religion are significantly correlated. This means that religion is also one of the factors that determine the practice of PBCS among women in Lagos state. There is also a significant relationship between levels of income and attitude to PBCS. This indicates that level of income is a factor that determines the uptake of PBCS among women in Lagos state.

There is no significant relationship between place of residence and practice of PBCS. This indicated that place of residence is not a major determinant of the attitude towards the practice of PBCS among women in Lagos state. In summary, the study found that women in Lagos State who undertake preventive breast cancer screening do so mostly because of their level of income, education, and religion.

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REFERENCES

Abulkhair, O. A., Al Tahan, F. M., Young, S. E., Musaad, S. M., & Jazieh, A. R. M. (2010). The first national public breast cancer screening program in Saudi Arabia. *Annals of Saudi medicine*, *30*(5), 350-357.

Adeniji, K. A. (1999). Pathological appraisal of carcinoma of the female breast in Ilorin Nigeria. *Niger Postgrad Med J*, *6*(2), 56-59.

Ahmadian, M., & Samah, A. A. (2012). A model for community participation in breast cancer prevention in Iran. *Asian Pacific Journal of Cancer Prevention*, *13*(5), 2419-2423. Ajzen I, Fishbein M (1980). Understanding attitudes and predicting social behaviour. Englewood Cliffs, NJ: Prentice Hall.

American Cancer Society, Cancer Facts & Figures 2011, American Cancer Society, Atlanta, Ga, USA, 2011.

Anderson, B. O., Yip, C., Smith, R., Shyyan, R., Sener, S., Eniu, A., Carson, R. W., Azavedo, E., & Hartford, J. (2012). Guideline implementation for breast healthcare in low-income and middle-income countries. doi10.1002/cncr.23844

Anderson, B.O., Yip, C. H., Smith, R. A., Shyyan, R., Sener, S. F., & Eniu, A., ... Harford, J.(2008). Guideline implementation for breast healthcare in low-income and middleincome countries: Overview of breast cancer.The Breast Health Global Initiative Global Summit 2007. *Cancer, 113*(Supplement), 2221-2243.

Anyanwu, S. N. (2000). Breast cancer in eastern Nigeria: a ten year review. *West African journal of medicine*, *19*(2), 120-125.

Anyanwu, S. N., Egwuonwu, O. A., & Ihekwoaba, E. C. (2011). Acceptance and adherence to treatment among breast cancer patients in Eastern Nigeria. *The Breast*, *20*, S51-S53.

Austoker, J., Bankhead, C., Forbes, L., Atkins, L., Martin, F., Robb, K., ... & Ramirez, A. (2009). Interventions to promote cancer awareness and early presentation: systematic review. *Nature Precedings*, 1-1.

Bailly, L., Jobert, T., Petrovic, M., & Pradier, C. (2023). Factors influencing participation in breast cancer screening in an urban setting. A study of organized and individual opportunistic screening among potentially active and retired women in the city of Nice. *Preventive Medicine Reports*, *31*, 102085.Bandura, A. (1991). Social cognitive theory of self-regulation. Organizational Behaviour & Human.

Bello, M. (2012). Awareness is the first step in battle against breast cancer. *Bull World Health Organization 90:164-165.*

Blanpain, N. (2016). Male executives always live 6 years longer than male workers. *Insee first* , (1584).

Bray, F., Ferlay, J., Soerjomataram, I., Siegel, R. L., Torre, L. A., & Jemal, A. (2018). Global cancer statistics 2018: GLOBOCAN estimates of incidence and mortality worldwide for 36 cancers in 185 countries. *CA: a cancer journal for clinicians*, *68*(6), 394-424.

Bray, F., Ferlay, J., Soerjomataram, I., Siegel, R. L., Torre, L. A., & Jemal, A. (2018). Global cancer statistics 2018: GLOBOCAN estimates of incidence and mortality worldwide for 36 cancers in 185 countries. *CA: a cancer journal for clinicians*, *68*(6), 394-424.

Burgess, C. C., Linsell, L., Kapari, M., Omar, L., Michell, M., Whelehan, P., ... & Ramirez, A. J. (2009). Promoting early presentation of breast cancer by older women: a preliminary evaluation of a one-to-one health professional-delivered intervention. *Journal of psychosomatic research*, *67*(5), 377-387.

Chong, P. N., Krishnan, M., Hong, C. Y., & Swah, T. S. (2002). Knowledge and practice of breast cancer screening amongst public health nurses in Singapore. *Singapore Medical Journal*, *43*(10), 509-516.

Downing, A., Prakash, K., Gilthorpe M. S., Mikeljevic J. S., & Forman D. (2007). Socioeconomic background in relation to stage at diagnosis,treatment and survival in women with breast cancer. *Br. J. Cancer*, 96(5):836-40

Dündar, P. E., Özmen, D., Öztürk, B., Haspolat, G., Akyıldız, F., Çoban, S., & Çakıroğlu, G. (2006). The knowledge and attitudes of breast self-examination and mammography in a group of women in a rural area in western Turkey. *BMC cancer*, *6*, 1-9.

Dyba, T., Randi, G., Bray, F., Martos, C., Giusti, F., Nicholson, N.,... & Bettio, M. (2021). The European cancer burden in 2020: Incidence and mortality estimates for 40 countries and 25 major cancers. *European Journal of Cancer*, *157*, 308-347.

Egwuonwu, O. A., Anyanwu, S. N., & Nwofor, A. M., (2012). Default from neo-adjuvant chemotherapy in premenopausal female breast cancerpatients: What is to blame? Niger. J. *Clin. Pract. 15:265- 9.*

El Saghir, N. S., Adebamowo, C. A., Anderson, B. O., Carlson, R. W., Bird, P. A., Corbex, M.,... & Cazap, E. (2011). Breast cancer management in low resource countries (LRCs): consensus statement from the Breast Health Global Initiative. *The Breast*, *20*, S3-S11.

Ersin, F., Gözükara, F., Polat, P., Erçetin, G., & Bozkurt, M. E. (2015). Determining the health beliefs and breast cancer fear levels ofwomen regarding mammography. *Turkish journal of medical sciences*, *45*(4), 775-781.

Ferlay, J., Shin, H. R., Bray, F., Forman, D., Mathers, C., & Parkin, D. M. (2010). Estimates of worldwide burden of cancer in 2008: GLOBOCAN 2008. *International journal of cancer*, *127*(12), 2893-2917.

Fisbein, M., & Ajzen, I. (1975). Belief, attitude, intention and behavior: An introduction to theory and research. *Massachusetts, Addison-Wiley Publishing Company*.

Forbes, L. J. L., Linsell, L., Atkins, L., Burgess, C., Tucker, L., Omar, L., & Ramirez, A. J. (2011). A promoting early presentation intervention increases breast cancer awareness in older women after 2 years: a randomised controlled trial. *British journal of cancer*, *105*(1), 18-21.

Gollwitzer, P. M. (1993). Goal achievement: The role of intentions. *European review of social psychology*, *4*(1), 141-185.

Hajian-Tilaki, K., & Auladi, S. (2014). Health belief model and practice of breast self-examination and breast cancer screening in Iranian women. *Breast cancer*, *21*, 429-434.

Harmer, V. (2008). Breast cancer. Part 1: Awareness and common benign diseases. *British Journal of Nursing*, *17*(15), 950-955.

Hay, J. L., McCaul, K. D., & Magnan, R. E. (2006). Does worry about breast cancer predict screening behaviors? A meta-analysis of the prospective evidence. *Preventive medicine*, *42*(6), 401-408.

Hochbaum, G. M. (1958). *Public participation in medical screening programs: A socio-psychological study* (No. 572). US Department of Health, Education, and Welfare, Public Health Service, Bureau of State Services, Division of Special Health Services, Tuberculosis Program.

Islam, S. R., & Aziz, S. M. (2012). Mammography is the most effective method of breast cancer screening. *Mymensingh medical journal: MMJ*, *21*(2), 366-371.

Jack, R. H., Davies, E. A., & Møller, H. (2009). Breast cancer incidence, stage, treatment and survival in ethnic groups in South East England. *British journal of cancer*, *100*(3), 545-550.

Jedy-Agba, E., McCormack, V., Adebamowo, C., & dos-Santos-Silva, I. (2016). Stage at diagnosis of breast cancer in sub-Saharan Africa: a systematic review and meta-analysis. *The Lancet Global Health*, *4*(12), e923-e935.

Kerlikowske, K., Hubbard, R. A., Miglioretti, D. L., Geller, B. M., Yankaskas, B. C., Lehman, C. D., ... & Breast Cancer Surveillance Consortium. (2011). Comparative effectiveness of digital versus film-screen mammography in community practice in the United States: a cohort study. *Annals of internal medicine*, *155*(8), 493-502.

Khokhar, A. (2009). Level of awareness regarding breast cancer and its screening amongst Indian teachers. *Asian Pac J Cancer Prev*, *10*(2), 247-50.

Montano, D. E., & Taplin, S. H. (1991). A test of an expanded theory of reasoned action to predict mammography participation. *Social science & medicine*, *32*(6), 733-741.

Montazeri, A., Vahdaninia, M., Harirchi, I., Harirchi, A. M., Sajadian, A., Khaleghi, F., ... & Jarvandi, S. (2008). Breast cancer in Iran: need for greater women awareness of warning signs and effective screening methods. *Asia Pacific family medicine*, *7*, 1-7.

Noël, A., Heid, P., Tardivon, A., Dilhuydy, M. H., Haber, S., & Séradour, B. (2004). Screening mammography of women with a hereditary predisposition to cancer of the breast. *Bulletin du Cancer*, *91*(7-8), 655-discussion.

Oluwatosin, O. A., & Oladepo, O. (2006). Knowledge of breast cancer and its early detection measures among rural women in Akinyele Local Government Area, Ibadan, Nigeria. *BMC cancer*, *6*, 1-6.

Onwere, S., Okoro, O., Chigbu, B., Aluka, C., Kamanu, C., & Onwere, A. (2009). Breast self-examination as a method of early detection of breast cancer: Knowledge and practice among antenatal clinic attendees in South Eastern Nigeria. *Pak J Med Sci*, *25*(1), 122-5.

Parkin, D. M., Sitas, F., Chirenje, M., Stein, L., Abratt, R., & Wabinga, H. (2008). Part I: Cancer in Indigenous Africans—burden, distribution, and trends. *The lancet oncology*, *9*(7), 683-692.

Peacey, V., Steptoe, A., Davídsdóttir, S., Baban, A., & Wardle, J. (2006). Low levels of breast cancer risk awareness in young women: an international survey. *European Journal of Cancer*, *42*(15), 2585-2589.

Petro-Nustas, W., Tsangari, H., Phellas, C., & Constantinou, C. (2013). Health beliefs and practice of breast self-examination among young Cypriot women. *Journal of Transcultural Nursing*, *24*(2), 180-188.

Porter, P. (2008). "Westernizing" Women's Risks? Breast Cancer in Lower-Income Countries. *New England Journal of Medicine*, *358*(3), 213.

Pruitt, L., Mumuni, T., Raikhel, E., Ademola, A., Ogundiran, T., Adenipekun, A., ... & Olopade, O. I. (2015). Social barriers to diagnosis and treatment of breast cancer in patients presenting at a teaching hospital in Ibadan, Nigeria. *Global public health*, *10*(3), 331-344.

Retsky, M., Demicheli, R., Hrushesky, W. J., Forget, P., De Kock, M., Gukas, I.,... & Vaidya, J. S. (2012). Promising development from translational or perhaps anti-translational research in breast cancer. *Clinical and translational medicine*, *1*, 1-11.

Rosenstock, I. M., Strecher, V. J., & Becker, M. H. (1988). Social learning theory and the health belief model. *Health education quarterly*, *15*(2), 175-183.

Rutter, M. (2006). The promotion of resilience in the face of adversity.

Sharma, K., Costas, A., Shulman, L. N., & Meara, J. G. (2012). A systematic review of barriers to breast cancer care in developing countries resulting in delayed patient presentation. *Journal of oncology*, *2012*.

Smith, R. A., Cokkinides, V., Brooks, D., Saslow, D., & Brawley, O. W. (2010). Cancer screening in the United States, 2010: a review of current American Cancer Society guidelines and issues in cancer screening. *CA: a cancer journal for clinicians*, *60*(2), 99-119.

Tavafian, S. S., Hasani, L., Aghamolaei, T., Zare, S., & Gregory, D. (2009). Prediction of breast self-examination in a sample of Iranian women: an application of the Health Belief Model. *BMC women's health*, *9*, 1-7.

Tilaki, K. H., & Auladi, S. (2015). Awareness, attitude, and practice of breast cancer screening women, and the associated socio-demographic characteristics, in northern Iran. *Iranian journal of cancer prevention*, *8*(4).

Veena, K. S., Kollipaka, R., & Rekha, R. (2015). The Knowledge and attitude of breast self examination and mammography among rural women. *International Journal of Reproduction, Contraception, Obstetrics and Gynecology*, *4*(5), 1511-1517.