A Correlational Study on Perceptions of Vulnerability and Women's Behavioural Dispositions to Breast Cancer: Implication for Sustainable Development in Nigeria

Tolulope Abiola Allo
ORCID iD: https://orcid.org/0000-0002-8770-1939

David Imhonopi
ORCID iD: https://orcid.org/0000-0001-8536-8514

Victor Adekunle Owoyomi
ORCID iD: https://orcid.org/0000-0001-7883-5874

Mariam Seedat-Khan CCS
ORCID iD: https://orcid.org/0000-0001-9056-2282

Abstract

This paper examined a correlation between the perception of vulnerability and women's behavioural dispositions to breast cancer within the context of Sustainable Development Goals (SDGs) in Ogun State, Nigeria. Therefore, this paper, in its objective, examined i) the relationship between women's reaction to breast cancer and ii) the nexus between women's attitude towards breast cancer screening and worry about having breast cancer. The study made use of the health belief model (HBM) in its theoretical framework. The paper adopted a descriptive cross-sectional research design using mixed methods of data collection. A self-administered questionnaire, in-depth inter-views (IDIs) and key informant interview (KII) guides were the instruments adopted. A sample size of 1 000 women was randomly selected using four multi-stage sampling techniques for quantitative data, while for the qualitative data 20 respondents

Print ISSN 1023-1757; Electronic ISSN: 2519-5476; DOI https://doi.org/10.29086/2519-5476/2021/sp37a2

were purposively selected, using snowballing for IDIs, and a convenience sampling technique for the KIIs among close family members, acquaintances of breast cancer patients and health service providers in the study area. The quantitative data were analysed using frequency distribution (univariate analysis) while chi-square (χ^2) was utilised for the bi-variate analysis. Content analysis was adopted to analyse the qualitative data. Findings revealed that there is a significant relationship between women's reaction to unusual breast cancer change and worry about having breast cancer as well as a significant relationship between women attitude towards breast cancer screening and worrying about having breast cancer. The paper however, concludes among others that health education policies and programmes should be mapped out to address issues surrounding the perception of vulnerability and women's behavioural dispositions towards breast cancer in Ogun State sufficiently so that Nigeria will be a step closer to the realization of the development that is equitable, feasible and sustainable for all.

Keywords: Breast Cancer, Perception, Vulnerability, Behavioural Disposition, SDGs

Introduction

Cancer of the breast represents a major health and developmental challenge of the 21st century, posing a significant threat to the achievement of the internationally agreed Sustainable Development Goals (SDGs) in most developing countries, including Nigeria. The United Nation's Sustainable Development Goals, specifically goal three, targets the reduction by one third of premature deaths from non-communicable diseases by the year 2030. It is instructive to note that, for decades, most developing countries are undergoing demographic and epistemological transitions and the prevalence of non-communicable diseases, particularly cancers, is on the increase. However, the correlation between perception of vulnerability and women's behavioural dispositions to the threat of breast cancer within the context of sustainable development goals in most developing countries in Nigeria have not received sufficient empirical attention in the extant literature and this could have a far reaching consequence on the ability of Nigeria to fully actualize the SDGs, particularly goal 3, which

targets the reduction by one third of premature deaths from non-communicable diseases such as breast cancer. Breast cancer has become a major source of morbidity and mortality globally, and in Nigeria, breast cancer has surpassed cervical cancer as the leading malignancy in females. To be sure, breast cancer in Nigeria has been reported to have accounted for about 56.6% of all cancer diagnosis (Nigeria National Cancer Control Plan, or NNCCP 2018), with about 70% of cancer patients presenting late with advanced stage of the disease. The estimated five-year survival rate of breast cancer is still less than 10% in Nigeria when compared with Western Europe and North America that have been experiencing an over 70% survival rate (Phaswana-Mafuya & Peltzer 2018: 1468; NCCP 2018). Approximately 45% of breast cancer diagnosis and 60% of breast cancer deaths occur in low and middle income countries (LMCs), and statistics for African countries like Nigeria, Kenya, South Africa and the rest reveal that breast cancer has steadily surpassed cervical cancer as the most fatal cancer among women (Amoo *et al.* 2018; NCCP 2018; Ogunsiji, Kwok & Chun 2017).

According to the National Coordinator of the Cancer Control Program in Nigeria, Dr. David Atuwo (World Health Organization, or WHO 2018), in recent times, the Federal Ministry of Health has improved on making available infrastructure for diagnosis, chemotherapy, surgery and radiotherapy for breast and other cancers in Nigeria. However, so many factors among which include genetic, environmental, metabolic, poor cancer management, sub-optimal healthcare facilities, poverty, religion, sociocultural and behavioural factors contribute immensely to the in-crease of breast cancer cases among wo-men in Nigeria (WHO 2018). Sadly, breast cancer is now ranked as number 1 by site (22.7%) and by cause of mortality in women (18.6%) in Nigeria (WHO 2018).

Several studies have shown that early detection can conveniently take place only if there is a correlation between women's perception of vulnerability and factors like cultural sensitivity to breast cancer, social norms, socio-economic status of the women, adequate knowledge, and positive attitude of women towards breast cancer screening (Naghibi *et al.* 2013:76, Masoudiyekta *et al.* 2015: e30234). In Nigeria, the correlation between women's attitude towards breast cancer screening, reaction to unusual breast cancer change and worry about having breast cancer have not received sufficient empirical attention in the extant literature and policy action; a lacuna this current study intends to bridge in order to promote a breast cancer behavioural change model (Rosenstock & Irwin 1974: 30).

Theoretical Underpinning and Literature Review

The study was anchored on the Health Belief Model (HBM). The HBM is a conceptual framework that was designed to predict a person's health behaviour. It argues that a person's health behaviour is an expression of his/ her health beliefs and claims that perceived susceptibility and severity of a risk motivate individuals to engage in preventive actions, while the type of preventative action depends on the perceived benefits and hindrances of performing the action (Cho 1999: 146). It was originally developed in the 1950s by social psychologists Rosenstock, Irwin, Godfrey, Hochbaum, Stephen, and Howard (Cf. Rosenstock 1974; and Rosenstock *et al.* 1994). It was later restructured in 1974 by Becker and his colleagues, into the 1980s, Cf. Becker 1974; and Janz and Becker 1984). The theory is most commonly used in health education and health promotion, particularly in understanding the patients' responses to symptoms of a disease, compliance with medical regimens, and behaviours relating to chronic illnesses. It therefore helps to explain and predict people's engagement in health-related behaviours such as Self Breast Examination (SBE), and getting screened for breast cancer, among others. Hence, two of its key components that are relevant to this current study will be discussed briefly.

Its components include a person's own perception of the susceptibility or vulnerability to a disease or condition, the perceived likelihood of getting that disease or condition, the perceived severity of the consequence of getting a disease, the perceived benefit of a preventive health-related behaviour, barriers to engaging in the health-related behaviour, and the internal and external motivations that result in the appropriate health behaviour by the person. The theory also suggests that some modifying factors such as demographic, psychosocial and structural variables can affect perceptions, i.e. perceived susceptibility, severity, benefits and barriers (Rosenstock 1974: 329). Demographic variables include – age, sex, race, ethnic group, education, and others; while psychosocial variables include personality, social class and peer pressure. Structural variables are the knowledge about the disease and earlier contact with the disease. HBM thus suggests that these modifying variables affect health-related behaviour by affecting perceptions (Rosenstock & Irwin 1974: 330, Masoudiyekta *et al.* 2015: e30234).

The last component of the HBM is the concept of self-efficacy, which refers to an individual's perception of his/ her ability to carry out a preventive health-related behaviour successfully.

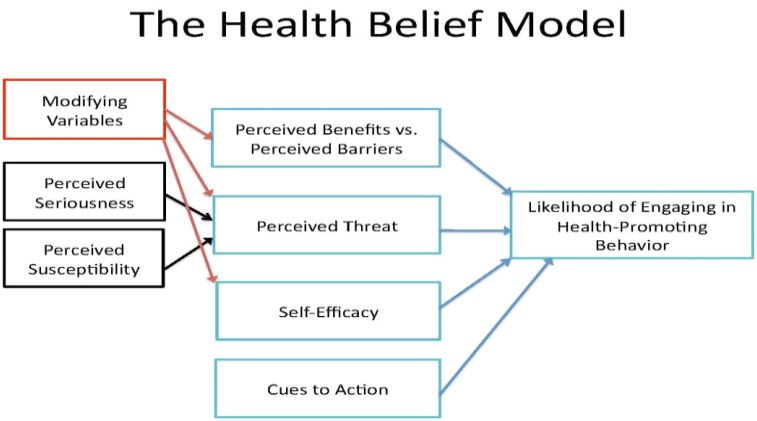

Figure 1.1: The Health Belief Model
(Sources: Rosenstock 1974; Becker 1974).

The HBM has been found applicable to this study, because it helps to situate all the key components that are central to this study and puts them in a clear perspective. As such, perceived vulnerability, also known as perceived susceptibility, has been viewed as an individual's recognition of the risks or chances of developing a health condition, and it includes an appraisal of susceptibility to illness in general (Rosenstock, Strecher and Becker 1994: 20; Donnelly *et al.* 2013; Masoudiyekta *et al.* 2015: e30234). The concept was a vital component in the prototype/willingness model that contends that the perception of vulnerability is a part of a 'reasoned' path to risk behaviour reflecting the fact that people who engage in risk behaviour acknowledge their vulnerability to the negative consequences of such behaviour. As such, women's reaction to unusual breast cancer change may likely be associated with worry about having breast cancer as postulated in this theory. Similarly, women's attitude towards breast cancer screening will be related to worry about having breast cancer (Rosenstock, Strecher & Becker 1994: 24; Donnelly *et al.* 2013; Azubuike & Okwuokei 2013; Masoudiyekta *et al.* 2015: e30234).

Behavioural disposition within the context of this study has been conceptualized as tendencies to react in a certain manner to corresponding stimuli. The response and reactions of women to breast change have been viewed as a major determinant for breast cancer survival. The action and inaction of women to breast changes can be likened to a thin line between life and death, and their attitude and behavioural disposition to breast cancer symptoms may be said to be the probable key to increasing breast cancer survivorship in Nigeria. Breast awareness among women is central to the correct and accurate recognition of breast cancer symptoms, which is believed will help in expediting action for treatment, thereby increasing the hope of survival (WHO 2018; Akhigbe & Akhigbe 2012; Donnelly *et al.* 2013; Masoudiyekta *et al.* 2015: e30234). Women need to be more breast-aware in order to reduce the incidence and prevalence of breast cancer in Nigeria.

To this end, the research bordering on perceived vulnerability and behavioural disposition of women towards breast cancer, particularly in Nigeria, has been unreliable, inadequate and inconclusive. Available reports from literature reveal that studies on breast cancer are incomplete and mostly of epidemiological or clinical nature. There is also the challenge of incomplete reporting which has been found to distort the true picture of the situation, thereby presenting questionable statistics (Akinkugbe *et al.* 2010: 26). As reported in an article published by Globocan (2012), cancer in Africa continues to receive a low public health priority due to low resources to tackle the disease, and over-concentration on other communicable diseases such as malaria, tuberculosis, polio and HIV/AIDS, which are considered a more pressing public health concern. As it were, the whole continent of Africa is already encumbered with these primary diseases and is left with limited resources for cancer information and management. In addition to these is the lack of awareness on the part of government, policy makers, health agencies and other major public health stakeholders about the magnitude of the current and future cancer burden.

It is believed that findings from the study could enlighten the government and policy makers about the need for increased awareness creation and publicity for the curtailment of the disease which will ultimately lead to an increase in the breast cancer survival rate among Nigerian women. As such, in the bid to achieve the sustainable development goals in Nigeria, the health of women must take centre stage, and government and key stakeholders must rise to their responsibility of investing in the health of women particularly in the

area of early diagnosis of breast cancer as well as breast cancer treatments. Sadly, the burden of breast cancer in Nigeria is unknown and this is largely due to missed diagnoses and inaccurate data from poorly funded cancer registries that produce mainly hospital-based data (NCCP 2018; Akinkugbe *et al.* 2010: 27).

Given the estimated population figure of over 3.7 million in Ogun State, the area of study for this research, the State could only boast of about 165 doctors and 249 nurses, which results in an abysmally low ratio of about 4 doctors to over 100 000 people, and 8 nurses to about 10 000 people (Ogun State Ministry of Health 2010). Apart from the insufficiencies of healthcare personnel, hospitals and most public health facilities across the state generally lack basic amenities such as constant electricity supply and pipe-borne water. Other facilities and equipment are in a deplorable condition, which makes a visit to some of these health centres by women a harrowing experience (OGMH 2010). This revelation highlights that many cases of breast cancer in the state either go unreported or are poorly documented. Very limited study has also been carried out as regards breast cancer in Ogun State. Some research work has been done in the area of cervical cancer (Olumide *et al.* 2013: 56; Makinde *et al.* 2016), but not much has been done on breast cancer, particularly on perceived vulnerability to breast cancer, hence the choice of Ogun State for this study. This precarious situation of many women's health status and other associated health-related structural conditions in Ogun State spurred the current re-searchers' interest to examine the correlation between the perception of vulner-ability and women's behavioural dispositions to breast cancer within the con-text of Sustainable Development Goals (SDGs) in Ogun State, Nigeria.

Hence, this study thus examined the correlation between the perception of vulnerability and women's behavioural disposition to breast cancer within the context of the sustainable development goals, specifically goal 3, that focuses on the reduction of premature deaths from non-communicable diseases.

Research Objectives

The general objective of this study was to examine the correlation between perception of vulnerability and women's behavioural dispositions to breast cancer threat, as well as its implication for sustainable development in Nigeria. To achieve this, two hypotheses have been formulated and stated in the null and alternative forms:

Hypotheses

H_0: There is no significant relationship between women's reaction to unusual breast cancer change and worry about having breast cancer.

H_1: There is a significant relationship between women's reaction to unusual breast cancer change and worry about having breast cancer.

H_0: There is no significant relationship between women's attitude towards breast cancer screening and worry about having breast cancer.

H_1: There is a significant relationship between women's attitude towards breast cancer screening and worry about having breast cancer.

Materials and Methods

The Research Design

This study adopted a descriptive, cross-sectional research design. It utilized two research methods in this regard, in investigating the subject of interest. As such, both quantitative and qualitative research methods were adopted in order to arrive at a richer conclusion that is believed will provide support for clinically based research.

The Study Area

The study area is Ogun State in Nigeria. Ogun State, also acknowledged as the 'Gateway State' is situated in the Southwestern region and is among the 36 states in the Federal Republic of Nigeria. There are three major tertiary healthcare institutions in the state (Ogun State Ministry of Health 2010). However, Ogun State has 3 senatorial districts, 9 federal constituencies, 27 state constituencies, and in total 20 local government areas (LGAs) (Oke 2012).

The Study Population

The population of interest constituted women of adult age selected across the 20 LGAs of Ogun State. Therefore, women in their reproductive years and

post-menopausal women (15–69 years) constituted the study population. Although previous studies have reported that breast cancer peaks between the ages of 45 and 55 years (Soyingbe 2013; Bayoumi *et al.* 2012: 48), this study is limited to women aged 15–69, because current findings from the literature suggest that all age groups are vulnerable to breast cancer and vulnerability increases with age (American Cancer Society 2014; Komen 2014). The selected LGAs include Ado-Odo Ota, Abeokuta South, Sagamu, Obafemi Owode and Ijebu Ode, whereas the researcher visited just five wards in these selected LGAs, which include, i) Sango Ota; ii) Ake; iii) Ogijo; iv) Mowe; and v) Irewon. The opinions of women residing in the urban, sub-urban and rural in areas were sampled in these five wards. By the same token, the inclusion criteria for selecting urban, semi-urban and rural areas were determined by the size, population density, social distance, and economic activities in these areas.

The Sampling Procedure

The multi-stage sampling method was adopted in the choice of respondents for the quantitative aspect of this study. The sample population was drawn from over 880 970 regular households unevenly spread across the 20 LGAs in Ogun state (NPC 2006). The sampling stages involved are diagrammatically represented in Figure 2.1.

The first stage of the sampling process involved the cluster of the 20 LGAs, according to their population size. Abeokuta has been identified as one of the densest areas, with an estimation of about 7 476 persons per km. Other identified areas that are fairly dense include Ifo, Ota, Ijebu North, Odogbolu, Yewa North and South, Ipokia, Obafemi-Owode, Sagamu, Ijebu Ode and Ikenne, with a population density oscillating between 300 and 900 persons per km^2. The second stage entails a random selection of 5 out of the 12 densely populated LGAs. The lottery method was used in doing this selection. The 5 selected LGAs are: Ado-Odo Ota, Abeokuta South, Sagamu, Obafemi Owode and Ijebu Ode. The third stage involved the selection of one ward from each of the chosen LGAs using the lottery method. Out of the ward selected from each of the LGAs, 32 two streets were selected using the purposive sampling method, while the systematic sampling method was adopted in the selection of houses in selected streets. One household in every fifth house was selected to ensure everyone was given an equal non-zero chance of being selected. This

sampling interval was arrived at by dividing the number of households in the population by the number of households needed for the sample. The final stage of the sampling procedure entails the choice of one respondent per selected household. Hence, a total 1000 respondents were selected for the quantitative data using Taro Yamane's formula for sample size calculation across the selected five LGAS. The essence of adopting this formula was because the population understudy was very large. However, in order to enrich the quantitative data, the researchers collected qualitative data using In-depth Interviews (IDIs) and Key Informant Interviews (KIIs). The inclusion criteria are all females in their respective reproductive years and post-menopausal females aged 15–69 years, persons who have had a close relation or friend with a diagnosis of breast cancer, and healthcare providers (doctors/nurses) from one of the healthcare facilities in the town/ward.

Figure 2.1: Sampling Stages

Administration of Research Instrument

A set of pre-coded questionnaires comprising questions that cut across socio-demographic characteristics, general knowledge and awareness of breast cancer, perception of breast cancer risk factors, attitude and behavioural disposition to breast cancer and breast care practice of respondents were administered on the target population. Verbal consent was obtained from respondents, with the questionnaires administered, filled in and returned speedily.

Based on the survey data, the reliability test of the instrument for this study utilizing the standardized Cronbach's Alpha was obtained at (0.778) > 0.70 threshold value. The proof of the reliability result of the instruments was done using the analysis of variance (ANOVA) to test if there is a significant variation on how respondents rated the items in the instrument. The result suggests that there are no variations in the rating of the item by respondents at F-values = 231.233, since P-values < 0.05 significance level. The result is reinforced by the coefficient of variation (CV) value 0.10< 0.50 threshold value, signifying a strong homogeneity on how respondents rated the items on the research instrument. Thus, an internal consistency is noted in the answers from the respondents and therefore, the data do not violate the assumption of reliability.

By the same token, two in-depth interview and key informant interview sessions were also conducted in each ward of the five selected LGAs, totalling 10 in-depth interviews and 10 key informant interview sessions. Two participants were purposively selected from each ward using snowball sampling and convenience sampling techniques.

However, the inclusion criteria are all females in their respective reproductive years and post-menopausal females aged 15– 69 years, persons who have had a close relation or friend with a diagnosis of breast cancer and healthcare providers (doctors/nurses) from one of the healthcare facilities in the town/ward.

Data Analysis

The quantitative data were generated and analysed using the Statistical Package for Social Sciences software package (SPSS 20.0). Univariate and bivariate analyses were conducted accordingly. Univariate analysis was conducted with the use of the frequency distribution tables to assess and describe the socio-demographic profiles of respondents like their LGAs,

ethnicity affiliation, marital status, education, occupation and religion. Bivariate analysis was carried out using Chi-square (X^2) for the cross tabulation of variables of women's behavioural disposition to breast cancer such as their 'reaction to unusual breast change and discomfort' and 'attitude towards breast cancer screening', against variables of perceived vulnerability such as: 'worry about having breast cancer'.

Qualitative data from the IDIs and KIIs sessions were transcribed, edited and analysed using content analysis.

Ethical Consideration

Ethical Approval was sought from the Covenant University Health Research Ethics Committee (CUHREC) of the University with reference number CU/HREC/ATA19. Also, the informed consent of participants for both the survey and in-depth interviews and key informants interviews were duly obtained. Participants were debriefed about the aim and objectives of the study before the data collection process commenced. Participants were also assured of privacy, anonymity, and confidentiality of information supplied.

Results

Socio-demographic Profile of Respondents

A total of 992 copies of questionnaire were retrieved out of the 1 100 copies administered to the study population. The attrition rate was 9.8%. Table 1.1 represents the socio-demographic characteristics of the respondents.

The sample was drawn from 5 LGAs namely Ado-odo Ota, Abeokuta South, Sagamu, Obafemi Owode and Ijebu-Ode. Opinions were sampled from women residing in these 5 LGAs. As seen in in the table, the total number of respondents sampled in each of the five Local government Areas are as follows: Ado-odo/Ota – **363,** Abeokuta South – **184**, Sagamu – **176**, Obafemi Owode – **139**, and Ijebu-Ode: **130**, totalling **992** respondents. From the table presented below, it can be observed that a larger percentage of the sampled population were of the Yoruba ethnic group: 60.3%. This did not come as a surprise, as the study area is a predominantly Yoruba community with some areas partially dominated by some minority ethnic groups such as the Egun. The Igbo are next to the Yoruba, totalling 18.3% in terms of population making them the second-largest ethnic group in the study area, while the Hausas were

the least, representing a total of 6.1% of the three major ethnic groupings in Nigeria. Other ethnic groups which obviously constitute minority groups were also duly represented (15.2%).

In terms of age distribution, the modal age is 25–39 years, as the majority of respondents were within this age bracket. A larger percentage of respondents are also married (47.5%). Others claimed to be either single (38.8%), divorced (3.7%), widowed (5.3%) or separated (4.6%). Furthermore, a large percentage of respondents mostly had secondary education (34.8%). Others either had only the primary form of education (24.7%), or was able to obtain some form of tertiary education (30.9%), while the rest had no formal education (9.6%). Looking at the occupational status of the respondents, categories were created since the question concerning occupation was an open-ended question. These categories include the unemployed, those in farming and trading, the skilled, those engaged in clerical and allied services, and professionals. Respondents categorized as 'unemployed' are housewives, students and those without any tangible source of earnings. Those who were grouped under farming were those involved in crop production, animal husbandry/livestock farming, fishing, and oil-palm collection. Trading constituted owners of small shops, stores or stalls in the market, petty traders, hawkers, etc. The skilled category included artisans such as hairdressers, tailors, tie and dyers, weavers. and caterers. Those grouped under clerical and allied included secretaries, typists, receptionists, librarians, cashiers, sales attendants and others, while those classified as professionals included doctors, lawyers, pharmacists, lecturers, administrators, teachers, midwives, nurses, welfare officers, traffic warden and policewomen. Analysis of these categories revealed that, majority of the respondents (29.0%) were engaged in clerical and allied occupations, 19.1% were involved in professional jobs; 25.1% are engaged in trading, 8.3% in farming, 11.4% were involved in skilled jobs, while 7.2% were unemployed. Additionally, with regard to religion, 69.2% of the respondents belonged to the Christian faith. The rest belonged to the Islamic religious sect (25.1%) and other religious groups (5.7%).

Table 1.1: Percentage Distribution of Respondents by Socio-demographic Characteristics N=992

Responses	Frequency	Percent (%)
LGA		
Ado-Odo Ota	363	36.6

Abeokuta South	184	18.5
Sagamu	176	17.7
Obafemi Owode	139	14.0
Ijebu-Ode	130	13.1
Total	**992**	**100.0**
Age		
< 25 years	313	31.6
25-39 years	494	49.8
40 & above	185	18.6
Total	**992**	**100.0**
Ethnicity Affiliation		
Yoruba	598	60.3
Igbo	182	18.3
Hausa	61	6.1
Others	151	15.2
Total	**992**	**100.0**
Marital Status		
Single	385	38.8
Married	471	47.5
Divorced	37	3.7
Widowed	53	5.3
Separated	46	4.6
Education		
No formal education	95	9.6
Primary education	245	24.7
Secondary education	345	34.8
Tertiary education	307	30.9
Total	**992**	**100.0**
Occupation		
Unemployed	71	7.2
Skilled	113	11.4
Clerical & Allied	288	29.0
Professional	189	19.1
Trading	249	25.1
Farming	82	8.3
Total	**992**	**100.0**
Religion		
Christianity	686	69.2
Islam	249	25.1
Others	57	5.7
Total	**992**	**100.0**

Table 1.2. Relationship between Respondents' Reaction to Unusual Breast Change and Worry about Having Breast Cancer

		Will go to the hospital	Will pray about it	Will ignore it	Will take herbal mixture	No response	Total
Ever Worried about Breast Cancer	**Yes**	126 (16.5%)	21 (15.9%)	0 (.0%)	1 (2.0%)	6 (14.0%)	154(15.5%)
	No	591 (77.3%)	105 (79.5%)	2 (100.0%)	45(90.0	24(55.8%)	767 (77.3%)
	No Response	48 (6.3%)	6 (4.5%)	T0 (.0%)	4 (8.0%)	13(30.2%)	71 (7.2%)
Total		765(100.0)	132(100.0%)	2 (100.0%)	50(100.0%)	43(100.0%)	992(100.0%)

Pearson Chi-Square = 44.828, p-value = 0.000
Pearson's r = 0.125, p-value = 0.000

Source: Field survey on breast cancer, 2016

As depicted in Table 1.2, perception of vulnerability stated as 'ever worried about having breast cancer' is the independent variable that is exerting influence on the respondents' behavioural disposition (dependent variable) stated as 'reaction to unusual change and discomfort in the breast'.

For respondents that claimed to have ever worried about having breast cancer, 16.5% said the first thing they would do if they noticed an unusual change and discomfort in breast was to visit the hospital; 15.9% said they would pray about it; and none of the respondents said they would ignore it; 2% would take herbal mixtures; and 14% gave no answer. For those that said they do not worry about having breast cancer, 77.3% would go to hospital; 79.5% would pray; 2 respondents said they would just ignore it; 90% would take herbs; while 55.8% gave no response.

The relationship statistics show a positive association and a very significant relationship between respondents' disposition to breast change and if they ever worried about having breast cancer. The Pearson Chi-Square = 44.828, p-value = 0.000, Pearson's r = 0.125, p-value = 0.000.

Table 1.3: Relationship between Respondents' attitude to Breast Cancer Screening and Worry about Having Breast Cancer

		Would go for BC Screening			Total
		Yes	**No**	**No Response**	
Ever worried about Breast Cancer	**Yes**	122 (16.9%)	28 (12.4%)	4 (9.1%)	154 (15.5%)
	No	558 (77.2%)	183 (81.3%)	26 (59.1%)	767 (77.3%)
	No Response	43 (5.9%)	14 (6.2%)	14 (31.8%)	71(7.2%)
Total		723 (100.0%)	225(100.0%)	44(100.0%)	992(100.0%)

Pearson Chi-Square = 44.899, p-value = 0.000
Pearson's r = 0.125, p-value = 0.000

Source: Field survey on breast cancer, 2016

As shown in Table 1.3, perception of vulnerability stated as 'ever worried about having breast cancer' is the independent variable that influences respondents' attitude to breast cancer screening (dependent variable), stated as 'would go for screening'.

From the table above, the analysis of the relationship between respondents' worry about having breast cancer and their disposition to breast cancer screening revealed that 16.9% of those that claimed to have ever worried about having breast cancer would go for screening, 12.4% would not, while 9.1% gave no response. In the same vein, for those who declared that they had never worried about having breast cancer, 77.2% would still go for the screening, 81.3% would not, and 59.1% did not respond.

The relationship statistics show a positive association and a very significant relationship between respondents' disposition to breast cancer screening and if they ever worried about having breast cancer. The Pearson Chi-Square = 44.899, p-value = 0.000, Pearson's r = 0.125, p-value = 0.000.

In-depth Interviews and Key Informant Interviews

Findings from IDIs and KIIs conducted, however, revealed that women in the study area possessed deep-seated traditional health beliefs, were excessively fatalistic by nature and were quick to ascribe their health problems to spiritual causal factors. Excerpts from the IDI and KII sessions have been categorized under the following themes: 'respondents' perception of vulnerability to breast cancer' and 'respondents' behavioural disposition to breast cancer'.

Respondents' Perception of Vulnerability to Breast Cancer

Presented below are excerpts from some of the IDI and KII sessions conducted to support the quantitative method for this study. Responses have been presented verbatim, highlighting relevant and striking statements. The following excerpts represented some of the respondents' perceptions of vulnerability to breast cancer; that is, whether they see themselves as vulnerable or at risk of developing breast cancer or not:

> *many people see themselves as not vulnerable to the disease. They see it as a disease of the rich because of all the junks that rich people eat ...* **(KII with close acquaintance of a breast cancer patient from Sango Ota).**

Another interviewee had this to say:

> *women around here are more influenced by their religion. They belief breast cancer is an attack, they don't know much about health, but they belief there are forces responsible for it. You see these people from polygamous homes, they will say it is one woman that is after them. They don't normally belief that it is something medical …* (**IDI with close acquaintance of a breast cancer patient from Ijebu Ode).**

A healthcare worker in the female surgical ward of the State Hospital, Ijebu Ode further had this to say:

> *some women do not take it seriously. We have seen cases of some women that develop lumps and were advised to go traditional and use alternative medical intervention. When the alternative medicine did not work for them they will now come to the hospital.*

> *Some will tell you that how will they develop breast cancer when it is not in their family. Nobody has ever developed BC in their family so they cannot develop it. Even the educated ones do not really take it seriously* **(KII session with a matron at State Hospital Ijebu Ode)**.

Respondents' Behavioural Disposition to Breast Cancer

The excerpts presented here showed the behavioral disposition and attitude of some sampled respondents to breast cancer:

> *an issue that affect people's behaviour towards breast cancer is their religious beliefs, some believe that once you have it you can go to church. And some prophets even use to deceive them by saying to them 'don't worry, it will melt'. Then, apart from church, some believe in 'Babalawo' (herbalist) they will say the 'Babalawo' (herbalist) will just give them something to rub it, by the time you wash it, by the time you use pawpaw to wash it will disappear …* **(KII session with a matron at a teaching hospital, Sagamu).**

> *for me, I don't think I can use my money to go and do breast cancer screening because I believe I cannot have it. But if there is a free screening I will go for it if the queue is not much…* **(IDI session with close acquaintance of a cancer patient in Obafemi Owode).**

> *some people don't even want to hear about breast cancer! They believe they cannot have it …* **(Close acquaintance of a cancer patient in Obafemi Owode).**

Discussion

We have limited empirical studies on the perception of susceptibility and women's behavioural disposition to breast cancer in the study area. Hence this current study has been able to statistically describe a correlation between perception of vulnerability and women's behavioural disposition towards breast cancer in Ogun State, Nigeria. Given, the stated hypotheses, it was noted that there is a significant relationship between women's reaction to unusual breast cancer change and worry about having breast cancer. This study, in consonance

with another recent study conducted in Brazil found statistical correlations between observed perceived risk to cancer and both cancer-related worry and frequency of interference of this worry with daily activities ($p < 0.001$) (Edenir *et al.* 2020). Another study conducted among the Iranian women gave credence to this finding as a significant relationship was found between women's participation and variables of knowledge, perceived sensitivity, perceived benefit, perceived barriers, and self-efficacy among other behavioural disposition towards breast cancer (Masoudiyekta *et al.* 2015: e30234).

Similarly, the study also found a significant relationship between women's attitude towards breast cancer screening and worry about having breast cancer. This study corroborates the HBM core assumption, as Rosenstock (1974: 329) opines, that the ability of an individual to adopt a healthy lifestyle requires a perception of personal risk or vulnerability. In order to measure vulnerability accurately, individuals should be able to feel susceptible to a particular threat and must also perceive the threat as severe. This will inform the actions they take in order to salvage or treat a health condition. Hence, this suggests to us that women generally worry about breast cancer and they equally care about breast cancer screening. In the same vein, other studies conducted in Benin City in Nigeria attest to the fact that women tend to worry about their susceptibility to breast cancer and this affects their behavioural dispositions towards cancer (Akhigbe & Akhigbe 2012; Azubuike & Okwuokei 2013: 155).

Following the qualitative data, this study, on the other hand, determined most essentially that perception of vulnerability, although an important component of behavioural change, is not a sufficient enough variable that is capable of impacting on women's behaviour and disposition towards breast cancer in the study area. This was noted when considering the results from the IDIs and KIIs conducted to corroborate the quantitative data for this study. Hence, issues surrounding cultural/traditional beliefs and religion stood out as major determinants of behavioural disposition towards breast cancer. Hence, this was found consistent with a study conducted among Arab women living in Qatar. It was reported that many complex beliefs, values and attitude influences Arab women's behavioural dispositions towards breast cancer (Donnelly *et al.* 2013). Cultural values, beliefs and attitudes are seen as major determinants of perception of breast cancer vulnerability, and having a cancer diagnosis is often accompanied by social stigma. In some societies, a cancer diagnosis is seen as carrying a significant amount of stigma, myth and taboos,

while culture is also viewed as having a major influence on patients' and communities' perceptions of cancer risks (Daher 2012: 68; Kagawa-Singer *et al.* 2010). To stress further**,** Donnelly *et al.* (2013) have found that breast cancer screening among Arab women remains low in spite of the rising breast cancer incidence and mortality rates. Some factors they identified as impacting negatively on Arab women's behavioural disposition towards breast cancer, particularly breast cancer screening, include low perceived risk of cancer, preference for a female health professional, time, cost, lack of a physician's recommendation, fear of the breast cancer screening procedure, fear of finding cancer, and embarrassment related to the breast cancer screening procedure.

Conclusion

Premised on the findings generated so far from this study, it can be deduced that issues that regarding breast cancer perceived vulnerability and behavioural disposition are better understood from sociocultural and spiritual dimensions rather than from a mere psychoanalytical and biomedical perspective. Hence, sociocultural, personal beliefs and traditional practices of a society are crucial when it comes to the way and manner in which women experience and respond to the incidence of breast cancer. Breast cancer-related issues are culturally sensitive issues for women and should be understood and addressed in a culturally sensitive manner. There is no doubt that, investing in the health of women in Nigeria, particularly with regard to breast cancer, will ultimately translate to a complete reduction in the economic burden of the disease on women and their families. This will in the long run lead to a massive reduction in breast cancer-related deaths, and thus increase the chances of survival, serving as a step closer to the realization of the development that is equitable, feasible and sustainable for all. When women are healthy, their children will be healthy and the society will be better off for it. This is because, the healthier and stronger a woman is, the greater her economic contribution and productivity, which will eventually impact positively on the overall socio-economic status and sustainable development of the country.

Recommendations

This study therefore recommends that policy makers and implementers should urgently attend to the unmet health needs of women in Nigeria, specifically in

the area of understanding their health beliefs. For instance, this study found that one of the reasons for low survival rates of breast cancer in Nigeria is the personal health beliefs of women, which is largely influenced by spiritualism and religiosity. Specifically, the study recommends:

1. Health education policies and programmes that will create more awareness, sensitize and enlighten most essentially the rural women regarding demystification of sociocultural and religious issues surrounding breast cancer in Nigeria.

2. Provide adequate health financing support and intensifying campaign on the available cancer prevention, management and treatment services for all women including rural women to have a positive attitude towards breast cancer screening, early detection, and treatment in Nigeria.

References

Akhigbe A. & K. Akhigbe. 2012. Effects of Health Belief and Cancer Fatalism on the Practice of Breast Cancer Screening among Nigerian Women. ISBN 978-953-51-0285-41. https://doi.org/10.5772/31176 http://www.intechopen.com/books/mammography-recentadvances/effects-of-healthbelief-and-cancerfatalism-on-the-practice-of-breast-cancerscreening-among-nigeria

Akinkugbe, O.O., A.O. Lucas, G.C. Onyemelukwe, H. Yahaya & M.J. Saka 2010. Non-communicable Diseases in Nigeria. *Nigerian Health Review* 6,1: 25 – 29.

Ameer, K., S.M. Abdulie, S.K. Pal, K. Arebo & G.G. Kassa 2014. Breast Cancer Awareness and Practice of Breast Self-examination among Female Medical Students in Haramaya University, Harar, Ethiopia. *International. Journal of Multi-discipline Studies* 2,2: 109 – 119.

American Cancer Society 2014. *Breast Cancer Prevention and Early Detection*. Available at: http://www.cancer.org/cancer/breastcancer/moreinformation/breastcancerearlydetection/breast-cancerearly-detection-acs-recs-bse

Amoo, E.O., A. Olawole-Isaac, N. Okorie, M.P. Ajayi, P.O. Adekola, T.T. Amana & F. Olu-Owolabi 2018. Spousal Desertion and Coping Strategies among Women with Cervical Cancer in Nigeria: A Schematic Framework for Wellbeing. *African Population Studies* 32,1. https://doi.org/10.11564/32-1-1172.

Azubuike, S.O. & S.O. Okwuokei 2013. Knowledge, Attitude and Practices of Women towards Breast Cancer in Benin City, Nigeria. *Annals of Medical and Health Science Research* 3,2: 155 – 160. https://doi.org/10.4103/2141-9248.113653 PMid:23919181 PMCid:PMC3728854

Bayoumi, M.M.M, M.M.M. Elbasuny, A.M.A. Nasser, K.M. Abdullah & N.M.A. Al-matery 2012. Saudi Young Females' Level of Knowledge Regarding Cervical and Breast Cancer. *International Journal of Nursing Science* 2,5: 47 – 52. https://doi.org/10.5923/j.nursing.20120205.01

Becker, M.H. 1974. The Health Belief Model and Personal Health Behavior. *Health Education Monographs* 2: 324 – 508.

Cho, H. 1999. *Unintended Effects of Fear Appeals: The Role of Stage of Change, Threat, and Efficacy.* Michigan State University. Pro-Quest Dissertations and Theses.

Daher, M. 2012. Cultural Beliefs and Values in Cancer Patients. *Annals of Oncology* 23,3: 66 – 69. https://doi.org/10.1093/annonc/mds091 PMid:22628419

Edenir I.P. C. Natalia, S. Lavinia, G. Roberto, C.R. José, R.V. Fernando & A. Patricia 2020. Cancer-related Worry and Risk Perception in Brazilian Individuals Seeking Genetic Counseling for Hereditary Breast Cancer. *Genetics and Molecular Biology* 43,2. https://doi.org/10.1590/1678-4685-GMB-2019-0097 PMid:32325485 PMCid:PMC7210979

Donnelly, T.T., A. Al Khater, B.S. Al-Bader, M.G. Al Kuwari, N. Al-Meer, M. Malik, R. Singh, S. Chaudhry & T. Fung 2013. Beliefs and Attitudes about Breast Cancer and Screening Practices among Arab Women Living in Qatar: A Cross-sectional Study. *Asian Pacific Journal of Cancer Prevention.* https://doi.org/10.1186/1472-6874-13-49 PMid:24330708 PMCid:PMC3878774

GLOBOCAN 2012. *Cancer Incidence and Mortality Worldwide*. IARC Cancer Base No. 11. Lyon, France: International Agency for Research on Cancer. http://globocan.iarc.fr (Accessed 02 March 2020).

Janz, N.K & M.H. Becker The Health Belief Model: A Decade Later. *Health*

Education and Behaviour 11,1. https://doi.org/10.1177/109019818401100101

Kagawa-Singer, M., V.A. Dadia, M.C. Yu, & A. Surbone 2010. Cancer, Culture, and Health Disparities: Time to Chart a New Course? *A Cancer Journal for Clinicians* 60,1. https://doi.org/10.3322/caac.20051 PMid:20097836

Komen, S.G. 2014. *What is Breast Cancer? Facts for Life.* Available at: http://ww5.komen.org/ (Accessed 24 December 2019.)

Makinde, B., T. Olaoye, O. Ogunsanmi, T. Akinremi, A. Solademi & J.M. Dagana 2016. Cancer of the Cervix and Cervical Screening: Current Knowledge, Attitude and Practice of Primary Health Care Workers in Ikenne Local Government Area Ogun State, Nigeria. *OSR Journal of Nursing and Health Science* (IOSR-JNHS). www.iosrjournals.org (Accessed 16 April 2020).

Masoudiyekta, L., B. Dashtbozorgi, M. Gheibizadeh, A.S. Malehi & M. Moradi 2015. Applying the Health Belief Model in Predicting Breast Cancer Screening Behavior of Women, Jundishapur. *Journal Chronic Disease Care* 4,4: e30234. https://doi.org/10.17795/jjcdc-30234

Naghibi, A., D. Shojaizadeh, A. Montazeri, J. Yazdani Cherati & S. Mozaffari 2013. Studying Knowledge, Attitude and Behavior of Breast Cancer Screening Methods among Behshahr Dwelling Women. *Iran Journal Health Science* 1,2: 75 – 82. https://doi.org/10.18869/acadpub.jhs.1.2.75

National Population Commission 2006. *Population and Housing Census of the Federal Republic of Nigeria, Priority Table*. 3,1. Masaka Close off Olusegun Obasanjo Way Wuse Zone 7, Abuja, Nigeria.

Nigeria National Cancer Control Plan (NNCCP) 2018-2022. https://www.iccp-portal.org/system/files/plans/NCCP_Final%20%5B1%5D.pdf (Accessed 24 May 2019).

Obaikol, R., M. Galukande & J. Fualal 2010. Knowledge and Practice of Breast Self-examination among Female Students in a Sub-Saharan African University. *East Central African. Journal of Surgery* 15,1: 22 – 27.

Ogunsiji, O.O., C. Kwok & L.Chun Fan 2017. Breast Cancer Screening Practices of African Migrant Women in Australia: A Descriptive Cross-sectional Study. *Bio-Med Central Women's Health.*

https://doi.org/10.1186/s12905-017-0384-0
PMid:28412942 PMCid:PMC5392914

Ogun State Ministry of Health 2010. Ogun State Government Strategic Health Development Plan (2010-2015). http://ogunstate.gov.ng/moh/ (Accessed 12 December 2019).

Oke, M. 2012. Nigeria: Ogun should have 36 State Constituencies. Daily Trust Abuja. https://www.dailytrust.com.ng/ (Accessed 4 September 2019).

Olumide. A. & O. Olu-Abiodun 2013. An Assessment of Women's Awareness and Knowledge about Cervical Cancer and Screening and the Barriers to Cervical Screening in Ogun State, Nigeria. *OSR Journal of Dental and Medical Sciences* 10,3: 52 – 58. https://doi.org/10.9790/0853-1035258

Phaswana-Mafuya, N. & K. Peltzer 2018. Breast and Cervical Cancer Screening Prevalence and Associated Factors among Women in the South African General Population. *Asian Pacific Journal of Cancer Prevention* 19,6: 1465 – 1470.

Rosenstock, I.M., V.J. Strecher & M.H. Becker 1994.The Health Belief Model and HIV Risk Behaviour Change. In DiClemente, R.J. & J.L. Peterson (eds.): *Preventing AIDS: Theories and Methods of Behavioural Intentions* 4 - 24. https://doi.org/10.1007/978-1-4899-1193-3_2

Rosenstock, I. 1974. Origins of the Health Belief Model. *Health Education Behavior* 2,4: 328 – 335. https://doi.org/10.1177/109019817400200403

Soyingbe, A. 2013. *Amosun's Campaign against Cancer.* http://dailyindependentnig.com/2013/11/amosuns-campaign-against-cancer/ (Accessed 8 April 2020).

Suh, M.A.B., J. Atashili, E.A. Fuh & V.A. Eta 2012. Breast Self-examination and Breast Cancer Awareness in Women in Developing Countries: A Survey of Women in Buea, Cameroon. *Bio-Med Central Research Notes* 5,1: 627. https://doi.org/10.1186/1756-0500-5-627
PMid:23140094 PMCid:PMC3522012

World Health Organization 2018. *Cancer*. https://www.who.int/news-room/fact-sheets/detail/cancer (Accessed 6 January 2020).

World Health Organization 2018. Government and Partners Redouble Efforts to Beat Breast Cancer in Nigeria. https://www.afro.who.int/news/government-and-partners-redouble-efforts-beat-breast-cancer-nigeria (Accessed 16 May 2020).

Covenant University

Canaanland, Km 10, Idiroko Road, Ota, Ogun State, Nigeria.
Tel:+234-014542070
Website: www.covenantuniversity.edu.ng

THE WORLD UNIVERSITY RANKINGS 2019 TOP 800

COVENANT HEALTH RESEARCH ETHICS COMMITTEE
(CHREC) Email: hrec@covenantuniversity.edu.ng
COVENANT UNIVERSITY
P.M.B. 1023, OTA, OGUN STATE, NIGERIA.

Our Ref: CU/HREC/ATA19 **Date 4th April, 2019**
Your Ref:

NOTICE OF FULL APPROVAL OF PROTOCOL AFTER FULL COMMITTEE REVIEW
RE: PERCEIVED VULNERABILITY AND BEHAVIOURAL DISPOSITION OF WOMEN TOWARDS BREAST CANCER IN OGUN STATE, NIGERIA

US DEPT. OF HEALTH &HUMAN SERVICES	**IORG0010037**
NHREC REG. NUMBER	**NHREC/25/10/2018**
CHREC Protocol Assigned Number	**HREC /010/2019**
Name of Principal Investigator	**ALLO Tolulope Abiola**
Date of Receipt of Valid Application:	**6th February, 2019**
Date of Meeting where decision was taken	**28th March, 2019**
The approval dates from	**28th March 2019 to 29th March 2020**

We write to inform you that the Research described in your submitted protocol, consent form, questionnaire and other related documents has undergone a positive review and given a full approval following the outcome of the review by the Covenant Health Research Ethics Committee (CHREC).

If there is delay in starting the research, please inform the HREC so that the dates of approval can be adjusted accordingly. Note that no participant accrual or activity related to this research may be conducted outside of these dates. In multi-year research, endeavour to submit your annual report to the HREC early in order to obtain renewal of your approval and avoid disruption of your research.

The national Code for Health Research Ethics requires you to comply with all institutional guidelines, rules and regulations and with the tenets of the Code including ensuring that all adverse events are reported promptly to the CHREC. No changes are permitted in the research without prior approval by the CHREC except in circumstances outlined in the Code. The CHREC reserves the right to conduct compliance visit to your research site without previous notification.

Prof. S. N. Chinedu
Chairman, CHREC

Dr. T.O. George
Secretary, CHREC
Tel: +234 8025931037

Tolulope Abiola Allo
Department of Sociology
Covenant University
tolu.allo@convenantuniversity.edu.ng

David Imhonopi
Department of Sociology
Covenant University
david.imhonopi@convenantuniversity.edu.ng

Victor Adekunle Owoyomi
Department of Sociology
University of Lagos
owoyomivictor@gmail.com

Professor Mariam Seedat-Khan CCS
University of KwaZulu-Natal
Society and Social Change
Durban, South Africa
seedatm@ukzn.ac.za