HEALTH EDUCATION AND BEHAVIOURAL PRACTICE OF WOMEN TOWARDS BREAST CANCER SCREENING IN LAGOS, NIGERIA

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Abstract

This study examined the effect of health education on breast cancer screening behavior in Lagos, Nigeria, in response to a worldwide demand for strategic information to comprehend breast cancer. Breast self-examination (BSE) remains a validated behavior intervention for preventing the global spread of breast cancer. This study examines the ability of a health belief model to predict the adoption of breast self-examination among 400 women in Lagos state, which is reputed to have the second-highest incidence of breast cancer in Nigeria. A cross-sectional study examined the relationship between health education channels and HBM components based on the demographic characteristics of research participants. On a five-point Likert scale, study constructs were rated, and the results were averaged. The findings indicate that educational sources of information have a significant effect on perceived breast self-examination vulnerability (= 0.803, R2=0.644, t-statistics=12.763>1.96, P-value =0.000 0.05), and the Path coefficient of 0.380 indicates a significant relationship between educational sources of information and women's breast self-examination self-efficacy. Furthermore, nearly half (48.3%) of participants who claimed to know how to do so said that not performing breast self-examination is the most common detrimental practice among female residents. The study concludes that, although female residents are concerned about breast cancer, a number of factors, including beliefs, lack of knowledge, and inability to perform breast self-examination, as well as insufficient information provided by various breast self-examination sources, impede the effective adoption of breast self-examination.

Keywords: Health Education, Information Sources, Breast Cancer, Health Belief Model

1. INTRODUCTION

Disease outbreak is a severe health hazard that poses a threat to human survival. In the twenty-first century, increased mobility, travel, urbanization, climate change, and human behavior have all heightened the threat, leading diseases to spread faster and amplify into epidemics and pandemics (Okyere et al., 2022; WHO, 2020). In the hands of public health specialists, education has evolved into a critical tool for avoiding disease

transmission among humans and reducing the possibility of non-infectious illness epidemics.

One of such diseases is the breast cancer, worldwide; the incidence of mammary gland cancer is high, having consequent results on the physical, emotional, and societal well-being of the human population. In 2020, an estimated 2.3 million females were diagnosed with breast cancer, with an approximated mortality rate of 650,000 (Song et al., 2021; WHO, 2021). Breast Cancer has been categorized as a non-communicable disease of global health importance (WHO 2020, 2021), and the prevalence of the disease, particularly in Africa, is alarming (National Cancer Institute, 2020).

In Nigeria and across many African countries, Breast cancer has been identified as the most prevalent and second leading cause of death among women; its prevalence is significant, and the rate at which new cases are reported have continued to rise (Gall & Bilodeau, 2018; Vijayasiri et al., 2018). Approximately one out of every eight women will be diagnosed with the disease during their lifetime, according to the American Cancer Society Facts (2021). In addition, one out of every thirty-three women dies from it, making it one of the world's most deadly diseases, with casualty rates approaching or exceeding those of heart disease, stroke, diabetes, and chronic lung disease.

Education intervention is a critical determinant of success in public health emergency response and recovery, according to Dickmann, McClelland, Gamhewage, Portela de Souza, and Apfel (2015), because it empowers people to protect their health by providing critical information that influences public perceptions and beliefs about disease prevention through information sources, practices, and management options (George, Allo, Amoo, & Olonade, 2019). As a result, the public acquires a better awareness of non-infectious illness epidemiology, which may lead to a change in behavior or attitudes about the diseases; societal norms that promote good health are created, and policy reforms for disease prevention and control are proposed (Metwally et al., 2021; Ngwu, 2017).

The proposed breast cancer examination techniques are clinical breast examination (C.B.E.), Breast self-examination (B.S.E.), and mammography (Karaman, Sekmen, & ALVUR, 2019; Salod & Singh, 2019). According to a previous study, self-observation is crucial in detecting cancer's initial formation (Bien, Korzynska-Pietas, & Iwanowicz-Palus, 2014; Mulyk et al., 2022). It also makes women more aware of breast changes and prompts them to arrange clinical tests and mammograms (Avci & Altinel, 2018; Kolutek, Avci, & Sevig, 2018). Despite its high efficacy in lowering mortality, multiple research findings demonstrate that women in various populations adopt such behaviors at a low rate. Several factors may influence the performance or non-performance of breast screening behaviors, which must be identified to promote these behaviors.

Adoption and adherence to positive behavioral practices are intimately tied to a small number of social cognitive models (S.C.Ms) that posit beliefs and attitudes as the primary determinant of behavioral patterns. These S.C.Ms have been shown to be effective in explaining why people adopt and adhere to positive behavioral practices (Charron-Prochownik et al., 2001; Glanz, Rimer, & Viswanath, 2008). The Health belief model (HBM) is one of the most extensively utilized models in health awareness (Hounton, Carabin, & Henderson, 2005; Janz & Becker, 1984). In the 1950s, social psychology searchers at the U.S. Public Health Service proposes a model to identify individuals who were uninterested in community health programs such as cervical cancer screening and tuberculosis (Rosenstock, 1974; Rosenstock, Strecher, & Becker, 1988).

Existing research, particularly for education on health has shown that education elements may not directly impact the public (Ogunsiji, Kwok, & Fan, 2017; Rosenstock et al., 1988). However, much health behavior management research has concentrated on the indirect pathways via which education features influence public behavior (Ball, Timperio, & Crawford, 2006; Kim & Park, 2012). Scholars have underlined the need of determining indirect paths through psychological difficulties. As a result, this research examined how women's acquisition of breast cancer education from various information sources influences their health beliefs and behavioral practice intentions via psychological factors.

HBM is one of the most commonly used models for studying the factors of people's intentions to adopt a behavioral practice (Amosu & Akpo, 2021; Motilewa, Ekanem, & Ihesie, 2015). It focuses on psychological aspects like vulnerability, severity barriers, and cues to action, severity, benefits and self-efficacy. However, few researches have looked into the elements that influence one's health attitudes. The study's overall goal was to accomplish two things. To begin, the research explores the Health Belief Model (HBM) to demonstrate the method by which breast cancer education is turned into behavioral practices. Second, we tried to identify the most beneficial sources of information in boosting breast cancer screening behavior by examining the varied functions of various information sources. The findings of this study will aid authorities in

terms of locating effective information sources for disseminating health information during public health crises, as well as conceptually contributing to the literature on breast cancer.

2. MATERIALS AND METHODS

2.1 Research Objectives

1. To examine the extent to which information educational sources influence women's perceived susceptibility towards breast self-examination.

2. To determine whether / not the information educational sources influence women's self-efficacy towards breast cancer breast self-examination.

2.2 Research Hypotheses

Ho_1: There is a significant relationship between information educational sources and women's perceived susceptibility to breast cancer and adherence to breast self-examination

Ho_2: There is a significant relationship between information educational sources and women's self-efficacy towards of women towards breast self-examination.

2.3 Methods and Data

This study employed the quantitative method research of survey to determine the most predominant information educational sources as well as the health belief of women, in Lagos state, Nigeria

2.4 Data Measurements

The research instrument used for this study is the questionnaire. Perceived vulnerability, self-efficacy, cues to action, perceived benefits, perceived severity, and perceived barriers were all incorporated into the survey questionnaire in order to collect data on participants' health beliefs. Sections on demographic data, information educational sources and the health belief model were all included in the questionnaire.

2.5 Sample Size

In this study, 400 Lagos State residents were chosen as the sample size. Wimmer and Dominick (2013) discovered that a sample size of 200 to 300 is acceptable, 300 to 500 is good, and 1,000 or more is outstanding. Therefore, 400 samples were sufficient for this study. This investigation employed both bivariate and multivariate descriptive analysis methods. Cross-tabulation results were made from the bivariate analysis for the information sources and health belief model element for people in Lagos State. The research used multivariate analyses to find out if there is a strong link between how Lagos, Nigeria women get information about women and what they think about their health.

3. RESULTS

Research Objective 1: Perceived Susceptibility (PSU)

	Loading	VIF	t-statistics	P value	AVE	Composite Reliability	Cronbach's Alpha
Constructs	**≥ 0.7**	**<3.0**	**>1.96**	**<.05**	**≥0.5**	**≥ 0.8**	**> 0.7**
Information Sources					**0.656**	**0.809**	**0.758**
Television	0.782	2.487	1.512	0.082			
Radio	0.789	2.960	0.671	0.664			

Newspaper	0.796	3.001	1.129	0.322
Friends/Family	0.799	2.782	1.576	0.082
Internet	0.884	1.741	9.040	0.003
Health Workers	0.805	2.023	5.012	0.004

Perceived Susceptibility (PS)				**0.664**	**0.887**	**0.829**
PS1	0.740	1.813	11.277	0.000		
PS2	0.813	1.222	21.618	0.000		
PS3	0.785	1.941	16.665	0.000		
PS4	0.911	1.335	48.011	0.000		

Table 1 displays the factor loadings for each assessment item for perceived breast cancer susceptibility and information educational sources. Compound reliability, average variance extracted (AVE) calculation, and Cronbach Alpha were utilised to assess the validity and reliability of the instrument. Consequently, the intermediate requirements for factor loading, composite reliability, AVE, and Cronbach Alpha were fulfilled. This research also assessed the questionnaire's convergent and discriminant validity. Convergent validity indicates a connection between information sources and breast cancer susceptibility perceptions.

Table 2 Coefficient value of Hypothesis One

Variables	Path Co-efficient	SE	T-Statistics	P Values	R^2	F^2	Q^2	Decision
Information Sources → PS	**0.803**		**12.763**	**0.005**	**0.644**	**2.117**	**0.390**	**Significant**
Friends/Family → PS	0.148	0.085	1.739	0.082	0.021	0.040		Insignificant
Health Worker→ PS	0.257	0.090	2.897	0.004	0.066	0.183		Significant
Internet → PS	0.465	0.156	2.990	0.003	0.216	0.188		Significant
Newspaper→ PS	0.136	0.138	0.985	0.325	0.018	0.017		Insignificant
Radio→ PS	0.052	0.121	0.435	0.664	0.003	0.004		Insignificant
Television→ PS	0.220	0.143	1.537	0.124	0.048	0.042		Insignificant

To test Hypothesis 1, a smart partial least squares model was used to look at the link between how respondents saw their own risk for breast cancer and the information they got from different sources. The results show that information sources have a big effect on how likely people think they are to get breast cancer (= 0.803, R2=0.644, t-statistics=12.763>1.96, P-value =0.000 0.05; = 0.803, R2=0.644, t-statistics=12.763>1.96, P-value =0.000 0.05; = 0.803, R2=0.644, t-statistics=12.763>1.96, P- With a Path coefficient of 0.803, it was clear that there was a link between where people got their information and how likely they thought they were to get breast cancer. The R2 value of 0.644 shows that information sources can

explain 64.4% of the difference in how likely women think they are to get breast cancer.

With a standardised coefficient value of 0.465, the internet has the highest predictive value of the six information sources looked at in this study. Health workers are a close second. But TV, radio, newspapers, and friends and family don't have much of an effect on the model.

Table 2 Reliability and Construct validity for Hypothesis two

	Loading	VIF	P- Value	AVE	Composite Reliability	Cronbach's Alpha
Constructs	≥ 0.7	<3.0	<.05	≥0.5	≥ 0.8	> 0.7
Women Self-Efficacy (WSE)				**0.631**	**0.870**	**0.798**
WSE1	0.905	2.553	0.000			
WSE2	0.720	1.616	0.000			
WSE3	0.632	1.299	0.000			
WSE4	0.886	2.575	0.000			

Table 2 shows the factor loadings for all of the women's breast self-exam self-efficacy measurement items. The Cronbach Alpha and the composite reliability, average variance extracted (AVE) calculations were used to test the validity and reliability of the instrument. During the interim, all of the criteria for factor loading, composite reliability, AVE, and Cronbach Alpha were met. When we were trying to figure out construct validity, we also looked at convergent and discriminant validity. Convergent validity shows the link between sources of educational information and how confident women are that they can check their own breasts.

Table 2: Coefficient value of Hypothesis two

Variables	Path Co-efficient	SE	T-Statistics	P Values	R^2	F^2	Q^2	Decision
Information Sources → WSE	**0.780**		**11.770**	**0.001**	**0.608**	**1.292**	**0.416**	**Significant**
Friends/Family → PS	0.156	0.057	2.755	0.006	0.024	0.066		Significant
Health Worker→ PS	0.278	0.099	1.977	0.052	0.077	0.020		Significant
Internet → PS	0.453	0.140	3.238	0.001	0.205	0.192		Significant
Newspaper→ PS	0.162	0.081	1.992	0.046	0.026	0.043		Significant
Radio→ PS	0.265	0.120	2.053	0.040	0.070	0.075		Significant
Television→ PS	0.197	0.078	2.511	0.012	0.039	0.073		Significant

As shown in Table 2, the results of Hypothesis 2 show that women's self-efficacy in BSE is related to information and education sources. The results show that information sources have a big effect on women's confidence in their ability to check their own breasts (t-statistics=11.770>1.96 = 0.380, R2=0.608, t-statistics=11.770>1.96 P-value =0.000 0.05, R2=0.608). The Path coefficient of 0.380 shows that there is a strong link between information sources and women's confidence in their ability to check their own breasts. The R2 value of 0.608 shows that information sources can explain 60.8% of the difference in how well women think they can check their own breasts.

In particular, each of the six educational information sources looked at in this study makes a big difference in women's confidence in their ability to check their own breasts. With a standardised coefficient value of 0.453, the Internet has the highest predictive value. This is followed by radio, TV, newspapers, and friends and family of health workers**.**

4. DISCUSSION

In Nigeria, the number of women who get breast cancer is a big public concern. Mammary gland cancer is a big reason why death and illness rates are going up in some parts of Lagos state, Nigeria. This study, which was based on facts, looked at the link between sources of information about health beliefs and breast self-examination. In this study, 65 percent of the people asked knew what BSE was. The results show that Internet, TV, health professionals, family and friends, radio, and newspapers are the most common ways for women in Lagos to learn about breast cancer screening. The most effective information channels for health communication interventions are new media and interpersonal networks (Adeyeye et al., 2022; Young & Bleakley, 2020). This perspective led Panahi, Watson, and Partridge (2012) said that the media and personal networks have been accepted as ways to teach people about health in developing countries (Aririguzoh, Amodu, Sobowale, Ekanem, & Omidiora, 2021 ; Morris, 2005) .

The results show that a large number of people feel vulnerable when it comes to breast cancer screening. If the average score after adding up all the answers is between 0 and 2.4, then most people in Lagos, Nigeria probably don't need breast cancer screening. But if it falls between 2.5 and 4.4, it means that people in Lagos, Nigeria are more likely to get breast cancer. If it falls between 4.5 and 5, it means that people in Southwest Nigeria are very likely to get breast cancer. The study also shows that there is a strong link between where women get information about breast cancer screening and how confident they feel about their own ability to do so.

The test of the hypothesis showed that there is a strong link between using educational sources of information, feeling vulnerable, and feeling like you can do something This finding supports the claims of Nelson and Salawu (2016) , said, which is that information sources can be used as effective health communication interventions to raise awareness and knowledge about diseases in both high-resource and low-resource countries. Thus, newspapers, magazines, television, the Internet, and interpersonal networks serve as venues for informing and educating individuals about breast self-examination (breast cancer screening) (Adesina et al., 2021).

5. CONCLUSION AND RECOMMENDATION

The susceptibility and self-efficacy levels for breast cancer screening were found to be average among residents of Lagos, Nigeria, despite the high prevalence of breast cancer in Nigeria. This was the case despite the fact that Nigeria has a very high breast cancer mortality rate. It's possible that this has nothing to do with the fact that the location is urban and commercial, or with the fact that platforms for conventional and social media make it simpler for individuals to share their knowledge. Both of these factors might be to blame. If the momentum of such information generation and exchange can be maintained in all of the other states, it is likely that the objective of eliminating noncommunicable illnesses such as breast cancer by the year 2030 would be reached. This would be a significant accomplishment. This work has significant implications for the development of eco-friendly health care in a variety of different ways, and those implications are essential. Finding and utilising educational information sources is the first step that government and non-government organisations need to do in order to build knowledge about breast cancer that is in line with SDG 3. Second, there is an immediate need for information and education campaigns to make people aware that the number of cases of breast cancer is going up and to encourage them to live healthier lives. The goal of these campaigns is to encourage people to live healthier lives and to make them aware that the number of breast cancer cases is going up.

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