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INVESTIGATING THE FACTORS THAT INFLUENCE BREAST SELF-EXAMINATION PRACTICES AMONG FEMALE UNDERGRADUATES IN RIVERS STATE

Ijeoma Obinna Adiele

Department of Human Kinetics, Health and Safety Education, Ignatius Ajuru University of Education, Rivers State, Nigeria
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Abstract: This study investigated the factors influencing breast self-examination among female undergraduates in public tertiary educational institutions in Rivers State, Nigeria. A descriptive research design was adopted for this study with a population consisting of forty-four thousand, eight hundred and sixty-four (44,864) female university undergraduates in Rivers State. A sample size of 1,200 was selected using a multi-stage sampling procedure. The instrument for data collection was a structured questionnaire with a reliability coefficient of 0.74. Data collected were analysed using point biserial correlation at 0.05 level of significance. The finding of the study showed that statistically significant relationship was found between practice of breast self-examination and variables such knowledge [$f(1,1172) = 4925$, $p<0.05$], age [$f(1,1172) = 8248.73$, $p<0.05$] and religious affiliation [$f(1,1172) = 3946.40$, $p<0.05$]. It was concluded that the factors influencing breast self-examination among female undergraduates in public tertiary educational institutions in Rivers State, Nigeria were knowledge of cervical cancer, age and religious affiliation of the female undergraduates. It was recommended among others, that non-government health organizations should create awareness about BSE by carrying out monthly awareness campaign in the different tertiary educational institutions.

Keywords: Breast, Female, Undergraduates, Self-examination, Rivers

Introduction

Breast cancer though deadly has a greater chance of survival if it is caught at an early stage, of which one of the cost-effective methods of recognizing it set out is breast self-examination; because, early diagnosis is necessary for its successful treatment than when lately diagnosed. Breast cancer is the most common cancer and the leading cause of cancer death for women which accounts for 23% of all female cancers globally (International Agency for Research on Cancer (IARC), 2013). Breast cancer is also a leading cause of cancer death in the less developed

countries of the world (World Health Organization, 2018). In Nigeria Gwarzo cited in Birhane (2017) stated that, only 19.0% of the study participants were performing breast self-examination monthly.

Breast self-examination is performed by touching the breast with the finger tips, in order to find masses. Through this method, women can check their breasts in sitting, standing, or lying positions (Ogunbode et al., 2015). BSEs are routinely carried out in advanced countries, but are often not considered to be appropriate in developing countries. Research in low-and middle-income countries has indicated that regular breast self-examination is associated with the identification of breast cancer in an earlier stage, and thereby with reduced mortality (International Agency for Research on Cancer, 2018). However, early detection, whether through breast self-examination or by other means, must be followed up with prompt diagnosis and effective treatment (Pengpid & Peltzer, 2014).

Early diagnosis of breast cancer is a potentially beneficial way to control the disease and to reduce mortality. Annual mammography, clinical breast examinations, and monthly breast self-examinations (BSEs) are essential for the early diagnosis of breast cancer (Al-Azmy et al., 2013). The World Cancer Report (2018) showed that, although mortality from breast cancer could be reduced through early detection, a substantial proportion of women do not practice it. The earliest signs of breast cancer are usually observable on mammograms, often before lumps can be felt. However, mammograms are not foolproof and total as they are not very effective for use on younger women, whose dense breasts tissues can obstruct x-rays. Despite the advent of these modern screening methods, cases of cancer of the breast can be detected by women themselves through breast examination. It is for this reason that experts are advocating breast self-examination (BSE), as a preventive measure for early detection of breast cancer. But, certain factors can influence its practice among young women such as the absence of signs (Akhtari-Zavare et al., 2015), pain (Naghibi et al., 2016); cultural beliefs about fate (Abu-Helalah et al., 2015); the absence of support from family (Kissal et al., 2018); perception, attitude and knowledge about it. Knowledge is a primary step towards achieving behavior change in prevention of breast cancer as well as its early detection. Knowledge is an understanding of required facts, information, or skills through experience or education. Serdar, (2017) defined knowledge of breast self-examination as the awareness about self-breast examination. A study done in sub-Saharan and Nigeria showed that women knowledge and attitude towards breast cancer is poor despite a global warning to adopt positive preventive behavior (Mohtasham, 2018). Furthermore, lack of knowledge on BSE was cited as the main reason for not performing BSE (Nade et al., 2015). Though, knowledge in itself does not automatically translate to practice but, it is also not possible for one to practice what he/she does not know hence, its influence on practice. Birhane et al. (2017) stated that, lack of knowledge on how to perform BSE was cited as the main reason for not practicing BSE. In the same vein, Agbonifoh (2016) found that, knowledge of BSE impacted significantly on the practice of BSE as well as attitude towards it which also a key factor responsible for its practice.

Attitude towards breast self-examination could influence its practice among females. Attitude is a person's disposition towards a thing and readiness to engage in any form of practice. Attitude favourable for the usefulness of BSE was cited as the main reason for practicing BSE (Birhane et al., 2017). Serdar (2017) stated that, positive attitude is usually motivated as a result of the individual belief that such behavior will be of benefit to his health (desire outcome) either by reducing or eliminating the chance of acquiring a disease or illness. Attitude can be

influence by one's knowledge on the causes or risk factors to such disease, also can improve behavior towards preventive measures, reduce prevalence rate and burden of cervical cancer by engaging in regular breast self-examination (Nwozor & Oragudosi, 2013). On the other hand, a positive attitude could be developed by a family history of breast cancer.

Socio demographic variables such as age, and religious affiliation had also been noted to predict preventive behavior towards breast cancer such as BSE. Age is a pattern of life changes that occurs as one grows older, the process of aging includes the physiological, psychological, social and economic changes that accompany aging affect the breast tissues specially the female breast. (WHO, 2013). Younger women may be less likelihood to develop breast cancer than older adult but the peak age of breast cancer in Nigeria is between 35-45. Women who have their first childbirth after 30 are prone to develop breast cancer 5-10 years after the pregnancy, it was also revealed that early menarche before age 12 have a slightly higher risk of developing breast cancer most common among women who have their first full childbirth after 30 years and about 5-10 years after the pregnancy are prone to develop breast cancer, it was also revealed that early menarche before age 12 have a slightly higher risk of developing breast cancer (WHO, 2013) Report on breast cancer prevention and control by Lokossou and Ogoudjobi (2018), affirmed that the average age of the respondents of 35.2years old with extremes ranging from 30-48 years old which may also be significant to preventive behavior among the women towards breast cancer. Research on breast cancer in women both in developed and less developed world disclose that breast cancer is more on women among all other forms of cancer. It was estimated worldwide that over 508, 000 women died in 2011 due to the disease "breast cancer" (WHO, 2013). Reports are not discriminating, but breast cancer was thought to be a disease of the developed world and about 50% of death in developed countries of all cases of breast cancer as against a total of 58% of deaths occurring in less developed countries. The American Cancer Society (2013) reported that, breast cancer accounts for over 10% of all cancer cases among women worldwide; it remains the most frequent causes of cancer death in women to about 1.6 million in both developing and developed countries. Breast cancer incidence rates have been reviewed to be increasing each year by 5% in low resource region such as Nigeria; where more often breast cancer is diagnosed late with a poor chance of survival. Though, breast cancer afflicts women in their most fecund years of life, it can be successfully treated or managed with limited resources if detected early; most breast lumps that are later found to be cancers are detected very late, thus managing it at such advanced stage is expensive with a very slim chances of survival for the patient due to high risk of spread at that stage. Breast self-examination is a key strategy for reducing breast cancer mortality among young women such as female university undergraduates because it requires them to perform it by themselves and at their conveniences without visiting the hospital or spending money as required by other methods like mammography or other clinical breast examination. Yet, report has shown that a substantial proportion (32%) of female students in tertiary institution did not practice breast self-examination (Fidelis & Manalo., 2013; Agbonifoh, 2016); which suggest that certain factors could be implicated for its practice. Hence, the researcher aimed at finding out the factors influencing breast self-examination among female undergraduates in higher institutions in Rivers State.

Female undergraduate students in Rivers State like their counterparts in other parts of the country are saddled with the challenge of balancing their academics and other aspects of their life including their health, making some

of them to be more susceptible to certain illness during their years of study, while some pay little or no attention to preventive health behaviors including breast self-examination. Breast self-examination is a simple way of detecting lumps which could be cancerous or not, ideally done on a monthly basis; yet, not much attention is given to it thereby, increasing the morbidity and mortality rate of breast cancer. Apart from death, breast cancer can present some devastating consequences to the sufferer such as pains, low self-esteem, economic loss, psychological trauma, and low productivity in life endeavor. This has necessitated this study on breast self-examination. The study provided answers to the following research questions:

1. What is the relationship between knowledge of breast self-examination and the practice of breast self-examination among female students in public universities, Rivers State?
2. What is the relationship between age and the practice of breast self-examination among female students in public universities, Rivers State?
3. What is the relationship between religious affiliation and the practice of breast self-examination among female students in public universities, Rivers State?

Hypotheses

The following null hypotheses formulated were tested at 0.05:

1. There is no significant relationship between knowledge and the practice of breast self-examination among female students in public universities, Rivers State.
2. There is no significant relationship between age and the practice of breast self-examination among female students in public universities, Rivers State.
3. There is no significant relationship between religious affiliation and the practice of breast self-examination among female students in public universities, Rivers State.

Methodology

A descriptive correlational research design was adopted for this study. The population for the study comprised of forty-four thousand, eight hundred and sixty-four (44,864) female undergraduate students in the three government owned universities in Rivers State. The sample size for the study was 1,200 which was determined using the Taro Yamane formula given below: $n = N / 1 + N (e)^2$. Where n is the sample size, N = population size, and e = margin of error = 5% = 0.05. n was given as 400, but, this value was multiplied by three, representing the three universities to be studied, thus, the sample size was 1,200. A multi-stage sampling procedure was adopted for the study. At the first stage, a simple random sampling technique (balloting without replacement) was used to select two female hostels in each of the universities making it a total of six hostels to be used for the study. At the second stage, the proportionately stratified sampling technique was used to determine how many respondents to be selected from each of the schools and; at the third stage, the simple random sampling technique was used to select the respondents for the study.

The data collection instrument was a self-administered questionnaire titled 'Breast Self-Examination Questionnaire (BSEQ).' The questionnaire has a reliability coefficient of 0.74. Data was collected by administering the questionnaire to the respondents. Four research assistants were briefed on what to do regarding data collection. The researcher and the assistants administered the questionnaires to the respondents. The aim of the study and methods to be adopted were clearly explained to the respondents. Those who gave their

consent were recruited into the study after signing the consent form attached to the questionnaire. The completed copies of the questionnaire were retrieved, coded, and analyzed with the aid of the Statistical Product for Service Solution using point biserial correlation at 0.05 level of significance.

Results

The results of the study are shown below:

Table 1: Point Biserial Correlation showing relationship between knowledge of breast self-examination and the practice of breast self-examination among female university undergraduates in Rivers

Variables		Practice	Knowledge	Remark
Practice	Correlation	1	0.50	Moderate
	N	1173	1173	relationship
Knowledge	Correlation	0.50	1	
	N	1173	1173	

Guide: 0.00-0.19 = very low, 0.20-0.39 = low, 0.40-0.59 = moderate, 0.60-0.79 = high and 0.80 above is very high relationship

Table 1 showed the Point Biserial Correlation between knowledge of breast self-examination and the practice of breast self-examination among female students in public universities, Rivers State. The result revealed a correlation coefficient, r = 0.50 indicating a moderate relationship. Thus, the relationship between knowledge of breast self-examination and the practice of breast self-examination among female students in public universities, Rivers State was moderate.

Table 2: Point Biserial Correlation showing relationship between age and the practice of breast self-examination among female university undergraduates in Rivers

Variables		Practice	Age	Remark
Practice	Correlation	1	0.72	High
	N	1173	1173	relationship
Age	Correlation	0.72	1	
	N	1173	1173	

Guide: 0.00-0.19 = very low, 0.20-0.39 = low, 0.40-0.59 = moderate, 0.60-0.79 = high and 0.80 above is very high relationship

Table 2 showed the Point Biserial Correlation between age and the practice of breast self-examination among female students in public universities, Rivers State. The result revealed a correlation coefficient, r = 0.72 indicating a high positive relationship. Thus, the relationship between age and the practice of breast self-examination among female students in public universities, Rivers State was high.

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Table 3: Point Biserial Correlation showing relationship between religious affiliation and the practice of breast self-examination among female university undergraduates in Rivers

Variables		Practice	Religious affiliation	Remark
Practice	Correlation	1	0.54	Moderate
	N	1173	1173	relationship
Religious affiliation	Correlation	0.54	1	
	N	1173	1173	

Guide: 0.00-0.19 = very low, 0.20-0.39 = low, 0.40-0.59 = moderate, 0.60-0.79 = high and 0.80 above is very high relationship

Table 3 showed the Point Biserial Correlation between religious affiliation and the practice of breast self-examination among female students in public universities, Rivers State. The result revealed a correlation coefficient, r = 0.54 indicating a moderate relationship. Thus, the relationship between religious affiliation and the practice of breast self-examination among female students in public universities, Rivers State was moderate.

Table 4: Point Biserial Correlation showing significant relationship between knowledge and the practice of breast self-examination among female university undergraduates in Rivers

Variables		Practice	Knowledge	Decision
Practice	Correlation	1	0.50	H_o rejected
	Sig. (2-tailed)	.	.003*	
	N	1173	1173	
Knowledge	Correlation	0.50	1	
	Sig. (2-tailed)	.003*	.	
	N	1173	1173	

*Correlation is significant at the 0.05 level (2-tailed).

Table 4 showed Pearson Correlation between knowledge of breast self-examination and the practice of breast self-examination among female students in public universities, Rivers State. The findings of the study showed that there was a significant relationship between knowledge of breast self-examination and practice (n = 1173; r = 0.50; $p<0.05$). Thus, the null hypothesis which stated that there is no significant relationship between knowledge of breast self-examination and the practice of breast self-examination among female students in public universities, Rivers State was rejected.

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Table 5: Point Biserial Correlation showing significant relationship between age and the practice of breast self-examination among female university undergraduates in Rivers

Variables		Practice	Age	Decision
Practice	Correlation	1	0.72	H_o rejected
	Sig. (2-tailed)	.	.000*	
	N	1173	1173	
Age	Correlation	0.72	1	
	Sig. (2-tailed)	.000*	.	
	N	1173	1173	

*Correlation is significant at the 0.05 level (2-tailed).

Table 5 showed Pearson Correlation between age and the practice of breast self-examination among female students in public universities, Rivers State. The findings of the study showed that there was a significant relationship between age and practice ($n = 1173$; $r = 0.72$; $p<0.05$). Thus, the null hypothesis which stated that there is no significant relationship between age and the practice of breast self-examination among female students in public universities, Rivers State was rejected.

Table 6: Point Biserial Correlation showing significant relationship between religion and the practice of breast self-examination among female university undergraduates in Rivers

Variables		Practice	Religion	Decision
Practice	Correlation	1	0.54	H_o rejected
	Sig. (2-tailed)	.	.009*	
	N	1173	1173	
Religion	Correlation	0.72	1	
	Sig. (2-tailed)	.009*	.	
	N	1173	1173	

*Correlation is significant at the 0.05 level (2-tailed).

Table 6 showed Pearson Correlation between religion and the practice of breast self-examination among female students in public universities, Rivers State. The findings of the study showed that there was a significant relationship between religion and practice ($n = 1173$; $r = 0.54$; $p<0.05$). Thus, the null hypothesis which stated that there is no significant relationship between religion and the practice of breast self-examination among female students in public universities, Rivers State was rejected.

Discussion of findings

The findings of the study are discussed below:

The findings of the study revealed that there was a significant relationship between knowledge and the practice of breast self-examination [$f(1,1172) = 4925$, $p<0.05$]. The finding of this study is also expected because knowledge in some cases has been proven to be a prerequisite in any health practice given that, individuals cannot

successfully or appropriately practice what they do not know about. The finding of this study corroborates that of Faronbi and Abolade (2012) whose study on breast self-examination among female secondary school teachers in Oyo State, Nigeria showed that there was a significant relationship between knowledge and practice of breast self-examination. The fining of this study is also in concordance with that of Masso-Calderón et al. (2016) whose study on breast self-examination among scholars in Colombia revealed a significant relationship between knowledge and practice of breast self-examination. The Finding of this study gives credence to that of Carlson-Babila et al (2017) whose study on breast self-examination among female undergraduate students in Cameroon revealed a relationship between knowledge and practice of breast self-examination. The finding of this study is akin to the result of Getu et al. (2018) among female undergraduate students in Addis Ababa University, Ethiopia which indicated a significant relationship between knowledge and practice of breast self-examination. The finding of this study is in keeping with that of Ossai et al (2019) whose study among female undergraduates of Ebonyi State University, Abakaliki, Nigeria revealed that there was a statistically significant relationship between knowledge of breast self-examination and practiced breast self-examination. The finding of this study is similar to that of Koc et al. (2019) whose study among female university students in Turkey revealed a significant relationship between knowledge and practice of breast self-examination. The finding of this study is in keeping with that of Kalayu et al. (2018) whose study on the practices of breast self-Examination and associated factors among Female Debre Berhan University Students showed a significant relationship between knowledge and practice of breast self-examination. However, the findings of this study differ from that of Kratzke and Amatya (2013) whose study on breast cancer prevention among college women revealed that there was no significant relationship between knowledge and practice of breast self-examination. The difference was due to the fact that the previous study targeted older women, aged 40 years and above while the present study was conducted among university undergraduates who are mainly very younger.

The findings of the study revealed that there was a significant relationship between age and the practice of breast self-examination [$f(1,1172) = 8248.73$, $p<0.05$]. The positive relationship found between age and practice of breast self-examination concretize that older women are more likely to practice it. By implication, young women may feel that they are too young to be suspecting such illness on their tender breast. The finding of this study corroborates that of Faronbi and Abolade (2012) whose study on breast self-examination among female secondary school teachers in Oyo State, Nigeria showed that there was a significant relationship between age and practice of breast self-examination. The finding of this study is also in line with that of Karimollah and Sahar (2015) whose study among women in Northern Iran showed a significant relationship between age and practice of breast self-examination. The Finding of this study gives credence to that of CarlsonBabila et al (2017) whose study on breast self-examination among female undergraduate students in Cameroon revealed a relationship between age and practice of breast self-examination. The finding of this study is in keeping with that of Kalayu et al. (2018) whose study on the practices of breast self-Examination and associated factors among Female Debre Berhan University Students showed a significant relationship between age and practice of breast self-examination. The finding of this study is in keeping with that of Kratzke and Amatya (2013) whose study on breast cancer prevention among college women revealed a significant relationship between age and practice of breast self-examination.

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The findings of the study revealed that there was a significant relationship between religious affiliation and the practice of breast self-examination [f(1,1172) = 3946.40, p<0.05]. The finding of this study is also expected thus not surprising because religion is a very vital aspect of a woman's live which influences almost everything about them even their health practices. Although, there are no clear specifications of what each religious bodies hold concerning the practice of breast self-examination but, the positive relationship found between religion and practice of breast self-examination implies that even higher religious approval of any health practice including BSE examination will lead to an increase in positive behavior towards that particular health issue. he finding of this study corroborates that of Faronbi and Abolade (2012) whose study on breast self-examination among female secondary school teachers in Oyo State, Nigeria showed that there was a significant relationship between religious affiliation and practice of breast self-examination.

The finding of the study showed that the level of practice of breast self-examination among female undergraduates in higher institutions in Rivers State was low (38.4%). The finding of this study was not anticipated thus surprising because the respondents who are undergraduates seen as learned people who should be concerned about their health, but, this was not the case. The implication of this low level of practice found is that, more breast cancer cases among young people will be presented at a late stage at which point its management or treatment becomes difficult, leading to higher breast cancer morbidity and mortality. The finding of this study corroborates that of Faronbi and Abolade (2012) whose study on breast self-examination among female secondary school teachers in Oyo State, Nigeria showed that the practice of breast self-examination was low (38.0%). The finding of this study is also in line with that of Karimollah and Sahar (2015) whose study among women in Northern Iran showed the practice of breast self-examination to be very low (10.2%), though lesser than what was obtained in the present study but they both indicate low level of practice. The Finding of this study gives credence to that of CarlsonBabila et al (2017) whose study on breast self-examination among female undergraduate students in Cameroon revealed a low level of practice of breast self-examination (38.5%). Also, the finding of this study is akin to the result of Getu et al. (2018) among female undergraduate students in Addis Ababa University, Ethiopia which indicated a low level of breast self-examination practice (21.4%). The finding of this study is in keeping with that of Ossai et al (2019) whose study among female undergraduates of Ebonyi State University, Abakaliki, Nigeria revealed that low practice whereby only 15.9% of the respondents practiced breast self-examination on a monthly basis. The finding of this study is similar to that of Koc et al. (2019) whose study among female university students' in Turkey revealed that the practice of breast self-examination was low among students (33.3%).

The level of practice found in the present study differs from some other studies which found high level of practice. The finding of this study is at variance with that of Yakubu et al. (2014) whose study on breast self-examination among female nurses in Kano, Nigeria showed that majority, 91.2% practiced breast self-examination. This variation might be attributed to the heterogeneity of the study population has the study of Yakubu and colleagues was carried out among nurses who are healthcare personnel whose focus is on health while the present study was carried out among undergraduate females whose primary concern is their academy. Also, the difference in the study location could also be implicated for the variations found between the two studies. The fining of this study is also in dissonance with that of Masso-Calderón et al. (2016) whose study on breast self-examination among

scholars in Colombia revealed a high level of practice of breast self-examination (78.1%). This dissonance found could be attributed to the fact that the two studies were carried out in different locations and settings.

Conclusion

Based on the findings of the study, it was concluded that, the factors influencing breast self-examination among female undergraduates in public tertiary educational institutions in Rivers State, Nigeria were knowledge of cervical cancer, age and religious affiliation of the female undergraduates.

Recommendations

Based on the findings of the study, the following recommendations were made:

1. Non-government health organizations should create awareness about BSE by carrying out monthly awareness campaign in the different tertiary educational institutions.
2. The result showed a relationship between age and BSE practice hence, Healthcare programme planners should take age of women into consideration when planning any programme aimed at increasing breast self-examination among women with more focus on the younger ones.
3. The result showed a relationship between religion and BSE practice hence The ministry of health should incorporate religious leaders in any effort to help women achieve any health behavior, including breast self-examination.

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