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Research Paper

Knowledge of Manifestations and Preventive Strategies of Breast Cancer among Women in Imo East Senatorial District of Imo State Nigeria

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Abstract: *The study determined the knowledge of manifestations and preventive strategies of breast cancer among women in Imo East Senatorial District of Imo State with a view to identifying the variables associated with the knowledge of these women about breast cancer. Ten purposes, ten research questions and eight hypotheses guided the study. A descriptive survey design was used for this study. The area of study for this research is Imo East Senatorial District of Imo State. The population of the study comprised women from 40 years and above in Imo East Senatorial District of Imo State, including teachers, traders and farmers. The sample size for this study comprised 500 female teachers, female traders and female farmers in Imo East Senatorial District of Imo State. The data required for this study were collected with a structured test instrument which was designed by the researcher and titled "knowledge of manifestations" and "preventive measures of breast cancer". The reliability co-efficient of the instruments were found to be 0.75 and 0.79 respectively. Research questions were answered with mean. Hypotheses were tested using analysis of variance (ANOVA). The women generally had on the average adequate knowledge of the manifestations of breast cancer. Generally, the women had adequate knowledge of the preventive measures of breast cancer. Based on the findings the following conclusions and recommendations were made among others; Wider out-reach for women needs to be achieved and not only women who are married that should be exposed to education on breast cancer.*

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I. Introduction

Breast cancer is a malignant growth that affects the tissues in the breast. In this type of cancer, the cells in the breast grow abnormally and in an uncontrolled way. Though breast cancer is mostly found in women, in rare cases, it is also found in men. Breast cancer is the most common cancer in women worldwide and it is a public health problem (Redhwan, Dhekra, Yuri, Robert and Ali 2011). According to Odelola (2004), the clinical features of breast cancer include breast lumps which is usually painless and increase in size progressively, skin excoriation especially around the nipple, nipple retraction, nipple discharge and swellings in the axilla. The peak age of presentation in Nigeria is between the fourth and the fifth decades while about 10 percent occur in women below 27 years of age. The tumour is staged with respect to its local morphology, axillary lymph node involvement and presence of distance spread. Eighty percent of the females diagnosed with breast cancer presented late signs of the disease (comes when the cancer must have spread all over the breast tissue). The reason for late presentation includes denial, ignorance, religious considerations among other. The predominant features of late presentation of breast cancer are said to have been reported over three decades ago in Nigeria. Awareness of early detection measures of breast cancer preventive strategies such as clinical breast examination (CBE) and breast self-examination (BSE) are also low.

Adebamowo and Ajayi (2000) opined that in an environment where late presentation is predominant and where most breast cancers were detected accidentally by women themselves; there was an urgent need for awareness of breast cancer and its early detection measures. Similarly, baseline reports on current level of knowledge would be vital on an effective awareness programme. The diagnosis of breast cancer is a topic that is not freely discussed, hence lack of knowledge prevails. The relative frequencies of breast cancer among other female cancers, from Cancer Registries in Nigeria were 35.3 percent in Ibadan, 28.2 percent in Ife-Ijesha, 44.5 percent in Enugu, 17 percent in Eruwa, 37.5 percent in Lagos, 20.5 percent in Zaria and 29.8 percent in Calabar (Banjo, 2004). In all the centers except Calabar and Eruwa, breast cancer rated first among other cancers.

Further reports showed that majority of cases of breast cancer occurred in pre-menopausal women, and the mean age of occurrence ranged between 43-50 years across the regions. The youngest age recorded was 16 years, from Lagos (Banjo 2004).

Breast cancer is one of the most important health concerns of today (Redhwan, et al., 2011). The bad news is that 10, million people will be diagnosed of cancer in developing countries and 6million people will die of cancer every year around the world. The good news is that there are evidence-based research which showed that one-third of all cancers are preventable and a further one-third, if diagnosed early, are potentially curable (World Health Organization, 2002). This observation according to Parkin (2004), demand that cancer control should be of increasing priority in health care programmes of developing countries. According to WHO (2006) the etiology of breast cancer is unknown. Numerous risk factors may influence the development of this disease including genetics, hormonal, environmental, socio-biological and physiological factors. Over the past few decades, while the risk of developing breast cancer has increased in both industrialized and developing countries by 1-2 percent annually, the death rate from this disease has fallen slightly. Lifestyle changes and advances in technology, especially in detection and therapeutic measures, are in part responsible for this decrease. Breast cancer does not strike an individual alone but the whole family unit. Despite considerable changes, women continue to be the focus of family life. The impact of breast cancer is therefore on both the woman diagnosed with the disease and her family. Their fear and anxiety over the eventual outcome of the illness may manifest itself through behavioural changes. This may contribute to high incidence of the disease. If people have adequate knowledge of the disease, this high incidence could be reduced.

Knowledge is the state or act of knowing, familiarity, awareness or understanding gained through experience or study. According to International Planned Parenthood Federation (IPPF, 2006), knowledge is the sum or range of what has been perceived, discovered or learned, the facts, feelings or experiences known by a person or group of people. Knowledge about breast cancer is all about what is known about the disease, its manifestations (signs and symptoms), and risk factors, preventions and screen test for the disease. Knowledge of breast cancer is the first step to developing adequate behaviour about breast cancer but may not be sufficient to change behaviour about the health problem. An individual with adequate knowledge should be able to develop positive attitude towards the knowledge he or she has acquired on a particular disease. Knowledge acquired will enable the individual to understand the early manifestations (signs and symptoms) of the onset of the disease.

Manifestations of breast cancer (signs and symptoms) are symptoms or observable conditions which are seen as a result of some disease. Manifestations are the observed or detectable signs and experienced symptoms of breast cancer. These are unusual changes that occur on the breast (Centre for Disease Control, 2021). According to Morrow (2014), most breast cancers can have different symptoms for different people, why some don't notice any signs at all. Morrow also added that other possible symptoms of breast cancer includes swelling of all part of a breast, even if no lump is felt, skin dimpling, breast or nipple pain, nipple or breast skin that is red, dry, flaking or thickened, swollen lymph nodes. Sometimes a breast cancer can spread to lymph nodes under the arm or around the collar bone and cause a lump or swelling there, even before the original tumor in the breast is large enough to be felt. Manifestation in this study are those signs women noticed in their body or breast both visually and by palpation or even under the arm. The signs and symptoms when manifest or observed by individual can lead to prevention of the disease

Prevention is deliberate process by which change is introduced into people's thought, feelings and behaviour (Dibels, 2007). Preventive measures are the first line of defence against breast cancer. Preventive measures are procedures that individuals use to keep others from engaging in native behaviour. The preventive strategies have been perceived as interventions directed to avert the emergence of breast cancer, reducing their incidence and prevalence in population. According to Star field, Hyde and Gervas (2007), preventive strategies are measures that limit the progression of breast cancer and any stage of its course. Onyekwere (2012) opined that preventive strategy is referred to as all the activities which primary purpose is to promote, restore and maintain health, and those practices which are directed towards preventing the occurrence of the disease. There are three level of preventing breast cancer; they include primary prevention, secondary prevention and tertiary prevention. Primary prevention involves health promotion and risk reduction in the general population so that invasive cancers do not develop. The primary preventive measures include the cessation of smoking, lifestyle and diet modification, vitamins and micronutrients supplementation. Identification of genetic risk, understanding of carcinogenesis, development of effective screening tools, avoiding risk factors and effective chemoprevention are all primary prevention measures that can lead to decreased morbidity and mortality of cancers in general and more importantly breast cancer (Prentice et al; 2000).Secondary prevention is the identification and treatment of premalignant or subclinical cancers. Screening by means of mammography is typical of secondary prevention or clinical breast examination (Boyd, et al; 2007). While tertiary prevention is explained as symptoms control and rehabilitation. This is given treatment to the diagnosed patients or through surgery (Greenwald, 2002). In this study, knowledge of all the preventive measures aforementioned will be taken into consideration.

According to Redhwan, et al., (2011), the high incidence and mortality rates of breast cancer, as well as the high cost of treatment and limited resources available require that it should continue to be a focus of attention for public health authorities and policy makers. The cost and benefits of fighting breast cancer, including the positive impact that early detection and screening can have, need to be carefully weighed against other competing health needs. Therefore, early detection which remains the first priority and regular practice of breast self-examination (BSE) influences; treatment, quality of life, survival, and prognosis of breast cancer patients. There are many risk factors associated with breast cancer, for example, family history, dense breast, age, occupation, marital status, level of education, life-style like alcohol consumption, smoking, overweight or obese, not partaking in physical exercise etc. But in this study the focus will be on age, marital status, occupation and level of education.

According to the American Cancer Society (2014) the rapid spread of this disease to a large extent is as a result of unawareness of its early symptoms which can be treated at its early stage when detected. This is to show the low level of awareness and attention given to this disease that is gradually sending most women to the grave. Adequate knowledge of all about this health problem and positive attitude towards it, by women in the area of study may reduce its prevalence in the area. It is against this background that this study is designed to determine knowledge of manifestations and preventive strategies of breast cancer among women in Imo Eat senatorial district of Imo State.

Purpose of the study

The main purpose of this study will be to determine the knowledge of manifestations and preventive strategies of breast cancer among women in Imo East Senatorial District of Imo State. Specifically the study will determine the knowledge of:

1. manifestations of breast cancer among women in Imo East senatorial district of Imo State.
2. manifestations of breast cancer among the women based on their ages.
3. manifestations of breast cancer among the women based on their marital status.
4. manifestations of breast cancer among the women based on their level of education.
5. manifestations of breast cancer among the women based on their occupation.
6. preventive measures of breast cancer among women in Imo East senatorial district of Imo State.
7. preventive measures of breast cancer among women based on their ages
8. preventive measures of breast cancer among the women based on their marital status.
9. preventive measures of breast cancer among the women based on their level of education.
10. preventive measures of breast cancer among the women based on their occupation.

Research Question

The following research questions have been raised to guide the study.

1. What is the knowledge of manifestations of breast cancer among women in Imo East Senatorial District of Imo State?
2. What is the knowledge of manifestations of breast cancer among the women based on their ages?
3. What is the knowledge of manifestations of breast cancer among the women based on their marital status?
4. What is the knowledge of manifestations of breast cancer among the women based on their level of education?
5. What is the knowledge of manifestations of breast cancer among the women based on their occupation?
6. What is the knowledge of preventive measures of breast cancer among women in Imo East Senatorial District of Imo State?
7. What is the knowledge of preventive measures of breast cancer among the women based on their ages?
8. What is the knowledge of preventive measures of breast cancer among the women based on their marital status?
9. What is the knowledge of preventive measures of breast cancer among the women based on their level of education?
10. What is the knowledge of preventive measures of breast cancer among the women based on their occupation?

Hypotheses

The following null hypotheses have been formulated to guide the study and will be tested at 0.05 level of significance.

1. There will be no significant difference in the mean scores in knowledge of manifestations of breast cancer among women in Imo East Senatorial district of Imo State based on their ages.

2. There will be no significant difference in the mean scores in knowledge of manifestations of breast cancer among women based on their marital status.
3. There will be no significant difference in the mean scores in knowledge of manifestations of breast cancer among women based on their level of education.
4. There will be no significant difference in the mean scores in knowledge of manifestations of breast cancer among women based on their occupation.
5. There will be no significant difference in the mean scores in knowledge of preventive measures of breast cancer among women in Imo East Senatorial District of Imo State based on their ages.
6. There will be no significant difference in the mean scores in knowledge of preventive measures of breast cancer among women based on their marital status.
7. There will be no significant difference in the mean scores in knowledge of preventive measures of breast cancer among women based on their level of education.
8. There will be no significant difference in the mean scores in knowledge of preventive measures of breast cancer among women based on their occupation.

II. Method

A descriptive survey design will be used for this study. The area of study for this research is Imo East Senatorial District of Imo State. Imo State is one of the 36 states of the Federal Republic of Nigeria, located in the Southeast region of the Nigeria. The population of the study will comprise women from 40 years and above in Imo East Senatorial District of Imo State, both civil servants and non-civil servants. The population of females in Imo East Senatorial District according to Imo State Bureau of Statistics (2021) is 1,283,555 as at 2019. The sample size for this study will comprise 500 female traders and female teachers in Imo East Senatorial District of Imo State. The data required for this study will be collected with a structured test instrument which was designed by the researcher and titled "knowledge of manifestations" and "preventive measures of breast cancer". Draft copies of the test instrument were given each to two experts in the Department of Human kinetic and Health Education, one expert in measurement and evaluation and a registered nurse and midwife. The reliability of the instrument was established using Kuder Richardson (K-R 20). The reliability co-efficient of the instruments were found to be 0.77 and 0.81 respectively. Research questions were answered with mean. Hypotheses were tested using analysis of variance (ANOVA). Where the p-value was less than or equal to 0.05 the null hypothesis will be rejected, where it was greater than 0.05 the null hypothesis will not be rejected. The following decision rule was used: For the research questions, scores ranging between 0 – 39 = Very Poor Knowledge; 40 – 49 = Poor Knowledge; 50 – 69 = Moderate Knowledge; 70 – 79 = Good Knowledge; 80 – 100 = Very Good Knowledge. For the hypothesis testing, where the p-value was less than or equal to 0.05 the null hypothesis was rejected, where it was greater than 0.05 the null hypothesis was not rejected.

III. RESULTS AND DISCUSSION

This chapter presents and discusses the findings of knowledge of manifestations and preventive measures of breast cancer among women in Imo East Senatorial District of Imo State.

For the hypothesis testing, where the p-value was less than or equal to 0.05 the null hypothesis was rejected, where it was greater than 0.05 the null hypothesis was accepted.

Research Question One

What is the knowledge of manifestation of breast cancer among women in Imo East Senatorial District of Imo State?

Table 4.1
Women's Mean Knowledge and Standard Deviation Scores on Manifestation of Breast Cancer

	n	Minimum	Maximum	Mean	SD	Decision
Knowledge of Manifestation of Breast Cancer	481	39.29	89.29	70.69	13.32	Adequate Knowledge

The result displayed in Table 4.1 shows that the minimum knowledge score on manifestation of breast cancer by women in Imo east-senatorial zone was 39.29 while the maximum was 89.29. The mean knowledge was 70.69. The mean knowledge score shows that, on the average, the women had adequate knowledge of the manifestation of breast cancer.

Research Question Two
What is the knowledge of manifestation of breast cancer among the women based on their ages?

Table 4.2
Women's Mean Knowledge scores of Manifestation of Breast Cancer Based on Age

Age Range	n	Mean	SD	Decision
40-45years	87	62.85	15.29	Moderate
46-51years	149	74.62	11.28	Adequate
52-57years	54	72.75	10.41	Adequate
58-63years	116	74.72	13.02	Adequate
64 and above	75	64.29	10.52	Moderate

Table 4.2 shows that the mean knowledge score on manifestation of breast cancer by women in Imo east-senatorial zone based on their age ranges. Women between the ages of 58-63 years had the highest mean knowledge score of 74.72. This was followed by women between 46-51 years of age who had mean knowledge of 74.62 and those between 52-57 years of age had mean knowledge of 72.75. These three categories of women had adequate knowledge of manifestation of breast cancer. On the other hand, women belonging to the youngest category (40 – 45) and those within the oldest (64 and above) category had moderate knowledge of manifestation of breast cancer as shown by their mean knowledge scores of 62.85 and 64.29 respectively.

Research Question Three
What is the knowledge of manifestation of breast cancer among the women based on their marital status?

Table 4.3
Women's Mean Knowledge scores of Manifestation of Breast Cancer Based on Marital Status

Marital Status	n	Mean	SD	Decision
Married	272	72.03	14.19	Adequate
Widowed	122	68.13	12.78	Moderate
Single	68	71.74	10.17	Adequate
Divorced	12	63.10	10.14	Moderate
Separated	7	66.33	9.86	Moderate

The results displayed in Table 4.3 show the mean knowledge scores of women on the manifestation of breast cancer according to their marital status. The mean knowledge scores show that married women had the highest mean of 72.03 and single women had second highest mean score mean of 71.74. This suggests that both had adequate knowledge of manifestations of breast cancer. The other categories (widowed, divorced and separated) had mean knowledge scores of 68.13, 63.10 and 66.33 respectively. These indicate that they had moderate knowledge of the manifestation of breast cancer.

Research Question Four
What is the knowledge of manifestation of breast cancer among women based on their level of education?

Table 4.4
Women's Mean Knowledge scores of Manifestation of Breast Cancer Based on Level of Education

Level of Education	n	Mean	SD	Decision
Primary level	52	70.60	9.79	Adequate
Secondary level	83	70.18	16.22	Adequate
Tertiary level	346	70.83	13.05	Adequate

The mean knowledge scores displayed in Table 4.4 for women with primary, secondary and tertiary education levels are 70.60, 70.18 and 70.83 respectively. These indicate they had adequate knowledge of the manifestation of breast cancer. The mean scores also suggest that the women of this study with different levels of education had knowledge of the manifestation of breast cancer.

Research Question Five
What is the knowledge of manifestation of breast cancer among women based on their occupation?

Table 4.5
Women's Mean Knowledge scores of Manifestation of Breast Cancer Based on Occupation

Occupation	n	Mean	SD	Decision
Teaching	199	74.47	12.14	Adequate
Trading	126	65.08	13.91	Moderate
Farming	156	70.42	12.71	Adequate

Table 4.5 displays mean knowledge of manifestation of breast cancer based on occupational status of women. Women in teaching occupation had the highest mean knowledge score of 74.47 while those in farming had 70.47. This implies that these two groups had adequate knowledge of the manifestation of breast cancer while those in trading with mean knowledge score of 65.08 had moderate knowledge.

Research Question Six

What is the knowledge of preventive measures of breast cancer among women in Imo East Senatorial District of Imo State?

Table 4.6
Women's Mean Knowledge and Standard Deviation Scores on Breast Cancer Preventive Measures

	n	Minimum	Maximum	Mean	SD	Decision
Knowledge of breast cancer preventive measures	481	35.00	95.00	70.25	14.45	Adequate Knowledge

Table 4.6 shows that the least score on the knowledge of breast cancer preventive measures is 35.00 while the highest score is 95.00. The mean knowledge scores on breast cancer preventive measures is70.25. This value implies that women in Imo east-senatorial zone had adequate knowledge of breast cancer preventive measures.

Research Question Seven

What is the knowledge of preventive measures of breast cancer among women based on their ages?

Table 4.7
Women's Mean Knowledge scores of Breast Cancer Preventive Measures Based on Age

Age Range	n	Mean	SD	Decision
40-45years	87	72.76	16.87	Adequate
46-51years	149	69.16	16.61	Moderate
52-57years	54	72.50	15.80	Adequate
58-63years	116	69.48	10.88	Moderate
64yrs and above	75	69.07	9.68	Moderate

Table 4.7 shows that the mean knowledge score on breast cancer preventive measures by women in Imo east-senatorial zone based on their age ranges. Women between the ages of 58-63 years had the highest mean knowledge score of 72.76. This was followed by women between 52-57 years of age who had mean knowledge 72.50. These values suggest that they had adequate knowledge of breast cancer preventive measures. On the other hand, women between the age groups of 46-51, 58-63 and those between 64 years and above had moderate knowledge as shown by their mean knowledge scores of 69.16, 69.48 and 69.07 respectively which implies that they had moderate knowledge of breast cancer preventive measures.

Research Question Eight

What is the knowledge of preventive measures of breast cancer among women based on their marital status?

Table 4.8
Women's Mean Knowledge scores of Breast Cancer Preventive Measures Based on Marital Status

Marital Status	n	Mean	SD	Decision
Married	272	70.07	14.52	Adequate
Widowed	122	71.35	14.45	Adequate
Single	68	69.26	14.51	Moderate
Divorced	12	65.42	12.15	Moderate
Separated	7	75.71	15.39	Adequate

The results presented in Table 4.8 show that the mean knowledge scores on the preventive measures of breast cancer by married women, widowed women and those separated from their husbands are 70.07, 71.35 and 75.71 respectively. This suggests that they have good knowledge of breast cancer preventive measures. On the other hand, single and divorced women had moderate knowledge of breast cancer preventive measures as shown by their mean scores of 69.26 and 65.42. respectively.

Research Question Nine

What is the knowledge of preventive measures of breast cancer among women based on their level of education?

Table 4.9
Women's Mean Knowledge scores of Breast Cancer Preventive Measures Based on Level of Education

Level of Education	n	Mean	SD	Decision
Primary level	52	66.54	12.66	Moderate
Secondary level	83	68.43	15.94	Moderate
Tertiary level	346	71.24	14.24	Adequate

The mean knowledge scores displayed in Table 4.9 for women with primary, secondary and tertiary education levels are 66.54, 68.43 and 71.24 respectively. These imply that women with tertiary education had adequate knowledge of the breast cancer preventive measures while those with primary and secondary education had moderate knowledge.

Research Question Ten

What is the knowledge of preventive measures of breast cancer among women based on their occupation?

Table 4.10
Women's Mean Knowledge scores of Breast Cancer Preventive Measures Based on Their Occupation

Occupation	n	Mean	SD	Decision
Teaching	199	74.65	16.46	Adequate
Trading	126	65.75	14.37	Moderate
Farming	156	68.27	9.45	Adequate

Table 4.10 displays mean knowledge scores of breast cancer preventive measures of women based on their occupational status. Women in teaching occupation had adequate knowledge score of breast cancer preventive measures as shown by their mean knowledge score of 74.65 while those in trading and farming occupation had moderate knowledge of breast cancer preventive measures as respectively demonstrated by their mean knowledge scores of 65.75 and 68.27.

Hypothesis One

There will be no significant difference in the mean knowledge scores of manifestation of breast cancer among women in the Imo East Senatorial District of Imo State based on their ages.

Table 4.11
Summary of Analysis of Variance on Women's Mean Knowledge scores of Manifestation of Breast Cancer By Age

Source of Variation	**Sum of Squares**	**df**	**Mean Square**	**F**	***p*-value**	**Decision**
Between Groups	12844.03	4	3211.01	21.12	.000	Sig.
Within Groups	72359.54	476	152.02			
Total	85203.57	480				

Summary of the Analysis of Variance (ANOVA) displayed in Table 4.11 shows that women of different ages differed significantly in their knowledge of manifestation of breast cancer, $F(4,476) = 21.12$, $p = 0.000$. Since the p-value was less than 0.05 the null hypothesis was rejected.

Hypothesis Two

There will be no significant difference in the mean scores of knowledge of manifestation of breast cancer among women based on their marital status.

Table 4.13
Summary of Analysis of Variance on Women's Mean Knowledge score of Manifestation of Breast Cancer based on the Marital Status

Source of Variation	Sum of Squares	df	Mean Square	F	*p*-value	Decision
Between Groups	2068.11	4	517.03	2.97	.020	Sig.
Within Groups	82851.03	476	174.06			
Total	84919.14	480				

The summary Analysis of Variance (ANOVA) displayed in Table 4.13 shows that women of different marital status differed significantly on their knowledge of manifestation of breast cancer, $F(4,476) = 2.97$, $p = 0.020$. Since the p-value was less than 0.05 the null hypothesis was rejected. Table 4.14 presents the post hoc test.

Hypothesis Three

There will be no significant difference in the mean scores of knowledge of manifestation of breast cancer among women based on their level of education.

Table 4.15
Summary of Analysis of Variance on Women's Mean Knowledge of Manifestation of Breast Cancer by Level of Education

Source of Variation	Sum of Squares	df	Mean Square	F	*p*-value	Decision
Between Groups	28.87	2	14.44	.081	.922	Not Sig.
Within Groups	85174.70	478	178.19			
Total	85203.57	480				

The result presented in Table 4.15 shows that there was no significant difference in the mean knowledge scores of manifestation of breast cancer among women of different levels of education, $F(2,478) = .081$, $p = 0.922$. Since the p-value was greater than 0.05 the null hypothesis was accepted.

Hypothesis Four

There will be no significant difference in the mean scores of knowledge of manifestation of breast cancer among women based on their occupation.

Table 4.16
Summary of Analysis of Variance on Women's Mean Knowledge of Manifestation of Breast Cancer by Occupation

Source of Variation	Sum of Squares	df	Mean Square	F	*p*-value	Decision
Between Groups	6813.84	2	3406.92	20.78	.000	Sig.
Within Groups	78389.73	478	164.00			
Total	85203.57	480				

The result presented in Table 4.16 shows that there was a significant difference in the mean knowledge scores of manifestation of breast cancer among women of different occupational status $F(2,478) = 20.78$, $p = 0.020$. Since the p-value was less than 0.05 the null hypothesis was rejected.

Hypothesis Five

There will no significant difference in the mean scores of knowledge of preventive measures of breast cancer among women in Imo East Senatorial District of Imo State based on their ages.

Table 4.18
Summary of Analysis of Variance on Women's Mean Knowledge scores of Breast Cancer Preventive Measures by Ages

Source of Variation	Sum of Squares	df	Mean Square	F	*p*-value	Decision
Between Groups	1170.87	4	292.72	1.41	.231	Not Sig.
Within Groups	99099.20	476	208.19			
Total	100270.06	480				

The result presented in Table 4.18 shows that there was no significant difference in the mean knowledge scores of breast cancer preventive measures among women of different age range $F(4,476) = 1.41$, $p = 0.231$. Since the p-value was greater than 0.05 the null hypothesis was accepted.

Hypothesis Six

There will no significant difference in the mean scores of knowledge of preventive measures of breast cancer

among women based on their marital status.

Table 4.19
Summary of Analysis of Variance on Women's Mean Knowledge of Breast Cancer Preventive Measures by Marital Status

Source of Variation	Sum of Squares	Df	Mean Square	F	*p*-value	Decision
Between Groups	516.56	4	129.14	.62	.651	Not Sig.
Within Groups	99316.53	476	209.53			
Total	99833.09	480				

The result displayed in Table 4.19 shows that there was no significant difference in the mean knowledge scores of breast cancer preventive measures among women of different marital status $F(4,476) = .62$, $p = 0.651$. Since the p-value was greater than 0.05 the null hypothesis was accepted.

Hypothesis Seven

There will no significant difference in the mean scores of knowledge of preventive measures of breast cancer among women based on their level of education.

Table 4.20
Summary of Analysis of Variance on Women's Mean Knowledge of Breast Cancer Preventive Measures by Level of Education

Source of Variation	Sum of Squares	df	Mean Square	F	*p*-value	Decision
Between Groups	1331.15	2	665.57	3.22	.041	Sig.
Within Groups	98938.92	478	206.99			
Total	100270.06	480				

The result presented in Table 4.20 shows that there was a significant difference in the mean knowledge of breast cancer preventive measures among women of different levels of education $F(2,478) = 3.22$, $p = 0.041$. Since the p-value was less than 0.05 the null hypothesis was rejected.

Hypothesis Eight

There will no significant difference in the mean scores of knowledge of preventive measures of breast cancer among women based on their occupation.

Table 4.22
Summary of Analysis of Variance on Women's Mean Knowledge scores of Breast Cancer Preventive Measures by Occupation

Source of Variation	Sum of Squares	Df	Mean Square	F	*p*-value	Decision
Between Groups	7008.62	2	3504.31	17.96	.000	Sig.
Within Groups	93261.44	478	195.11			
Total	100270.06	480				

The ANOVA result displayed in Table 4.22 shows that there was a significant difference in the mean knowledge of breast cancer preventive measures among women of different occupational category, $F(2,478) = 17.96$, $p = 0.000$. Since the *p*-value was less than 0.05 the null hypothesis was rejected.

IV. Discussion of findings

Findings of the study showed that on the average, the women had adequate knowledge of manifestations of breast cancer. Women between 58-63 years had the highest mean knowledge score. The result is so because at that age (58-63), which is probably a menopausal age, the experiences they got while entering into menopause might have increased their knowledge of breast cancer. Menopause comes with so many health complications which could be determined on getting to the hospital, also many medical diagnosis could be carried on the women to determine what their problem is, this diagnosis could expose the women to so many health knowledge in which knowledge of breast cancer could be among. Women within that age bracket also have a lot of experiences from childhood to old age. This could also be an edge for them to be more knowledgeable about breast cancer. The findings of this study is in line with the study conducted by Bogusz , Humeniuk , Walecka and Bojar, (2016) that women between the ages of 40-60 years obtained an average knowledge as regards to breast cancer. It was also in line with the study of Odusanya and Tayo (2001) that the subjects used for the study showed adequate knowledge about breast cancer. The null hypothesis of no significant difference in the mean scores in knowledge of manifestation of breast cancer among women in Imo Esat Senatorial District of Imo State based on their ages was significant. That is to say that, age affected their knowledge of manifestation of breast cancer.

The findings of the study also showed that married women had the highest knowledge of manifestations of breast cancer, though both married and single women had adequate knowledge. This is

because breast cancer is not dependent on marriage or not being married. It is a health problem that anyone can get at any time. Also married women with higher knowledge could be because of experiences the got through pregnancy and childbirth. The teaching of breast cancer might have come to them during antenatal visit that is during health talk, during their visit to the physicians. It might be discussed and they might even be examined by the doctor. The knowledge of breast cancer could also come to them during breast feeding, because breast feeding or breast milk production comes with a lot of discomfort which could be examined in order to ascertain that it is not breast cancer but ordinary breast pain which could later stop. Also the high knowledge of single women could also come through the social media platform which is widely used today. They could also get the information through their friends. The findings of this study is in line with the study of Taioli et al (2014), that two-third of the women reported using personal research on internet, books and other social media to increase knowledge on breast cancer after diagnosis. Therefore the high knowledge shown by married women was expected. The null hypothesis of no significant difference in the mean scores in knowledge of manifestation of breast cancer among women based on their marital status was also significant, showing that the women's marital status affected their knowledge of manifestation of breast cancer.

The findings of the study also showed that all the women regardless of their educational level had adequate knowledge of manifestations of breast cancer. This is because whether educated or not, the women might possess some other factors which could make them knowledgeable about breast cancer. Some of them might be married as shown in research question three that married women were more knowledgeable about breast cancer. Some of them might be affected by their ages as seen in research question two of older women with a lot of experiences and so on. Some of them might be advantaged by their occupation. So the high knowledge of breast cancer amongst them might not be a surprise at all as supported by the study of Bogusz, et al. (2016) and Odusanya any Tayo (2001). The study was in line with the study conducted by Alam, et al. (2021), that knowledge was associated with marital status, literacy and so on. The null hypothesis of no significant difference in the mean scores in knowledge of manifestation of breast cancer among women based on their levels of education was not significant, which showed that not minding how educated they were, it did not affect their knowledge of manifestation of breast cancer.

The findings of the study showed that women in the teaching occupation had the highest mean knowledge of manifestations of breast cancer. The result was expected because with teaching as a profession, teachers are always exposed to seminars and workshops. Some of these seminars and workshops could be health based and issues such as breast cancer could be discussed. Teachers could also read on their own and gain more knowledge with regards to manifestations of breast cancer. Their position as well educated individuals, places them in the position to be well knowledgeable about the manifestations of breast cancer. The study is also supported by the study of Alam, et al (2021) that high knowledge of the manifestations of breast cancer is associated by literacy. The null hypothesis of no significant difference in the mean scores in knowledge of manifestation of breast cancer among women based on their occupations was significant, this means that the occupation of the women affected their knowledge of manifestation of breast cancer

Knowledge of preventive measures of breast cancer

Generally, the women in Imo East Senatorial District of Imo State had adequate knowledge of breast cancer preventive measures. Women between the ages of 58-63 years had the highest knowledge of prevention of breast cancer more than women of other age brackets. The study was not in line with study of Bogusz et al, (2016), the noted that the women lack the knowledge of risk factors, symptoms, screening, diagnosis and therapy. The null hypothesis of no significant difference in the mean scores in knowledge of preventive measures of breast cancer among women in Imo State Senatorial District of Imo State based on their ages was not significant, meaning that age did not have any much effect on the women's knowledge of preventive measures of breast cancer.

The findings of the study showed that the women not minding their marital status had adequate knowledge of the preventive measures of breast cancer. Whether married, single, widowed, divorced or separated. But it was slightly low for single mother who might not be experienced or might have not experienced any maternal health issue. The study was not in line with the study conducted by Akram, Iqbal, Danital and Ullah (2017). Akram, et al. noted that the women still lacked knowledge of self-inspection and clinical examination of the breast. The null hypothesis of no significant difference in the mean scores in knowledge of preventive measures of breast cancer among women based on their marital status was also not significant, showing that the women's marital status had not too much effect on their knowledge of preventive measures of breast cancer.

The findings of the study also revealed that women with tertiary education had adequate knowledge of preventive measures of breast cancer. This was expected because women at the tertiary institution are knowledgeable and has a lot of experiences. Awareness and health campaigns could be created ones in a while within the university environment which could widen their knowledge. The issue of breast cancer is mostly

discussed within institutions of higher learning, so they are expected to have adequate knowledge. It was also not in line with the study of Akram, et al. (2017). The null hypothesis of no significant difference in the mean scores in knowledge of preventive measures of breast cancer among women based on their levels of education was significant, this showed that the level of education of the women used for the study affected their knowledge of preventive measures of breast cancer.

The findings of the study revealed also that teaching professions had the highest mean knowledge of the preventive measures of breast cancer, also the result was expected to be so because teachers are the ones that educate others and they also attend seminars and workshops which might also be health based, thereby providing them sound opportunity to learn about preventive measures of breast cancer. It was not in line with the study of Bogusz, et al, (2016). The study did not identify any relationship between levels of education about breast cancer and age, financial situation or health of women in perimenopausal age. The null hypothesis of no significant difference in the mean scores in knowledge of preventive measures of breast cancer among women based on their occupation was significant, this result showed that the women's occupation had effect on their knowledge of preventive measures of breast cancer.

Conclusion

Based on the findings of the study, the following conclusions were made.

Findings from this study highlighted the mean knowledge scores of women both in the knowledge of manifestations and preventive measures of breast cancer among women in Imo East Senatorial District of Imo State. The women tend to have adequate knowledge of the manifestations of breast cancer and also adequate knowledge for the preventive measures of breast cancer. Age, marital status and occupation were significant in the women's knowledge of the manifestations of breast cancer but level of education was not significant. For the knowledge of preventive measures, age and marital status of women used for the study was not significant, but level of education and occupation were significant in the knowledge of preventive measures of breast cancer.

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