**KNOWLEDGE OF BREAST CANCER DETECTION AND PREVENTION: A PREREQUISITE FOR MATERNAL MORTALITY REDUCTION**

**Ekenedo Golda. O.( Ph.D) and Ikemike Dolfina Olaitari (M.ed)**

**e-mail:dolfike1@gmail.com (08036690914)**

**Department of Human Kinetics and Health Education**

**Faculty of Education, University of Port Harcourt**

**Port Harcourt.**

**ABSTRACT**

*The purpose of the study was to investigate the knowledge about breast cancer detection and prevention, among female secondary school teachers in Bayelsa State. Might want to say where Bayelsa State is located. The research design was a cross sectional survey. One thousand nine hundred and fifty two (1,952), female teachers in Bayelsa State were sampled, using multistage sampling procedures. The research instrument was a self- structured and validated questionnaire with reliability coefficient of 0.78 using the person product moment correlation. The statistical tools used for the analysis of the data were descriptive statistics of percentage, mean and inferential statistics of chi-square, and Z- test using the Statistical Package for Social Sciences (SPSS) batch system. Results showed that majority (67.8%) of the respondents knew about breast cancer detection and prevention, but did not translate to their practice. This could be the singular reason why there is no evidence of maternal mortality reduction in Bayelsa state. One study could not produce a result of the* ***singular*** *reason for anything… It may be a contributing reason, but not the singular reason. Marital status has significant influence on knowledge of breast cancer detection and prevention. It was recommended that state government should sponsor and organize workshops/ seminars on the morbidity and mortality of breast cancer and the need for its early detection and prevention among women in general. There is urgent need for interventions to implement and re-enforce existing cancer awareness and cancer screening programmes.*

**Key words:** knowledge, breast cancer, maternal mortality, detection and prevention.

**Introduction**

Per APA format, the document should be left aligned, rather than having full justification.

Breast cancer is the commonest malignancy of females, worldwide. It is the most common cancer in women accounting for 23% of all cancers and a major leading cause of death among females, (Onyije, Zenebo, & Oboma, 2010). The incidence and prevalence of cancer is rapidly increasing in the developed and developing countries (Horton, 2006). Over one million cases of breast cancer and 411,000 deaths from breast cancer occur annually representing 14% of female cancer death worldwide, (Smith, Caleffi, Albert, Chen, Duff, Franceschi, & Nystron, 2006). The rising incidence of breast cancer and the increasing mortality from the disease are major concerns. A primary reason for the escalating mortality is late diagnosis of the disease and lack of early detection programmes, (Pinotti, Barros, Hegg & Zeferino,1995).

The breast is an accessory organ of reproduction in females and it is made up mainly of *lobules* (milk-producing glands), *ducts* (tiny tubes that carry the milk from the lobules to the nipple), and *stroma* (fatty tissue and connective tissue surrounding the ducts and lobules, blood vessels, and lymphatic vessels). Someone is said have dense breast tissue when they have more glandular and fibrous tissue and less fatty tissue. Women with dense breasts on mammogram have a risk of breast cancer, that is 2 to 3 times that of women with average breast density (Sarah, 2013).

One of the vital parts of the body affected by cancer is the breast, giving rise to breast cancer. Cancer is a non-communicable disease, increasingly becoming important worldwide. It is a disease characterized by an abnormal growth of cells with the ability to invade adjacent tissues and even metastasize to distant organs, resulting in morbidity and eventually leading to the death of the individual, if not detected and managed early (Park, 2007). Cancer occurs as a result of mutations, or abnormal changes, in the genes responsible for regulating the growth of cells and keeping them healthy. Breast cancer is a malignant tumor that starts in the cells of the breast. A malignant tumor is a group of cancer cells that can grow in to surrounding tissues (invade) or spread (metastasize) to distant areas of the body. Most breast cancers begin in the cells that line the ducts, which are the passages that drain milk from the lobules to the nipple, (ductal cancers). Some begin in the cells that line the lobules, which are the milk producing glands (lobular cancers), while a small number start in other tissues. Thus most types of cancer are named after the part of the body where the tumor originates(National Breast Foundation, 2011).

Breast cancer begins in the breast tissue, which is made up of glands for milk production. It can be invasive or non-invasive. Invasive means it has spread from the milk duct or lobule to other tissues in the breast whereas non- invasive cancer means it has not yet invaded other breast tissue. Non – invasive breast cancer is called “in-situ”( Michael, 2011). The disease occurs almost entirely in women, but men can get it, too (Puangthong, 2006). Over the past two decades, breast cancer has become a matter of serious public health concern in developing countries and associated mortality, especially among women. It is established that early detection and early treatment lead to improved survival (World Health Organization, 2007).

Breast cancer presents most commonly as a painless breast lump and a smaller proportion with non- lump symptoms. A mass or lump which may feel small as a pea, skin irritation, a change in the size, shape, or contour of the breast, a blood stained or clear fluid discharge from the nipple, change in the feel or appearance of the skin on the breast or nipple (dimpled) puckered, scaly, or inflamed,redness, scariness or thickening of the skin on the breast or nipple and an area that is distinctly different from any other area on either breast. In those with spread of the disease, there may be bone pain, swollen lymph nodes, shortness of breast (Saunders,& Jassal, 2009). For women to present early to hospital they need to be “aware of their breast. (Okobia, Bunker, Okonufua & Osimie, 2006). There is also evidence that most of the early breast tumours are self – discovered and that the majority of early discoveries are by BSE performers. (Smith, Francis, & Polissar, 1980). The information presented in the introduction is quite good.

**Risk Factors Associated with Breast Cancer**

Specific causes of breast cancer, or why some people get breast cancer and some do not are not known. Research suggests that the breast cancer is caused by a combination of many different risk factors, many of which are beyond our control. A risk factor is anything that affects your chance of contacting a disease, such as cancer. According to Khatib and Modjtabai, (2006), the risk factors for breast cancer vary with respect to geographical characteristics and life- style related habits of of a community. Every woman is at risk of developing breast cancer. There are diverse risk factors that may affect each woman’s susceptibility to the disease which include: increasing age, family history of breast cancer, early menarche, late menopause, older age at first live child birth, hormone replacement therapy (HRT), high dietary fat, excessive alcohol consumption smoking, exposure to certain chemicals, physical agents such as radiation, obesity, having children at late age or not at all, and family history, among others, (Globocan, 2000, & American Cancer Society, 2009.

Desantis ,Rebecca, and Ahmedin,(2007) described the stages of cancer into four clinical stages.

* **Stage 1**: The cancer is 2cm or less and is confined to the breast (lymph nodes are clear). It has not spread to other parts of the body.
* **Stage 2**: The tumor is larger than 2cm but no longer than 5 centimeter and has or has not spread to the auxiliary nodes. However, it has not spread to other parts of the body.
* **Stage 3**: The tumor is larger than 5 centimeters and has spread to axillary lymph nodes that are lumped together. It has not spread to other parts of the body.
* **Stage 4**: The cancer has spread to other organs of the body. It has spread to the chest wall or the skin of the breast. Cancer has spread to the lymph nodes near the breast bone. Cancer may have also spread to other parts of the body.

Breast cancer is a disease of public health importance. Female malignancies such as breast cancer is are (or change malignancies to singular) an important aspect of the reproductive health problems of women worldwide. Breast cancer affects young, middle-aged, and elderly women who are care givers of the family and who contribute to the development of society. Breast cancer is unfortunately still characterized by late presentation and poor outcome in many developing countries that lack the facility for early detection. It results in high morbidity and mortality in women worldwide. The high morbidity and mortality from breast cancer can be decreased by measures targeted at early detection such as screening. Breast examination as screening tool for breast cancer in developing countries is advocated in view of its cost- effectiveness (Misauno, Anosike, Ojo & Ismaila,2011). It is surprising, however, that cancer of the breast still results in high morbidity and mortality despite the fact that the breast is an “exposed” organ and is readily accessible to breast screening measures (Herman, Gill & Fajardo, 2002).

The Female gender is ~~usually~~ faced with many health problems among which is breast cancer. The Tennessee Comprehensive Cancer Control Coalition (TCCCC), (2013). Reported that the incidence of breast cancer has been increasing steadily from an incidence of 1:20 in 1960 to 1:8 in women today. This high incidence necessitates the importance of being knowledgeable about the disease, and its prevention, and that breast lumps are detected and diagnosed through breast cancer screening. Breast cancer knowledge refers to woman’s knowledge of breast cancer risks. It is a predisposing variable that determines women’s breast cancer screening compliance and is important because women who have an appropriate amount of breast cancer knowledge are more aware of their risk for breast cancer and are more likely to comply with breast cancer screening. Knowledge often does not equate to practice. This study seems to say they will evaluate practice, but they really evaluate knowledge. They used the HBM as the theoretical foundation, and that model clearly identifies the difference between knowledge and practice. People must perceive the benefits to them before they will apply knowledge to practice.

Women’s health is not only a state of physical wellbeing, but is an expression of the many roles she performs as a mother, caregiver, wage earner and her interaction with the social and economic, as well as cultural circumstances which influence her daily life (Aswathy, et al., 2006). The relative frequency of breast cancer among other female cancers, from the Cancer Registry in Nigeria were 35.3% in Ibadan, 28.2% in Ife-Ijesha, 44.5% in Enugu, 17% in Eruwa, Oyo state, 37.5% in Lagos, 20.5 in Zaria and 29.8% in Calabar., (Banjo, 2004). This sentence implies the percentages are the percent of breast cancer as part of all cancers. Is that what the authors means, or are they reporting overall percentages of the incidence of breast cancer? They say **“in relation to other cancers”,** so that data is the incidence of breast cancer among all cancers in women. It doesn’t really show incidence of breast cancer in the population. In all the centers, except Calabar and Eruwa, breast cancer rated first among other cancers. This further emphasizes that they were reporting the % of breast cancer from among all cancers in women. That is very different statistic than reporting the incidence of breast cancer in the population which I believe would be more useful to this article. Further reports showed that majority of cases occurred in pre-menopausal women and the mean age of occurrence ranged between 43 – 50 years across the region. The youngest age recorded was 16 years, from Lagos (Banjo, 2004). ~~In~~ a three-years clino-pathological observation of breast cancinoma by Fente and Alogoa, (2012), in Okolobiri, Bayelsa State, revealed that Cancer of the breast is still a common problem presenting in the young to middle age group. Infiltrating ductal carcinoma is the commonest variant. Late stage presentation is often the norm in this locality. Also a six years (2009-2015) clino-pathological observation from the breast cancer registry in the Federal Medical Centre Yenagoa, Bayelsa State, recorded a total of 105 cases with 100% mortality rate.

Salako (2015), also opined that the cause of Breast Cancer like many other cancers is obscure and there is no cure once it has developed. This is presented as an opinion, but it is not fact in 2016. Many women have good 5-year cure rates for breast cancer. If there is no cure in developing countries, that should be included in the sentence. This demands that cancer prevention and control should be of increasing priority in the health care programmes of developing countries. As an individual, being informed, or knowledgeable and avoiding tobacco, maintaining a healthy body weight, eating right, getting enough exercise, and getting appropriate cancer screening tests can all make a significant difference.

**Statement of the Problem**

Cancer and its destructive effects are very ~~much~~ evident in Nigeria. Its ravaging effects have long been a recurring decimal and several Nigerian families have experienced the agony of losing relations to the disease. What is a recurring decimal? Infact notable female Nigerians, Bayelsa State inclusive have died of breast cancer. Who are these notable Nigerians? Could it be that the increasing cases of breast cancer in females is due to lack of knowledge of early detection and prevention? Rhetorical question – APA format discourages the use of rhetorical questions, so form as an hypothesis, instead.

**Aim and Objectives of the Study**

The aim of this study was to assess the knowledge, of breast cancer detection and knowledge of breast cancer prevention among female teachers of government-owned secondary schools in Bayelsa State. In specific terms, the study intends to determine the:

1. Knowledge of breast cancer detection and prevention.

2. Sources of knowledge of breast cancer detection and prevention .

3. Influence of marital status on knowledge of breast cancer detection and prevention.

4.Influence of knowledge on the practice of breast cancer detection and prevetion with regards to ~~maternal~~ mortality reduction. Many breast cancer victims are not mothers, so maternal mortality is not an issue.

**Research Questions**.

1. What is the knowledge of breast cancer detection and prevention among female teachers of government-owned secondary schools in Bayelsa State?

2. What are the sources of knowledge of breast cancer?

3. Does marital status have influence on knowledge of breast cancer detection and prevention among women in Bayelsa State?

4. How would knowledge influence the practice of breast cancer detection and prevention with regards to ~~maternal~~ mortality reduction? If by *maternal* you mean ***female***, then say female, or just say breast cancer mortality reduction.

**Hypotheses**

The following hypotheses were postulated and were tested at .05 alpha level.

1. Knowledge has no significant influence on the practice of breast cancer detection and prevention? How did you evaluate the practice of prevention?

2 . Marital status has no significant influence on knowledge of breast cancer detection and prevention among women in Bayelsa state

**Theoretical Framework**

A possible framework utilized to help understand why and under what conditions people take action to prevent, detect or comply with treatment is the Health Belief Model. According to Abdulaziz and Parinnaz, (2012)., the ~~The~~ Health Belief Model (HBM), is a Psychological model that attempts to explain and predict preventive health behaviours. Health belief model is one of the most widely used models to explain ~~the~~ health behaviours such as screening. According to the HBM, individuals are more likely to engage in preventive health behaviours if they believe that a course of action will produce positive outcomes (perceived benefits), perceive themselves to be susceptible to a certain disease/ illness (perceived susceptibility), perceive that obstacles or barriers to taking actions are outweighed by the benefits, or perceive the condition to have potentially serious consequences (perceived severity). The Health Belief Model related to breast cancer, can thus be translated as the perception of one’s own susceptibility to breast cancer, the benefits of being aware of the disease and the practice of breast cancer screening methods for early detection and prevention and also the possible barriers to the implementation of these screening methods.

According to American Cancer Society, (2014), the goal of screening for breast cancer is to find cancers before they start to cause symptoms (like a lump that can be felt). Most importantly In in the context of breast cancer screening, HBM, states that individuals are more likely to adapt cancer screening behaviours when they are at- risk for those cancers and the cancer is severe enough to warrant preventable action.

**Method and Materials**

A cross sectional survey design was adopted for the study. The population of the study consists of 1,952 women in Bayelsa State with a sample size of 976 women. All ~~the~~ eight local government areas within the three senatorial districts were used for the study. A multi-stage sampling procedure was used to draw the sample. The research instrument for data collection was a 27 item self- structured and validated questionnaire with reliability coefficient of 0.78, using the person (Pearson) product moment correlation. How was validity and reliability established if this study is the first sue of the tool> That could be explained a bit more. (Just saying so isn’t enough.) The statistical tools used for the analysis of the data include descriptive statistics of percentage, mean and inferential statistics of chi-square, and Z- test using the statistical package for social sciences (SPSS) batch system. A total of 976 copies of questionnaire were administered directly to the respondents with the help of 10 research assistants. Eight hundred and forty five (845) copies out of 976 copies administered were properly filled and returned giving a return rate of 87 percent and was used for the analysis.

**Results**

**Table 1: Frequency and percentage distribution of respondents by Age**

|  |  |
| --- | --- |
| **Age** | f % |
| 20- 24 years 178 21.1  25-29 years 203 24.0  30-34 years 180 21.3  35-39 years 137 16.2 | |
| 40 years and above 147 17.4  Total 845 100 | |

Table 4.1 shows that 178 (21.1%) of the female teachers were between the ages of 20-24 years, while 203 (24%) of them were between the ages of 25-29 years. Also 180 (21.3%), were between the ages of 30-34 years, 137 (16.2%) of the teachers were between the ages of 35-39 years and, 147 (17.4%) of them were 40 years and above. This indicated that teachers within the age bracket of 25–29 years constituted the highest number 203 (24%).

**Table 2: Frequency and percentage distribution of respondents by Educational Status**

|  |
| --- |
| **S/N Educational Status f %** |
| 1. NCE 219 25.9  2. B.Ed/ B.Sc 560 66.3  3. M.Ed/M.Sc 62 7.3  4. Ph.D 4 0.5  Total 845 100 |

**Table 2** shows that 219 (25.9%) of teachers were NCE holder, while B,Ed/ B.Sc holders were 560 (66.3%). Also teachers that were holders of M.Ed/M.Sc were 62 (7.3%) and Ph.D, 4 (0.5%) which indicated that the highest number of teachers, 560 (66.3%) were B.Ed/B.Sc holders. Explain what NCE means for readers from different educational systems.

**Table 3: Frequency and percentage distribution of respondents by Marital Status**

|  |
| --- |
| **Marital Status f %** |
| Unmarried 420 49.7  Married 401 47.5  Divorce 14 1.7  Separated 7 0.8  Widowed 3 0.4  Total 845 100 |

**Table** 3 shows that 420 (49.7%) of the female teachers were unmarried, 401 (47.5%) of them were married, while 14 (1.7%) were divorced teachers, ~~while~~ and 7 (0.8%) were separated. Also 3 (0.4%) of teachers were widowed, which indicated that the highest number of teachers were those that were unmarried 420 (49.7%).

**Table 4: Frequency and percentage distribution of respondents by Religion**

|  |
| --- |
| **S/N Educational Status f %** |
| 1. Christianity 819 96.9  2. Islam 17 2.0  3. Traditional religion 5 0.6  4 Others (ECK & GM) 4 0.5  Total 845 100 |

Table 4; shows that 819 (96.9%) of teachers were Christians, 17 (2.0%), of them were Islam, while teacher that belong to Traditional religion were 5 (0.6%) and others,( Eckankar and Grail Message) 4 (0.5%), which indicated that the highest number of teachers 819 (96.9%) were Christians. Explain what traditional religion means. Depending on the world region, traditional could mean Christianity or Muslim or Buddhist, so it has no meaning without an explanation of the geographical tradition.

**Table 5: Frequency and percentage distribution of respondents by Location**

|  |  |
| --- | --- |
| **S/N Location f %** | |
| 1. Urban  2. Rural  Total | 503 59.5  342 40.5  845 100 |

Table 5; shows that 503 (59.5%) of female teachers from government owned secondary school resided in the urban area, while 342 (40.5%) resided in the rural area of Bayelsa State.

**Research Question 1**: What is the Knowledge of breast cancer detection and prevention among women in Bayelsa State

**Table 6: Responses on knowledge of Breast Cancer Detection and Prevention. (n=845)**

|  |  |
| --- | --- |
| **S/N** | **Breast cancer detection Correct Incorrect**  **f % f %** |
| 1  2  3  4  5  6  7  8  9  10  11  12  13  14  15  16  17  18  19 | Breast sself- examination is a method of detecting breast cancer 768 90.9 77 9.1  Breast self- examination is not a useful tool for the early  detection of breast lump 600 71.0 245 29.0  Mamography (mammography) (breast x-ray) plays a vital part in early detection  and improve survival rates among women 798 94.4 47 5.6  Mamography (breast x-ray) may pick up tumours long  before they can be detected in some other way 677 80.1 168 19.9  Clinical breast examination is done by a physician for breast cancer detection 729 86.3 116 13.7  **6.** A palpable mass in the breast is a symptom of breast cancer 641 75.9 204 24.1  A sore on the breast that does not heal is a sign of breast cancer 634 75.0 211 25.0  Discharge of blood from the nipple is not a symptom of breast cancer 418 49.5 427 50.5  A change in colour on the skin over the breast is a sign of breast cancer 541 64.0 304 36.0  Redness and warmth over the breast is not common with breast cancer 406 48.0 439 52.0  Breast cancer presents commonly as a painless lump 521 61.7 324 38.3  Nipple retraction may not be a sign of breast cancer 316 37.4 529 62.6  Cluster 69.5 30.5  **Breast cancer prevention**  Abstain from smoking 608 72.0 237 28.0  Eating diet high in fat 442 52.3 403 47.7  Regular exacise to maintain a healthy weight 620 73.4 225 26.6  Knowing your family history of breast cancer 624 73.8 221 26.2  Drinking of excessive alcohol beverages 517 61.2 328 38.8  Moderate use of hormone replacement therapy 564 66.7 281 33.3  Avoiding radiation therapy 533 63.1 312 36.9  **Cluster % 66.1 33.9**  **Overall cluster % 67.8 32.2** |
|  |  |

**Table 6** shows that majority of the respondents knew about breast cancer detective and preventive measures with an overall cluster percentage of 65.1% for true and 34.9% false

Table 6 does not have the items numbered correctly.

**Research Question 2**: What are the sources of knowledge about breast cancer?

**Table 7: Sources of knowledge of breast cancer**

|  |  |  |  |
| --- | --- | --- | --- |
| S/No | Source of knowledge | Frequency F | Percentage % |
| 1.  2.  3.  4.  5.  6.  7.  8.  9. | Hospital 320 37.9  Mass Media 228 27.0  Television 121 14.3  News paper 53 6.3  Radio 41 4.9  Friends 33 3.9  Neighbour 25 3.0  Husband 36 4.3  Relatives 13 1.5 | | |

Table 7: shows the sources of knowledge of breast cancer among women in Bayelsa State. 320 (37.9%) had their knowledge from the hospital, 228 (27.0%) from the Mass Media, 121(14.3%) from Television and 53(6.3%) from News paper. 41(4.9%) source of knowledge was from radio,33(3.9%) was from friends, 25(3.0%) from neighbours and 36(4.3%) were from their husbands while 13(1.5%) had their knowledge from relatives . How do television and newspapers differ from mass media?

Research Question 3: Does marital status have influence on the knowledge of breast cancer detection and prevention?

**Table 8: Knowledge of breast cancer detection and prevention, based on marital status**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **S/N** | **Statement** |  | **Unmarriedn=420** | **Marriedn=401** | **Divorcedn=14** | **Separatedn=7** | **Widowed n=3** |
|  | **Breast cancer detection** |  | **True False**  **f % f %** | **True False**  **f % f %** | **True False**  **f % f %** | **True False**  **f % f %** | **True False**  **f % f %** |
| **1**  **2**  **3**  **4**  **5**  **6**  **7**  **8**  **9**  **10**  **11**  **12**  **13** | **Breast self examination is a method of detecting breast cancer 381 90.7 39 9.3 349 91.4 52 8.6 12 85.7 2 14.3 7 100 0 0.00 3 100 0 0,00**  **BSE is not a useful tool for the early detection of breast cancer 96 22.9 324 77.1 157 39.2 244 60.8 3 21.4 1 1 91.7 1 14.3 6 85.7 3 100 0 0,00**  **Mammography play a vital part in early detection and improve**  **survival rates 394 93.8 26 6.2 363 90.5 38 9.5 14 100 0 0,00 7 100 0 0.00 3 100 0 0,00**  **Mammography picks up tumours before they can be detected in**  **other ways 324 77.1 96 22.9 337 84.0 64 16.0 13 92.2 1 7.10 5 71.4 2 28.6 3 100 0 0,00**  **Clinical breast examination is done by a physician for breast**  **Cancer detection 351 83.6 69 16.4 342 85.3 59 14.7 10 71.4 4 28.6 6 85.7 1 14.3 3 100 0 0,00**  **Cluster % 73.6 26.4 78.1 21.9 74.1 28.3 74.3 25.7 100 0.0 0**  **Breast Cancer Prevention**  **Abstain from smoking 282 67.1 138 32.9 310 77.3 91 22.7 10 71.4 4 28.6 3 42.9 3 42.9 3 100 0 0,00**  **Eating diet high in fat 210 50,0 210 50,0 186 46.4 215 53.6 4 28.6 10 71.4 3 42.9 4 57.1 3 100 0 0.0 0**  **Regular exercise to maintain a healthy weight 318 75.7 102 24.3 280 69.8 121 30.2 13 92.2 1 97.1 6 85.7 1 14.1 3 100 0 0.00**  **Knowing your family history of breast cancer 301 71.7 119 28.3 309 77.1 92 22.9 8 57.1 6 42.9 3 42.9 4 57.1 3 100 0 0.00**  **Drinking of excessive alcohol Beverages 165 39.3 255 60.7 157 39.2 244 60.8 4 28.6 10 71.4 3 42.9 4 57.1 3 100 0 0.00**  **Moderate use of hormone replacement therapy 288 68.6 132 31.4 254 63.3 147 36.7 13 92.9 1 7.1 6 85.7 1 14.3 3 100 0 0.00**  **Avoiding radiation therapy 262 62.4 158 37.6 261 65.1 140 34.9 11 78.6 3 21.4 4 57.1 3 42.9 3 100 0 0.00**  **Cluster % 62.1 37.9 63.0 37.4 64.2 48.6 57.2 33.0 100 0.00**  **Overall cluster % 67.9 32.1 70.0 30.0 69.2 30.8 66.0 34.0 100 0.00** | | | | | | |

**Table 8** shows that majority of the women with different marital status knew about breast cancer detection and prevention based on the overall cluster percentages (Unmarried (67.9%),married (70.0), divorced (69.2%), separated (66.0%) and widowed (100%). What does the statement *the women with different marital status knew about breast cancer* mean?

The item numbering in table 8 makes no sense.

**Research Question 4**: How would knowledge influence the practice of breast cancer detection and prevention with regards to maternal mortality reduction? How were these questions asked. You included the actual question for the knowledge portion, so please do so for the prevention portion. Otherwise, there is no way for the reader to interpret if your findings on actual practice are accurate.

**Table 9:** **Influence of knowledge on the practice of breast cancer detection and prevention (n=845)**

|  |
| --- |
| **S/N Statement Knowledge Practice**  **Correct Incorrect Correct Incorrect**  **% % % %** |
| 1. Breast Cancer Detection 69.5 30.5 33.0 67.0  2. Breast Cancer Prevention 66.1 33.9 38.2 61.8  **Overall % 67.8 32.2 35.6 64.4** |

Table 9 reveals that majority of the teachers, (67.8 %) had good knowledge of breast cancer detection and prevention while only 35.6 percent put it into practice, which is an indication that knowledge have no significant influence on practice of breast cancer detection and prevention. How does the data show that only 35.6% practiced prevention? Knowledge about preventive practices and actually performing those practices is not the same.

**Hypothesis 1:** Knowledge has no significant influence on the practice of breast cancer detection and prevention among female teachers of government-owned secondary schools in Bayelsa State.

**Table 9:** Summary of Chi-Square of no significant influence of knowledge on the practice of breast cancer detection and prevention.

|  |
| --- |
| **χ2 calculated χ2  critical df Alpha level Decision** |
| **3.045 7.82 3 .05 Retained** |

**Table 9** reveals that the chi square ( χ2)calculated value (3.045) is greater than the χ2 (*x*2) critical value (7.82) at degree freedom (3) at .05 alpha level, hence the null hypothesis was retained. Therefore, knowledge have has no significant influence on practice of breast cancer detection and prevention among female teachers of government-owned secondary schools in Bayelsa State.

**Hypotheses 2**: Marital status has no significant influence on the knowledge of breast cancer detection and prevention among female teachers of government –owned secondary schools in Bayelsa state.

**Table 10: Summary of chi-Square of no significant influence of marital status on knowledge of breast cancer detection and prevention**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| χ2 calculated | χ2 critical | Df | Alpha Level |  | Decision |
| 61.483 11.07 5 0,05 rejected | | | | | |

Table 10 The χ2 calculated value (61.483) is greater than the χ2 critical value (11.07) at the degree of freedom (5) at 0.05 alpha level, and since P-value (0.000) is less than 0.05, the null hypothesis was rejected. Hence, marital status has significant influence on knowledge of breast cancer detection and prevention among women in Bayelsa State.

**Discussion of Findings**

It was found that majority, of the women had knowledge of breast cancer detection and prevention (67.8)**.** This is not in line with the findings of WHO (2012), that in the developing countries, the majority of women diagnosed with breast cancer do not survive because their cancer is detected too late due to lack of knowledge of the disease. This is comparing apples and oranges. The number of healthy women who had knowledge about cancer prevention cannot be compared to the number of cancer deaths for any assumptions. It is a surprise, because with all the knowledge acquired by female secondary school teachers in Bayelsa State regarding breast cancer detection and prevention it does not translate to their practice (35.6%), neither reflect any improvement on the mortality rate among women in general. I am still confused about how translating knowledge to practice was evaluated. The survey asked questions about prevention knowledge, but did not seem to ask if women actually practiced prevention techniques. Knowledge about prevention and putting that knowledge into practice are two different things.

The findings on the sources of information on knowledge about breast cancer, reveals that 36.7% of respondents heard it from hospital, electronics and print- media, (52.5), from neighbours (3.0), friends (3.9%), husband (4.3%) and other sources (relatives and peers) (1.5%). This implies that majority of the respondents source of knowledge of breast cancer was from the hospital. While in the findings of Pinar, Dilek, Beyhan, and Gokce, Filiz, Sumyra and Gamze, (2006), majority of the sample (76.6%) reported that they had heard or read about breast cancer. TV programmes ( 39.3%),while health professionals were also mentioned as a source of information by 23.4% of the sample. The preceding is not a complete sentence.

The findings on influence of marital status on knowledge of breast cancer detection and prevention, reveals that majority of the teachers ~~with different marital status~~ knew about breast cancer detection and prevention regardless of marital status. (Is that what you mean to say? Marital status did not matter? Or, marital status did inlfunece knowledge? It is not clear from your table or your narrative.) ~~based on the overall cluster percentages of,~~ widows (100%), followed by women who are married (71.0%), divorced (69.2%), unmarried and separated (68.0%) and (66.0%) had differing levels of breat cancer knowledge. It could further be seen that marital status has significant influence on knowledge of breast cancer detection and prevention. ~~Since~~ the calculated value (61.483) is greater than the at the degree of freedom (5) at 0.05 alpha level and p-value (.000) is less than 0.05 alpha level. The p value is 0.000?

**Conclusion**

Finding from the study showed that majority of the respondents had good knowledge (67.8%)of breast cancer detection and prevention but did not put it into practice (35.6%) which could be the single a major reason why there is no evidence of reduction on the maternal mortality rate of the disease. You are reporting on cancer mortality, not maternal mortality.

**Recommendations**

Based on the findings of this study, the following recommendations are ~~hereby~~ made:

1. Respondents source of knowledge was mainly in hospital and mass media. Teachers should be encouraged to acquire knowledge of breast cancer detection and prevention through other sources such as attending seminars /workshops on breast cancer detection and prevention.

2. Teachers serve as roll- role models to the students and as well as other women in the society. Hence state government should sponsor and organize workshops/ seminars on the morbidity and mortality of breast cancer in women and the need for its early detection and prevention among women in general. Teachers should be encouraged to share their knowledge with their students.

3.Teachers should be encouraged to sustain their knowledge of breast cancer detection and prevention, and seek for more knowledge concerning the phenomenon

4. I would think that a recommendation for how to put knowledge into practice would be important. Clearly the sample has knowledge about preventive practices, but that knowledge has not decreased mortality, so knowledge is not enough. Women can’t be taught about prevention as a theoretical exercise. It needs to be personalized as to what each woman should do in her own daily life.

5. Further research in a different population is indicated. Teachers are usually better educated than the general population, so the study should be repeated in churches or maternity clinics or pediatric clinics or markets or other places where woman gather and could respond to the survey. Would the results be significantly different in a less well-educated population? If so, how do you get the message to that population?

**References**

Abdulaziz, A., & Parinaz, A. (2012). Health Beliefs as predictors of breast cancer screening behaviours in a group of female employees in Shiraz Iran. *Journal of cancer prevention; 5 (3), 124-129.*

American Cancer Society. (2009) *Causes and risk facts associated with* *breast cancer.* Atlanta: American cancer society., Inc

American Cancer Society. (2014). *The risk factors for breast cancer*. USA, American Cancer Society Inc.

American Cancer Society. (2014). The importance of finding breast cancer early. Detail Guide: Breast Cancer. *Accessed from* [*http://www.cancer.org/breastcancer/detailguide/index*](http://www.cancer.org/breastcancer/detailguide/index)*, on August 28, 2015.*

Aswathy. S, Sumithra. S, Valsala. L.S, Sandheed. S. Lohidas V. Shobha P, George. S, Francis P, Rajeev N S, & Johnson A. J. (2006). Self reported morbidity and Awareness regarding common cancers of Elderly women. Amrita School of Medicine*: Journal of Community Medicine 38 (1) 106 – 111.*

Banjo, A.A.F. (2004). *Overview of breast and cervical cancer in Nigeria: are there regional variations?* Paper presentation at the International workshop on new trends in management of breast and cervical cancer, Lagos, Nigeria.

Cancer Registry.(2009-2015). *Six years clino-pathological observation of breast cancer.* Federal Medical Centre Yenagoa, Bayelsa State. Cancer Registry.

Desantis C, Rebecca S, & Ahmedin J. ( 2007 ). *Breast cancer Facts & Figures*. A publication of the American Cancer Society . Atlanta. Georgia.

Globocan. (2000).An Empirical evidence of breast cancer. *Retrieved from http://www- dep.iarc.fr/globocan/database.htm*

Horton, J. (2006). Breast cancer in 2020: What can we expect? *Cancer Detect Prev; 30 : 109-110*

Herman, C.R., Gill, H.K., Fajardo. L.L. (2002). Screening for preclinical disease: Test and disease characteristics*. African Journal Research; 179: 825-31.*

Khatib, O. M., & Modjtabai, A. ( 2006*). Guidelines for early detection and screening of breast cancer.* Region office for the East Mediterranean*. WHO.*

Misauno, M. A., Anosike, I.H., Ojo, E.O., & Ismaila, B. O. (2011). Knowledge and Attitude to Breast Self- Examination among a cohort of medical students in Nigeria. *Journal on Tropical. Medicine, 13 (1): 32-35.*

National Breast Cancer Foundation, (2011). What is Breast Cancer. *Retrieved from http://www.nationalbreastcancer.org/about-breast-cancer/what-is-breast-cancr.aspx.*

Okobia, M.N., Bunker, C.H., Okonufua, F. E., & Osime, U. (2006). Knowledge, attitude and practice of Nigerian women towards breast cancer: Across- sectional study. *World Journal of Surgical Oncology. 4:1.*

Onyije F. M, Zenebo V. C, & Oboma Y. I. (2010). Knowledge and practice of breast cancer self- examination among female students in tertiary institutions in Nigeria. *Continental Journal. Biomedical Sciences. 4: 75-82,. Retrieved from http: // www wiloludjournal.com.*

Park, K. P. (2007). *Textbook of Preventive and Social Medicine;* 19th ed. India: Banarsidas.

Pinar, E. D., Dilek, O., Beyhan, O., Gokce, H., Filiz, A., Sumyra, C., & Gamze, C. (2006). The knowledge and attitudes of Breast self- examination and mammography in a group of women in a rural area in western Turkey. *BioMedical Council, 6 : 43.*

Pinotti, J. A., Barros, A.C., Hegg, R., & Zeferino, L. C. (1995). Breast cancer control programme in developing countries. *Breast Disease; 8: 243-250.*

Puangthong, K. ( 2006*). Knowledge of cancer*. Bangkok: Matichon.

Salako, O. (2015,Febuary 9th). Breast cancer, not death sentence. *Retrieved from* [*http://www.mynewswatchtimesng.com/breast-cancer-not-death-sentence*](http://www.mynewswatchtimesng.com/breast-cancer-not-death-sentence)*.*

Sarah, J. (2013*). Breast Cancer Hereditary Factors. UK, Macmillian Cancer Support*

Saunders, C., & Jassal, S. (2009*).* [*Breast cancer*](http://books.google.ca/books?id=as46WowY_usC&pg=PT123) *(1st.ed.). Oxford: Oxford University Press.*

Smith, A.R., Caleffi, M., Albert, U., Chen, T.A., Duff, S.C., Franceschi, M.D., & Nystron, L. (2006). Breast cancer in limited- resource countries: Early detection and access to care. *Breast Journal; 12 (1): 16-26.*

Smith, E.M., Francis, A.M., & Polissar, L. (1980). The effect of breast self-examination practices and physician examination on extent of disease at diagnosis. *Preventive Medicine 9 (1): 409-417.*

Tennessee Comprehensive Cancer Control Coalition. (2013). Stae of cancer plan 2013-2017 summary. *Retrieved from* [*http://tncancercoalition.org*](http://tncancercoalition.org)

World Health Organization. (2007). *The world health organization’s fight against cancer. Strategies that prevent, cure and care. NLM Classification*, QZ 2000, Geneva, Switzerland, WHO, 9-27.