

**Perception of Women About Breast Cancer in Isiokpo Community Of
Ikwerre Local Government Area, Rivers State**

AYINDE Abayomi Oluwasegun
University of Ibadan (Public Health, Epidemiology)

OLUBUNMI Ayinde
Oyo State Ministry of Health (Director of Public Health)

MACAULAY Oluropo Babafemi Ph.D.
Lagos State College of Health Technology Yaba Lagos

AIBINUOMO Ayomide Oluwaseyi
Texilia American University

AGBONAVBARE Omotunde Omoruyi
University of Ibadan (Public Health, Epidemiology)

AKINFOYEKU Sunday Olatunbosun
University of Ibadan (Public Health, Epidemiology)

Abstract.

Breast cancer is a malignant (cancerous) growth that begins in the tissues of the breast. Cancer is a disease in which abnormal cells grow in an uncontrolled way. Breast cancer is the most common cancer in women. A malignant tumor is a group of cancer cells that can grow into (invade) surrounding tissues or spread (metastasize) to distant areas of the body. Breast Cancer (BC) in women is a major health burden worldwide. It is the most common cause of cancer among women in both high and low income countries. Breast cancer is second only to lung cancer as a cause of cancer related deaths among women. Finally, its aim to investigate the Perception of Women about Breast Cancer in Isiokpo Community of Ikwerre Local Government Area, Rivers State, who were selected randomly. A community-based descriptive cross-sectional study design was carried out among the respondents in Isiokpo Community of Ikwerre Local Government Area, Rivers State. A total of 200 respondents were selected. The mean age was 38.3 ± 17.9 years. The results revealed that predominant age groups were 20 to 29 years having 57(28.5%). 91(45.5%) of married were the highest respondents in this distribution. 78(39.0%) were respondent whose educational background were secondary levels. 167(83.5%) were house wives. As regards religion, 148(74.0%) were Christians. there was a high level of knowledge on breast cancer with the percentage of 181(90.6%) respondents. that there was a high level of positive perception of breast cancer, 177(88.5%) of respondents. Finally, the results of this work from the research questions, there was high level of knowledge among respondents; the level of perception of breast cancer was significant to a single variable out of many and also this finding revealed that age is one of the variable that influences the knowledge of the respondents about breast cancer.

Key words: Breast cancer, Perception, Women of reproductive age, Isiokpo Community, Ikwerre Local Government Area, Rivers State.

Introduction

Pam (2020) expressed that breast cancer is a malignant (cancerous) growth that begins in the

tissues of the breast. Cancer is a disease in which abnormal cells grow in an uncontrolled way. Breast cancer is the most common cancer in women. A malignant tumor is a group of cancer cells that can grow into (invade) surrounding tissues or spread (metastasize) to distant areas of the body. The disease occurs almost entirely in women (American Cancer Society, 2020).

Breastcancer.org (2016) expressed that breast cancer is **an uncontrolled growth of breast cells**.

Cancer occurs as a result of mutations, or abnormal changes, in the genes responsible for regulating the growth of cells and keeping them healthy. The genes are in each cell's nucleus, which acts as the "control room" of each cell.

Breast cancer is the most common cancer in women worldwide (World Health Organization, 2005). In Hong Kong, breast cancer, the third leading cause of female cancer deaths after lung and colorectal cancers, accounted for 9.8% of all female cancer deaths in 2016 (Hong Kong Department of Health, 2017). In western societies it is estimated that one in nine women will have breast cancer before the age of 85. The incidence of breast cancer in Hong Kong has risen since 1994 and the most obvious increase is among the 30-49 age groups (Hong Kong Department of Health, 2004). It is estimated that one in 23 women would develop breast cancer by age 75 (Hong Kong Department of Health, 2016).

There has been an alarming rate of the increase of breast cancer among women, of which is said to be the most common cancer in women worldwide. In the most part of world is the third leading cause of female cancer deaths after lung and colorectal cancers, accounted for 9.8% of all female cancer deaths in 2016.

Based on this, the researcher decided to carry out this study on the "Perception of Women about Breast Cancer in Isiokpo Community of Ikwerre Local Government Area, Rivers State".

The findings may provide the people with ample of knowledge on breast cancer. The findings may stimulate positive spirit in the public health and town planning department of the council towards adequate mobilization of the community and their full participation on breast cancer sensitization programme if organized. The findings may provide detailed information of the benefit/ importance of breast self examination that will encourage government collaborate with some health agencies and other private bodies to promote routine of breast cancer screening. To the students who may be interested, it will provide a veritable source of literature for them.

General Objective of the study

The main objective of this study is to investigate the Perception of Women about Breast Cancer in Isiokpo Community of Ikwerre Local Government Area, Rivers State.

SPECIFIC OBJECTIVES OF THE STUDY

The following are the specific objectives:

1. To ascertain the socio demographic characteristics of the respondents on the perception of breast cancer.

2. To determine the level of knowledge of the respondents on breast cancer.
3. To determine the level of the perception of breast cancer among respondents.
4. To find out sources of information on breast cancer among respondents.

RESEARCH QUESTIONS

The following are the research questions:

- 1 What are the socio demographic characteristics of the respondents?
- 2 What is the level of knowledge of respondents on breast cancer?
- 3 What is the level of perception of breast cancer among respondents?
- 4 What are the sources of information on breast cancer among respondents?

HYPOTHESES OF THE STUDY

The following are the hypotheses of the study:

Ho1: there would be no significant association between the socio-demographic characteristics of the respondents and the perception of breast cancer.

Ho2: there would be no significant relationship between the respondents' and level of knowledge of breast cancer and its perception.

MATERIALS AND METHODS

Research Design

The research design for this study was a community based descriptive cross-sectional study design. In order to examine how women in the Isiokpo Community in the Ikwerre Local Government Area, Rivers State, perceive breast cancer, the researcher collected data from a sample of respondents there.

Study Area

This study was conducted in Isiokpo is a community in Ikwerre Local Government Area of Rivers State, Nigeria. Isiokpo community it is one of the recognized Ikwerre speaking communities that make up the four Local Government Area in Rivers State (Ikwerre, Emuoha, Obio/Akpor and Port Harcourt) located in South east senatorial district of Rivers Senatorial zone. It is the headquarters of Ikwerre LGA, Rivers State. It comprises of nine villages namely: Alimini-Isiokpo, Mgbuohara-Isiokpo, Mgbo-Isiokpo, Agwara-Isiokpo, Okpirikpi-Isiokpo, Nwarahia-Isiokpo, Omueke-Isiokpo, Adanta-Isiokpo and Ogbodo-Isiokpo. This area covers approximately 375km^2 according to recent survey carried out in 2011 by the LGA council to develop a befitting master plan for the area.

The people are predominantly Christians with traditional religion gradually phasing out. Though with a cultural heritage outside the white collar and civil service jobs, the people are greatly involved in farming, fishing, hunting and trading as their major occupation; the people are highly educated with number of academic institution located in the area.

STUDY POPULATION

The study population shall consist of mothers aged 15 to 49years who reside in Isiokpo is a community in Ikwerre Local Government Area of Rivers State, Nigeria

SAMPLING METHOD

A simple random sampling technique was used to recruit subjects for the study. Participants are given an equal chance of being selected. The sample size is known and each participant will be given a number, thereafter, the table of random samples will be used to select a random sample. This process continues until the required sample size (200) is obtained.

Method of Data Analysis

The Statistical Package for the Social Sciences (SPSS) was used in the analysis of the data gotten from the study participants. Results were expressed in percentages, frequencies, tables and charts (Descriptive Statistics). Chi square test tool was used to test the hypothesis ($p=0.05$) and also compare the association between variables in the study.

Ethical Considerations

Ethical clearance.

Ethical clearance was obtained from the research and ethical review committee of Ministry of Health, Rivers State. The research shall be at no cost to the participants as the researcher shall bear the cost.

Consent.

Informed written consent and permission was obtained from the mothers and permission was taken from the hospital.

Confidentiality of data

The data collected from the respondents was only be used for the purpose of this research. The questionnaires were identified with numbers, and every data collected from the participants will be safely protected from a third party. Confidentiality of the subjects was assured through coding of all data. The researcher also assure that the data collected and information would be confidential and would be used only for the purpose of the study.

RESULTS

SECTION A: DEMOGRAPHIC DATA OF RESPONDENTS

Table 4.0: SOCIODEMOGRAPHIC CHARACTERISTICS OF THE RESPONDENTS

AGE OF RESPONDENTS	FREQUENCY	PERCENTAGE(%)
20 to 29 years	57	28.5
30 to 39 years	33	16.5

40 to 49 years	26	13.0
50 to 59 years	22	11.0
60 to 69 years	18	9.0
70 years and above	22	11.0
Less than 20 years	22	11.0
Total	200	100.0
MARITAL STATUS	FREQUENCY	PERCENTAGE(%)
Divorced	16	8.0
Married	91	45.5
Single	71	35.5
Widow	22	11.0
Total	200	100.0
LEVEL OF EDUCATIONAL	FREQUENCY	PERCENTAGE(%)
No formal education	26	13.0
Primary	48	24.0
Secondary	78	39.0
Tertiary	38	19.0
Total	200	100.0
OCCUPATION	FREQUENCY	PERCENTAGE(%)
Civil Servant	5	2.5
Farmer	5	2.5
Housewife	167	83.5
Student	15	7.5
Trader	8	4.0
Total	200	100.0
RELIGION	FREQUENCY	PERCENTAGE(%)
Christian	148	74.0
Islam	36	18.0
Traditional	16	8.0

Total	200	100.0
-------	-----	-------

Table 4.0 above shows that the highest frequency of respondents (28.5%) fell into the age range of 20 to 29 years, while the lowest frequency (9.0%) was observed in the age bracket of 60 to 69 years. The mean age was 38.3 ± 17.9 . In terms of marital status, the highest proportion of respondents (45.5%) reported being married, while the lowest proportion (8.0%) were divorced individuals. Among the respondents, 39.0% had a secondary level of education, making it the most common educational background. On the other hand, the lowest proportion (13.0%) of respondents had no formal education. The majority of respondents (83.5%) were housewives, indicating a high representation in the occupation category. Civil servants and farmers were the least represented, with only 2.5% of respondents each. Regarding religious affiliation, the highest proportion of respondents (74.0%) identified as Christians, while Muslims accounted for 18.0% and traditionalists represented 8.0% of the respondents.

TABLE 4.1: KNOWLEDGE OF BREAST CANCER

KNOWLEDGE OF BREAST CANCER	FREQUENCY	PERCENTAGE(%)
Yes	181	90.6
No	19	9.4
Total	200	100.0

Table 4.1 indicated that a high percentage of respondents 181(90.6%) agreed that they have knowledge about breast cancer while few 19(9.4%) of them claimed that no knowledge.

TABLE 4.2: WHAT CAN RESULT TO BREAST CANCER?

RESULT TO BREAST CANCER	FREQUENCY	PERCENTAGE(%)
Breast lump	1	0.5
I dont wear bra	1	0.5
Intake of alcohol	16	8.0
Intake of drug to prevent pregnancy	9	4.5

Lack of Excecise and over weight	1	0.5
Lump	29	14.5
Poor treatment of wound on the breast	124	62.0
Putting money in the breast	1	0.5
Putting of money in bra	1	0.5
Wearing of tight bra	17	8.5
Total	200	100.0

Table 4.2 expressed that majority of respondents 124(62.0%) accepted that poor treatment of wound on the breast can result to breast cancer while the majority 1(0.5%) agreed that breast lump can result to cancer.

TABLE 4.3: NOTICE OF ANY BREAST CANCER VICTIM

NOTICE OF ANY BREAST CANCER VICTIM	FREQUENCY	PERCENTAGE(%)
Yes	67	33.2
No	133	66.8
Total	200	100.0

Table 4.3 reviewed that 133(66.8%) of respondents agreed that they haven't seen any breast cancer victim while 67(33.2%) they have seen someone with breast cancer.

RESEARCH QUESTION THREE: What is the level of perception of breast cancer among respondents?

TABLE 4.4 PERCEPTION OF BREAST CANCER

PERCEPTION OF BREAST CANCER	FREQUENCY	PERCENTAGE(%)

Yes	177	88.5
No	23	11.5
Total	200	100.0

Table 4.4 suggested 177(88.5%) of respondents shows a high level of positive perception that breast cancer when early detected can be cured. While 23(11.5%) of respondents perception low with a negative view that breast cancer cannot be cured when declared early.

RESEARCH QUESTION FOUR: What are the sources of information on breast cancer?

TABLE 4.5: SOURCES OF INFORMATION

SOURCES OF INFORMATION	FREQUENCY	PERCENTAGE(%)
Health workers	53	26.2
Neighbour	22	10.9
Newspaper	16	7.9
Radio	18	8.9
Television	74	36.6
Total	183	90.6

Table 4.5 Shows that 74(36.6%) of respondent got there source of information through the television while 16(7.9%) of respondents got theirs from newspaper.

RESEARCH QUESTION FIVE: Do the respondents practice self breast examination for breast cancer preventive behavior.

TABLE 4.6 PRACTICES OF SELF BREAST EXAMINATION

PRACTICES OF SELF BREAST EXAMINATION	FREQUENCY	PERCENTAGE(%)
Yes	82	41.0
No	120	60.0
Total	202	100.0

Table 4.6 indicated that 120(60.0%) of respondents don't practice breast self examination while 80(40.0%) of respondents agreed that they practice breast self examination.

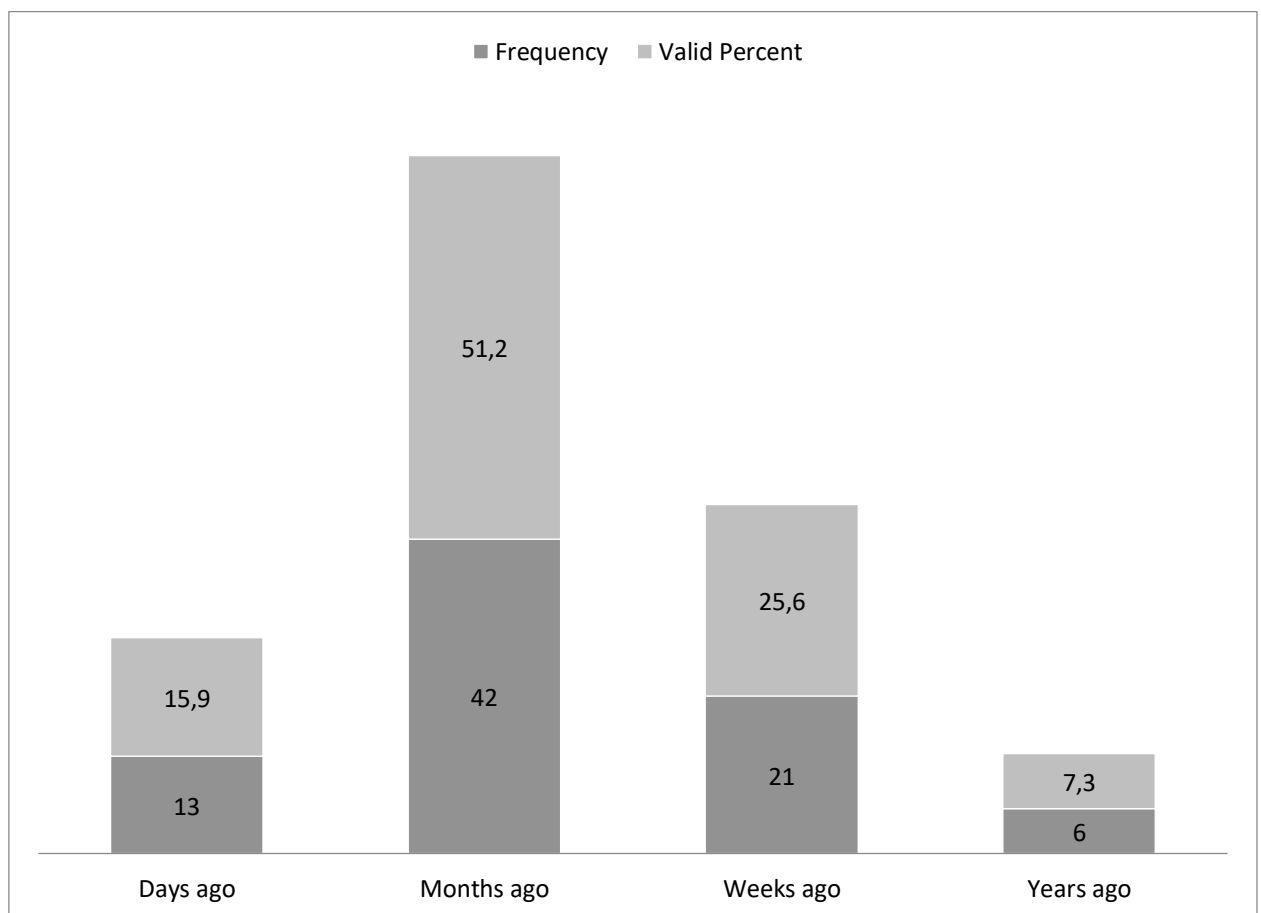


FIG 4.6 RESPONDENTS PREVIOUS PRACTICE:

Fig 4.6 Showed that 47(31.2%) of the respondents who accepted that they practice breast self-

examination had its months ago, while 6(7.3%) of respondents practiced it years ago.

RESEARCH HYPOTHESES

Three Null hypotheses were formulated to guide this research work and were tested using the chi-square statistical analysis.

Null hypothesis one (H_0): There would be no significant relationship between the demographic profile and knowledge of the respondent and perception of breast cancer.

TABLE 4.7: RELATIONSHIP BETWEEN THE DEMOGRAPHIC PROFILE AND KNOWLEDGE OF BREAST CANCER.

SOCIO DEMOGRAPGHIC PROFILES		KNOWLEDGE OF BREAST CANCER				CHI SQUARE	P- VALUES
		No		Yes			
		n	%	n	%		
Age Group	20 to 29 years	5	8.8	52	91.2	16.669	0.011
	30 to 39 years	3	9.1	30	90.9		
	40 to 49 years	0	.0	26	100.0		
	50 to 59 years	1	4.5	21	95.5		
	60 to 69 years	0	.0	18	100.0		
	70 years and above	3	13.6	19	86.4		
	Less than 20 years	7	29.2	17	70.8		
Marital Status	Divorced	1	6.3	15	93.8	7.275	0.064
	Married	5	5.5	86	94.5		
	Single	12	16.9	59	83.1		
	Widow	1	4.2	23	95.8		
Education	No formal education	2	7.7	24	92.3	0.687	0.876
	Primary	4	8.3	44	91.7		
	Secondary	9	11.5	69	88.5		
	Tertiary	4	8.0	46	92.0		
Occupation	Civil Servant	0	.0	5	100.0	6.622	0.157
	Farmer	0	.0	5	100.0		
	Housewife	14	8.3	155	91.7		
	Student	4	26.7	11	73.3		
	Trader	1	12.5	7	87.5		

TABLE 4.7 The result of the table above with the value of chi-square as: $\chi^2=3.175, 2.216, 1.415$

and 0.143 respectively and P. value 0.011 (age), 0.064(marital status), 0.874(level of education), and 0.517(occupation) respectively indicated that there is no significant relationship between the socio-demographics and knowledge of breast cancer among respondents because the P. value is higher than 0.05 except for age of the respondents therefore is only age that influences the knowledge of the respondents.

NULL HYPOTHESIS TWO (HO₂): There would be no significant relationship between the respondents' level of knowledge of breast cancer and its perception.

TABLE 4.8: RELATIONSHIP BETWEEN KNOWLEDGE OF RESPONDENTS ON BREAST CANCER AND ITS PERCEPTION.

VARIABLE	KNOWLEDGE OF BREAST CANCER				CHI SQUARE	P-VALUES
	No		Yes			
WEARING OF TIGHT BRA	N	%	N	%	7.025	0.008
No	16	14.3	96	85.7		
Yes	3	3.3	87	96.7		
ABNORMAL NIPPLE DISCHARGE	N	%	N	%	0.389	0.533
No	14	8.8	146	91.3		
Yes	5	11.9	37	88.1		
UNUSUAL CHANGES IN BREAST SIZE	N	%	N	%	1.562	0.211
No	19	10.1	169	89.9		
Yes	0	0.0	13	100.0		
NOTICE ANY LUMP IN THE BREAST	N	%	N	%	1.443	0.230
No	19	10.1	170	89.9		
Yes	0	0.0	13	100.0		

Table 4.8 presents the results of the chi-square analysis examining the relationship between the respondent's level of knowledge of breast cancer and its perception. The p-values associated with each analysis were compared to a significance level of 0.05. For the variable "Wearing of Tight Bra," the chi-square test yielded a value of 7.025 with a p-value of 0.008, indicating a significant relationship between knowledge and perception. As a result, the null hypothesis was rejected,

suggesting that there is a relationship between the respondent's knowledge of breast cancer and their perception of wearing tight bras. However, for the variables "Abnormal Nipple Discharge," "Unusual Changes in Breast Size," and "Notice any Lump in the Breast," the chi-square tests resulted in p-values of 0.533, 0.211, and 0.230, respectively. These p-values were higher than the significance level of 0.05, indicating no significant relationship between knowledge and perception for these variables. Therefore, the null hypothesis was not rejected, suggesting that there is no significant relationship between the respondent's knowledge of breast cancer and their perception of these symptoms.

DISCUSSION

This study's findings indicated that the majority of respondents (28.5%) were between the ages of 20 and 29, which is consistent with the age distribution reported by Kayode et al. (2005). The mean age of the participants was found to be 38.3 ± 17.9 . In terms of marital status, the largest proportion (45.5%) of respondents were married, while the smallest proportion (8.0%) were divorced. In relation to educational background, 39.0% of the participants had a secondary level of education, and 13.0% had no formal education. A significant majority of respondents (83.5%) were housewives. A smaller proportion of participants identified as civil servants (2.5%) or farmers (2.5%). In terms of religious affiliation, 74.0% of the respondents identified as Christians, 18.0% as Muslims, and 8.0% as traditionalists.

In this study, a significant proportion of respondents (90.6%) claimed to have knowledge about breast cancer, which contradicts the findings of Yuk (2009) who reported poor knowledge of breast cancer risk factors among women in Hong Kong. This is however in line with the findings of Omoyeni et al (2012) who reported more than half of the respondents have significant knowledge of breast cancer. Among the participants, 62.0% acknowledged that poor treatment of wounds on the breast could be a risk factor, while 23.0% mentioned wearing tight bras as a potential risk factor. These results highlight the need for education and awareness campaigns to address misconceptions and enhance knowledge about breast cancer.

The perception of breast cancer among the respondents was predominantly positive, with 88.5% believing that it can be cured when detected early. However, a small percentage (11.5%) expressed a negative perception, believing that breast cancer cannot be cured even with early detection. These findings are consistent with the study conducted by Sarfo et al. (2016) and Mehejabin and Rahman (2022) which emphasized the importance of early detection and highlighted media and health centers as significant sources of information on breast cancer and breast self-examination.

In terms of practices, a significant proportion (60.0%) of respondents reported not practicing breast self-examination, while 40.0% claimed to practice it. This contradicts the findings from Omoyeni et al (2014) and Okolie (2011) who reported that majority of the women are practicing BSE. Among those who practiced it, 31.2% did so months ago, while 7.3% practiced it years ago. These findings

indicate a need for targeted interventions to promote regular breast self-examination among the population.

The chi-square analysis showed that there was a significant relationship between the level of knowledge about breast cancer and its perception among the respondents, as indicated by a chi-square value of 7.025 and a p-value of 0.008. However, no significant relationships were found between socio-demographic factors (age, marital status, educational level, and occupation) and knowledge of breast cancer, except for age (p-value = 0.011). This however contradicts the findings from (Mehejabin and Rahman 2022) who reported no significant association between sociodemographic factors and the respondents level of knowledge. Also, a study in Southeast Asia found income level was significantly associated with knowledge level. (Hussein et al., 2019)

In summary, this study provides valuable insights into the knowledge, perception, and practices related to breast cancer among the study participants. The findings highlight the need for targeted educational campaigns to improve knowledge, address misconceptions, and promote regular breast self-examination. The results also support previous research emphasizing the role of media and health centers as important sources of information on breast cancer and breast self-examination (Sarfo et al., 2016; Yuk, 2009; Kayode et al., 2005).

CONCLUSION

The study suggested that the respondents seemed not to be sufficiently informed to the extent of reducing their exposure and vulnerability to breast cancer. Much of what they knew would do little to encourage behavioral change and health seeking behavior relevant for primary prevention and early detection. Good attitudes and practices towards prevention were also poor. However, while there was evidence that when knowledge improved, practice level also seemed to improve, there was also strong suggestion that not everyone who had knowledge was willing to practice it. Generally, knowledge of the respondents seemed to be affected or influenced by age, also there one variable on perception was also showed significant relationship between the respondent level of knowledge of breast cancer and its perception

RECOMMENDATION

Based on the results of the findings, the researcher made the following recommendation:

1. Health education on breast cancer prevention should focus on creating awareness about common risk factors in the population that increases vulnerability. Emphasis on the need and procedure for early detection of painless lumps should be made
2. Breast cancer awareness programs in the rural communities should be designed to tackle sociocultural and superstitious beliefs about the nature and cause of breast cancer, as well as presented in a manner that would evoke behavioral change.

3. Exploring health facility avenues and electronic media in the creating awareness about breast cancer should also be encouraged
4. The study could be repeated in the same or similar setting with individual subjects sampled based on systematic house to house survey.

REFERENCE

- Ademola M Amosu; Adenike M Degun; Adebo M Thomas; Abraham O Babalola
(2011). Assessment of awareness, perception, specific knowledge, and screening behaviour regarding breast cancer among rural women in Ipokia Local Government Area, Ogun State, Nigeria. *Archives of Applied Science Research*, 2011, 3 (2):253-265
- Ahmed F., Mahmud S., Hatcher J., Khan S.M. (2016): Breast cancer risk factor knowledge among nurses in teaching hospitals of Karachi, Pakistan: a cross-sectional study. *BMC Nurs*, Sep 19; 5:6.
- Alsaif A.A. (2004): Breast self-examination among Saudi female nursing students in Saudi Arabia. *Saudi Med J*; 25:1574–1578.
- American Cancer Society (2005): Cancer Facts and Figures. <http://www.cancer.org>
- American Cancer Society (2016): Breast Cancer Facts & Figures 2005–2016. Inc Atlanta.
- American Cancer Society (2017c): Cancer Prevention and Early Detection Facts and Figures, Atlanta: American Cancer Society. [Electronic Version]. p. 1-2, 30-50.
- American Cancer Society (2008): Cancer Facts and Figures, Atlanta: American Cancer Society. [Electronic Version]. p. 1-11.
- Balogun, M.O. & E.T. Owoaje, (2004) Knowledge and practice of breast self – examination among female traders in Ibadan, Nigeria. *Ann. Ibadan. Post med*, 3: 52-56.
- Boeding et al (2020). Couples and Breast Cancer: Women’s Mood and Partners’ Marital Satisfaction Predicting Support Perception. *Journal of Family Psychology* © 2020 American Psychological Association 2020, Vol. 28, No. 5, 675–683

Brain K, Henderson BJ, Tyndel S, et al (2008). PIMMS study management group.

Predictors of breast cancer-related distress following mammography screening in younger women on a family history breast screening programme. *Psychooncol*, **17**, 1180-8.

Breastcancer.org (April 1, 2020), Breast Cancer Risk Factors;
<http://www.breastcancer.org/risk/factors>

Burke, K. M., LeMone, P., and Mohn-Brown, E. L. (2017). Medical-surgical nursing care. 2nd Edition. Pearson; Prentice Hall

Canadian Cancer Society/National Cancer Institute of Canada Canadian Cancer Statistics Toronto. 2016.

Carels, R. A., & Baucom, D. H. (1999). Support in marriage: Factors associated with on-line perceptions of support helpfulness. *Journal of Family Psychology*, *13*, 131–144. doi:10.1037/0893-3200.13.2.131

Clegg-Lamprey JNA, Hodasi WH. (2017). A study of breast cancer in Korle Bu teaching hospital: Assessing the impact of health education. *Ghana Med J*. 41(2): 72-77.

[Fatema Mehejabin](#) and [Md. Sahidur Rahman](#) (2022): Knowledge and perception of breast cancer among women of reproductive age in Chattogram, Bangladesh: A cross-sectional survey [Health Sci Rep](#). 2022 Sep; 5(5): e840.doi: [10.1002/hsr2.840](#)PMCID: PMC9488900 PMID: [36189418](#)

Fatma, D., Nevin, A., Balleya, S.M. (2017). How do nurses and teachers performance BSE. Are they reliable sources of Information? BMC public health 7:96.

Ferlay J., Bray f., Pisani P., (2001): Cancer incidence and mortality worldwide. IARC cancer base no.

F.O. Kayode, T.M. Akande, G.K. Osagbemi (2005): Knowledge, Attitude and Practice of Breast Self Examination among Female Secondary School Teachers in Ilorin, Nigeria. Department of Epidemiology and Community Health, University of Ilorin, ILORIN, Nigeria; *European Journal of Scientific Research*, Vol 10, No 3

Gupta S.K., Pal D.K., Garg R., et al (2009): Impact of a health education

intervention program regarding breast self-examination by women in a semi-urban area of Madhya Pradesh, India. *Asian Pac J Cancer Prev*, 10, 1113-7.

Hussen A, Kumbi M, Abate L, Nuriye S. Knowledge of breast cancer and associated factors among women reproductive age in Bale zone, Southeast Ethiopia: a community based cross sectional study. *Emergency Med*. 2019;9(395):2. 10.4172/2165-7548.1000395

Inanc Guvenc et al (2012). **Identifying Women's Knowledge about Risk Factors of**

Breast Cancer and Reasons for Having Mammography.

Women's Breast Cancer Knowledge and Reasons for Having Mammography
DOI:<http://dx.doi.org/10.7314/APJCP.2012.13.8.4191>

Ludwick R., Gaczowski S. (2001): Breast self-exams by teenagers. *Cancer Nurs*; 24:315–319.

Ludwig, R.L. & Turner, L.W. (2002). Effective patient education in medical imaging: public perceptions of radiation exposure risk. *Journal of Allied Health*, 31:3, 159-164. Lyon, International Agency for Research on Cancer Press.

Meystre-Agustoni G, Paccaud F, Jeannin A, Dubois-Arber F (2001). Anxiety in a cohort of Swiss women participating in a mammographic screening programme. *J Med Screen*, 8, 213-9.

Montgomery M, McCrone SH (2010). Psychological distress associated with the diagnostic phase for suspected breast cancer: systematic review. *J Adv Nurs*, 66, 2372-90.

National Cancer Registry (2017): Cancer Incidence Report Saudi Arabia 2017.
Available from: <http://www.kfshrc.edu.sa/NCR/>.

Okobia M.N., Bunker C.H., Okonofua F.E., Osime U. (2016): Knowledge, attitude and practice of Nigerian women towards breast cancer: a cross-sectional study. *World J Surg Oncol*, Feb 21;4:11.

- O'Donnell S, Goldstein B, Dimatteo MR, et al (2010). Adherence to mammography and colorectal cancer screening in women 50-80 years of age the role of psychological distress. *Womens Health*, **20**, 343-9.
- Okolie, Uchenna Virginia(2012): Breast self examination among female undergraduates in Enugu, Southeast, Nigeria International Journal of Nursing and Midwifery Vol. 4(1), pp. 1-7, January 2012 Available online at <http://www.academicjournals.org/IJNM> DOI: 10.5897/IJNM11.038 ISSN 2141-2499 ©2012 Academic Journals Full Length Research Papers
- Omoyeni O.M, Popoola E.O., Omolola O.I, Olaogun A.O (2014):Assessment of the Knowledge and Practice of Breast Self Examination among Female Cleaners in Obafemi Awolowo University Ile Ife, Nigeria. International Journal of Caring Sciences January-April 2014 Vol 7 Issue 1
- Parsa, P, Kandiah, M. Mohd Zulkefli, N., Abdul Rahman, H. (2008). “Knowledge and behavior regarding breast cancer screening among female teachers in Selangor, Malaysia,” Asian Pacific Journal of cancer Prev, Vol. 9, pp. 221-28
- World Health Organization (2017): Fight Against Cancer: Strategies that prevent, cure and care.www.who.int/cancer/enWomen’s News 10/05/06 U.S. Groups Join Saudi Breast Cancer Effort
- WHO (2009). Global health risks: mortality and burden of disease attributable to selected major risks. Geneva, World Health Organization
- Wiredu, E.K., & Armah, H.B. (2016). Cancer mortality patterns in Ghana: a 10 – year review of autopsies and hoapital mortality. *BMC Public Health*; 6:159-165
- Yuk Yee Yan (2009): Breast Cancer: Knowledge and Perceptions of Chinese Women in Hong Kong, Department of Geography, Hong Kong Baptist University. Kowloon Tong, Hong Kong; *Global Journal of Health Science*, Vol. 1, No. 2

