



## BREAST CANCER RELATED AWARENESS, KNOWLEDGE, ATTITUDE AND PREVENTION PRACTICE AMONG MARKET WOMEN IN IBADAN, METROPOLIS

ASUZU CC,<sup>1</sup> AKIN-ODANYE EO<sup>2</sup> AND ASUZU MC<sup>3</sup> IBITOYE, SB<sup>1</sup>

<sup>1</sup>Department of Counselling and Human Development Studies, University of Ibadan, Ibadan

<sup>2</sup>Department of Clinical Psychology, University College Hospital, Ibadan

<sup>3</sup>Department of Community Medicine, University of Ibadan, Ibadan

### ABSTRACT

Breast cancer is a major public health challenge among Nigerian women. A good number of Nigerian women are market women. Understanding the breast cancer related awareness, knowledge, attitude and preventive practice of this group will guide public health initiatives to promote early breast cancer detection among them. The purpose of this study is to assess market women's awareness, knowledge, attitude and practices regarding breast cancer. This descriptive cross sectional study was carried out in two market places in Ibadan as part of a breast cancer awareness and screening program carried out in the markets. A breast cancer related awareness, knowledge, attitude and practice questionnaire with a Cronbach's alpha value of .654 was used for data gathering. Data was analyzed on SPSS 21 using descriptive statistics and correlational analysis. The 153 women that participated in the study had an age range of 16 to 72 with a mean of 45.56. Talking about breast cancer scares 43.8% of the women and only 22.2% feel susceptible to breast cancer. Only 32.0% indicated that they have previously screened for breast cancer. The correlation analysis showed that educational level was significantly positively correlated with breast cancer related knowledge ( $P < 0.05$ ), breast cancer related knowledge was significantly positively correlated with breast cancer related attitude and practice ( $p < 0.05$ ) and breast cancer awareness was significantly correlated with practice ( $p < 0.05$ ). Attitude was however not significantly correlated with practice ( $P > 0.05$ ). There is need to better understand the factors mediating breast cancer related attitude and practice so as to enhance breast cancer screening among market women.

**Key words:** Breast cancer, Market women, Ibadan, Awareness, Knowledge, Attitude, Practice

### BACKGROUND

Breast cancer is the second most common cancer and the fifth cause of cancer-related death globally (GLOBOCAN, 2008). It is the most common cancer in women and an important cause of cancer-related deaths among women (GLOBOCAN, 2008; WHO, 2013; GLOBOCAN, 2012). In low- and middle-income countries (LMICs), it remains a significant public health challenge as incidence rates have been shown to increase yearly by as much as 5% with over 1 million projected new cases annually by 2020 (WHO, 2013; GLOBOCAN, 2012; Anderson, Shyyan, Eniu, Smith, Yip & Bese, 2006). There is a rise in breast cancer incidence rates in Sub-Saharan Africa (Forouzanfar et al., 2011). In Nigeria, the incidence of breast cancer has risen significantly with incidence in 2009–2010 at 54.3 per 100 000, thereby representing a hundred percent increase in the last decade (Jedy-Agba et al., 2012). Moreover, in most developing countries and low resource settings, breast cancer is diagnosed at advanced stages of the disease with poorer outcome and high fatality rate compared with developed nations (WHO, 2013).

Screening for breast cancer in asymptomatic women through routine breast self examination (BSE), clinical breast examination and mammography are key to reducing the high morbidity and mortality by ensuring the early detection of breast cancer (WHO, 2013) and would increase the treatment options available to affected women and thereby improve survival rates (Faronbi & Abolade, 2012). In resource-constraint settings like Nigeria, BSE is often recommended because it can be done easily and conveniently by oneself for free. Awareness, knowledge and



attitudes are however central to women's practice of any of the breast cancer screening modalities and subsequent presentation for orthodox treatment. This could be done by anybody irrespective of the status or class of the women. However, not much is known about market women's breast cancer related awareness, knowledge, attitude and practices especially given that most market women in Nigeria are not well educated. Several studies have been conducted on different categories of Nigerian women on knowledge and attitude towards breast cancer and breast self-examination especially outside the population used by the researchers (Obaji et al 2013; Olaogun et al 2017; Banning and Ahmed, 2013; Gwarzo et al, 2009). Moreso, there are similarities in the study conducted by Oladimeji et al, 2015 with the present study.

**Purpose:** The purpose of this study is to assess market women's awareness, knowledge, attitude and practices regarding breast cancer and breast cancer screening. This category of women was chosen because they hardly take time off their normal daily routine to go for screening. Moreso, getting them aware and improving their knowledge and attitude towards screening could go a long way in reducing the rate of diagnosing breast cancer at advanced stages of the disease, reducing high fatality rate thereby leading to better outcomes. Specifically, the study seeks to answer the following seven research questions:

RQ 1: Are market women aware of breast cancer and its screening methods?

RQ 2: Do women know the changes to look out for in their breasts?

RQ 3: Do women know how often they should do breast self examination?

RQ 4: What are the market women's breast and breast cancer related attitudes?

RQ 5: What is the level of the market women's breast cancer related knowledge?

RQ 6: What are the market women's breast cancer-related practices?

RQ 7: What is the relationship between age and education with breast cancer-related awareness, knowledge, attitude and practice?

## METHODS

A total of 153 market women from two markets, Aleshinloye and Ojoo markets in Ibadan participated in this descriptive cross sectional study as part of a breast cancer awareness and screening program carried out in the markets. These markets were selected based on the availability of convenient locations used for the outreach and research. Amongst the market women, 123 (80.4%) participated from Aleshinloye market while 30 (19.6%) participated from Ojoo market. The age range is between 16 to 72 with the mean of 45.56. The participants from Aleshinloye were more because the health centre used for the outreach was within the market while that used in Ojoo was not within the market but located few kilometers away from the Ojoo market. Aleshinloye is also a bigger market. Ethical approval for the study was obtained from the UI/UCH Ibadan Ethics Review Committee.

The women were given the questionnaires to complete as part of data collected during registration and while they were waiting for the program to start. The reason for completing the questionnaire was explained to the respondents and only those who voluntarily agreed to fill the questionnaires were allowed to do those. The questionnaire was interviewer administered as majority of the respondents could not read or preferred that the items on the questionnaire be read to them while they responded. Also, the interviewers translated the questionnaires to the local language for those who had limited use of English language.



The questionnaire used for data gathering assessed the respondents' breast cancer related awareness, knowledge, attitude and practice. It had a Cronbach's alpha value of .654 with each subscales having Cronbach's alpha values ranging from .430 to .729.

**Data analysis:** Data was analyzed on SPSS 21 using descriptive statistics and correlation analysis.

## RESULT

### RESPONDENT'S DEMOGRAPHIC CHARACTERISTICS

**Table 1: Respondents Educational Characteristics**

Educational levels	Frequency	Percent
None	12	7.8
Primary	19	12.4
Secondary	67	43.8
NCE or Grade2	29	19.0
HND or Degree	21	13.7
Not indicated	5	3.3
Total	153	100.0

**Table 1** shows that most of the respondents have secondary school level of education (43.8%)

**Table 2: Respondents Religious Characteristics**

Religion	Frequency	Percent
Christianity	100	65.4
Islam	51	33.3
Not indicated	2	1.3
Total	153	100.0

**Table 2** shows that majority of the respondents were Christians (65.4%)

**RQ 1:** Are market women aware of breast cancer and its screening methods?

**Table 3: Market Women's Awareness of Breast Cancer and its Screening Methods**

	Frequency (%)	n = 153
I have heard of breast cancer before (Yes)	130 (85.0%)	
I have heard about the different breast cancer screening methods (Yes)	52 (34.0%)	
<b>Breast cancer screening methods women are aware of</b>		
Not aware	117 (76.5%)	
Breast self examination and clinical breast examination	4 (2.6%)	
Breast self examination and mammogram	3 (2.0%)	
Breast self examination	23 (15.0%)	
Irrelevant responses	6 (3.9%)	
Total	153 (100%)	



**Table 3** shows that 85% of the market women were aware of breast cancer while only 15% are aware of the different screening methods. Breast self-examination was the most commonly known screening method by 15% of the market women.

**RQ 2:** Do women know the changes they should look out for in their breasts?

**Table 4: The Market Women's Responses to the Changes they would look out for in their Breasts**

	Frequency (%) n = 153
I know the important changes to look out for in my breasts. (Yes)	44 (28.8%)
<b><i>The breast changes the market women indicated they would look out for:</i></b>	
Do not know	122 (79.7%)
Lump in the breast or armpit	17 (11.3%)
Changes in nipples when pressed	1 (0.7%)
Lumps and discharge in breast (nipples)	2 (1.3%)
Lumps, dark skin, heaviness	1 (0.7%)
Check for lump, breast losing shape, pain in the armpit, swollen breast, discharges coming out from the breast	2 (1.3%)
Dirty breast	1 (0.7%)
Growing differences in size and shape	2 (1.3%)
Pains in breast	2 (1.3%)
Pains and lumps in breast	1 (0.7%)
If some parts of the breast are hard	1 (0.7%)
Spots on the breast	1 (0.7%)
Total	153 (100%)

**Table 4** shows that 79.7% of the respondents did not know what changes to look out for in their breasts. Breast lump was the most known of the breast changes to look out for by 11.3% of the market women.

**RQ 3: Do women know how often they should do breast self-examination?****Table 5: The Market Women's Responses to how often they should do Breast Self-examination**

	Frequency (%)
Do not know	133 (86.9%)
Monthly	5 (3.3%)
Every 3 months (and it should be done in the hospital)	1 (0.7%)
3 times a week	1 (0.7%)
All the time	1 (0.7%)
Anytime	1 (0.7%)
Bi-monthly	1 (0.7%)
Early in the morning/ Early in the morning everyday/ Daily during bath	4 (2.6%)
During menstruation period	1 (0.7%)
Before Menstrual cycle	1 (0.7%)
Immediately after menstruation	1(0.7%)
Every 6 months	1 (0.7%)
Every 2 weeks (whenever you have the funds to do it like 2 weeks interval)	2 (1.3%)
Total	153 (100%)

**Table 5** shows that majority of the market women did not know how often to screen for breast cancer

**RQ 4: What are the market women's breast and breast cancer related attitudes?****Table 6: Market Women's Attitude towards their Breast, Breast Cancer and Breast Cancer Screening**

Do you agree with the following statements?	Correct attitude
I feel comfortable touching and pressing my breasts (Yes)	127 (83.0%)
I feel comfortable looking at my breasts in the mirror (Yes)	126 (82.4%)
I can allow health professionals check and examine my breast for health reasons (Yes)	134 (87.6%)
I would screen for breast cancer if I can. (Yes)	128 (83.7%)
I would rather not screen for breast cancer (No)	113 (73.9%)
A diagnosis of breast cancer is death sentence (No)	97 (63.4%)
Thinking or talking about breast cancer scares me (No)	67 (43.8%)
I can never have breast cancer (No)	34 (22.2%)

**Table 6** shows that the attitude of most of the market women is such that will encourage breast cancer screening. However, thinking or talking about breast cancer scares 43.8% of the women and only 22.2% feel susceptible to having breast cancer.



**RQ 5:** What is the level of the market women's breast cancer related knowledge?

**Table 7: Market Women's Breast Cancer and Breast Cancer Screening Related Knowledge**

	Correct responses (%) n = 153
Over 50% of breast cancer cases are due to a family history or inherited genes.	53 (34.6%)
Breastfeeding increases a woman's risk for breast cancer.	95 (62.1%)
Early Detection provides a chance of surviving breast cancer	113 (73.9%)
Ensuring a healthy body weight by exercise and good diet reduces breast cancer risk.	84 (54.9%)
Younger women are not at risk of breast cancer	89 (58.2%)
Only women can have breast cancer	70 (45.8%)
Breast cancer is an infectious disease	76 (49.7%)
Giving birth to children early can reduce the risk of breast cancer	31 (20.3%)
It is possible for a woman to identify a breast lump by herself	95 (62.1%)
Regular consumption of alcohol is a risk factor for breast cancer	77 (50.3%)
Breast cancer lump could start from the armpit	79 (51.6%)
Knowledge descriptive in %: Range = 9.1 to 81.8 Mean = 53.5 SD = 16.7	

**Table 7** shows that 50% or more of the respondents got 7 out of the 11 questions right. When scores were converted into percentages, the participant had a mean score of 53.5% which is slightly above average.

**RQ 6:** What are the market women's breast cancer-related practices?

**Table 8: Market Women's Breast Cancer and Breast Cancer Screening Related Practices**

	Frequency (%) n = 153
I have talked about breast cancer screening with my mum, daughter, sister and/or friend. (Yes)	72 (47.1%)
I have screened for breast cancer before (Yes)	49 (32.0%)
<b>Breast cancer screening methods the market women have previously used</b>	
Frequency (%)	
No response	124 (81.0%)
BSE only	14 (9.1%)
BSE and mammography	1 (0.7%)
CBE	7 (4.5%)
Mammogram	5 (3.3%)
CBE and mammography	1 (0.7%)
Pipette sample taking and x-ray breast scan	1 (0.7%)
Total	153 (100.0%)

**Table 8** shows that 47.1% of the respondents have talked about breast cancer screening before while 32.0% indicated that they have screened for breast cancer before. However, only 29 (59.2%) out of the 49 women who indicated they had screened for breast cancer before could state the breast cancer screening method they had used. The most commonly used screening method was breast self examination only by 9.1% of the respondents.

**RQ 7:** What is the relationship between age and education with breast cancer-related awareness, knowledge, attitude and practice?

**Table 9: Correlations between Age, Education and Breast Cancer Related Awareness, Knowledge, Attitude and Practice**

		Age	Education	Awareness	Knowledge	Attitude	Practice
Age	r <sup>2</sup>	1	-.304**	-.068	-.107	.150	.079
	Sig. (2-tailed)		.000	.413	.199	.073	.355
Education	r <sup>2</sup>		1	.022	.163*	.104	.066
	Sig. (2-tailed)			.792	.048	.218	.441
Awareness	r <sup>2</sup>			1	.070	.022	.279**
	Sig. (2-tailed)				.396	.788	.001
Knowledge	r <sup>2</sup>				1	.328**	.201*
	Sig. (2-tailed)					.000	.017
Attitude	r <sup>2</sup>					1	.108
	Sig. (2-tailed)						.203
Practice	r <sup>2</sup>						1
	Sig. (2-tailed)						

\*\*Correlation is significant at the 0.01 level (2-tailed).

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

**Table 9** shows that educational level is significantly positively correlated with breast cancer related knowledge ( $P < 0.05$ ), breast cancer related knowledge is significantly positively correlated with breast cancer related attitude and practice ( $p < 0.05$ ) and breast cancer awareness is significantly correlated with practice ( $p < 0.05$ ). Attitude is however not significantly correlated with practice ( $P > 0.05$ ) and age was not significantly correlated with awareness, knowledge, attitude and practice ( $P > 0.05$ ) among these market women in this study.

## DISCUSSION

A high level of breast cancer awareness was found among 85% of the market women in our study. The level of breast cancer awareness among the Ibadan market women was higher than the 77.7% reported from among market women in Abakiliki (Obaji et al., 2013). However, despite the high level of breast cancer awareness among our market women, their breast cancer-related knowledge was less than adequate. This is similar to the findings of some other studies with different categories of women reporting high breast cancer awareness but low knowledge (Olaogun et al., 2017; Oladimeji et al., 2015; Banning & Ahmed, 2013; Obaji et al., 2013; Gwarzo, Sabitu & Idris, 2009). For instance, 79.7% of the respondents did not know what changes to look out for in their breasts, with only 10.6% knowing that they should look out for breast lump and 50.0% not knowing that a lump in the armpit can be the first noting of a breast cancer. This is similar to the 70.8% of market women in another study that did not know how to perform BSE (Oladimeji et al., 2015) probably because they did not know what to look out for.

Most of the women (80%) in our study did not know that having children early can reduce the risk of breast cancer; which is similar to findings that women do not consider their reproductive history as a risk factor for breast cancer (Singh & Turuk, 2017; Gabriel et al., 2016). Moreover, only 34% of respondents in our study were aware of the different breast cancer screening methods with BSE being the most commonly known screening method among 15% of the market women. This 15% is much lower than the 38.9% of market women in Abakiliki who were aware of BSE (Obaji et al., 2013). Much higher levels of BSE awareness of above 90% have been reported among female health practitioners (Omolase, 2009) and teachers (Kayode,



Akande & Osagbemi, 2005). Only 3.3% of the market women in our study knew how frequently to do BSE which is higher than the 0.4% reported by Obaji et al., (2013) but much lower than the 8.1% reported by Oladimeji et al (2015) in their studies. This high awareness and poor knowledge finding brings to the fore that awareness and knowledge are two different concepts in health education. While awareness may be easily gained through superficial information dissemination, obtaining knowledge requires more rigors of mentally processing health information and acquiring skills for the intelligent application of the information.

The finding that the market women in our study with more education had higher breast cancer related knowledge is in agreement with the findings of similar studies (Olagunju et al., 2017; Oladimeji et al., 2015; Singh & Turuk, 2017). However no relationship was reported between level of education and breast cancer related knowledge in some other study (Al-Azmy, Alkhabbaz & Almutawa, 2012). Having a higher breast cancer related knowledge was associated with more favorable breast cancer related attitude and practice in our study similar to findings reported by other studies (Olagunju et al., 2017; Gabriel et al., 2016; Azubuike & Okwuokei, 2013).

In terms of breast cancer-related practices 47.1% of the respondents have talked about breast cancer screening before while 32.0% indicated that they have screened for breast cancer before. This may be probably due to some financial constraints or the health beliefs of the market women towards breast cancer. However only 29 (59.2%) out of the 49 women who indicated they had screened for breast cancer before could state the breast cancer screening method they had used. The most commonly used screening method was breast self examination only by 9.1% of the respondents. This is in congruence with previous studies that have found out that a lot of women, market women inclusive, have poor breast cancer screening practices (Obaji et al., 2013; Azubuike & Okwuokei, 2013).

Despite the favorable attitude of the market women towards breast cancer screening in this study, this was not significantly correlated with breast cancer screening practices. This finding is similar to that reported in Nigeria (Azubuike & Okwuokei, 2013) and some other low resource settings (Singh & Turuk, 2017). Possible explanations for this maybe that the market women feel discouraged by the high cost of screening for breast cancer using mammography and/or ultrasounds (Pourfarzi et al, 2016; Farid et al. 2014 and Shamsi et al 2014), as well as low awareness of the screening services and reluctance to lose sales by leaving their markets to go for screening. In settings where the cost of breast cancer screening tests were subsidized or provided for free, screening uptake have been reported to still be low (Farzaneh, Heydari, Shekarchi, & Kamran, 2017 ). This suggests a much deeper resistance to screening due to socio-cultural beliefs (El Bcheraoui et al., 2015) which are worth investigating and should be considered in planning interventions (Crawford et al., 2015).

### **Limitations of the study**

The quantitative nature of the study limited the extent to which the reasons behind participants' responses could be deduced; hence future studies may want to apply mixed quantitative and qualitative methods to allow for an in-depth understanding of the respondents' responses.



**REFERENCES**

- Al-Azmy, S.F., Alkhabbaz, A., Almutawa, H.A., Ismaiel, A.E., Makboul, G. & El-Shazly, M.K. (2013). Practicing Breast Self-examination among Women attending Primary Health Care in Kuwait. *Alexandria Journal Medicine*; 49: 281-286.
- Anderson, B., Shyyan, R., Eniu, A., Smith, R., Yip, C. & Bese, N. (2006). Breast Cancer in Limited-resource Countries: An Overview of the Breast Health Global Initiative 2005 guidelines. *Breast Journal* ; 12 (Suppl 1): S3-15.
- Azubuikwe, S.O. Okwuokei, S.O. (2013). Knowledge, Attitude and Practices of Women towards Breast Cancer in Benin City, Nigeria. *Annals of Medical and Health Sciences Research*; 3(2): 155-160.
- Banning, B., & Ahmed, F.G. (2013). Insights into the Knowledge and Perception of Breast Cancer and its Screening Practices among Nigerian Women. *Journal of Cancer Therapy & Research*; 1:
- Crawford, J., Frisina, A., Hack, T., Parascandalo, F. (2015) A Peer Health Educator Program for Breast Cancer Screening Promotion: Arabic, Chinese, South Asian, and Vietnamese Immigrant Women's Perspectives. *Nursing Research & Practice*: vol. 2015, Article ID 947245 .
- El Bcheraoui, C., Basulaiman, M., Wilson, S., Daoud, F., Tuffaha, M., AlMazroa, MA, Memish, ZA, Al Saeedi, M & Mokdad, A H (2015) Breast Cancer Screening in Saudi Arabia: free but almost no takers. *PLoS One* 2015;10:e0119051. doi: 10.1371/journal.pone.0119051.
- Farid, N.D., AbdulAziz, N., Al-Sadat, N., Jamaludin, M., & Dahlui, M. (2014) Clinical Breast Examination as the Recommended Breast Cancer Screening Modality in a Rural Community in Malaysia; What are the factors that could enhance its uptake? *PLoS One*. 2014;9:e106469. doi: 10.1371/journal.pone.0106469.
- Faronbi, J.O. & Abolade, J. (2012). Self Breast Examination Practices among Female Secondary School Teachers in A Rural Community in Oyo State, Nigeria. *Open Journal of Nursing* 2: 111–115.
- Farzaneh, E., Heydari, H., Shekarchi, A. A. & Kamran, A. (2017). Breast and Cervical Cancer-screening Uptake among Females in Ardabil, Northwest Iran: A Community-based Study. *Onco Targets and therapy*, 10, 985–992.
- Ferlay, J., Soerjomataram, I., Dikshit, R., Eser, S., Mathers, C., Rebelo, M. et al. (2015). Cancer Incidence and Mortality Worldwide: Sources, Methods and Major Patterns in GLOBOCAN 2012. *International Journal of Cancer*, 136 (5): E359-86.
- Ferlay, J., Shin, H.R., Bray, F., Forman, D., Mathers, C. & Parkin, D. (2010). Estimates of Worldwide Burden of Cancer in 2008: GLOBOCAN 2008. *International Journal of Cancer*. 127 (12): 2893-917.
- Forouzanfar, M.H., Foreman, K.J., Delossantos, A.M., Lozano, R., Lopez, A.D., Murray, C.J. (2011). Breast and Cervical Cancer in 187 Countries between 1980 and 2010: A Systematic Analysis. *Lancet* ; 378: 1461–1484
- Gabriel, O., Ajetunmobi, O., Shabi, O., Elegbede, O., Okere, R., Busari, O., & Dada, A. (2016). Awareness and Practice of Self breast Examination among Female Nurses at the Federal Teaching Hospital Ido-Ekiti, Nigeria. *Journal of Public Health in Africa*, 7(1).
- Gwarzo, U.M.D., Sabitu, K. & Idris, S.H. (2009). Knowledge and Practice of Breast-self Examination among Female Undergraduate Students of Ahmadu Bello University Zaria, Northwestern Nigeria. *Annals of African*



*Medicine*; 8:55–58.

IARC. Globocan 2012: Estimated Cancer Incidence, Mortality and Prevalence Worldwide in 2012. Accessed 10 September 2016

Jedy-Agba, E., Curadob, M.P., Ogunbiyi, O., Oga, E, Fabowale, T, Igbinoba, F.Osubor, G,Olu, T.,Koechlin,A.Osinubi, P., Dakun, P.,Blattner, W.,& Adebamowo, CA (2012) Cancer Incidence in Nigeria: A Report from Population-based Cancer Registries. *Cancer Epidemiology* ; 36(5): e271–e278.

Kayode, F.O., Akande, T.M. & Osagbemi, G.K. (2005). Knowledge, Attitude and Practice of Breast Self-examination among Female Secondary School Teachers in Ilorin, Nigeria. *European Journal of Scientific Research*; 10: 42-47.

Obaji, N.C., Elom, H.A., Agwu, U.M., Nwigwe, C.G., Ezeonu, P.O., Umeora, O. (2013). Awareness and Practice of Breast Self- Examination among Market Women in Abakaliki, South East Nigeria. *Annals Medical Health Sciences Research*; 3: 7-12.

Oladimeji, K.E., Tsoka-Gwegweni, J. M., Igbodekwe, F. C., Twomey, M., Akolo, C., Balarabe, H. S. & Oladimeji, O. (2015). Knowledge and Beliefs of Breast Self-Examination and Breast Cancer among Market Women in Ibadan, South West, Nigeria. *PloS one*, 10(11), e0140904. doi:10.1371/journal.pone.0140904

Olaogun, J.G., Emmanuel, E.B., Dada, SA, Odesanmi, OM, Adesua, O.A. (2017). The Prevalence of Practicing Breast Self-examination and Knowledge of Breast Cancer Disease among Women Attending Secondary Health Facility. *International Surgery Journal*;4:10; 3211-3217.

Omolase, C.O. (2009). Awareness, Knowledge and Practice of Breast-self Examination amongst Female Health Workers in a Nigerian Community. *Annals of African Medicine* 8: 55-8.

Pourfarzi, F., Fouladi, N., Amani, F., Ahari, SS, Roshani,z.,& Alimohammadi, S., (2016). Factors Affecting Preferences of Iranian Women for Breast Cancer Screening based on Marketing Mix Components. *Asian Pacific Journal of Cancer Prevention.*; 17(8): 3939–3943.

Shamsi, M., Yenistani, H., Ebrahimipour, H., Esmaili, H. Najjar, A.V. (2014). Using Social Marketing Model to Persuade the Women to do Mammography. *Journal of School Public Health Institute Public Health Research*; 12: 85–96.

Singh, R. & Turuk, A. (2017). A Study to Assess the Knowledge Regarding Breast Cancer and Practices of Breast Self-examination among Women in Urban Area. *International Journal of community Medicine and Public Health.* 4(11); 4341-4347

World Health Organization, (2013). Breast cancer: Prevention and Control. Available: <http://www.who.int/cancer/detection/breastcancer/en/print.html> [Ref list]

World Health Organisation. (2016). Breast cancer: Prevention and Control. Geneva, Switzerland. Accessed 10 October 2016.

**The authors appreciate the financial support from the Union for International Cancer Control (UICC)**