

Knowledge, Attitudes and Breast Cancer Screening Practices among Market Women in Thika Town, Kiambu County, Kenya

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Abstract-Introduction: Breast cancer is one of the commonest cancers among women in Kenya. Screening of the cancer is done through self-breast examination, clinical breast examination, and mammography. The success in the management of breast cancer is essentially dependent on the stage at which the cancer is diagnosed and therefore screening is helpful at identifying the disease in the early stages. The study aimed at assessing knowledge, attitudes and breast cancer screening practices among women in Thika Town, Kiambu County, Kenya.

Methods: The study utilized an analytical cross-sectional study design that had mixed methods of data collection; pre-tested self-administered structured questionnaires and Focused Group Discussions. A sample size of 304 respondents was selected through systematic random sampling from both markets while Focus Group Discussion participants were selected through convenience sampling. SPSS version 22 was used to analyse quantitative data while qualitative data was analyzed by use of content analysis.

Results: The respondents who were screened by any of the methods were 13.2%. They had high awareness of breast cancer and 95.3% had heard of breast cancer screening. Knowledge of symptoms

was high (70.5%) but knowledge of risk factors (50%) was lower among the respondents. Approximately half of the respondents were knowledgeable on the procedure for self-breast examination. All the respondents were afraid of being diagnosed with breast cancer and most (74%) agreed that they were afraid of disfigurement. They (84.9%) did not like the embarrassment associated with clinical breast examination and majority (48.8%) agreed that mammography is painful. Most of the participants would go for treatment if diagnosed with breast cancer as well as support those found with breast cancer. On multivariate analysis knowledge of procedure of self-breast examination (2.62; 95% CI: 1.212-5.665) and level of agreement with statements on breast cancer and screening (8.03; 95% CI: 1.85-34.85) were the strongest predictors for screening among the respondents.

Conclusion: In conclusion, uptake of screening was low; there was incomplete knowledge of breast cancer and screening in addition to negative attitudes. There is need for creation of sustained awareness on breast cancer and screening through mass media, healthcare professionals and breast cancer survivors.

Index Terms: Attitudes, breast cancer, knowledge, screening

1. INTRODUCTION

Breast cancer is a major public health concern. It accounted for 12% of all cancer cases seen globally in 2018 (32) and was the main cause of cancer related deaths among women where an estimated 626,679 deaths were reported to have occurred in 2018 (32). With 168,690 new cases and 74,072 deaths, breast cancer was the leading cancer among women in

Africa in 2018 (32). It is also the leading malignancy among women in Kenya where 5, 985 new cases were diagnosed in 2018 (32). The incidence rates for breast cancer vary globally from 25.9 in South Central Asia to 94.2 new cases in Australia and New Zealand (32, 37). South Central Asia is closely followed by African regions at 27.9 in middle Africa and 29.9 per 100,000 new cases in Eastern Africa.

Other developed countries in regions such as Europe and Northern America have more than 80 new cases

per 100,000 women (32, 37).

The incidence of breast cancer in African countries is lower compared to the developed countries (32, 37). The survival rates are also poor and mortality rates are as high as the industrialized nations (6, 32). Most of the developing countries are characterized by inadequate funding and unavailability of treatment facilities as well as staff. African women have also been found to present at a younger age (35-49 years) and with a more aggressive type of breast cancer (1, 6). Patients in developing countries also present in advanced stages of the cancer; 64% of patients with cancer in Kenya presented at stages III and IV (7) while 77.8% of patients in Angola were diagnosed with breast cancer in the advanced stages (8). Survival from breast cancer is dependent on various important genetic and clinical factors. One of the key factors is the stage and grade of the tumour when the diagnosis is made (1, 31). For this reason, chances of survival are improved greatly when breast cancer is detected early, especially through screening.

presented in the Kenya Demographic Health Survey (13) showed that only 10% of women in Kenya have had both a Self-breast Examination and a Clinical Breast Examination done. Other low and middle income countries also have low rates screening. An analysis of the World Health Survey (2003) found that only 2.2% of women in low-income countries had ever been screened for breast cancer (3). Developed countries such as Denmark and Netherlands had screening rates of 84.3% and 79.4% in 2014 (15). The differences in the screening rates can be attributed to improved and timely dissemination of information on breast cancer in the high income countries. The developed countries also have organized national screening programmes where women are invited through phone calls as well as mails and follow-up is done on them. In developing countries national screening programmes are non-existent and screening for breast cancer is mostly emphasized in the month of October which is the breast cancer month (16, 29).

Screening for breast cancer is done through mammography which is a method that has been found to reduce deaths related to breast cancer by 20% (29). Clinical Breast examination (CBE) is also useful in the early detection of cancer with clinical trials reporting specificity and sensitivity rates of 94.3% and 51.7% respectively (9, 10). Provencher et.al, (30) also found that a significant portion of breast cancer cases in their Canadian study would have been missed if CBE was not done on the patients. Self-breast examination (SBE) is used as a tool for creating awareness for breast cancer among women especially in the developing countries (29). Recent studies in Kenya found that 30.8% of women in Nairobi County and 28% of women in Kakamega County reported to have been screened for breast cancer in 2013 and 2014 respectively (11, 12). Data

Several reasons have been identified for the low screening rates in the developing countries in which Kenya is part of. A review by Islam et.al (17) found that lack of knowledge and poor understanding on the importance of screening for breast cancer were key barriers to women being screened in low and middle income countries. Other barriers identified were psychological factors such as fear and anxiety, perception of not being at risk and fear of a painful mammogram (17). This study was designed to establish the knowledge, attitudes and breast cancer screening practices among market women in Thika Town, Kiambu County, Kenya.

2. METHODS

The study was an analytical cross sectional study carried out in Mukiriti and Madaraka markets in Thika Town, Kiambu County, Kenya from April-August 2017. The population of Kiambu County was 1,623, 282 with 820,679 being women (14). Thika Town constituency had a population of 165,342 (14). The markets were selected because they are the largest in Thika Town. Economic activities included selling clothes and shoes, jewelry, salons, furniture and foodstuff. The target population was the approximately 1000 women who own and work in stalls in both markets. Data was collected by use of pre-tested self-administered structured questionnaires

and Focus Group Discussions (FGDs). Systematic sampling was used to get 304 respondents for the self-administered questionnaires where 152 respondents from each market took part in the study. Convenience sampling was used to get participants for the Focus Group Discussions which took place in Mukiriti market; three Focus Group Discussions were held. Women who operated permanent stalls and those who consented took part in the study while customers, those who did not consent as well as those who had breast cancer were not considered to be eligible for the study. Data from the questionnaires was manually checked to ensure completeness and was then coded and keyed into a computer database

using SPSS version 22. Percentages, frequencies and composite scores (univariate analysis) were first utilized to analyze quantitative data; Chi squares (bivariate analysis) and binary logistic regression (multivariate) analysis were then utilized to determine the association between the variables (i.e. dependent and independent variables). Content analysis was used for the qualitative data whereby trends, patterns and relationships from the data collected were established.

3. RESULTS

Coverage and Response Rate

The study targeted a sample size of 304 respondents from whom 258 completely filled and returned their questionnaires and this resulted to a coverage rate of 84.9%. The response rate was 100%.

Characteristics of the Respondents

Majority of the respondents 105 (40.7%) were in the age range of 25-34 years. They were followed by those who were between 35-44 years (31.8%). A large proportion of the respondents was married (62%) and had between 2-5 children (55%). Majority (53.5%) also had a secondary level of education, were self-employed 45.3% (117%), had worked between 6-10 years and 114 (44.2%) earned between Ksh 15,000-Ksh 20,000. Almost all 250 (96.9%) respondents were Christians and a large number 121 (48.4%) were Catholics. Most of the respondents 170 (65.8%) spoke Kikuyu as their mother tongue.

Uptake/Practice of Breast Cancer Screening

The study sought to establish the uptake of screening for breast cancer and therefore asked the respondents to indicate if they have ever gone to be screened. The proportion of the respondents who reported to have been screened was 34 (13.2%) (95% C.I. 9.9-17.2) as indicated in Figure 1

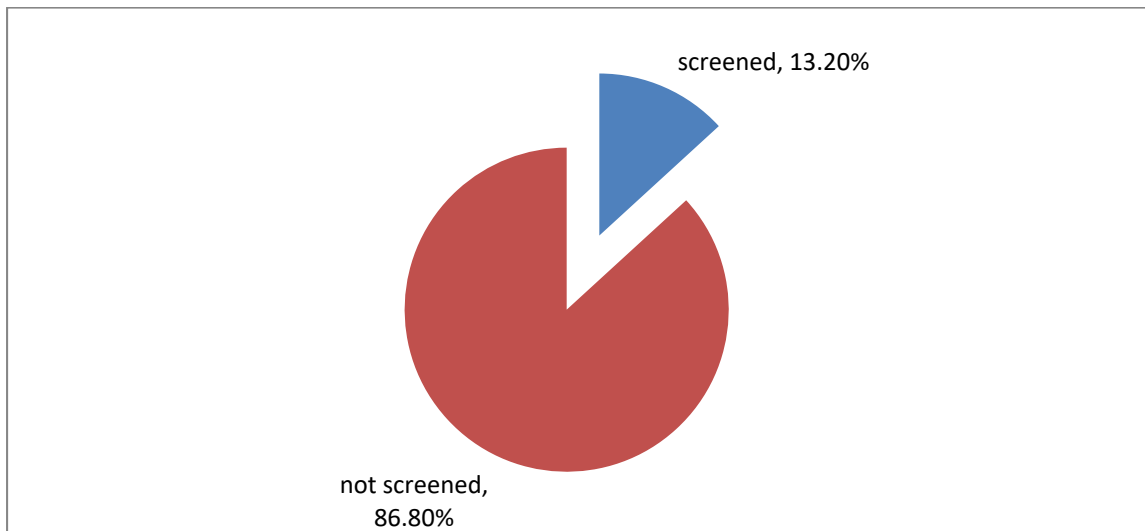


Figure 1: Uptake of Breast Cancer Screening among market women in Thika Town, Kiambu County, Kenya (April-August 2017)

During the previous two years 18 out of the 34 screened respondents (52.9%) (95% C.I. 35.1-70.2) indicated to have done self-breast examination; 14 respondents (41.2%) (95% C.I. 24.7-59.3) reported to have undertaken a clinical breast examination and the rest of the respondents (5.9%) (95% C.I. 0.7-19.7) had a mammography done. Out of 18 respondents who had done self-breast examination, only 3 (16.7%) correctly examined themselves monthly, 44%.4 examined themselves annually, 33.3% after two years (33.3%) and the remaining 5.6% examined themselves after one week.

Knowledge of breast cancer

All the respondents 258 (100%) had heard of breast cancer. From the responses got from the Focus Group Discussions, the sources of information on breast cancer and screening mentioned were media (radio and television), hospitals, campaigns, friends and relatives, colleagues, community health workers, school and one respondent mentioned the husband to be the source of information.

Symptoms and risk factors for breast cancer

In regards to symptoms of breast cancer, most of the respondents (80.2%) correctly identified nipple discharge as a symptom. Majority also identified (76%) nipple retraction, (74.4%) ulcers on the breast

and (72.9%) breast lump as symptoms. A lesser number of respondents (57.4%) and 45.7% correctly identified dimpling of skin on breast and skin colour changes respectively as symptoms. The responses were then computed and categorized into five quintiles based on the level of knowledge of symptoms (Table 1). Majority of the respondents (70.5%) were knowledgeable on the symptoms of breast cancer. On the risk factors majority of the respondents (82.6%) correctly identified obesity as a risk factor. A large proportion (72.9%) recognized

late menopause, (67.1%) early menarche, (65.9%) previous history of breast cancer in one breast and (53.1%) increasing age as risk factors. Fewer respondents (46.5%) identified lack of exercise and (48.4%) late age at first birth as risk factors. The variables were computed and categorized into five quintiles to establish the level of knowledge of risk factors. Half of the respondents were knowledgeable on the risk factors for breast cancer (Table 1).

Table 1: Level of knowledge of symptoms and risk factors for breast cancer among market women in Thika Town, Kiambu County, Kenya (April-August 2017)

Variable	Frequency	Percentage (%)
Symptoms of Breast Cancer		
Very high knowledge	93	36.0
High knowledge	89	34.5
Average knowledge	55	21.3
Low knowledge	17	6.6
Very low knowledge	4	1.6
Total	258	100
Risk factors for Breast Cancer		
Very high knowledge	59	22.9
High knowledge	70	27.1
Average knowledge	102	39.5
Low knowledge	21	8.1
Very low knowledge	6	2.3
Total	258	100

Knowledge of Breast Cancer Screening

Almost all the respondents 246 (95.3%) had heard of breast cancer screening. A large proportion of the respondents correctly indicated that self-breast examination (81.8%) and clinical breast examination (77.5%) were screening modalities. A significantly lesser number of respondents (52.7%) identified mammography as a screening technique. Slightly more than half of the respondents (56.6%) indicated that clinical breast examination is done annually while 44.2% indicated that mammography is done

after every two years. On the procedure for performing a self-breast examination, slightly more than half of the respondents indicated that self-breast examination does not begin by inspection with arms akimbo, 52.7% indicated that inspection is then done with arms raised, 51.6% indicated that palpation is not done with a flat palm, 50.4% indicated that palpation is then done with the patient standing upright and when lying supine and 55.4% indicated that palpation of the breast is not done systematically. The responses were computed and categorized into five quintiles based on the level of knowledge on the

procedure for self-breast examination. The first category was from 0-0.20 and the respondents in this group were considered to have very high knowledge, the second category was 0.21-0.40 and the respondents were considered to have high knowledge, the third category was from 0.41-0.60 and the respondents were considered to have average

knowledge, the fourth was from 0.61-0.80 and the respondents were considered to have low knowledge and the fifth category was from 0.81-1.00 and the respondents in this category were considered to have very low knowledge (Table 2). Approximately 50% of the respondents were knowledgeable on the procedure for self-breast examination.

Table 2: Level of Knowledge on the procedure for self-breast examination

Variable	Frequency	Percentage (%)
Very high knowledge	80	31
High knowledge	49	19.0
Average knowledge	47	18.2
Low knowledge	35	13.6
Very low knowledge	47	18.2
Total	258	100

The respondents were presented with statements that had information regarding breast cancer and screening; they were asked to indicate the degree to which they agreed with them. Majority of the respondents strongly agreed (46.1%) that early diagnosis has favourable outcomes following treatment; 73.6% agreed that cigarette smoking, obesity and hormonal contraceptives contribute to cancer of the breast and that early presentation of the disease is a painless breast lump; 57.8% agreed that

breast cancer can be inherited; 53.9% agreed that self-breast examination helps in the early detection of breast cancer; 32.9% were neutral on whether breast cancer is caused by putting coins in the brassieres; 66.3% disagreed that breast cancer is caused by breastfeeding and 61.2% disagreed that breast cancer leads to the loss of breasts. The responses were computed and categorized into five based on the level of agreement and 68.6% of the respondents agreed with the statements provided (Figure 2).

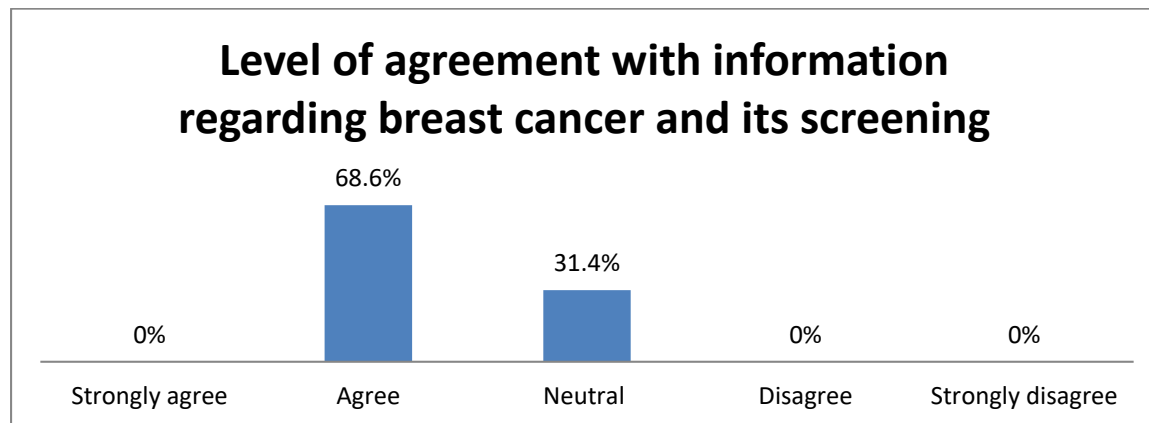


Figure 2: Level of agreement with information regarding breast cancer and screening

Bivariate analysis between knowledge of symptoms and risk factors of breast cancer and uptake of breast cancer screening

A bivariate analysis showed that there was a tendency of the uptake of breast cancer screening to increase as the level of knowledge of symptoms

increased. A breast lump is the commonest sign of breast cancer and 72.9% of the respondents were aware that it was a symptom. Uptake of screening was found to be higher (23 out of 34 i.e. 67.6%) among those who had indicated that it was a symptom. This was however not statistically significant ($X^2=0.54$, $p=0.462$). Obesity (modifiable risk factor) was a factor mentioned by most of the respondents (82.6%) and uptake of screening was higher (26 out of 34 respondents; 76.5%) among those who indicated that it was risk factor however that was also not statistically significant ($X^2=1.161$,

$p=0.281$). The risk factors were then categorized into modifiable (obesity, lack of exercise and late age at birth) and non-modifiable risk factors (late menopause, early menarche, previous history of breast cancer in one breast and increasing age) and each category was further computed into five quintiles. Uptake of screening was found to be higher among the respondents with a high level of knowledge of non-modifiable risk factors and this was statistically significant ($\chi^2 =14.250$, $p=0.007$) (Table 3).

Table 3: Cross tabulation between knowledge of symptoms and risk factors of breast cancer and uptake of breast cancer screening

Variable	Breast screening uptake			Chi square/Significance
	Screened	Not screened	Total	
Knowledge of symptoms of breast cancer				
Very high knowledge	14 (15.1%)	79(84.9%)	93 (100%)	$X^2=1.107$ df=4 $p=0.893$
High knowledge	10 (11.2%)	79 (88.8%)	89 (100%)	
Average knowledge	7 (12.7%)	48 (87.3%)	55 (100%)	
Low knowledge	2 (11.8%)	15 (88.2%)	17 (100%)	
Very low knowledge	1 (25.0%)	3 (75.0%)	4 (100%)	
Total	34	224	258 (100%)	
Knowledge of risk factors for breast cancer				
Modifiable risk factors				
Very high knowledge	8 (15.4%)	44 (84.6%)	52 (100%)	$X^2=3.708$ df=3 $p=0.295$
High knowledge	13 (11.2%)	103 (88.8%)	116 (100%)	
Average knowledge	0 (0%)	0 (0%)	0 (0%)	
Low knowledge	8 (11.3%)	63 (88.7%)	71 (100%)	
Very low knowledge	5 (26.3%)	14 (73.7%)	19 (100%)	
Total	34	224	258 (100)	
Non modifiable risk factors				
Very high knowledge	2 (4.7%)	41 (95.3%)	43 (100%)	$X^2=14.250$ df=4 $p=0.007^*$
High knowledge	22 (21.8%)	79 (78.2%)	101 (100%)	
Average knowledge	9 (10.8%)	74 (89.2%)	83 (100%)	

Low knowledge	0 (0%)	27 (100%)	27 (100%)	
Very low knowledge	1 (25.0%)	3 (75.0%)	4 (100%)	
Total	34	224	258 (100%)	

*Significant values with $p < 0.05$

Upon cross tabulation, there was a statistical significance between the number of children and the level of knowledge of symptoms ($X^2=4.023$, $p=0.045$). The respondents with two and more children had a higher level of knowledge of symptoms of breast cancer. There was no statistical significance between any of the demographic characteristics and modifiable risk factors but non-modifiable risk factors late menopause was statistically significant with marital status ($X^2=4.793$, $p=0.029$), level of education ($X^2=13.291$, $p=0.000$),

Bivariate analysis between knowledge of screening and uptake of breast cancer screening

A bivariate analysis showed that all the respondents who had ever been screened had heard of breast cancer screening. Indication of self-breast

main sources of income ($X^2=33.494$, $p=0.000$) number of children ($X^2=39.753$, $p=0.000$) and being Christian ($X^2=75.896$, $p=0.000$). Previous history of breast cancer in one breast was also statistically significant with main sources of income ($X^2=7.697$, $p=0.021$) and the number of children ($X^2=7.662$, $p=0.006$). Early menarche was statistically significant with age ($X^2=5.889$, $p=0.015$), marital status ($X^2=18.930$, $p=0.000$), main sources of income ($X^2=34.834$, $p=0.000$), number of children ($X^2=7.457$, $p=0.006$) and being Christian ($X^2=20.416$, $p=0.000$).

examination as a screening modality was statistically significant with uptake of screening ($X^2=6.134$, $p=0.013$) as well as the knowledge of performing a self-breast examination ($X^2=16.332$, $P=0.003$). Uptake of screening was also higher among the respondents who agreed with the statements provided ($X^2=11.835$, $p=0.001$) (Table 4).

Table 4: Cross tabulation between knowledge of screening and uptake of breast cancer screening

Variable	Breast screening uptake			Chi square/Significance
	Screened	Not screened	Total	
Ever heard of breast cancer screening				
Yes	34 (13.8%)	212 (86.2%)	246 (100%)	$X^2=1.1910$ df=1 $p=0.167$
No	0 (0%)	12 (100%)	12 (100%)	
Total	34	224	258 (100%)	
Modalities of breast cancer screening				
Self-breast examination				
Yes	33 (15.6%)	178 (84.4%)	211 (100%)	$X^2=6.134$ df=1 $p=0.013^*$
No	1 (2.1%)	46 (97.9%)	47 (100%)	
Total	34	224	258 (100%)	

Clinical breast examination				
Yes	27 (13.5%)	173 (86.5%)	200 (100%)	X ² =0.080 df=1 p=0.777
No	7 (12.1%)	51 (87.9%)	58 (100%)	
Total	34	224	258 (100%)	
Mammography				
Yes	20 (14.7%)	116 (85.3%)	136 (100%)	X ² =0.587 df=1 p=0.444
No	14 (11.5%)	108 (88.5%)	122 (100%)	
Total	34	224	258 (100%)	
How often is clinical breast examination done				
Annually	18 (12.3%)	128 (87.7%)	146 (100%)	X ² =0.212 df=1 p=0.645
Others	16 (14.3%)	96 (85.7%)	112 (100%)	
Total	34	224	258 (100%)	
How often are you supposed to go for mammography				
After every 2 years	16 (14%)	98 (86%)	114 (100%)	X ² =0.131 df=1 p=0.717
Others	18 (12.5%)	126 (87.5%)	144 (100%)	
Total	34	224	258 (100%)	
Procedure for self-breast examination				
Very high knowledge	18 (22.5%)	62 (77.5%)	80 (100%)	X ² =16.332 df=4 p=0.003*
High knowledge	9 (18.4%)	40 (81.6%)	49 (100%)	
Average knowledge	5 (10.6%)	42 (89.4%)	47 (100%)	
Low knowledge	2 (5.7%)	33 (94.3%)	35 (100%)	
Very low knowledge	0 (0%)	47 (100%)	47 (100%)	
Total	34	224	258 (100%)	

*Significant values with p< 0.05

Multivariate analysis between knowledge of breast cancer and screening and uptake of screening for breast cancer

A binary logistic regression was performed to establish the effects of non-modifiable risk factors, self-breast examination as a modality, procedure for self-breast examination and level of agreement with statements on breast cancer on uptake of screening.

The logistic model was statistically significant X² =29.609, P=0.000). It explained 20% (Nagelkerke R²) of the change in uptake of breast cancer screening and correctly classified 86.8% of cases. Increase in the knowledge of the procedure for self-breast examination as well as degree of agreement with statements on breast cancer and screening increased the likelihood of uptake of screening (Table 5).

Table 5: Multivariate analysis between knowledge of cancer of the breast and screening and uptake of screening

Variable	B	S.E.	Sig.	Exp(B)	95% C.I.for EXP(B)	
					Lower	Upper
Self-breast examination as a screening modality	1.984	1.038	0.056	7.272	0.950	55.661
Non-modifiable risk factors	-0.157	0.209	0.453	0.855	0.568	1.287
Procedure for self-breast examination	0.963	0.393	0.014	2.621	1.212	5.665
Level of agreement with statements on breast cancer and screening	2.083	0.749	0.005	8.029	1.850	34.851

*Significant values with $p < 0.05$

Attitude towards breast cancer and screening

All the respondents (100%) agreed that they were afraid of being diagnosed with breast cancer, 74% agreed that were afraid of being disfigured, 84.9% of the respondents agreed that they hated the embarrassment associated with clinical breast examination, 69.8% agreed that women should be encouraged to screen for cancer of the breast and 65.1% agreed that doing a self-breast examination would make them worry of breast cancer. A large proportion of the respondents disagreed (59.3%) that

cancer of the breast is a curse, 49.2% disagreed with the statement that they are not at risk of developing breast cancer, 48.8% agreed that having a mammography is painful and 46.9% were neutral on the statement that they consider breast cancer as a 'death sentence'. The responses were then computed and categorized into 5 quintiles. The groups ranged from strongly agree (0-0.20), to agree (0.21-0.40), to neutral (0.41-0.60), to disagree (0.61-0.80) and finally strongly disagree (0.81-1.00). Most of the respondents (77.1%) agreed with the statements provided (Table 6)

Table 6: Percentage of the respondents' extent of agreement on statements on attitude towards breast cancer and screening

Statements	Frequency	Percentage (%)
Strongly agree	0	0
Agree	199	77.1
Neutral	59	22.9
Disagree	0	0
Strongly disagree	0	0
Total	258	100

On how the society treats someone with breast cancer; majority of the FGD participants mentioned that the society treats people with pity and sympathy and even empathized with them as one respondent mentioned '*I imagine the pain they experience. I lost a friend last year who had cancer and she didn't know (FGD-2)*'. A large number of participants said that they would offer financial support as one respondent put it '*personally, I would organize a fundraiser if somebody I know had breast cancer. They are given very expensive medications' (FGD-2)*'. The participants would also encourage them to seek and continue with their medication.

Stigma towards the women with breast cancer patients was also mentioned as another participant mentioned that '*some people treat them as outcasts especially the single mothers (FGD-1)*' and another added that '*they will be looked at as death walking because cancer is not curable' (FGD-1)*'.

The participants in the FGDs also discussed on what they would do if they were to be diagnosed with breast cancer. Majority of the respondents mentioned that they would accept themselves and then seek treatment as one respondent put it '*I have to first accept and then go for treatment because it's a worrisome disease and I want to live and lead a better life' (FGD-1)*'. Another mentioned that '*I would seek medication and try to follow the doctor's prescription'*'

Some of the participants would create awareness of breast cancer to help others seek medical care as one respondent put it '*I would start awareness campaigns to inform other people of the disease (FGD-3)*' while other participants would encourage others to go for screening so it can be detected early. A few participants mentioned that they would be afraid of being stigmatized by the society and even equated the

cancer to Human Immunodeficiency Virus which does not have a cure.

Bivariate analysis between attitude towards cancer of the breast and screening and the uptake of screening

A bivariate analysis showed that there was statistical significance between uptake of screening for cancer of the breast and the extent of agreement that breast cancer is a curse ($X^2=26.875$, $p=0.000$), belief that the respondents were at risk of developing breast

cancer ($X^2=16.106$, $p=0.003$), fear of disfigurement ($X^2=13.737$, $p=0.001$), active encouragement of women to screen for breast cancer ($X^2=8.472$, $p=0.037$), having a mammogram is painful ($X^2=10.983$, $p=0.012$) and the fear that breast cancer is a 'death sentence' ($X^2=6.770$, $p=0.034$). Upon computing the variables and further analysis, there is no statistical significance between attitude towards breast cancer and screening (Table 7)

Table 7: Cross tabulation between attitude towards cancer of the breast screening and the characteristics of the respondents

Variable	Breast screening uptake			Chi square/Significance
	Screened	Not screened	Total	
Strongly agree	0 (0%)	0 (0%)	0 (0%)	$X^2=3.428$ df=1 $p=0.064$
Agree	22 (11.1%)	177 (88.9%)	199 (100%)	
Neutral	12 (20.3%)	47 (79.7%)	59 (100%)	
Disagree	0(0%)	0 (0%)	0 (0%)	
Strongly disagree	0(0%)	0 (0%)	0 (0%)	
Total	34	224	258 (100%)	

*Significant values with $p < 0.05$

Factors associated with attitude towards breast cancer and screening

A composite score was made using variables for knowledge of risk factors for breast cancer, procedure for self-breast examination and degree of agreement with statements breast cancer and screening. A bivariate analysis was done and showed the level of knowledge was statistically significant with the attitude of the respondents. ($X^2=13.829$, $p=0.001$).

Demographic factors associated with attitude included marital status ($X^2=10.111$, $p=0.001$), highest level of education ($X^2=28.646$, $p=0.000$), main sources of income ($X^2=16.781$, $p=0.000$), number of children ($X^2=14.720$, $p=0.000$) and being Christian ($X^2=24.28$, $p=0.000$) (*Significant values with $p < 0.05$).

4. DISCUSSION

The purpose of this study was to establish the knowledge, attitudes and breast cancer screening practices among women. From the study, 13.2% (95% C.I. 9.9-17.2) of the respondents indicated to have ever been screened for breast cancer. The findings are comparable to those in other developing countries where studies found low screening rates of

17.7% in Nigeria (5), 12% in Indonesia (4), 12% in Iran (18) and an average of 2.2% in low and middle income countries (17). From the screened respondents, majority practiced SBE and CBE which are recommended screening methods in low and middle income countries.

Knowledge of breast cancer has been defined as a woman's awareness of the symptoms, risk factors, breast cancer screening and treatment. The respondents in this study had high awareness of breast cancer; all respondents indicated to have heard of breast cancer. This was similar to other studies done in Nairobi-Kenya, Tanzania, Senegal where 95.3%, 98.2% and 97.9% of the respondents reported to have heard of breast cancer (11, 19, 20). A higher proportion of respondents (70.5%) in this study correctly identified the symptoms of breast cancer presented to them while fewer (50%) correctly identified risk factors for the cancer depicting partial knowledge of breast cancer among the respondents. These findings are consistent to those of Morse et.al (20) in Tanzania and Marmara et.al (21) in Malta who found variations in both knowledge of symptoms and breast cancer risk factors. The sources of information mentioned in this study included the electronic media (radio and television) and hospitals similar to findings of a review by Ojewusi et.al, (22). These form an important source of information

regarding breast cancer as well as being fertile areas for interventions so as to increase awareness of the cancer.

Further analysis done showed that there was propensity for the uptake of screening for breast cancer to increase as the level of knowledge of symptoms increased. Having more children was associated with the knowledge of symptoms. The level of knowledge was higher among the respondents with two and above children; those who were younger and had worked for less than 10 years in the markets, earned more than Ksh 15,000 and were Catholics. A few selected characteristics were statistically significant with the knowledge of risk factors of cancer of the breast. They were age, marital status, level of education, main sources of income, number of children and being Christian. In this study majority of the younger respondents were more knowledgeable compared the older respondents. Kisiangani et.al (23) similarly found that the younger participants who took part in their qualitative study appeared to have a better understanding of the cancer, its signs and symptoms as well as lifestyle issues that predispose people to breast cancer and screening as opposed to older participants. According to data presented in the Kenya Demographic and Health Survey, (13), most women in Kiambu County (90.2%) have given birth in a hospital where they have been taught on various aspects of breast cancer by healthcare professionals (13).

There was a high awareness of breast cancer screening with majority of the respondents correctly indicating that SBE and CBE were modalities. Fewer respondents were aware that mammography is a screening modality. These findings were comparable to a study done in Ghana which found that 93% of the study participants were aware of self-breast examination as a screening modality (34). The findings are significantly higher compared to Agwu et.al, (24) who found that 38.9% of respondents were aware that self-breast examination was screening tool, 13% were aware of clinical breast examination and 13.4% were aware of mammography as a screening technique. In Senegal, 60.3% of the study participants were aware of any one of the screening methods (19). A study done in Uganda on cervical cancer screening found that those who were aware of at least one method of screening were 2 times more likely to have been screened (25).

Knowledge of the procedure for self-breast examination was a strong predictor for breast cancer screening. Those who were knowledgeable on the procedure were 2.6 times more likely to have been

screened. A systematic review by Ojewusi et.al, (22) found that lack of knowledge on how to carry out a SBE was expressed by as one the most important factors in its uptake. Similarly in Lebanon, women who were more confident on their ability to perform a SBE were 2.65 times more likely to practice it. Morse et.al (20) found that 87.7% of the respondents who were aware of SBE in their study mentioned that knowledge of the SBE procedure was an encouraging factor for them to examine themselves and 56.9% would examine themselves if there was an instruction sheet available. Busakhala et.al (9) also found a strong association between reports of prior training on SBE and its practice. Women who examine themselves have been found to more often, easily and correctly identify small changes in their breast on a monthly basis upon which they will visit a doctor. SBE allows women to actively take part in the management of their wellbeing which results to increased awareness and adherence to various screening modalities (26).

Most of the respondents (68.6%) in this study agreed with the statements with information on breast cancer and screening. The statements were meant to assess the general awareness of breast cancer. A composite score of the same was statistically significant with the uptake of screening. The respondents with increased awareness of breast cancer were approximately 8 times more likely to have been screened for breast cancer. Lack of awareness of the condition and its screening will prevent women from being screened for breast cancer. Islam et.al (17) in their review found lack of awareness of breast cancer and screening as a key barrier of screening by women. Kisiangani et.al (23) in their qualitative study also found that women being unaware and lacking information on breast cancer screening would be a barrier to them being screened for cancer of the breast.

Beliefs and attitudes have a significant impact on individuals' health-seeking behaviour, how they deal with illness as well as in the adoption of favorable health behaviour. All the respondents in this study were afraid of being diagnosed with breast cancer. These findings were comparable to those of a Maltese screening program which was organized and found that majority of non-attendees were afraid of the result of the screening programme (21). A large portion of the respondents were afraid of being disfigured. Disfigurement would also result in spousal abandonment for the women (27). Findings from the Kakamega study (23) revealed that the participants would not go for screening due to some of their friends having mastectomies after being

found with breast cancer. Chaka et.al (28) also found that a third of the respondents in their Ethiopian study felt that breast cancer would threaten their relationships with their spouses and partners. Majority of respondents in this study hated the embarrassment associated with CBE. The participants in the Kakamega study (23) felt that they would not to have a CBE for fear of being stigmatized while majority of respondents in the Ethiopian study (28) however indicated that it was not embarrassing for them to have their breasts examined.

A large proportion of respondents in this study agreed that having a mammogram is painful and this would deter them so as to avoid pain. A review of low and middle income countries revealed that fear of a painful mammogram would bar women from seeking screening services (17). Similarly, a study from Nigeria (35) also found that 50% of the respondents thought that mammography was harmful. The findings of this study were inconsistent with those of a study carried out in Jordan (2) where majority of the respondents were undecided on whether mammography was painful. In our study, majority of the respondents agreed that performing a self-breast examination would cause them to worry about breast cancer. This might explain why out of the 18 respondents only 3 respondents examined themselves monthly with most of the respondents examining themselves after long intervals of time (27). Health education should thus include information that lessens worries and fear towards the various screening modalities (2).

Most of the respondents in our study were undecided (46.9%) on whether breast cancer was a 'death sentence'. This might be because of the information they had regarding the cancer. In the FGDs the participants mentioned that they would get treatment if they were found with breast cancer and acknowledged that nowadays people have come to accept the disease as a normal condition due to increased awareness about breast cancer (26, 27). Participants in Kakamega (23) however perceived the disease as being a serious terminal disease that has no

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1. Abdulrahman GO, Rahman GA. Epidemiology of Breast Cancer in Europe and Africa. *Journal of Cancer Epidemiology*. [Online] 2012;2012: 1-5. Available from: doi:10.1155/2012/915610.
2. Abu-Helalah MA, Alshraideh HA, Al-Serhan A-AA, Kawaleet M, Nesheiwat AI. Knowledge, Barriers and Attitudes Towards Breast Cancer Mammography Screening in Jordan. *Asian*

cure. They labeled it a 'death sentence'. Overall the respondents in our study had negative attitudes and fear towards breast cancer and this is unsurprising given that most people in Kenya present when the disease is in the later stages when nothing in terms of cure can be done to save a patient. The results of a bivariate analysis between knowledge and attitude revealed a statistically significant association. A study done in Iran found a positive relationship between knowledge and attitude in that women with increasing knowledge had a better attitude towards breast cancer (36).

5. CONCLUSION

In conclusion, the screening rate in our study is low. There is high awareness of breast cancer and screening. The level of knowledge was not constant in the various aspects of breast cancer; knowledge of symptoms was higher however, the knowledge of risk factors was lower. Knowledge of the procedure for self-breast examination was also low. The study participants had a negative attitude and fear towards cancer of the breast which would in turn have a negative effect on uptake of screening. There should be sustained creation of awareness on breast cancer and screening through the media by partnering with vernacular mass media outlets (radio and television stations) and various breast cancer survivors with a view of elucidating the misconceptions, diffusing negative attitudes towards breast cancer as well as promoting the uptake of screening for cancer of the breast among the women.

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- Pacific Journal of Cancer Prevention. [Online] 2015;16(9): 3981-3990. Available from: doi:10.7314/apjcp.2015.16.9.3981
3. Akinyemiju TF. Socio-Economic and Health Access Determinants of Breast and Cervical Cancer Screening in Low-Income Countries: Analysis of the World Health Survey. *PLoS*

- ONE. [Online] 2012;7(11). Available from: doi:10.1371/journal.pone.0048834.
4. Anwar SL, Tampubolon G, Hemelrijck MV, Hutajulu SH, Watkins J, Wulaningsih W. Determinants of cancer screening awareness and participation among Indonesian women. *BMC Cancer*. [Online] 2018;18(1). Available from: doi:10.1186/s12885-018-4125-z
 5. Azubuike S, Okwuokei S. Knowledge, attitude and practices of women towards breast cancer in Benin City, Nigeria. *Annals of Medical and Health Sciences Research*. [Online] 2013;3(2): 155. Available from: doi:10.4103/2141-9248.113653
 6. Jedy-Agba E, McCormack V, Adebamowo C, Dos-Santos-Silva I. Stage at diagnosis of breast cancer in sub-Saharan Africa: a systematic review and meta-analysis. *The Lancet Global Health*. [Online] 2016;4(12). Available from: doi:10.1016/s2214-109x(16)30259-5
 7. Kenya National Cancer Screening Guidelines. Kenya National Cancer Screening Guidelines Nairobi; 2018.
 8. Lopes LV, Miguel F, Freitas H, Tavares A, Pangui S, Castro C, et al. Stage at presentation of breast cancer in Luanda, Angola - a retrospective study. *BMC Health Services Research*. [Online] 2015;15(1). Available from: doi:10.1186/s12913-015-1092-9
 9. Busakhala NW, Chite FA, Wachira J, Naanyu V, Kisuya JW, Keter A, et al. Screening by Clinical Breast Examination in Western Kenya: Who Comes? *Journal of Global Oncology*. [Online] 2016;2(3): 114–122. Available from: doi:10.1200/jgo.2015.000687.
 10. Sankaranarayanan R, Ramadas K, Thara S, Muwonge R, Prabhakar J, Augustine P, et al. Clinical Breast Examination: Preliminary Results from a Cluster Randomized Controlled Trial in India. *JNCI Journal of the National Cancer Institute*. [Online] 2011;103(19): 1476–1480. Available from: doi:10.1093/jnci/djr304
 11. Charles Ojiambo. Social Factors Affecting the Acceptance of Breast Cancer Screening: A Case of Women at the Nairobi City Park Market . [Masters dissertation] 2013. University of Nairobi
 12. Joyce Kisiangani. An assessment of women's knowledge, attitude and health seeking behavior towards breast cancer and its screening in Kakamega county of Kenya . [Masters dissertation] 2014. Moi University
 13. Kenya Demographic and Health Survey. [Online] dhsprogram.com. Available from: <https://dhsprogram.com/pubs/pdf/FR308/FR308.pdf> [Accessed: 26thApril2019]
 14. Kenya National Bureau of Statistics. Single and Grouped Ages in years by County and District. 2009. [Online] Available from: <https://www.knbs.or.ke/download/single-and-grouped-ages-in-years-by-county-and-district> [Accessed: 26thApril2019]
 15. Cancer statistics - specific cancers. [Online] Cancer statistics - specific cancers - Statistics Explained. Available from: http://ec.europa.eu/eurostat/statistics-explained/index.php/Cancer_statistics_-_specific_cancers [Accessed: 26thApril2019]
 16. Tabár L, Vitak B, Chen TH-H, Yen AM-F, Cohen A, Tot T, et al. Swedish Two-County Trial: Impact of Mammographic Screening on Breast Cancer Mortality during 3 Decades. *Radiology*. [Online] 2011;260(3): 658–663. Available from: doi:10.1148/radiol.11110469
 17. R Islam, B Billah, M Hossain, J Oldroyd. Barriers to Cervical Cancer and Breast Cancer Screening Uptake in Low-Income and Middle-Income Countries: A Systematic Review. *Asian Pacific Journal of Cancer Prevention*. [Online] 2017;; 1751–1763. Available from: doi:doi:10.22034/APJCP.2017.18.7.1751
 18. Moghaddam Tabrizi, S Vahdati, S Khanahmadi, S Barjasteh. Determinants of Breast Cancer Screening by Mammography in Women Referred to Health Centers of Urmia, Iran. *Asian Pacific Journal of Cancer Prevention*. [Online] 2018;; 997–1003. Available from: doi:10.22034/APJCP.2018.19.4.997
 19. Tine JAD, Niang K, Samiratou A, Faye A, Dia AT. Study of the Determinants of the Use of Breast Cancer Screening in Women 35 to 65 Years in the Region of Thies (Senegal). *Open Journal of Epidemiology*. [Online] 2018;08(04): 201–212. Available from: doi:10.4236/ojepi.2018.84016
 20. Morse EP, Maegga B, Joseph G, Miesfeldt S. Breast Cancer Knowledge, Beliefs, and Screening Practices among Women Seeking Care at District Hospitals in Dar es Salaam, Tanzania. *Breast Cancer: Basic and Clinical Research*. [Online] 2014;8. Available from: doi:10.4137/bcbr.s13745.
 21. Marmarà D, Marmarà V, Hubbard G. Health beliefs, illness perceptions and determinants of breast screening uptake in Malta: a cross-sectional survey. *BMC Public Health*. [Online] 2017;17(1). Available from: doi:10.1186/s12889-017-4324-6
 22. Ojewusi AA, Obembe T, Arulogun OS, Olugbayela T. Breast cancer awareness, attitude and screening practices in Nigeria: A systematic review. *Clinical Reviews and Opinions*.

- [Online] 2016;7(2): 11–25. Available from: doi:10.5897/cro16.0101
23. Kisiangani J, Baliddawa J, Marinda P, Mabeya H, Choge JK, Adino EO, et al. Determinants of breast cancer early detection for cues to expanded control and care: the lived experiences among women from Western Kenya. *BMC Womens Health*. 2018;18(1)
 24. Agwu U, Nwigwe C, Ezeonu P, Umeora O, Obaji N, Elom H. Awareness and Practice of Breast Self-Examination among Market Women in Abakaliki, South East Nigeria. *Annals of Medical and Health Sciences Research*. [Online] 2013;3(1): 7. Available from: doi:10.4103/2141-9248.109457
 25. Ndejjo R, Mukama T, Musabyimana A, Musoke D. Uptake of Cervical Cancer Screening and Associated Factors among Women in Rural Uganda: A Cross Sectional Study. *Plos One*. [Online] 2016;11(2). Available from: doi:10.1371/journal.pone.0149696
 26. Gonçalves A, Hernâni C, Susana L. Breast Cancer Prevention Knowledge, Attitude and Practice. Available from: <http://www.iosrjournals.org/iosr-jdms/papers/Vol15-Issue 10/Version-8/B1510080510.pdf>
 27. Grace Ndwiga. Determinants of Breast Cancer Screening among Market Women in Mukiriti and Madaraka Markets in Thika Town, Kiambu County, Kenya. [Masters dissertation] 2019. Unpublished
 28. Chaka B, Sayed A-R, Goeieman B, Rayne S. A survey of knowledge and attitudes relating to cervical and breast cancer among women in Ethiopia. *BMC Public Health*. [Online] 2018;18(1). Available from: doi:10.1186/s12889-018-5958-8
 29. Breast cancer: prevention and control. [Online] World Health Organization. World Health Organization; Available from: <https://www.who.int/cancer/detection/breastcancer/en/index3.html> [Accessed: 26thApril2019]
 30. Provencher L, Hogue J, Desbiens C, Poirier B, Poirier E, Boudreau D. Is clinical breast examination important for breast cancer detection? . *Current Oncology*. [Online] 2016;23(4): 332. Available from: doi:10.3747/co.23.2881
 31. Kerrison RS, Shukla H, Cunningham D, Oyebo O, Friedman E. Text-message reminders increase uptake of routine breast screening appointments: a randomised controlled trial in a hard-to-reach population. *British Journal of Cancer*. [Online] 2015;112(6): 1005–1010. Available from: doi:10.1038/bjc.2015.36
 32. Global Cancer Observatory. [Online] Global Cancer Observatory. Available from: <http://gco.iarc.fr/> [Accessed: 26thApril2019]
 33. *Breast Cancer | Breast Cancer Information & Overview*. [Online] American Cancer Society. Available from: <https://www.cancer.org/cancer/breast-cancer.html> [Accessed: 26thApril2019]
 34. Kudzawu E, Agbokey F, Ahorlu CSK. A Cross Sectional Study of the Knowledge and Practice of Self-Breast Examination among Market Women at the Makola Shopping Mall, Accra, Ghana. *Advances in Breast Cancer Research*. [Online] 2016;05(03): 111–120. Available from: doi:10.4236/abcr.2016.53013
 35. Amoran O. Breast Cancer Screening Awareness and Practice among Women in Sagamu Local Government Area, South-Western Nigeria: A Community Based Study. *British Journal of Applied Science & Technology*. [Online] 2014;4(16): 2320–2332. Available from: doi:10.9734/bjast/2014/9050
 36. Safarpour M, Tiyyuri A, Mohamadzade M. Knowledge, Attitudes and Practice of Women towards Breast Cancer and Its Screening: Babol City, Iran – 2017. *Iranian Journal of Health Sciences*. [Online] 2018; Available from: doi:10.18502/jhs.v6i4.199
 37. Bray F, Ferlay J, Soerjomataram I, Siegel RL, Torre LA, Jemal A. Global cancer statistics 2018: GLOBOCAN estimates of incidence and mortality worldwide for 36 cancers in 185 countries. *CA: A Cancer Journal for Clinicians*. [Online] 2018;68(6): 394–424. Available from: doi:10.3322/caac.21492

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