UNIVERSITY OF NAIROBI

INSTITUTE OF TROPICAL AND INFECTIOUS DISEASES

DETERMINING THE KNOWLEDGE, ATTITUDE AND PRACTICE OF BREAST-SELF EXAMINATION (BSE) AMONG FEMALE HEALTH CARE WORKERS IN KENYATTA NATIONAL HOSPITAL, KENYA

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DECLARATION

I hereby declare that this research project has never been done or presented for any degree/diploma in any university.

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Abbreviations

BSE Breast self examination

CBE Clinical breast examination

KNH Kenyatta National Hospital

TNM Tumour Node Metastasis

UICC International Union Contra Cancer

ABSTRACT:

Background: Breast cancer is the fifth commonest malignancy in Kenya and its incidence is rising. Most women appear for treatment when the disease is already advanced; with grave prognostic outcome and thus there is need for a low risk method of breast cancer detection that every woman can easily perform regularly at her home and which is more likely to find a breast lump in an early stage like monthly breast self examination. Health care providers have an important role to play in informing, educating and training of women to perform breast self examination hence it is crucial that their knowledge is accurate and aids in building awareness.

Objective:To determine the knowledge, attitude and practice on breast self-examination among female nurses in KNH.

Design: A cross sectional survey was conducted among 233 female nurses in KNH using a self-administered questionnaire.

Results: Out of 380 nurses, 233 participated in the study (61% response rate). Knowledge about symptoms, method of diagnosis breast cancer risk and breast self-examination was generally good. Knowledge was significantly associated with having a relative suffering from breast cancer (p=0.001), nursing duration (p=0.01) and the professional qualification of the nurse (p=0.01). Practice of breast self examination was significantly associated with the knowledge of the subject (p=0.009).

Conclusion and recommendation: Nurses posses adequate knowledge about breast cancer but they need more information on cancer risk estimation.

BACKGROUND

Carcinoma of the breast is the fifth commonest malignancy in Kenya and its incidence is rising as shown in the annual admission rate at Kenyatta National Hospital radiotherapy unit. Its onset is in the 30 and 40-year age group as compared to 40 to 50 year age group seen elsewhere. The incidence among males is also much higher than seen in western world.

A literature review of studies that have been carried out on breast cancer screening shows that mammography is the most sensitive available means for early detection of breast cancer, but both clinical breast examination and breast self-examination (BSE) have the potential to advance the diagnosis of breast cancer without the expense of a mammography facility (Weiss NS 2003). A retrospective cohort study on 417 cases of breast cancer seen at the department of human pathology, KNH showed that most patients seek medical help at a late state with advanced cancer (Bjerregaard and Kung'u 1992).

There is no clear evidence so far to support the role of breast self-examination in cancer detection. While the Kotka pilot project found that BSE could improve early detection and reduce mortality (Hakama M et al., 1995) the Russian, Shanghai and Swedish studies revealed no improvement in stage shifting or mortality reduction (Semiglasov V et al 1998; Thomas D B et al., 1997; Holmberg L et al., 1997). Other studies have found that breast cancers detected by BSE are smaller than those detected without screening and are more likely to be confined to the breast; furthermore, survival after a diagnosis of breast cancer tends to be longer among women who practice BSE than among women who do not (Weiss NS 2003). However some argue that by the time the tumours are palpable they are relatively late (i.e. have been there for 6 – 8 years) in their biological course and many have metastasized systemically (Roger S et al., 1992)

BSE may also prove to be of particular interest in countries where breast cancer is an increasing problem but where mammography services are almost non existence (Miller A B et., al 2000). A cross-sectional study that was carried out to determine knowledge, attitude and practice of breast self examination at KNH among patients attending family welfare clinic revealed that the knowledge was in 45% of the clients. The study revealed that, the factors that influenced Knowledge on breasts self-examination

included the practice of breast self-examination, breast examination at health facilities, duration of clinic attendance and training by medical personnel. The study also showed that confidence in breasts self-examination is influenced by training from medical personnel (Kihara 1999). Other studies have also shown that, despite the benefits associated with BSE, few women regularly perform it and many do not know how to perform it (NABCO 1995). A high proportion of women perform BSE, but few do so adequately (Tu SP et al., 2006). Evidence suggests that improvements in performing BSE will be achieved if women are convinced of the need for screening (Yelland et al., 1991,). It is important to note that with the large number of clients seeking family planning services the medical personnel are endowed with the good opportunity in which to teach reproductive health issues including various screening methods for gynecological malignancies seen in our setup. Because nurses have a professional responsibility to teach others about BSE and thus could have a significant impact on reducing breast cancer mortality, nurses need to be knowledgeable about breast cancer and early detection of breast cancer

LITERATURE REVIEW

The adult breast is composed of 16-18 lobes consisting of ducts, ductules and lobular alveolar units in fibro fatty stroma. Breast development begins at 5 weeks in the fetus and by forty weeks lobular alveolar is apparent (Vorherr. H 1974). It's not until puberty that the breast begins to undergo the cyclic changes associated with adult mammary gland, which is capable of full lactation (McCarty K S et al., 1983). The breast undergoes physical and physiological modification from birth to menopause due to the variability of the hormonal milieu. Associated with this active role are numerous malformations and dysfunctions, which make disease of the breast a common clinical problem.

Cancer of the breast is the leading course of cancer deaths in women in many developing countries, as well as in most developed countries. In Sub-Saharan Africa breast cancer is the second in occurrence to cancer of the cervix (Amir H., et al 1994; Bjerregaard.,et al1992; Yusuf K.,et al 1989). Studies in Kenya have shown breast

cancer to be the fifth commonest malignancy and its incidence is rising as reflected by annual admission rate at Kenyatta National Hospital, radiotherapy unit and those that are undergoing follow-up at the Nairobi Hospice unit (Bjerregaard B et al., 1992; Miller B A et al., 1991).

Most patients present themselves for treatment when the disease is already advanced; stage III and IV with grave prognostic outcome. These delays are attributed to limited medical facilities, bureaucratic delays at various stages of the health delivery system and long journeys to referral centers and patient unawareness on appropriate health seeking behavior (Miller B A et al 1991)

Early detection can significantly improve the chances of survival (Stanley et al, 1987) as well as the quality of life making far less radical therapy necessary. A descriptive study carried out on all 50 patients with breast cancer admitted between March and October 1996 to the surgery ward at Muhimbili medical center in Tanzania to determine the stage of female breast cancer in an African population at presentation using TNM classification of International Union Contra Cancer (UICC) showed that potentially, breast cancer is curable up to stage II by TNM classification with a 10-year survival rate of 82.9%. Those treated with modified radical mastectomy showed no evidence of disease subsequently in 64.8%, invasive cancer was 62.1%, local recurrence rate was 7.3%, auxiliary recurrence 0.7% and those requiring skin graft 2.1%(Amir H., et al 1997).

A literature review on breast cancer in sub-Saharan Africa women showed that breast cancer is less common in sub-Saharan Africa compared to the Western countries (USA or Europe), occurs in younger individuals with peak incidences about a decade younger and the majority present late, with advanced, sometimes terminal disease. Absence of health educational programmes on cancer as well as lack of screening facilities in nearly all countries in the region are contributory factors to the late presentation of the cases. Reluctance to undergo mastectomy in the young patient probably due to the psychological effects is a common experience. Therefore early detection and treatment especially with view to conserve the breast should be the aim of management of the disease (Anim JT1993). Changes in surgical management of the primary breast cancer were initiated in the 1970's (US National surgical adjuvant Breast Bowel project) to

replace the mutilating surgery that was being performed for most of this century. These procedures include lumpectomy, quadranectomy and sector resection. It's possible to achieve locally radical operation, cosmetically acceptable breast and cure prospects that are not compromised (Holmberg L et al., 1988: Fisher et al., 1991).

Breast cancer has been reported during pregnancy and lactation. Studies from 1977 to 1989 in Nigeria showed patients were young with a median age of 34 years, symptom duration of 10 months, 64% presented in stage IV, 72% had infiltrating ductal cancer and crude survival was 18months. This cancer has a very poor prognosis thought to be due to high oestrogen milieu, lowered cellular immunity resulting from pregnancy and delayed diagnosis. (Hassan I et al., 1995).

Prognosis in breast cancer depends on extent of disease and degree of differenciation (grade) of the tumor cells. Methods of assessment include examination of the breast, biopsy and cytology, presence of oestrogen and progesterone receptors, nucleolar organizer regions, oncogene amplification and expression and tumor ploidy and proliferation studies (Kitinya J. N. et al., 1994; Muchiri L. W 1993).

Monthly breast self examination, annual physician clinical breast examination and mammography are recommended methods for early breast cancer detection. Although use of approaches such as ductal lavage and examination of nipple aspirate fluid(NAF), in screening and diagnosis of malignant disease has been a subject of great interest to physicians in recent years, there is still no evidence that these techniques improve the detection of pathological breast disease (Dinkel HP et al.,2001; Khan SA et al 2002). However, majority of the patients who present with nipple discharge associated with breast carcinoma have early stage breast cancer associated with ductal carcinoma in situ and breast-conserving surgery can be performed safely if negative margins are achieved (Cabioglu N et al., 2004).

A prospective non-randomized study was done via analysis of the prospective database at the Strathfield Breast Centre (TSBC). Despite the selection and lead time bias involved the study showed that breast cancers detected on screening mammography are smaller and more likely not to have spread to regional lymph nodes when compared with breast cancers detected at physical examination (Spillane AJ et al., 2001). Other studies have also shown that patients whose breast cancer is detected on mammography

can be treated with less morbid therapy than patients whose breast cancer is detected at physical examination (Barth RJ et al., 2005; National comprehensive cancer network 2004). Although routine mammography for women aged 40 years and above appears to be quite accurate it is beyond the resources of most developing countries at present. Women should be encouraged to practice BSE and self-referral for suspicious lumps. Recent doubts have been expressed about the effectiveness of routine mammography because of false positive results and feeling of anxiety during the evaluation of abnormal results (Woolf 2001).

The Women from sub-Saharan Africa have been found to have a lower incidence of breast cancer than western nations. This is partly explained by a largely protective reproductive history, including late menarche, early menopause, and high parity with prolonged breastfeeding, irregular menses, and fewer ovulatory cycles. Average age at diagnosis, however, is approximately 10 years younger than breast cancer patients of western nations, and disease stage distribution is shifted toward more advanced disease, which resulted in higher mortality rates. These features were found to be similar to data on breast cancer in African-American women (Fregene A and Newman LA 2005). A study has shown that the true effect of mammography screening of women in their forties is also likely to be small (Miller AB et al., 2002). Even though some studies have indicated that BSE is harmful and there is no benefit to breast cancer mortality (McCready T et al., 2005), physical examination remains an important method of detection of breast cancer, particularly for younger women for whom mammography is less sensitive and not performed as frequently (Diratzouian H et al., 2005). Therefore the use of breast self examination should be perhaps promoted in addition to mammography. Where mammography cannot be performed for all women at high risk a worthwhile alternative may be public education to promote BSE by all women over the age of 20, with more sensitive screening, if possible for women of 50 and over and those with a family history of breast cancer (Stanley et al., 1987).

Evidence suggests that, for some women, clinical breast examination (CBE) can be an important complement to mammography in the earlier detection of breast cancer; CBE identifies some cancers missed by mammography and provides an important screening tool among women for whom mammography is not recommended or women who do

not receive high-quality screening mammography according to recommended guidelines. But CBE performance and reporting approaches are inconsistent. Health care providers indicate that they are not confident in their CBE skills and would welcome training (McDonald S et al 2004). Financial constraints continue to be a major hindrance to accessibility to health care. This leads to delayed diagnosis and treatment. For women with inadequate access to health care, breast self-examination may be the only screening technique available (Murali and Crabtree 1992). The resources required are less for screening by breast self examination but the technique requires further validation (WHO 1994). Large-scale prospective controlled studies of self-examination were initiated under the auspices of WHO in 1985 in what was then the USSR, and in 1989 in what was then the German Democratic Republic; Preliminary reports indicated its feasibility (Semiglazov and Moiseyenko 1987; WHO 1989c).

Elsewhere nurses have played a crucial role in patient education on breast cancer and breast self examination (Wilkes L et al., 1999) such that in some parts of the developed world, the specialist breast care nurse has evolved (White K et al .,1999). A study in Nigeria nurses showed that some nurses did not fully understand the risk factors of breast cancer and the knowledge of breast self examination but the attitude was good (Odusanya O and Olufemi T.O 2001). A similar study in Tehran Iran indicated that many women were pessimistic about the likely success of BSE (Haji-Mahmood M et al., 2002). A cross-sectional survey carried out in Singapore among healthcare workers showed that clinical experience appeared to influence level of knowledge and practice of BSE. Knowledge scores and BSE rates were higher in those who had managed breast cancer patients. Most nurses obtained their information and knowledge from nursing school and work place (Seah M and Tan SM 2007)

JUSTIFICATION

Health professionals are a direct source of medical information to the public. Hence it is crucial that their knowledge is accurate and aids in building awareness. Nurses represent the largest professional group in the health care work-force and if well utilized can be a potential resource for implementing cancer screening and early detection. Because nurses have a professional responsibility to teach others about BSE and thus could have a significant impact on reducing breast cancer mortality, they need to be knowledgeable about and proficient in BSE practice. Moreover, nurses must believe that BSE is important and can make a difference if they expect to convince women they teach.

By conducting the study among health care workers, their practice, attitude and awareness of breast self examination was evaluated.

AIMS

The study was aimed to examine the knowledge and practice of breast cancer screening among female nurses who are patient educators.

GENERAL OBJECTIVE

To determine the knowledge, attitude and practice of breast self examination among female nurses at KNH and PMH.

SPECIFIC OBJECTIVES

1. To determine the socio-demographic and reproductive health characteristics.
2. To determine the level of knowledge of breast self-examination among female nurses.
3. To determine the attitude towards breast self-examination among female nurses.
4. To determine the practice of breast self-examination among female nurses.

METHODOLOGY

Study area:

The study was carried out at KNH. KNH is a university teaching, national referral hospital.

Study population

The study was done among female health care workers mainly among female nurses at KNH.

Study design

This was a descriptive cross-sectional survey that was conducted over a period of four weeks.

Sample size

$N=Z^2\ p\ (1-p)/d^2$

N is the desired sample size.

P is the proportion of study population estimated to be doing BSE, which is 45%

$Z\alpha$ is the standard normal deviate at 1.96 corresponding to 95% confidence level

D is the precision with which to estimate p set at 0.05

Therefore: $N = (1.96)^{2*}\ (0.45)*(0.55)/(0.05)^2$

$=380$

Sampling method:

A list of all female nurses was obtained from KNH. Every female nurse that fell on an even number had a chance to participate until a sample of 380 was obtained.

Inclusion criteria

Female nurses who were not pregnant or on maternity leave or any other leave that would take more than one month.

Exclusion criteria

Male nurses and female nurses who were pregnant or on maternity leave or any leave that would take more than one month.

Data collection:

The principal investigator gave the nurses a brief introduction and the purpose of the study. Only those who consented to participate were given a questionnaire. The completed questionnaires were picked at most two days later by the principal investigator.

Data collection instruments

The questionnaire was divided into 5 sections namely:

1. Socio-demographic
2. Reproductive health
3. Knowledge on BSE
4. Attitude towards BSE
5. Practice of BSE

One point was given for a correct Knowledge answer and zero for wrong or not sure. The maximum knowledge score was 24. There were five questions on practice of breast self examination that evaluated the proportion of those who practice BSE and the proportion of those who practice BSE regularly. The questions on practice were also used to show the timing of BSE. Questions on attitude determined the confidence in BSE and the perception of BSE.

All questionnaires were kept in safe custody by the principal investigator awaiting data entry and analysis when the study was to be completed.

Variables

Independent variables:

1. Socio demographic characteristics
2. Duration of nursing
3. Level of education of the nurse
4. Department

Dependent variables:

1. Level of knowledge of breast self-examination.
2. Attitude towards breast self examination
3. Practice of breast self examination

Ethical issues

The ethical review approved the study and permission was obtained from KNH deputy director and head nurse before carrying out the study. The nurses were given a written consent form and asked to read and ask questions where they did not understand. Only those who consented were given questionnaires. They were asked to sign the consent form.

Study limitations

Contacting some nurses was difficult because they work in shifts and some nurses were not found at their workstation. Another limitation is that information collected from some of the nurses may not be true because some gave favorable answers. Also because a self-administered questionnaire was used, some questions may not have been well understood or may have been interpreted wrongly and Nurses may have confer with each other when filling the questionnaire.

Because of the big shortage of nurses at KNH it was not easy to get nurses who were willing to participate in the study and some returned back unfilled questionnaires because they lacked time.

Data Analysis

Each completed questionnaire was graded and scored on certain aspects such as knowledge of symptoms of breast cancer, method of diagnosis, BSE examination and knowledge of risk factors. A maximum, of 24 points was obtained on knowledge. Statistical analysis was performed with the stata software. Frequency distribution of variables was produced. The $\chi 2$ test was used to compare qualitative variables and proportions. The level of significance was set at $p<0.05$. The level of knowledge and attitude towards BSE (as independent variable) was cross tabulated against practice of BSE (as dependent variable)

Results

Out of the 380 female nurses who were given questionnaire 233 retuned their questionnaires giving a response rate of 61%

Table 1.1: Socio-demographic Characteristics and work experience of the respondents

Age group	**Number**	**%**
<=30 years	41	38
31-45 years	104	99
>46	32	28
Total	177	100.00
Marital status		
Single	45	19.31
Married	176	75.54
Divorced	4	1.72
Widowed	8	3.43
Total	233	
Education qualification		
University graduate	8	3.43
Higher diploma in nursing/ midwifery	118	50.64
Diploma nursing	14	6.01
Certificate in nursing	93	39.91
Total	233	
Religion		
Protestant	163	69.96
Catholic	68	29.18
Muslim	2	0.86
Others	0	0
	233	
Duration of nursing experience		
< 1 year	5	2.16
1 year to 3 years	19	8.19
4 years to 6 years	39	16.81
7 years to 10 years	52	22.41
Above 10 years	117	50.43
Total	232	
Worked in a surgical ward		
Yes	153	66.52
No	77	33.48
Total	230	
Family history of breast cancer		
Yes	31	13.36
No	201	86.64
Total	232	
Cared for breast cancer patient		
Yes	136	59.13
No	94	40.87
Total	230	

Figure 1: Age distribution

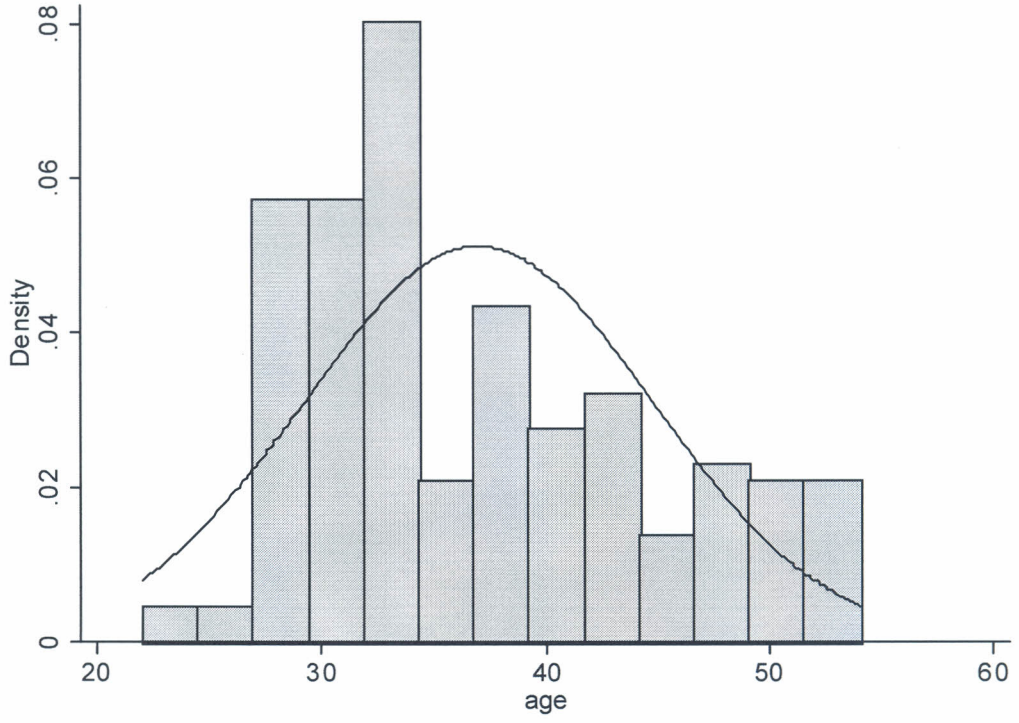

Table 1.1 shows the social demographic characteristics of the respondents. The mean age of the respondents was 36 years and the modal age group is31-35 years. Out of 233 respondents only 177 (76%) gave their age. Most of the respondents are married and about 51% have higher diploma in nursing/midwifery. Most of the nurses are Christians and about 70% are Protestants. In almost 50% of respondents the duration of nursing experience was over 10 years and about 67% had worked in a surgical ward and 59% had cared for breast cancer patients. A few respondents had a family history of breast cancer. Figure1 shows that the age of the participants was normally distributed and the modal age group is31-35 years.

Table 1.2 Reproductive health characteristics of the respondents

Characteristics	Number	%
A) Menarche		
10-12	20	8.73
13-15	148	64.63
16-18	58	25.33
>18	3	1.31
Total	229	
Pattern of menstruation		
Regular	153	68.3
Irregular	62	27.68
Menopause	9	4.02
Total	224	100
Parity		
None	20	9.35
1-2	105	49.07
3-4	71	33.18
>4	18	8.41
Total	214	
Method of contraception		
None	20	9.01
pill	25	11.26
IUCD	32	14.41
Natural	51	22.97
Bilateral tubal ligation	28	12.61
Injectable	13	5.86
norplant	46	20.72
Total	222	

Table 1.2 shows respondents reproductive health characteristics. The age at menarche ranged from 10-18 years with the modal age as 13-15 years and the mean age at 14.56 years with a 95%confidence interval of (14.35485 - 14.75868). About 2/3 of the respondents had regular menstrual period. Parity ranged from none to six. Majority 49% had 1 to 4 children and the mean number of deliveries was two. In 68% of our study population various modern methods of contraception were used of which about 21% used implants. Out of 233 respondents only 229(98%), 224(96%), 214(92%) and 222(95%) respondents answered the question on menarche, pattern of menstruation, parity and method of contraception respectively

Table 1.3: knowledge of breast cancer among female nurses

Symptoms of breast cancer	True n (%)	False n(%)	I don't know n(%)
Breast lump	216(92.70)	9 (3.86)	8 (3.43)
Multiple masses	135(57.94)	59(25.32)	39(16.74)
Nipple retractions	152(65.24)	41(17.60)	40(17.17)
Breast Pain	144(61.8)	68(29.18)	21(9.01)
Milky Discharge	48(20.60)	134(57.51)	50(21.89)
Weight loss	112(48.07)	87(37.34)	34(14.59)
Bloody Discharge	141(60.52)	52(22.32)	40(17.17)
Methods of diagnosis			
Pathological examination of breast tissue	193 (82.83)	13 (5.58)	27(11.59)
Breast self examination	199(85.41)	22 (9.44)	12 (5.15)
Mammography	213 (91.42)	5 (2.15)	15(6.44)
Consultation with a specialist doctor	162(69.53)	43(18.45)	28(12.02)
Risk factors			
Age	130(55.79)	59(25.32)	44(18.88)
Diet	84(36.05)	91(39.06)	58(24.89)
Age at first full term pregnancy	39(16.74)	127(54.51)	67(28.76)
Positive family history of breast cancer	191(81.97)	25(10.73)	17(7.30)
Prolonged lactation confers lower risk	122(52.36)	66(28.33)	45(19.31)
Overweight after menopause	53(22.75)	93(39.91)	84(37.34)
Multiparty confers lower risk	63(27.04)	96(41.20)	74(31.76)
Smoking	182(78.11)	23(9.87)	28(12.02)
Knowledge of Breast self Examination Procedure	120(51.50)	81(34.76)	32(13.73)
Palpation with the same site hand	52(22.32)	118(50.64)	63(27.04)
Control of nipple discharge	173(74.25)	36(15.45)	24(10.30)
Inspection in front of mirror	112(48.07)	33(14.16)	88(37.77)
Palpation with the middle finger of opposite hand			

Table 1.3 show respondents knowledge of symptoms of breast cancer, method of diagnosis of breast cancer, known risk factors associated with the disease and breast self examination. Most nurses had good knowledge of symptoms of breast cancer. However about 58% wrongly identified milky discharge as a symptom for breast cancer. The knowledge on method of diagnosis of breast cancer was good. Of the 8 risk factors it is only in 3 that about half of respondents were well informed. The knowledge on breast self examination is satisfactory. However 51% wrongly identified the use of hands to perform the examination

Table 1.4 Knowledge of the frequency of breast self examination

Breast self examination	Number	Percent
Daily	44	18.88
Weekly	16	6.87
Monthly	149	63.95
Undefined	8	3.43
I don't know	16	6.87

Table 1.4 shows knowledge of frequency of breast self-examination. Close to 2/3 of the respondents were well informed of the frequency of breast self-examination and the steps in conducting the procedure.

Knowledge of breast cancer/breast self-examination and the associated factors

Table 1.5 below shows that there is a significant association between Knowledge of breast cancer and breast self-examination and the professional qualifications of the respondents. Those with a certificate in nursing seemed to have satisfactory knowledge on breast cancer and breast self examination compared to others. Also the knowledge on breast cancer is significantly associated with nursing duration. Those who have worked for more than ten years had satisfactory knowledge on breast cancer and breast self examination compared to those who have worked for fewer years.

Those with relatives suffering from breast cancer had satisfactory knowledge of breast cancer compared to those without relatives with breast cancer.

Level of knowledge on breast cancer is not significantly associated with the marital status of the respondents, religion of the respondent, having worked in a surgical ward/clinic and having cared for breast cancer patients.

Table 1.5: Knowledge of breast cancer / breast self examination and the associated factors.

Variable	Knowledge			Total	Pearson chi(2)	Pr
	Good	Satisfactory	Poor			
Professional Qualification						
Nursing Diploma Higher	16	67	35	118	14.0474	0.029
diploma	0	9	5	14		
Degree in nursing	1	3	4	8		
Certificate	22	57	14	93		
Total	39	136	58	233		
Duration of work experience					20.1906	0.01
Less than one year	1	3	1	5		
1 year to 3 years	2	9	8	19		
4 years to six years	3	21	15	39		
7 years to 10 years	4	32	16	52		
More than 10 years	29	70	18	117		
Total	39	135	58	232		
Relative suffer from **Breast cancer**						
Yes	10	21	0	31	14.5857	0.001
No	29	114	58	201		
Total	39	135	58	232		
Marital Status Single	8	23	14	45	8.2044	0.224
Married	30	102	44	176		
Divorced	1	3	0	4		
Widowed	0	8	0	8		
Total	39	136	58	233		
Religion						
Protestant	26	100	37	163	2.831	0.586
Catholic	13	35	20	68		
Muslim	0	1	1	2		
Total	39	136	58	233		
Worked in a surgical ward						
Yes	29	86	38	153	1.6019	0.449
No	10	49	18	77		
Total	39	135	56	230		
Cared for a breast cancer patient						
Yes	24	80	32	136	0.4669	0.792
No	14	55	25	94		
Total	38	135	57	230		

Table 1.6 Attitude towards breast self examination of the respondents

	Yes n(%)	No n(%)
a) Confidence in doing breast self examination	186(82.30)	40(17.7)
b) Women should be taught breast self examination	225(97.83)	5(2.17)
b) I do not have any problem in my breast, so there is no reason to examine my breast	13(22.41)	
c) Breast self examination is difficult and time consuming	1(1.72)	
d) Breast self examination is troublesome	3(5.17)	
e) If I examine my breasts myself I could not detect any abnormalities	15(25.86)	
f) If I knew the benefit of Breast self examination I would have to do it	5(8.62)	
g) I am afraid of discovering a lump on my breast	18(31.03)	
h) I m very busy	2(3.45)	
i) I would recommend BSE to my friends	214(98.17)	4(1.83)

In table 1.6 more than 96% answered questions on confidence in doing breast self-examination. About 98% feel that women should be taught how to perform breast self-examination and 98% would recommend breast self-examination to a friend. The question on practice of breasts self-examination was used to determine the attitude to breast self-examination and the total response was used as the denominator.

Table 1.7: Practice of breast self examination

Practice of breast self examination in the study population	Number of respondents	Number (n)	%
a) Proportion examining breast cancer regularly	232		
Yes		206	88.79
No		26	11.21
b) Frequency of practice of BSE	207		
Every day		40	19.32
Every month		112	54.11
Once in ever six months		14	6.76
Erratic		41	19.81
c) Timing of BSE	207		
Before menses		10	4.83
During menses		11	5.31
After menses		101	48.79
Any time		76	36.71
Other		9	4.35
d) Performance last of BSE	218		
Today		23	10.55
Yesterday		23	10.55
Last week		40	18.35
Last month		75	34.40
Last year		22	10.09
Non-specified		35	16.06

In table 1.7, about 89% practice breast self-examination with 54% conducting this procedure at monthly intervals. Only 49% perform BSE after menses.

Table 1.8: Practice of BSE, marital status

Marital | Status	Practice of bse		
	Yes	No	Total
Single	37	8	45
Married	149	26	175
Divorced	3	1	4
Widowed	7	1	8
Total	196	36	232
Pearson chi2 (3) = 0.5635 Pr = 0.905			

A table 1.8 shows there is no association between practice of breast self-examination and marital status.

Table 1.9: Practice of breast self examination and the associated factors

Variable	Practice BSE		Total	Pearson Chi Sq	Pr
	Yes	No			
Professional qualification					
Nursing diploma	101	17	118	1.6552	0.647
Higher diploma	13	1	14		
Degree in nursing	6	2	8		
Certificate	76	16	92		
Total	196	36	232		
Religion					
Protestant	139	23	162	2.2646	0.322
Catholic	56	12	68		
Muslim	1	1	2		
Total	196	36	232		
Nursing duration					
Less than one year	3	2	5	5.2270	0.265
1year to 3 years	17	1	19		
4 years to 6 years	35	4	39		
7 years to 10 years	42	10	52		
More than 10 years	98	19	117		
Total	195	36	231		
Worked in a surgical Ward					
Yes	132	21	153	1.3849	0.239
No	61	15	76		
Total	193	36	229		
Relative with breast cancer					
yes	24	7	31	1.3322	0.248
no	171	29	200		
Total	195	36	231		
Age					
<=30 years	36	2	38	1.1123	0.573
31-45	88	11	99		
46+	25	3	28		
Total	149	16	165		
Knowledge	|	9	38		
Good	29	15	136	9.4580	0.009
Satisfactory	121	2	58		
Poor	56	26	232		
Total	206				

Table 1.9 shows that there is no association between practice of breast self-examination and professional qualification, religion, duration of nursing experience, having worked in a surgical war, having a relative suffering from breast cancer and age of the respondents. There is an association between the level of knowledge and practice of breast self-examination.

Discussion

Out of the 380 nurses who were given questionnaire 233 returned their questionnaires giving a response rate of 61%. Contacting some nurses was difficult because they work in shifts and some nurses obtained leave before the end of the study so it was not possible to compare the demographic variables of the participants with those of non-responders.

Only those who consented were given questionnaires. Since the demographic data of those who did not consent to participate was not collected, there was likely to be a selection bias owing to the fact that the participants may have been different from non-participants..

Since a self-administered questionnaire was used, it was not possible to obtain the desired sample size because some did not return back their questionnaires. It was also not possible to obtain completeness of responses to all the questionnaire items. This may have had a serious implication on the validity of the study.

The survey found in the socio-demographic characteristics of the nurses their ages ranged from 22-54 with their mean age at 36 years. The modal age group is 31-35 years. This population is within the high-risk group for breast cancer (Fregene A and Newman LA 2005). Almost 51% had a diploma in nursing, 50% of the nurses had worked for over 10 years and 67% had worked in a surgical ward while 59% had cared for a breast cancer patient. A cross-sectional study carried out in Singapore showed that clinical experience appeared to influence the level of knowledge and practice in that knowledge scores and BSE rates were higher in those who had managed breast cancer patients. Most of the Nurses obtained their information and knowledge from nursing school and work place. This emphasized the importance of continuous medical education for nurses. This is not only important for their own health but also in their role as public educators. (Seah M and Tan SM 2007).

In our study 25% of the nurses had good knowledge while in 58% the knowledge was satisfactory. However up to 62% incorrectly regarded breast pain as a symptom of breast cancer while 21% incorrectly regarded milky discharge as a symptom for breast cancer. These erroneous beliefs could result in a delay in seeking medical attention and having treatment. Only 4 out of 8 statements on breast cancer risk factors were

correctly answered by half of the respondents indicating that the Kenyan nurses did not fully understand the risk factors. This is similar to Nigeria where 2 out of 5 questions on breast cancer risk were answered correctly by half of the respondents (Odusanya O O and Tayo OO 2001).

Knowledge about how to conduct breast self examination was good compared to that obtained among clients attending family welfare clinic at Kenyatta National Hospital (Kihara 1999). However 52% wrongly identified palpation with the same site hand as a procedure for breast self-examination.

Professional qualification, clinical experience and having a relative suffering from breast cancer tended to influence the level of knowledge. .A similar study in Singapore among healthcare workers showed that clinical experience appeared to influence level of knowledge and practice of BSE. Knowledge scores and BSE rates were higher in those who had managed breast cancer patients. Most nurses obtained their information and knowledge from nursing school and work place (Seah M and Tan SM 2007).

Our respondents had a healthy attitude to breast self-examination. This is important because studies from developed countries show that attitudes and orientation of healthcare providers are important determinants of use of breast cancer screening programmes (Bekker H et al.1999, Lurie N et al., 1997).

About 89% of the nurses practiced breast self-examination. This is much higher proportion compared to the clients who attended the family welfare clinic at Kenyatta National Hospital (Kihara 1999). About 54% conduct BSE at monthly intervals while only 49% perform after menses. Women who correctly perform regular monthly BSE are more likely to find a breast lump in an early stage (coleman 1991)

Conclusion

Knowledge about breast self examination was found to be acceptable among the nurses. However breast self examination technique (i.e palpation technique) was poor. The nurses had a positive attitude towards breast self-examination. However they did not perform it regularly and they had a problem with palpation technique.

Since nurses beliefs and behaviors may have an impact on young females attending clinics, its essential to plan training courses for this group of women. Therefore continuing education and in-service education for nurses should be planned to improve their knowledge and experience of BSE because of their professional roles in community awareness about breast cancer and screening methods.

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APPENDIX 1

QUESTIONNAIRE

SERIAL NO

DEMMOGRAPHY

Section 1: socio demographic characteristics and work experience

1. Date of birth…DD/MM/YY.

2. What is your marital status?(tick one)

   □ Single

   □ Married

   □ Divorced

   □ Widowed

4. What is your professional qualification?

   □ Nursing/ midwifery diploma

   □ Higher diploma in Nursing /midwifery

   □ Degree in Nursing

Certificate level

5. What is your religion?

   □ Protestant

   □ Catholic

   □ Muslim

   □ Others (specify)……..

6. What is your nursing experience?

   □ Less than one year

   □ 1 year to 3 years

   □ 4 year to 6years

   □ 7 years to 10 years

   □ More than 10 years

7. Have you worked in a surgical ward /clinic?

   ○. Yes… /○. No…

8. Have you cared for breast cancer patients?

   ○ yes… / ○ No……

9. Does any of your relative suffer from breast cancer?

   ○Yes…/○ No…

SECTION 2: REPRODUCTIVE HEALTH

10. At what age was your first menstrual period in years? ……

11. When was your last monthly period (date/month/year)? ……

12. Are menstrual periods regular?

    ○ Yes… ○No……..

13a. How many children have delivered in total? …… (If none skip 12b)

13b.How many are alive: Alive ……Dead……

14. Which method of contraception are you currently using? (tick one)

□ Pills

□ IUCD

□ Barrier methods

□ Natural method

□ Bilateral tubal ligation (BTL)

□ Injectable

□ Norplant implant

□ None

SECTION 3: KNOWLEDGE ABOUT SYMPTOMS, METHOD OF DIAGNOSIS OF BREAST CANCER, RISK FACTORS FOR BREAST CANCER AND BSE

15. The following are symptoms of breast cancer. State if it is true, false or if you don't know by ticking the right box

a. Breast lump □ true □ false □ I don't know

b. Multiple masses □true □ false □ I don't know

c .Nipple retraction □ true □ false □ I don't know

d. Breast pain □ true □ false □ I don't know

e. Milky discharge □ true □ false □ I don't know

f. Bloody discharge □ true □false □ I don't know

g. Weight loss □ true □ false □ I don't know

16. The following are methods of breast cancer diagnosis. State whether its true or false by ticking the right box and if you are not sure tick 'I don't know'

a. Pathological examination of breast tissue □ true □ false □ I don't know

b. Self breast examination □ true □ false □ I don't know

c. Mammography □ true □ false □ I don't know

d. Consultation with a specialist doctor □ true □ false □ I don't know

17. The following are risk factors of breast cancer. State if it is true or false or if you don't know by ticking the right box

a. Age □ true □ false □I don't know

b. Diet □ true □ false □ I don't know

c. Age at first full term pregnancy □ true □ false □ I don't know.

d. Positive family history of breast cancer □ true □false □ I don't know

e. Prolonged lactation confers lower risk □true □ false □ I don't know

f. Overweight after menopause □ true □ false □ I don't know

g. Multiparity confers lower risk □ true □ false □ I don't know

h. Smoking is associated with increased risk □ true □ false □ I don know

18 . The following statement explains how BSE is performed. State whether its true or false by ticking the right box and if you are not sure tick 'I don't know'

a. Palpation with the same site hand □ true □ false □ I don't know

b. Control of nipple discharge □ true □ false □ I don't know

c. Inspection in front of mirror □ true □ false □ I don't Know

d. Palpation with the middle fingers of the opposite hand.

□ true □ false □I don't know

19. How often should Breast Self Examination be undertaken by a woman? (Tick one)

a. Daily

b weekly

c. Monthly

d . Undefined

e. I don't know

SECTION4: PRACTICE

Tick the right answer.

20a. Do you ever examine your breast? (If no skip to 26)

○ Yes……../○ No……..

20b. If yes what made you start doing breast self-examination?

20c. How often do you examine your breasts? (Tick one)

□ Every day…….

□ Every month

□Once every six months

□ Erratic

20d.When do you perform breast self-examination? (Tick one)

□ Before menses

□ During menses

□ After menses

□ Any time

□ Others

20e. When did you last perform BSE? (Tick one)

- □ Today
- □ Yesterday
- □ Last week
- □ Last month
- □ Last year
- □ Non - specified

SECTION 5: ATTITUDE TOWARDS BREAST SELF EXAMINTION:

21. Are you confident in doing your own breast self examination? (Tick one)

○Yes……../ ○ No…….

25. Do you think women should be taught self breast examination? (Tick one)

○Yes……. /○No……

25b. Why do you think women should not be taught breast self examination?

……..

……

26a. (If no) Why don't you perform BSE? (Tick one)

a. I do not have any problem in my breast, so there is no reason to examine my breast.
b. I m afraid of discovering a lump on my breast.
c. Breast self examination is difficult and time consuming.
d. Breast self examination is troublesome.
e. If I examine my breasts myself I could not detect any abnormalities.
f. I am very busy
g. If I knew the benefit of Breast self examination I would have to do it

27. Would you recommend breast self examination to your friend?

○ Yes……. / ○ No……

APENDIX 3

Consent Form

Dear Madam

My name is Zipporah Machuki; I am from the University of Nairobi Institute of Tropical and Infectious diseases(UNITID) taking a Post Graduate Course in Biomedical Research Methodology. As part of the fulfillment of the course I am carrying out a study to determine the Knowledge, attitude and practice of breast self examination (BSE) among all female nurses. You are asked to participate in this study by filling a questionnaire. The purpose of this consent form is to give you the information you will need to help you decide whether to be in the study. Please read it carefully.

Consent information

i) Your participation is voluntary
ii) You are free to withdraw from the study any time at any stage without penalty
iii) There are no monetary or material benefits
iv) There are no known risks associated with the study
v) All information collected during this research will be held in strictest confidence and no identifying information of any kind will be released to any other person or agency without your specific consent I will not publish or discuss in public anything that could identify you unless with your written consent. Only the investigator will have access to information that be used to identify you however once the study is complete all records that can be used to identify you will be removed. To maintain anonymity and confidentiality the participants will feel the questionnaires themselves and their names will not be entered therein.
vi) An ethical review committee has approved the research protocol.

You are free to ask any questions before you fill the questionnaire, when all your questions have been answered, you can decide if you want to be in this study or not. I will give you a copy of this form for your records.

Signature of investigator----------Date----------

Participant's statement:

The study described above has been explained to me. I voluntarily consent to participate in this activity. I have had an opportunity to ask questions.

Signature of subject----------Date----------

Copies to: 1. Subject 2. Investigator's file

APPENDIX 3

KENYATTA NATIONAL HOSPITAL
Hospital Rd. along, Ngong Rd.
P.O. Box 20723, Nairobi.
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Telegrams: MEDSUP", Nairobi.
Email: KNHplan@Ken.Healthnet.org

Ref: KNH-ERC/ 01/ 4523

4th July 2007

Machuki Zipporah Bosibori
W61/P/9751/06
UNITID

Dear Zipporah

REVISED RESEARCH PROPOSAL: "DETERMINING THE KNOWLEDGE, ATTITUDE AND PRACTICE OF BREAST-SELF EXAMINATION(BSF) AMONG FEMALE HEALTH CARE WORKERS IN K.N.H AND PUMWANI MATERNITY HOSPITAL, KENYA" (P113/5/2007)

This is to inform you that the Kenyatta National Hospital Ethics and Research Committee has reviewed and **approved** your above revised research proposal for the period 4th July 2007 – 3rd July 2008.

You will be required to request for a renewal of the approval if you intend to continue with the study beyond the deadline given. Clearance for export of biological specimen must also be obtained from KNH-ERC for each batch.

On behalf of the Committee, I wish you fruitful research and look forward to receiving a summary of the research findings upon completion of the study.

This information will form part of database that will be consulted in future when processing related research study so as to minimize chances of study duplication.

Yours sincerely

PROF. A.N. GUANTAI
SECRETARY, KNH-ERC

c.c. Prof. K.M. Bhatt, Chairperson, KNH-ERC
The Deputy Director CS, KNH
Supervisor: Dr. P.M. Ndavi, Dept. of Obs/Gynae, UON