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Evaluation of Knowledge, Attitude and Practice Towards Breast Cancer Screening Among Staff in Selangor University

Mardhiyati Mohd Yunus[1*], Siti Zurina Mat Noor[1], Sawal Marsait[1], Abdullah Mohd Noh[1], Norhafizah Zahari[1], and Azman Ariffin[2]

[1]Medical Imaging Division, Health Sciences Department, Universiti Selangor (UNISEL), Shah Alam, Malaysia
[2] Science and Biotechnology Department, Universiti Selangor (UNISEL), Bestari Jaya, Malaysia
mardhiyati@unisel.edu.my

Abstract: Breast cancer screening is crutial in early detection of breast cancer. Therefore, people at least must know how to practice Breast Self-Examination (BSE), mammography and Clinical Breast Examination (CBE). Participants were selected randomly among Selangor University staff to answer self-administered e-questionnaires regarding knowledge, attitude and practice of breast cancer screening. Subsequently, two qualified observers were observed participants' ability to palpate and count the lumps on breast phantom. Overall, 58.2% were aged 31 to 40 years with the mean 2.26 ± 0.697. 44% of them have Master degree by mean 4.21±1.243 with majority 53.9% have medium level of BSE knowledge while 58.2% of them have high knowledge on mammography. Majority 64.6% of respondents feel somewhat confident on palpating the lump, 41.8% feel confident in counting number of lumps and majority 54.4% was not confident on using proper technique on BSE. 97.8% agreed that BSE is necessary to check any abnormalities in the breast while 93.4% agreed it's good to practice. 71.4% of them have done BSE before with majority 53.8% started at the age of 26-35 years old. 41.9% have done their mammography because of having family members with breast cancer. 38.5% respond that mammography is costly and 30.8% said it is very painful to be done. In conclusion, majority of them has medium level of knowledge on BSE, knowledgable on mammography, able to palpate and count the lumps on the breast phantom but not that confident in using proper BSE techniques.

Keywords: *Breast Cancer, Breast Phantom, Breast Self-Examination, Mammography*

1. Introduction

In a year of 2003 alone, 3738 new cases of malignant tumor or malignant mass were reported to the National Cancer Registration (NCR) of Malaysia and it is estimated that 1 out of every 20 women in Malaysia may develop breast cancer in their lifetime (Yip, Taib, & Mohamed, 2006). In an effort to reduce its mortality rate, early detection through exercising multiple trial of mammography screening is very important (Park, Franken, Garg, Fajardo, & Niklason, 2007). Based on the randomized clinical tests, researchers have found that mammography is the best modality for breast cancer screening and has been proven to reduce the average breast cancer mortality to about 30% (Fletcher SW, 1993; Nystrom L, 1993). It is very important to motivate patient to come for mammography screening in the early detection of breast cancer. Over 30 years, mammography is the gold standard in detecting breast cancer.

Malaysia is a country in Southeast Asia as other countries having a high rate of breast cancer among women. Breast cancer is the commonest cancer among Malaysian women in all ethnic groups a woman in Malaysia has 1 in 20 chance of getting a breast cancer in her lifetime (Maznah, Sofea, & Awang M, 2011). The association between socioeconomic status and risk of breast cancer is well established, when social class is measured by income or education level, the variations in risk largely accord with the differential distribution of known risk factors, as observed in the USA (Bray, McCarron, & Parki, 2004). The majority of breast cancers occur in postmenopausal women or those over the age of 50, unfortunately nowadays the age range of getting breast cancer is increased and it involved many young women therefore its emphasis on role of the breast cancer awareness. According to (Assi, Khoury, E, Dbouk, & E, 2013) approximately seven percent of breast cancers are occurring in young adult women. That's a small percentage, but it represents a lot of women. Women should be aware that breast cancer exists and everyone is at a risk of developing breast cancer.

A reduction in breast cancer mortality is the primary goal of breast cancer screening (Franca, Kaaks, & Vainio, 2002). The central idea of the screening is that the prognosis of an individual cancer may change from deadly to curable by detecting it earlier. Mammography screening is the best method used in cancer screening programme and BSE is not an actual primary screening strategy for all women, but it plays a crucial role for younger women who do not undergo other forms of breast cancer screening methods, and it has a special place for all women in increasing breast awareness. As mention (Karayurt, Ozmen, & Cetinkaya, 2008), the adolescent is a time of quick change that provides teaching opportunities to form health behaviours into adulthood.

BSE is particularly the only realistic approach to early detect of breast cancer in developing countries because it is simple, cost effective as it does not need a technology. The awareness about early detection of breast cancer may be increased when teaching the women to practice BSE. The woman when doing BSE can familiarize with both the appearance and the feel of their breasts and help detection of any abnormal changes in breasts as early as possible (Karayurt et al., 2008). Among 59,903 Malaysian women, BSE and CBE performed by 34% and 31% of women respectively (Rosmawati, 2010). Only a few women actually examine themselves and the majority of them don't know how to do BSE (Sen S, 2002). This research is purposely to evaluate the knowledge, attitude and practice towards breast cancer among staff in Selangor University.

2. Materials and Methods

2.1 Ethical approval and confidentiality

Approval for the study was obtained from Centre for Research and Industrial Linkages (CRIL) of Selangor University, Malaysia. The purpose of the study was explained to respondents via e-questionnaire and a description of the purpose and aim of the study were also provided. Confidentiality with their right to withdraw was assured and participants who agreed to participate only can proceed to answer.

2.2 Study Setting

Descriptive study design and observation method was used in this study. The research was performed in Selangor University (UNISEL) within a condusive room. This is to ensure that the participants felt confortable to answer the questionnaire and doing BSE technique on breast phantom without any bias.

2.3 Study Sample

79 participants were randomly selected to do the observational study among 91 participants who answered the e-questionnaires including male and female academician and non academician staff. The sample size was calculated using formular with 95% confidence level adopted from the textbook of Basic Statistics: A Modern Approach.

2.4 Data collection

Each participant answered self-administered questionnaires via e-survey. The questionnaires were designed in English language. Permission has been granted from the original author and has been validated. The questionnaires are considered as primary data which is designed to evaluate information such as: (1) Demographic characteristic of the respondents such as gender, age, marital status and education (2) The level knowledge of participants about BSE and mammography (3) The attitude of the participants toward BSE and mammography (4) The practices of participants towards BSE, mammogram and CBE. After

they have done their e-survey, participants were given a chance to do BSE on breast phantom provided to them as shown in Figure 2.4.1. The breat phantom used was a type of bilateral breast phantom embedded with different types and sizes of lump.

Figure 2.4.1: The BSE breast phantom.

The ways of respondents palpating and counting the lump using BSE techniques on the phantom as shown in Figure 2.4.2 were observed by two qualified observers within the duration time given. The observation criterias are the number of lumps palpated, the ability to feel lumps and the ability to use proper BSE technique. The observation was rated in the observation sheet that was shown in Figure 2.4.3 using five(5) Likert scale.

Figure 2.4.2: Practicing BSE technique.

OBSERVATION SHEET BY EXAMINER

NAME OF EXAMINER: _____

1	2	3	4	5
Not confident at all	Not confident	Somewhat confident	Confident	Very confident

No.	Staff ID	Faculty	Ability to feel the lumps	Number of lumps palpated (average range)		Ability to use proper technique of BSE (including mid area of 3finger and using circular, up &down and wedge motion)
1.			1 2 3 4 5	1 2 3 4 5	/	1 2 3 4 5
2.			1 2 3 4 5	1 2 3 4 5	/	1 2 3 4 5

Figure 2.4.3: BSE technique observation sheet.

2.5 Data analysis

Descriptive statistics was obtained for all the variables in the study using Statistical Package for the Social Sciences (SPSS Inc., Chicago, IL) version 20.0. Statistical analysis was analysed by Pearson Correlation to find the relationship between level of knowledge, attitude and practice of BSE, mammography and CBE with demographic factors and followed by Chi-square Test to compare the level of BSE practice on breast phantom between faculties and gender. The means comparisons significance was tested at $p<0.05$.

3. Results and Discussion

58.2% aged 31 to 40 years with the mean 2.26 ± 0.697. 44% of them have Master degree background with the mean 4.21±1.243 showed in Table 3.1.

Table 3.1: Descriptive analysis of demographic data.

Subject	F (N=91)	% (N=100%)	Mean	SD
Gender			1.92	0.268
Male	7	7.7		
Female	84	92.3		
Category			1.44	0.499
Academic	51	56.0		
Non-Academic	40	44.0		
Age			2.26	0.697
20-30	9	9.9		
31-40	53	58.2		
41-50	25	27.5		
51-60	4	4.4		
Marital status			1.88	0.390
Single	13	14.3		
Married	76	83.5		
Divorced	2	2.2		
Educational level			4.21	1.243

	Secondary	5	5.5		
	Certificate	2	2.2		
	Diploma	18	19.8		
	Degree	18	19.8		
	Master	40	44.0		
	Doctorate	8	8.8		
Race				1.03	0.314
	Malay	90	98.9		
	Others	1	1.1		

Figure 3.1 showed the majority of 53.9% respondents have medium level of BSE knowledge while 58.2% of them have high knowledge on mammography as shown in Figure 3.2.

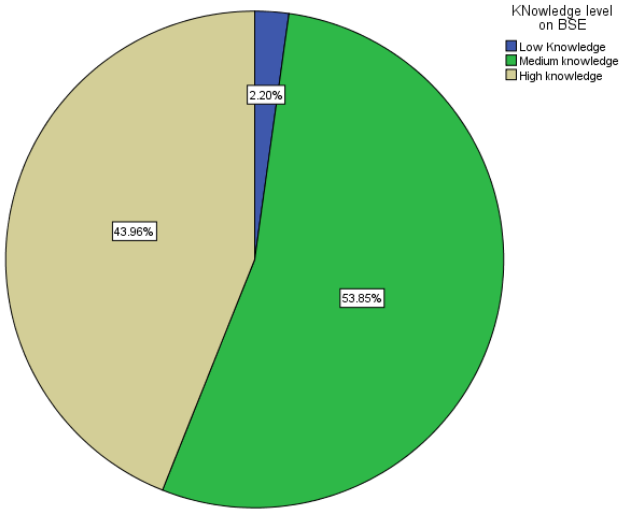

Figure 3.1: Pie chart on the percentage of level of knowledge on BSE.

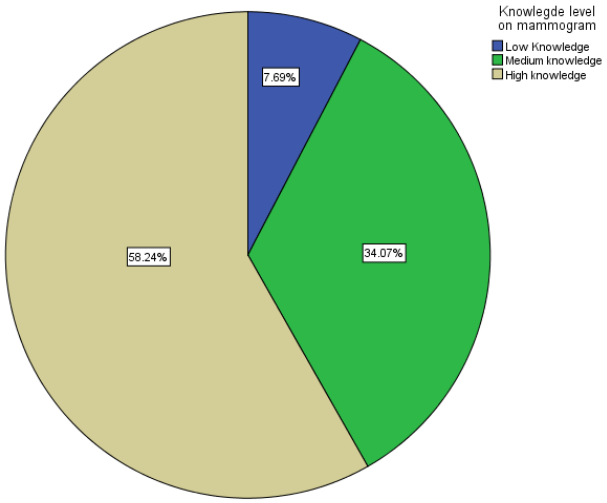

Figure 3.2: Pie chart on the percentage of level of knowledge on mammogram.

By referring to Table 3.2, majority 64.6% of respondents feel somewhat confident on palpating the lump, 41.8% feel confident in counting number of lumps and 54.4% was not confident on using proper technique on BSE. The mean response on the ability to feel the

lumps is (3.11 ± 0.62), ability to palpate the number of lump is (3.34 ± 0.96) and using proper techniques of BSE is (2.38 ± 0.74). None (0%) of the participant was very confident in feeling the lump and also using proper BSE technique. This shown that education on practicing BSE technique is required.

Table 3.2: Descriptive analysis of BSE practice on breast phantom.

Subject	Likert scale	F (N=79)	% (N=100%)	Mean	SD
Ability to feel the lump				3.11	0.62
	Not confident at all	1	1.30		
	Not confident	8	10.10		
	Somewhat confident	51	64.60		
	Confident	19	24.10		
	Very confident	0	0.00		
Number of lump palpated				3.34	0.96
	Not confident at all	3	3.80		
	Not confident	12	15.20		
	Somewhat confident	25	31.60		
	Confident	33	41.80		
	Very confident	6	7.60		
Ability to use proper technique				2.38	0.74
	Not confident at all	6	7.60		
	Not confident	43	54.40		
	Somewhat confident	24	30.40		
	Confident	6	7.60		
	Very confident	0	0.00		

Based on the survey, 97.8% agreed that BSE is necessary to check any abnormalities in the breast and good to practice (93.4%). 71.4% of them have done BSE before with majority 53.8% started at the age of 26-35 years old. 41.9% of female respondents done their mammography because of having family members with breast cancer. 38.5% respond that mammography is costly and 30.8% said it is very painful.

Table 3.3: Comparison between the knowledge, attitude and practice of breast screening with demographic factors using Pearson Correlation. The **BOLD** result showed that there is significant

different ($p<0.05$) or positive correation (r^2 <0.05) with the factors and the level of knowledge, attitude and practice.

	Demographic factors	Different (p value)	Correlation (r^2)
1) Level of knowledge on BSE	Gender	0.912	0.956
	Academic and Non-Academic	0.113	0.065
	Age	0.485	0.266
	Education level	0.119	0.007
2) Level of attitude on BSE	Gender	0.911	0.507
	Academic and Non-Academic	0.193	0.125
	Age	0.000	0.257
	Education level	0.074	0.006
3) Level of practice on BSE	Gender	0.017	0.049
	Academic and Non-Academic	0.482	0.252
	Age	0.032	0.019
	Education level	0.114	0.675
4) Level of knowledge on mammography	Gender	0.252	0.119
	Academic and Non-Academic	0.055	0.016
	Age	0.064	0.002
	Education level	0.237	0.006
5) Level of attitude on mammography	Gender	0.006	0.001
	Academic and Non-Academic	0.391	0.348
	Age	0.638	0.243

	Education level	0.883	0.414
6) Level of practice on mammography	Gender	0.498	0.315
	Academic and Non-Academic	0.002	0.000
	Age	0.629	0.912
	Education level	0.266	0.00
7) Level of practice on CBE	Gender	0.026	0.01
	Academic and Non-Academic	0.666	0.805
	Age	0.620	0.758
	Education level	0.264	0.528

Based on Table 3.3, there are significant different ($p<0.05$) between age, gender and categories (academic and non academics) with level of attitude on BSE and mammography, level of practice on BSE, mammography and CBE. There are also or positive correlation ($r^2 <0.05$) with the factors of education level, age, gender and catergories (academic and non academics) with the level of knowledge on BSE and mammography, level of attitude on BSE and mammography and level of practice on BSE, mammography and CBE. This showed there are significant relationship between the demographic factors and their knowledge, attitude and practice of breast screening method.

Table 3.4 showed Chi square test result in comparing between ability to feel the lump, ability to count number of palpated lump and ability to use proper BSE technique between different faculties, there is no significant different with the respective $p>0.05$ ($p=0.105$; 0.356; 0.277). In comparing between ability to feel the lump, ability to count number of palpated lump and ability to use proper BSE technique between two different gender, there is no significant different with the respective $p>0.05$ ($p=0.831$; 0.581; 0.633). Majority both male and female respondent feel somewhat confident on feeling the lump, feel confident in counting number of lump palpated and not confident on using proper technique on BSE.

Table 3.4: Comparison of the BSE level of practice on breast phantom with faculties and genders.

p value	Gender	Faculty
1)Ability to feel the lump	0.105	0.831
2)Ability to count number of palpated lump	0.356	0.581
3)Ability to use proper BSE technique	0.277	0.633

4. Conclusion

A significant proportion of participants was aware of breast cancer but did not practice proper breast screening method. The barriers for not practicing BSE are knowledge, psychological, and environmental factors were identified. BSE practice was associated significantly with socio-demographic factors, socio-economic factors and educational status. There is a need to increase awareness among Malaysian through massive nationwide campaigns and including information of BSE in the curriculum of secondary school and university students. In addition, the role of electronic media, particularly television should be enhancing in health education and attitude changes towards breast screening awareness. Social networking sites could also be used amongst younger generations. Primary health care workers should be involved aggressively in health education.

5. Acknowledgement

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6. References

Assi, Hussein, Khoury, A, E, Katia, Dbouk, Haifa, & E, Lena. (2013). Epidemiology and prognosis of breast cancer in young women. *Journal of Thoracic Disease, 5*(1), 2-8.

Bray, Freddie, McCarron, Peter, & Parki, D Maxwell. (2004). The changing global patterns of female breast cancer incidence. *Breast cancer research, 6*(6), 229-239.

Fletcher SW, Black W, Harris R, et al. (1993). Report of the International Workshop on Screening for Breast Cancer. *J Natl Cancer Inst, 85*, 1644-1656.

Franca, Bianchini, Kaaks, Rudolf, & Vainio, Harri. (2002). Overweight, obesity, and cancer risk. . *The lancet oncology, 3*(9), 565-574.

Karayurt, O, Ozmen, D, & Cetinkaya, A. C. . (2008). Awareness of breast cancer risk factors and practice of breast self examination among high school students in Turkey. *BMC public health, 8*, 359.

Maznah, D, Sofea, R, & Awang M, B. (2011). Breast cancer prevention and control programs in Malaysia. *Asian Pacific Journal of Cancer Prevention, 12*(6), 1631-1634.

Nystrom L, Rutqvist LE, Wall S, et al. (1993). Breast cancer screening with mammography: overview of Swedish randomised trials. *Lancet, 341*, 973-978.

Park, Franken, Garg, Fajardo, & Niklason. (2007). Breast tomosynthesis:present considerations and future applications. *Radiographics 27*, 231–240.

Rosmawati, NH Nik. (2010). The Usage and Knowledge of Mammogram among Women in Sub-Urban Area in Terengganu, Malaysia. *Asian Pacific Journal of Cancer Prevention, 11*(11), 767-771.

Sen S, Ozturk M , Kisioglu AN (2002). Level of knowledge of female in Isparta of the 25-65 year age group concerning risk factors and symptoms of breast cancer. *VIIIth congress for public health, Diyarbakir*.

Yip, Cheng Har, Taib, Nur Aishah Mohd, & Mohamed, Ibraham. (2006). Epidemiology of Breast Cancer in Malaysia. *Asian Pacific Journal of Cancer Prevention, 7*, 369-374.