

LEVEL OF KNOWLEDGE AND PERCEIVED BARRIERS OF MAMMOGRAPHY AMONG FEMALE LECTURERS IN KULLIYAH OF ALLIED HEALTH SCIENCES (KAHS), IIUM KUANTAN, PAHANG

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ABSTRACT

Introduction: Breast cancer is commonest disease amongst women throughout the world and the second leading cause of women's death. Since 2014, it was reported that approximately 5000 women were diagnosed with breast cancer every year in Malaysia. Adoption of mammography screening amongst Malaysian women remains under-utilized because it depends on self-initiatives of individuals. Amongst the perceived barriers are low knowledge, cost, embarrassment and pain which may then give a negative psychological aspect to health behavior actions. The study aims to determine the level of knowledge and perceived barriers pertaining to mammography amongst female lecturers in Kulliyah of Allied Health Sciences (KAHS), International Islamic University Malaysia (IIUM) Kuantan, Pahang. **Methods:** A survey was carried out on female lecturers aged 35 years and above in KAHS, IIUM Kuantan. A self-administered questionnaire which consists of three sections; demographic factors, knowledge about breast cancer and perceived barriers pertaining to mammography were distributed to 30 respondents. Data was analyzed using SPSS version 19.0. **Results:** The mean age of respondents was 39.9 years old (SD \pm 5.15). Majority of respondents possessed good knowledge of breast cancer. The perceived barriers pertaining to mammography amongst respondents were pain and the procedure being expensive. **Conclusions:** This study found that most female lecturers in KAHS, IIUM Kuantan possessed good knowledge on breast cancer but have fair knowledge pertaining to breast lumps and the best time for breast screening. The perceived barriers amongst respondents were pain and cost of the procedure.

KEYWORDS: Breast cancer, Knowledge, Mammography, Barriers, Women

INTRODUCTION

Breast cancer is the commonest disease amongst women globally (Al-Dubai et al., 2012). It is the second leading cause of women's death (Knutson & Steiner, 2007). In Malaysia, since 1993 until 2003, breast cancer cases reported in University Malaya Medical Centre had increased by six times (Nik Nairan et al., 2011). Since 2014, it was reported that approximately 5000 women were diagnosed with breast cancer every year (Cancer Research Malaysia, 2015). The National Cancer Registry reported that the age-standardized incidence (ASR) rate amongst Malaysian is 46.2 per 100 000 of female population.

Nonetheless, the ASR also varies amongst the races in Malaysia with Chinese recording the highest rate at 59.7 per 100 000, Indians; 54.2 per 100 000 and Malays have the lowest rate with 34.9 per 100 000 (Yip, Nur Aishah & Mohamed, 2006).

The awareness of breast cancer amongst Malaysian women is generally low which is indicated by relatively low uptake of breast cancer screening (Yip, Pathy & Teo, 2014). As such, most of the Malaysian women present at an advance stage of breast cancer (Nik Nairan et al., 2011). Therefore, early detection of breast cancer is very important as it is one of the determinants of survival rates (Teh et al., 2015). The recommended methods for early detection of breast cancer are breast self-examination, clinical breast examination, and mammography (Avci, 2008). Despite an implied cost, mammography is the only effective method for early detection of breast cancer (WHO, 2008). However, adoption of mammography screening amongst Malaysian women remains under-utilized because it depends on self-initiatives of individuals (Yip, Nur Aishah & Mohamed, 2006).

One of the reasons associated with women's non adherence to mammography is perceived barriers. Barriers are an individual's opinion or obstacles toward health behavior actions (Hartman, 2002). Amongst the perceived barriers are low knowledge, cost, embarrassment and pain which then, may give rise to a negative psychological aspect to health behavior actions (Hartman, 2002). In Malaysia, differences in education level were found to correlate with the uptake of mammography screening (Nik Nairan et al., 2011). Thus, knowledge regarding breast cancer correlates with the awareness amongst women in acknowledging the benefits of breast cancer screening such as mammography. Few studies have been conducted on the level of knowledge and perceived barriers for mammography screening, more so in a university setting and involving academicians. Therefore, the present study is carried out to determine the level of knowledge and perceived barriers pertaining to mammography amongst female lecturers in KAHS, IIUM Kuantan, Pahang.

METHODS

The study population were female lecturers aged 35 years and above. The sample size was calculated by using a sample size calculator so that the study can be generalized to the population. Thirty female lecturers were randomly selected. Data was collected from six departments in KAHS namely Department of Biomedical Science, Department of Diagnostic Imaging and Radiotherapy, Department of Optometry and Visual Sciences, Department of Audiology and Speech Language Pathology, Department of Nutrition Science and Department of Physical Rehabilitation Science. A self-administered questionnaire was sent to the respondents through their respective email addresses. The form consisted of four sections; demographic factors, knowledge about breast cancer, and perceived barriers pertaining to mammography. The socio demographic factors comprised of age, race, religion, marital status, education level and family income. The second section comprised of questions on knowledge on breast cancer screening. Seven items in this section were used to evaluate knowledge; symptoms of breast cancer, risk factors of breast cancer, methods of breast screening, best time for breast screening, places of breast screening, perceptions on breast lumps as well as the knowledge on mammography. The level of knowledge is categorized as 'poor' for a score in the range 0-49%, 'fair' for a score in the range of 50-79% and 'good' for a score in the range of 80-100% (Akhtari-Zavare et al., 2014). The last section focused on questions pertaining to perceived barriers. It consisted of five items. A ten-point Likert scale of anchored items was used in this section with responses ranging from "strongly disagree" to "strongly agree".

Data collection

The questionnaires in google form were distributed through the academic email of the respondents in KAHS, IIUM Kuantan from February 2018 to April 2018. The respondents were given a week to complete the questionnaire. The consent forms, explanation of confidentiality and the right to withdraw from the study were also provided in the email.

Statistical analysis

The data was analyzed by using the IBM statistical package for social sciences (SPSS) window, version 19.0. Descriptive statistics were used to describe the population whereas Chi-square test was used to determine the association between the level of education and socio demographic factors. The significance level of the test was set at $p < 0.05$.

RESULTS

The findings indicated that 23 respondents (76.7%) were in the 31 to 40 year age group. The mean age of respondents was found to be 39.9 years old ($SD \pm 5.15$). The socio demographic factors of the respondents are presented in Table 1. Twenty-nine respondents were Malays (96.7%). Out of 30 respondents, 20 (66.7%) of them were married, 9 respondents (30%) were single and 1 respondent (3.3%) was widowed. All the respondents have tertiary education. Fifteen respondents (50%) indicated their family income to be between RM 6,000 to RM 9,999 while 9 respondents (30%) indicated their family income to be more than 10,000 per month. Additionally, 6 respondents (20%) indicated their family income to be between RM 3,000 to RM 5,999.

Table 1 Socio demographic characteristics of the respondents

Class	Frequency	Percentage (%)
Age		
31-40	23	76.7
41-50	6	20
61-70	1	3.3
Race		
Malay	29	96.7
Chinese	1	3.3
Religion		
Muslim	29	96.7
Non-Muslim	1	3.3
Marital Status		
Single	9	30
Married	20	66.7
Widow	1	3.3
Level of Education		
Tertiary	30	100
Family Income		
RM3,000 – RM5,999	6	20
RM6,000 – RM9,999	15	50
More than RM10,000	9	30
TOTAL	30	100

All respondents recognized the presence of lumps in the breast as one of the symptoms of breast cancer. However, only 13 respondents (43.3%) gave the correct answer that gaining weight after menopause is linked to breast cancer (Table 2).

Table 2 Knowledge on breast cancer signs and symptoms

Statement	Yes N (%)	No N (%)
Symptoms of Breast Cancer		
Lump(s) in the breast	30 (100)*	0 (0)
Nipple retraction (drawn inward)	28 (93.3)*	2 (6.7)
Bloody discharge from the nipple (bloody fluid seeps out from nipple)	29 (96.7)*	1 (3.3)
Puckering (dimpling) of the skin of the breast	26 (86.7)*	4 (13.3)
Swelling of the axillary's lymph	29 (96.7)*	1 (3.3)
Warmth (burning) and redness throughout the breast	21 (70)*	9 (30)
Weight gain after menopause	13 (43.3)*	17 (56.7)
*Correct answer: 176		Total score: 210
Percentage of correct answer: 83.8%		

All respondents knew that having a family history with breast cancer is a risk of breast cancer. Additionally, 19 respondents (63.3%) knew that menopause after 55 years old is one of the risk factors for breast cancer (Table 3).

Table 3 Knowledge on risk factors of breast cancer

Statement	Yes N (%)	No N (%)
Risk Factors of Breast Cancer		
Onset menses before 12 years old	24 (80)*	6 (20)
Menopause after 55 years old	19 (63.3)*	11 (36.7)
Diets high in fats	21 (70)*	9 (30)
Past history of breast cancer	30 (100)*	0 (0)
First pregnancy after 35 years old	25 (83.3)*	5 (16.7)
Nulliparity at age 40 years	27 (90)*	3 (10)
Taking oral contraceptive pills (OCP)	25 (83.3)*	5 (16.7)
*Correct answer: 171		Total score: 210
Percentage of correct answer: 81.4%		

Seventeen respondents (56.7%) knew that the presence of abnormal lumps in the breast area does not necessarily mean cancer. In contrast, 23 respondents (76.7%) provided the incorrect answer that presence of pain in the breast means cancer.

Table 4 Knowledge regarding perception on breast lumps

Statement	Yes N (%)	No N (%)
Perception on Breast Lumps		
Presence of abnormal lump(s) in the breast means cancer	13 (43.3)	17 (56.7)*
Pain of the breast lump means cancer (mastodynia)	7 (23.3)	23 (76.7)*
*Correct answer: 40		Total score: 60
Percentage of correct answer: 66.7%		

All respondents knew that mammography is a procedure that uses a low-dose specialize unit to visualize the breasts by compression during mammogram. Additionally, 16 respondents (53.3%) gave the correct answer that women above 75 years old do not need breast cancer screening (Table 5).

Table 5 Knowledge on mammography

Statement	Yes N (%)	No N (%)
Knowledge on Mammography		
Women below 40 years old do not need to undergo mammography unless had family history of breast cancer	26 (86.7)*	4 (13.3)
Women aged 40-49 years old should be screened annually	26 (86.7)*	4 (13.3)
Women aged 50-75 years old can be screened annually or biennially	29 (96.7)*	1 (3.3)
Women above 75 years old do not need screening	14 (46.7)	16 (53.3)*
Mammography is a procedure that uses a low-dose x ray system to see inside the breasts	30 (100)*	0 (0)
Mammogram can cause pain and discomfort	28 (93.3)*	2 (6.7)
Mammography is the best method to detect breast abnormalities	26 (86.7)*	4 (13.3)
Women with breast implant cannot perform mammogram	17 (56.7)*	13 (43.3)
During mammogram, the breast will be compressed with a compression device	30 (100)*	0 (0)
*Correct answer: 228		Total score: 270
Percentage of correct answer: 84.4%		

Table 6 depicts the overall score for knowledge on breast cancer. The total knowledge pertaining to signs and symptoms of breast cancer was 83.8%. The knowledge on the risk factors of breast cancer was 81.4%. More than half of respondents (66.7%) have good knowledge pertaining breast lumps and 83.3% of the respondents knew the methods suitable for breast cancer screening. The total score for knowledge pertaining methods for breast cancer screening was 62.2%. Further, the total score for knowledge regarding breast cancer screening was 89.3% whilst 84.4% respondents reflected they were knowledgeable about mammography screening.

Table 6 The overall score for knowledge on breast cancer

Section	Percentage (%)
Breast cancer signs and symptoms	83.8
Risk factors of breast cancer	81.4
Perception on breast lumps	66.7
Methods on breast cancer screening	83.3
Best time for breast screening	62.2
Places for breast screening	89.3
Knowledge on mammography	84.4

Table 7 indicates the correlation of level of knowledge and socio demographic factors. However, no significant correlation was found for the level of knowledge and age, race, religion, marital status and family income.

Table 7 Correlation of the level of knowledge and socio demographic factors

Socio demographic Status	Low Knowledge	Average Knowledge	High Knowledge	Total	χ^2 <i>p</i>
1. Age					
31-40	11	6	6	23	5.260 0.262
41-50	1	4	1	6	
61-70	0	1	0	1	
Total	12	11	7	30	
2. Race					
Malay	12	10	7	29	1.787 0.409
Chinese	0	1	0	1	
Total	12	11	7	30	
3. Religion					
Muslim	12	10	7	29	1.787 0.409
Non-Muslim	0	1	0	1	
Total	12	11	7	30	
4. Marital Status					
Single	3	5	1	9	4.528 0.339
Married	9	5	6	20	
Widow	0	1	0	1	
Total	12	11	7	30	
5. Family Income					
RM3,000 – RM5,999	1	3	2	6	2.543 0.637
RM6,000 – RM9,999	6	6	3	15	
RM10,000 and above	5	2	2	9	
Total	12	11	7	30	
GRAND TOTAL	12 (40.0%)	11 (36.7%)	7 (23.3%)	30 (100.0%)	

*Note: Percentiles (0 – 32 = Low Knowledge, 33 – 34 = Average Knowledge, 35 – 40 = High Knowledge)

Four respondents (13.3%) indicated that having mammogram would be painful. Meanwhile, six respondents (20.0%) moderately agreed that mammogram is very expensive and seven respondents (23.3%) disagreed that having mammogram is time-consuming. Moreover, 13 respondents (43.3%) did not agree that having a mammogram would be embarrassing (Table 8).

Table 8 Perceived barriers of mammography

Aspect	Scale										Mean (SD)
	1	2	3	4	5	6	7	8	9	10	
Having a routine mammogram would make me worry	6	6	6	5	3	1	1	1	1	0	3.37 (2.109)
Having a mammogram would be embarrassing	13	5	5	2	1	1	1	1	1	0	2.73 (2.348)
Having a mammogram would take too much time	5	7	10	2	2	3	0	0	0	1	3.17 (1.967)
Having a mammogram would be painful	1	6	8	3	1	4	2	4	0	1	4.47 (2.417)
Having a mammogram would cost too much	2	6	7	5	6	4	0	0	0	0	3.63 (1.520)

*Note: Scale 1: strongly disagree, Scale 10: strongly agree

DISCUSSION

All respondents have good knowledge on signs and symptoms of breast cancer. The finding of this study is similar to the study conducted by Birhane et al. (2017) which reported that 71.8% of respondents at Debre Berhan University knew the sign and symptom of breast cancer. However, the same study reflected incorrect response amongst 43.3% of the of respondents pertaining to weight gain after menopause as one of the signs and symptoms of breast cancer. Insufficient knowledge of breast cancer signs and symptoms would cause varied understanding pertaining to breast cancer (Lua & Noor Salihah, 2013). Therefore, effort should be made disseminate information on signs and symptoms of breast cancer so that women could detect breast cancer at an early stage which can lead to better prognosis, thereby decreasing mortality and morbidity.

In general, all respondents possessed good knowledge on risk factors of breast cancer. However, only about 50% of the respondents knew that menopause after 55 years old is a risk factor of breast cancer. The finding of the present study is in line with a study carried out by Erdem & Tokta (2016) amongst female health care providers in which only 59.6% respondents have a fair knowledge on risk factors for breast cancer. As such, this misconception needs to be corrected via the mass media, breast cancer campaigns or education program on breast cancer. All respondents possessed fair knowledge on breast cancer pertaining to perception of breast lumps. However, pertaining to the subset question on lump means cancer, half of respondents responded incorrectly. As such, the finding appears that the respondents in the present study lack knowledge pertaining to perception of breast lumps. The finding of the present study is similar to the study conducted by Ramani & Hussain (2017) in which was found that 46.6% of respondents thought the presence of lump at the breast area was cancerous. In fact, having breast lumps does not necessarily mean breast cancer (American Cancer Society, 2013). As a matter of fact, only ten breast cancer campaigns were carried out in Malaysia in the

last five years and most of the campaigns only last less than a week (Loh, Sunthari, & Su, 2017). Thus, there is a need in increasing the number of breast cancer campaigns and duration of the campaign such as in community health education to disseminate breast cancer related information.

All respondents of present study have good knowledge on mammography. This is possibly due to respondents being highly educated and therefore have easy access to information on mammography. This is supported by Nik Nairan et al. (2011) who indicated that educated women were more likely to have knowledge on mammography as compared to other women in the community. Yet, to the question whether women above 75 years needs to undergo mammography, almost 50% respondents gave incorrect answer. In fact, women above 75 years and above are not recommended to perform breast cancer screening (Berg et al. 2015). This is probably due to the limited information on mammography through the mass media or even the pamphlet on mammography that is available at the mammography centers.

Concerning perceived barriers, about 50% of the respondents indicated that having mammogram would be painful. The finding of this study is consistent with a previous study conducted on women in Rawalpindi and Islamabad City by Naushaba et al. (2016) whereby it was found that 42% of participants perceived mammography as a painful procedure. Yet, another study conducted on Malaysian hospital personnel by Nik Nairan et al. (2011) also found similar finding. As such, pain is a major barrier pertaining to mammography amongst women. Further, this study indicated that 20% of the respondents perceived mammogram to be an expensive procedure. Yet, in another study carried out on Iranian Turkmen women, it was found that the participants indicated that they will only undergo mammography screening with the recommendation by the physicians as the cost of the procedure is very expensive (Charkazi et al., 2013). Therefore, cost of mammography procedure is considered one of the perceived barriers of mammography amongst women (McAlearney et al. 2007).

CONCLUSION

In conclusion, this study found that most female lecturers in KAHS, IIUM Kuantan generally possessed good knowledge on breast cancer. However, some respondents have misconception pertaining to breast lumps and the best time for breast screening. This study also showed that perceived barriers on mammography amongst female lecturers in KAHS, IIUM Kuantan is pain from the mammography procedure and the cost of the examination. This is expected as the respondents possessed tertiary education which is associated with high self-efficacy (Ahmadian et al., 2016). As such, woman with high self-efficacy tends to have lower perceived barriers on mammography screening (Othman et al., 2012).

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