A SURVEY ON THE KNOWLEDGE OF BREAST CANCER AND ADOPTION OF BREAST SELF-EXAMINATION AMONG FEMALE UNDERGRADUATE STUDENTS OF KULLIYYAH ALLIED HEALTH SCIENCES, IIUM KUANTAN

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ABSTRACT

Introduction: Many studies had been carried out on breast cancer awareness and the practice of breast self-examination (BSE). However, few studies had been conducted on the level of knowledge of breast cancer and the adoption of BSE amongst female undergraduate students. Even though, younger women have lower breast cancer incidence but younger women tend to have more aggressive cancer type and possibly present breast cancer at an advance stage. Therefore, it is best to start BSE at an early age especially in the high risk group because it will help in early detection of breast cancer. As such, this study aims to ascertain the level of knowledge of breast cancer and stage of adoption of breast self-examination (BSE) among female undergraduate students of the Kulliyyah of Allied Health Sciences (KAHS), International Islamic University Malaysia (IIUM) Kuantan, Pahang. **Methods:** A cross-sectional study was carried out on 262 randomly selected female undergraduate students from KAHS, IIUM Kuantan. Data was collected using a validated self-administered questionnaire through a given link. R**esults:** The mean age of the participants was 22.4 years. Approximately 78% of the respondents' overall knowledge of breast cancer was fair. The knowledge on risk factors for breast cancer among respondents was a mere 48.42%. The majority of the respondents (84%) have heard about BSE. However, only half of the respondents knew how to perform BSE. Further, approximately 60% of respondents were at the pre-contemplation and contemplation stage for adoption of BSE. A significant relationship was found between knowledge of BSE and stage of adoption of BSE. **Conclusion:** The study found the majority of respondents have a fair knowledge on breast cancer and that knowledge of BSE is related to the stage of adoption of BSE.

KEYWORDS: Breast cancer, knowledge, breast self-Examination, stage of adoption

INTRODUCTION

Breast self-examination (BSE), clinical breast examination (CBE) and mammography are the suggested screening method for early detection of breast cancer (Montazeri et al., 2008). However, in contrast with CBE and mammography, BSE is simple and it does not need a visit to hospital, dedicated equipment as well as professional help (Kanaga, Nithiya & Shatirah, 2011). Further, BSE can also be carried out at an early age, whereas mammography is not encouraged at a young age due to the dense breast tissues and as such is less effective to use as a screening tool (Salem et al., 2013). Nevertheless,

BSE still has its disadvantage as it requires the individual to have the knowledge to do it properly as well as the right time to do it.

Knowledge about breast cancer is essential in the adoption of BSE for early detection of breast cancer. However, knowledge about breast cancer differs from that pertaining to breast cancer awareness. It has been suggested that the breast cancer knowledge begins with self-awareness of the disease (Godfrey, Agatha & Nankumbi, 2016) as theoretically, knowledge precedes awareness. Lack of knowledge about breast cancer was documented as a key factor in preventing women to carry out BSE (Akpo, Akpo & Akhator, 2010). Due to lack of knowledge about breast cancer, many women have 'overlooked' the symptoms that can help in early detection of breast cancer (Avci, 2008).

Many studies that had been done in Malaysia concerning the awareness of breast cancer and BSE practice. However, few studies had been conducted on the level of knowledge of breast cancer and the adoption of BSE amongst female students. Further, it is of utmost importance to start BSE at an early age especially in the high risk group because it will facilitate in the early detection of the disease. Thus, this study is carried out to determine the level of knowledge of breast cancer and stage of adoption of BSE among female undergraduate students of KAHS, IIUM Kuantan.

METHODS

A cross-sectional study was conducted from February 2018 to March 2018 to assess the level of knowledge of breast cancer and the adoption of BSE among female undergraduate students of KAHS, IIUM Kuantan. The data was collected via Google form through given link. The sample size was obtained by using the Raosoft sample size calculator. The suggested sample size of the population for this study was 255. A simple random sampling technique was used in selecting the 262 female respondents for the study.

A validated self-administered questionnaire consisting of three sections which were the socio-demographic characteristics, knowledge on breast cancer and the stages of behavioral adoption of BSE was used to collect the data. The knowledge component was assessed using 'Yes' or 'No' questions. The correct answer was accorded one point and the incorrect answer was not accorded any point. The level of knowledge was categorized as ' poor ' for a score in the range of 0 to 49%, ' fair ' for a score in the range of 50 to 79% and ' good ' for a score in the range of 80 to 100% (Akhtari-Zavare et al., 2014). The stages of behavioral adoption of BSE was categorized into three groups; pre-contemplation and contemplation stage as one group, the preparation and action stage as another group and maintenance and relapse stage as the last group. Table 1 shows the stage of adoption of BSE and its associated terminology.

Statistical analysis

All the data obtained were analyzed using the IBM Statistical Package for Social Sciences (SPSS), version 19. Descriptive statistics were used to provide a description of the population whereas linear regression was used to determine statistically significant association between level of knowledge of breast cancer and the adoption of breast self-examination among female undergraduate students of KAHS, IIUM Kuantan.

RESULTS

Demographics of The Respondents

The age range of the respondents is from 19 to 27, while the mean age of the respondents was 22.4 years (SD ±1.426). From the total number of respondents, 30.2% were fourth year students. The respondents were from the Department of Diagnostic Imaging and Radiotherapy 53 (20.2%), Department of Nutrition Sciences 49 (18.7%), Department of Audiology and Speech-Language Pathology 44 (16.8%), Department of Biomedical Sciences 42 (16.0%), Department of Physical Rehabilitation Sciences 40 (15.3%) and Department of Optometry and Visual Sciences 34 (13.0%). The respondents' demographic data is presented in Table 2.

Table 1 The stage of adoption of BSE and its associated terminology

Statement	Stages of Adoption
I have never done BSE, and I do not intend to do it in the next six months	Pre-contemplation
I have never done BSE, but I intend to do it within the next six months	Contemplation
I have never done BSE, but I intend to do it within the next one month	Preparation
It is less than six months that I have been conducting breast self-examination on a monthly basis, and I am going to perform it regularly in the next year	Action
It is more than six months that I have been doing the breast self-examination on a regular basis, and I am going to do it over the coming years	Maintenance
I have been doing the BSE, but I am not going to do it again	Relapse

The majority of the respondents (96.6%) knew that the commonest sign and symptom for breast cancer is the presence of lump in the breast. However only 13.4% from the population knew that weight gain after menopause is also one of the signs and symptoms of breast cancer. Table 3 reflects the findings pertaining to knowledge on signs and symptoms of breast cancer.

Referring to Table 4, most of the respondents (84.0%) have heard about BSE. However, approximately half of the respondents (51.9%) knew how to perform BSE. The knowledge score pertaining to risk factors for breast cancer was 48.42%. Almost all respondents (95.4%) knew that past history of breast cancer in an individual is a breast cancer risk factor. Nonetheless, 22.9% respondents knew onset menses before 12 years old is also a breast cancer risk factor. Respondents' knowledge of other risk factors for breast cancer are as shown in Table 5.

While 77.9% of the respondents' knowledge was fair, 12.6% of the respondents' knowledge on breast cancer was poor and only 9.5% of the respondents' knowledge was good. Table 6 shows the respondents' level of knowledge of breast cancer while Table 7 depicts the sub-components of knowledge of breast cancer of the respondents.

Based on the results obtained from this study, 59.2% of the respondents were at the pre-contemplation and contemplation stage. While the percentage for the other stages were preparation and action (22.5%) and maintenance and relapse (18.30%) as shown in Figure 1. Table 8 shows there is no significant association between knowledge of breast cancer and stage of adoption of BSE (p>0.05). Table 9 shows a significant association between knowledge of BSE with stage of adoption of BSE (p= 0.000).

Table 2 Respondents' demographic data

Demographic characteristics	Respondents	Percentage (%)
Age		
19	4	1.5
20	20	7.6
21	54	20.6
22	57	21.8
23	52	19.8
24	68	26.0
25	6	2.3
27	1	0.4
Race		
Malay	259	98.9
Others	3	1.1
Religion		
Muslim	262	100.0
Department		
Department of Diagnostic Imaging and Radiotherapy	53	20.2
Department of Nutrition Sciences	49	18.7
Department of Audiology and Speech-Language Pathology	44	16.8
Department of Biomedical Sciences	42	16.0
Department of Physical Rehabilitation Sciences	40	15.3
Department of Optometry and Visual Sciences	34	13.0
Academic Year		
First	66	25.2
Second	65	24.8
Third	52	19.8
Fourth	79	30.2

DISCUSSION

The respondents indicated poor knowledge on some signs and symptoms for breast cancer. However, the majority of respondents knew that the commonest sign and symptom for breast cancer is the presence of lump in the breast which is in line with the findings of Noreen et. al (2015). However, to the question about weight gain after menopause, only 13.4% of the respondents answered correctly. Further search into the brochure on health promotion pertaining to breast cancer in My Health portal, Ministry of Health Malaysia revealed that weight gain after menopause was not included as a sign and symptom for breast cancer (Nor Filzatun, 2008). Hence, this possibly explains the poor knowledge among the respondents. Past history of breast cancer was recognized as a major risk factor for breast cancer. This may be due to the fact that the

respondents being university students were exposed to information pertaining to breast cancer. As such it is believed, that the level of education has an effect on knowledge of breast cancer (Ayesha et al., 2014). Additionally, results from the study carried out by Boulus and Ghali (2014) indicated that respondents lack in knowledge pertaining to early menarche as a breast cancer risk is also consistent with the finding of the present study. As such it is believed that insufficient emphasis is being placed in highlighting this factor as a risk for breast cancer during health education program.

Table 3 Respondents' knowledge on signs and symptoms of breast cancer

Signs and symptoms of breast cancer	Answer (Frequency)	Percentage (%)
Lumps in the breast		
Yes	253	96.6
No	9	3.4
Nipple retraction (drawn inward)		
Yes	135	51.5
No	127	48.5
Bloody discharge from the nipple (bloody fluid seeps out from nipple)		
Yes	188	71.8
No	74	28.2
Puckering (dimpling) of the skin of the breast		
Yes	163	62.2
No	99	37.8
Swelling of the axillary's lymph		
Yes	211	80.5
No	51	19.5
Warmth (burning) and redness throughout the breast	165	63.0
Yes	97	37.0
No		
Weight gain after menopause		
Yes	35	13.4
No	227	86.6

Table 4 Respondents' knowledge on BSE

Knowledge on BSE	Answer (Frequency)	Percentage (%)
Ever heard about BSE		
Yes	**220**	**84.0**
No	**42**	**16.0**
Know how to do BSE		
Yes	**136**	**51.9**
No	**126**	**48.1**
The age of BSE is starting from 20 years old	**136**	**51.9**
Yes	**126**	**48.1**
No		
BSE is important for women to know how their breasts normally feel		
Yes	**235**	**89.7**
No	**27**	**10.3**

The majority of the respondents in this study have high awareness of BSE as most of the them have heard about BSE. This may be owing to the ongoing breast cancer campaigns carried throughout Malaysia. The outcome of the program showed an increase in knowledge regarding BSE (Sumana et al., 2018). As such, it can be perceived that the program was successful in creating the awareness pertaining to the importance of BSE amongst participants. The finding of this study is similar with the finding of a study carried out by Godfrey, Agatha and Nankumbi (2016) among female university students in which 76.5% of the respondents have heard about BSE. Although respondents from this study have high awareness of BSE, nevertheless approximately half of the respondents knew how to perform BSE. The result from this study is in accordance with a study done by Ewaid et al. (2018) amongst women in Iraq in which they found that only 55.7% of the respondents knew how to perform BSE. This further indicated the need to emphasis the correct method in carrying out BSE during breast screening education program.

Table 5 Respondents' knowledge on risk factors for breast cancer

Onset menses before 12 years old		
Yes	60	22.9
No	202	77.1
Menopause after 55 years old		
Yes	114	43.5
No	148	56.5
Diets high in fats		
Yes	159	60.7
No	103	39.3
Past history of breast cancer		
Yes	250	95.4
No	12	4.6
First pregnancy after 35 years old		
Yes	79	30.2
No	183	69.8
Nulliparity at age 40 years (women who have no children or who their first child after the age 40 years)		
Yes	111	42.4
No	151	57.6
Taking oral contraceptive pills (OCP)		
Yes	115	43.9
No	147	56.1

Table 6 Respondents' level of knowledge of breast cancer

Breast Cancer	**Level of Knowledge**			**Mean Knowledge Score (SD)**
	Poor Freq. (%)	Fair Freq. (%)	Good Freq. (%)	
Overall knowledge on Breast Cancer	33 (12.6)	204 (77.9)	25 (9.5)	28.17 ±6.04

Table 7 Respondents' sub-components knowledge of breast cancer

Sub-component level of knowledge of breast cancer	Percentage
Signs and symptoms for breast cancer	62.7%
Risk factors for breast cancer	48.4%
Breast screening method	72.2%
Best time for breast screening	63%
Places of breast screening	88.9%
Perception on breast lumps	36.26%
Knowledge of mammography	60.7%

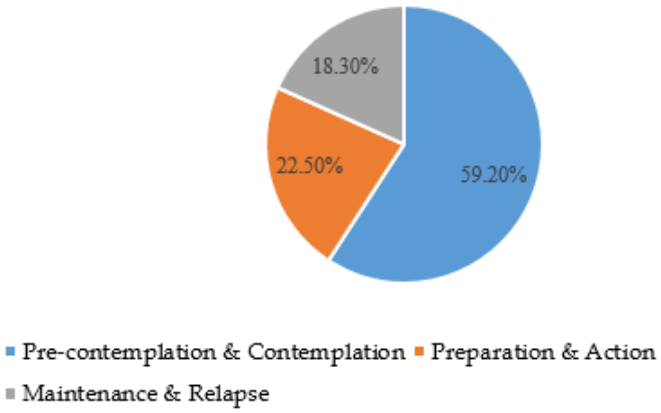

Figure 1 Stages of behavioral adoption of BSE

Table 8 Linear regression on level of knowledge of breast cancer and stage of adoption of BSE

Independent variable	b (95% CI β)	t-statistic (df)	*p*-value
Level of knowledge of breast cancer	2.868 (-0.741, 0.067)	6.714 (259)	0.101

Table 9 Linear regression on knowledge of BSE and stage of adoption of BSE

Independent variable	b (95% CI β)	t-statistic (df)	*p*-value
Score on knowledge of BSE	0.931 (0.296, 0.607)	3.926 (259)	0.00

Findings from the present study indicated that the majority of the respondents' knowledge pertaining to breast cancer was fair. This is similar with the study carried out by Segni et. al., (2016) at the Adama Science and Technology University. The possible reason behind the findings might be because the respondents were university students and therefore have better access to health-related information. The findings of this study however contradict the findings of the study carried out by Nada et. al. (2012) in which the majority of the respondents have low knowledge regarding breast cancer. The differences in findings of this study to that of the present study might be the respondents in the study carried out by Nada et al. (2012) comprised of

students, teaching staff and administrative university staff as compared to the present study which comprised of female undergraduate students.

Regarding the stage adoption of BSE, the findings of this study indicated that more than half of the respondents were at the pre-contemplation and contemplation stage for the adoption of BSE. While only a fourth of the respondent were at the preparation and action stage and the remaining respondents were at the maintenance and relapse stage. As such, it can be reflected that half of the respondents have never done BSE. The finding can be related to the respondents' knowledge on BSE in which only half of the respondents knew how to perform BSE. This could be the main contributing factor for the respondents' pre-contemplation and contemplation stage of adoption of BSE. The finding of this study is similar to the study carried out by Miri et al. (2017) and Vahedian, Pourhaje and Esmaily (2015) whereby they indicated that most of the women in their studies were at the pre-contemplation and contemplation stage for the adoption of BSE. The possible reason was that, the respondents perceived BSE as unnecessary as they were still young. This reason was supported in a study by Kissal, Kartal and Cetin (2017) in which they found out that students did not perform BSE as they regarded it as unimportant.

There is no significant association between the level of knowledge of breast cancer with stages of adoption of BSE. The main reason may be knowledge of breast cancer is such a broad aspect. Therefore, when knowledge of breast cancer is fragmented into sub-components, there is actually an association between the knowledge of BSE and stage of adoption of BSE. This indicated that the knowledge of BSE did affect the stage of adoption of BSE as approximately half of the respondents knew how to perform BSE and therefore the significant association. This is further supported by a study carried out by Yong and Soon (2018) that knowledge of BSE has resulted in an increase of BSE practice as it is the motivating force towards its' practice.

CONCLUSION

In conclusion, this study found that most of the female undergraduate students of KAHS, IIUM Kuantan have a fair knowledge of breast cancer. However, their knowledge of breast cancer was poor on risk factors of breast cancer and perceptions on breast lump. The study also indicated that there was an association between the level of knowledge of BSE with the stage of adoption of BSE which possibly leads to the low uptake of BSE amongst the respondents.

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