RESEARCH ARTICLE

Beliefs and Behavior of Malaysia Undergraduate Female Students in a Public University Toward Breast Self-examination Practice

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Abstract

  Background: Breast cancer is the most common cancer and the second principal cause of cancer deaths among women worldwide, including Malaysia. Methods: A cross-sectional study was carried out among 262 female undergraduate students in University Putra Malaysia using a validated questionnaire which was developed for this study. Results: The mean age of respondents was 22±2.3 years. Most of them were single (83.1%), Malay (42.3%) and 20.7% reported having a family history of breast cancer. Eighty-seven (36.7%) claimed they had practiced BSE. Motivation and self-efficacy of the respondents who performed BSE were significantly higher compared with women who did not (p<0.05).There was no association between BSE practice and demographic details (p<0.05). Logistic regression analysis indicated that women who perceived greater motivation (OR=1.089, 95%CI: 1.016-1.168) and had higher confidence of BSE (OR=1.076, 95%CI: 1.028-1.126) were more likely to perform the screening. Conclusions: The findings show that Malaysian young female's perception regarding breast cancer and the practice of BSE is low. Targeted education should be implemented to improve early detection of breast cancer.

Keywords: Breast cancer - breast self-examination - health belief model - Malaysia

Introduction

Breast cancer is the most prevalent cause of cancer morbidity and mortality among women in most parts of the world including Malaysia (Loh et al., 2011). In Malaysia, there was 3,525 female breast cancer cases registered in the National Cancer Registry (NCR) for 2006, accounted for 29.9% of all cancer cases registered (National Cancer Registry, 2006).

In Malaysia, the staging upon presentation among women is still poor, 50-60% of patients presenting at Stage 3 or Stage 4 with little or no benefit to be derived from any form of therapy (Hisham and Yip, 2004).

The emergence of breast disease and the subsequent development of cancer tend to be more aggressive in young women compared with breast cancer progression in the older population (Anders et al., 2008). Young women aged 20-29 years with breast cancer experienced mortality rate of 72.4% from the diseases (National Breast Cancer Centre, 2004). The high mortality rate among young women mainly due to lack of breast cancer awareness (Anders et al., 2008).

Early detection of breast cancer plays an important role in reducing its morbidity and mortality. Breast self examination (BSE), mammography, and clinical breast examination(CBE) are considered as screening methods for early detection of breast cancer (Avci, 2008). Although, there is debate surrounding the efficacy of routine BSE in early detection of breast cancer (Giridhara et al., 2011). BSE is still an important screening tool for early detection of breast cancer in developing countries, because it is cheap, widely available, and does not require complex technical training (Giridhara et al., 2011). Overall, practicing BSE could provide an opportunity for women to know how their breasts normally feel and able to notice any changes in their breast tissue (American Cancer Society, 2005). This complements the breast health awareness education and supplements women with knowledge on what to do when a lump is detected.

Despite the relative benefits of BSE, its application remains low (Canbulat et al., 2008). Studies conducted among women in Bushehr, a city in south of Iran, showed that only 41.9% had performed BSE in the past and 7.6% of them performed it regularly (Noroozi et al., 2011). Similar results were found among Malaysian female, which showed only 36.7% conducting BSE practice. In a recent research, young Malaysian female were noted not know how to perform a BSE (Akhtari-Zavare, 2011).

Demographic characteristics and influence of knowledge are two factors affecting the practice of

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BSE (Balogun et al., 2005). In some, a lack of belief regarding the necessity of regular BSE has an impact on the engagement of this screening practice (Avci, 2008). Therefore,understanding the women's beliefs regarding BSE can be used to design appropriate educational interventions to promote this screening behavior (Yarbrough et al., 2001).

The health belief model is a basic conceptual framework to consider health problems that are associated with behaviors (Hajian-Tilaki and Auladi, 2012). Based on this model, the domain of health practice is driven by health belief attitudes (Hajian-Tilaki and Auladi, 2012). Recently, researchers have reported that women's breast cancer screening practices also follow their health beliefs (Dundar et al., 2006). In this theoretical framework, women's breast cancer screening practices such as BSE, clinical breast examination, and mammography are influenced by their health belief model (Dundar et al., 2006). This model emphasizes that health behavior is affected by threats from health problems; for example, women perceiving susceptibility to breast cancer risk or believing that breast cancer is a serious disease are more likely to undergo BCE and breast cancer screening programs. Similarly, women perceiving greater benefits, with higher health motivation, and feeling less barriers to breast examination are more likely to perform BSE (Hajian-Tilaki and Auladi, 2012).

In Malaysia, limited documentation is seen on breast cancer awareness studies among young women (Hadi et al., 2010). The general perception is that young women do not consider themselves at risk for developing breast cancer as they believe that it is 'a problem that affects old(er) women (Johnsona and Dickson-Swifta, 2008).

However, in view of the aggressiveness of the cancer that occurs among young women, and the relevance of BSE as part of breast health awareness, it is the aim of this study to investigated the knowledge of BSE practices and perception of undergraduate female students toward BSE practice at University Putra Malaysia (UPM), Malaysia.

Materials and Methods

Study design

A cross sectional study among female undergraduate students was carried out from September 2010 to November 2010. University Putra Malaysia (UPM) was randomly selected among public universities in Malaysia. Sample

A total of 262 female undergraduate students of UPM were randomly selected for participate in the study. Student selected fulfill the inclusion criteria of the study who are Malaysian citizen, older than 20 years, not pregnant or currently breastfeeding and never been diagnosed with breast cancer.

Questionnaire

Questionnaire was used in this study for data collection. The questionnaire consists of two part: the first parts of questionnaire designed to obtain the information about the participants' socio-demographic characteristics included (age, marital status, race, religious, family monthly income

and family history of breast cancer) and other factors such as having a sources of breast self-examination and knowledge of breast self-examination. Questionnaire was developed by the authors based on an extensive review of the literature.

The second part of questionnaire included the HBM constructs on perceived susceptibility, perceived seriousness, perceived benefits, perceived barriers, self-efficacy, and health motivation that was measured using the CHBMS. Six subscales of CHBMS with 41 items were used: susceptibility to breast cancer (5 items), seriousness of breast cancer (7 items), benefits of breast self-examination (6 items), barriers to breast self-examination (6 items), self-efficacy in breast self-examination (10 items), and health motivation that being concerned about health in general (seven items). For each items subjects were asked to rate the level of agreement using 5-point Likert scale ranging from strongly disagree (1-point) to strongly agree (5 points). The questionnaire was pre-tested for validity before data collection.

Informed consent

Before any attempt to collect data, approval to conduct the study was obtained from Ministry of Higher Education of Malaysia and Universiti Putra Malaysia. Each participant was notified about the purpose of the study. The participants were told that all information would be kept secret and anonymous.

Data analysis

Data was analyzed by using PASW Statistics 19.0 program. Normality tests were done and all of the quantitative data were found to be normally distributed. Descriptive statistical analysis, which included frequency, percentage, mean and standard deviation (SD) was used to characterize the data. Parametric test such as independent sample t-test were employed to determine differences between the BSE practice category and the knowledge score of BSE practice and score of HBM. The level of statistical significance was set at $p < 0.05$. Logistic regression analysis was used to predict the probability that women would or would not perform BSE in the future.

Results

Respondent rate

From the total of 262 female undergraduate students, 10 respondents (3.81%) refused to participate, and 15 respondents (5.72%) did not complete the questionnaire. Hence, 237 female students participated in this study. The response rate in this study was 90.45%.

Socio-demographic characteristics

Table 1 shows the distribution of respondents according to their demographic characteristics. Overall, the majority of respondents were never married 197 (83.1%), Non-Malay 137 (57.8%) and Non-muslim 125 (52.7%). There were 49 (20.7%) of respondents reported having a family with breast cancer. The mean age of respondent was 22±2.3 and ranged between 18-30 years old. The mean family monthly income was RM5,347±RM2,740 and

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Table 1. Characteristics of the Respondents (n=237)

Characteristics	Frequency		Percentage (%)
Marital status	Never-married	197	83.1
	Ever- married	40	16.9
Race	Malay	100	42.2
	Chinese	78	32.9
	Indian	49	20.7
	Others	10	4.2
Religion	Islam	112	47.3
	Buddhism	41	17.3
	Hinduism	27	11.4
	Christian	44	18.5
	Others	13	5.5
Family history of breast cancer			
	Yes	49	20.7
	No	188	79.3
Age (year)	Mean±SD	22 (2.3)	Range 18-30
Family monthly income (RM)*			
	Mean±SD	5347 (2740)	Range 950-15000

*USD 1= RM 3.05

Table 2. Means and Standard Deviations of the Constructs and Internal Consistency (n=237)

	Health Belief Model					
Variable	Susceptibility	Seriousness	Benefit	Barrier	Confidence	Motivation
Mean	10.7	19.2	22.7	13.2	29.8	26.7
Standard deviation	4.1	4.8	4.5	4.0	7.1	4.9
Range	0-25	0-30	0-30	0-30	0-50	0-35

ranged between RM 950-RM15,000.

Regarding the factors that influenced their practice of BSE; there were no association between those practicing BSE and those who did not practice BSE with socio-demographic (p>0.05).

Breast self examination practice

Based on the result obtained from this study (87, 36.7%) of participants was performed BSE. Among those who practice BSE, most of them practice BSE occasionally (50, 57.5%). The most common reason for reluctance of BSE practices was forgot it, BSE practice not being needed if they are in good health status and fear of cancer diagnosis.

Among the respondents, 230 (97%) of them had heard or read about breast cancer and media was the major source of information on BSE (34%). Doctor (24%), brochure (17%), nurse (14%) and friends (11%) were mentioned as other sources of information on BSE practice.

Health belief model

Perception of female undergraduate students toward breast cancer and BSE are shown in Table 2. The vast majority of women don't believe that 'BSE is time consuming' (78.9%) and 'BSE is troublesome' (71.3). Also, most women believed that 'If I knew the benefit of BSE I would have done it' (75.1%).

Analysis of the mean knowledge of breast self-examination and health belief model for those who practice BSE and those who did not practice BSE

Table 3 shows the comparisons of mean knowledge

Table 3. Beliefs of Female Students toward Breast Cancer and BSE (n=237)

Perception	Agree		I don't know		Disagree	
	Freq.	%	Freq.	%	Freq.	%
I don't need to do BSE because I do not have any problems in my breasts	22	9.3	82	34.6	133	56.2
BSE is troublesome	21	8.8	47	19.8	169	71.3
BSE is time consuming	15	6.4	35	14.8	187	78.9
It is not necessary to do BSE	31	13.1	67	28.3	139	58.7
If I knew the benefit of BSE I would have done it	178	75.1	42	17.7	17	7.2

Table 4. Comparison of Mean Knowledge and Belief Scores between Those Performing BSE and Those Who Did Not BSE (n=237)

Variables	Practicing BSE (n=87) Mean±SD	Not practicing BSE (n=150) Mean±SD	t-test	p-value
Knowledge score of BSE	16.6±4.8	19.1±6.4	-3.393	0.001*
Perception to BSE				
Susceptibility	10.6±4.2	10.8±4.0	0.328	0.743
Seriousness	18.7±5.1	19.5±4.6	1.382	0.168
Benefit	22.7±4.5	22.6±4.5	0.139	0.889
Barrier	12.7±3.7	13.4±4.1	1.298	0.195
Confidence	32.0±6.7	28.6±7.1	3.636	0.000*
Motivation	28.0±4.1	26.0±5.3	2.966	0.003*
Total Score of Health Belief Model	124.0±11.9	121.2±14.5	2.205	0.028*

Table 5. Logistic Regression Analysis of CHBMs for Performing BSE (n=237)

Variables	B	S.E.	Wald	p-value	OR	95%CI
Health Belief Model						
Susceptibility	0.026	0.036	0.526	0.468	1.027	0.956-1.102
Seriousness	-0.028	0.031	0.844	0.358	0.972	0.915-1.033
Benefit BSE	-0.057	0.036	2.565	0.109	0.944	0.880-1.013
Barrier BSE	-0.024	0.038	0.383	0.536	0.977	0.906-1.053
Confidence BSE	0.073	0.023	9.903	0.002*	1.076	1.028-1.126
Motivation	0.086	0.036	5.769	0.016*	1.089	1.016-1.168
Constant	-3.202	1.378	5.398	0.02	0.041	

*Significant at level p<0.05, B: Coefficient; OR: Odds Ratio; CI: Confidence Interval, Nagekerke R^2 =0.15

score of BSE and belief score between those practicing BSE and those who did not practice BSE. With regards to HBM score, the total score was seen to be higher among respondents who practiced BSE (t=2.205, p=0.028), even though from the breakdowns only two components were significantly associated with BSE practice. The respondents who practiced were seen to be have more perceived confidence (t=3.636, p=0.000), and motivation (t=2.966, p=0.003) towards BSE. Regarding to knowledge of BSE, there was a significant difference between those who performed BSE and those who did not (t=3.393; p=0.001). Also, respondents with perceived confidence (OR=1.07, 95%CI:1.02-1.12) and motivation (OR=1.08, 95%CI: 1.01-1.16) and knowledge score of BSE (OR=1.06, 95%CI:1.00-1.12) were also to seen to significantly predict BSE practice.

Discussion

Breast cancer is one of the most frequent cancers

occurring among Malaysian women. Delay in diagnosis and treatment of this disease decreases survival rates (Yip et al., 2006). The literature on the effectiveness of BSE as a screening for early detecting breast cancer was controversial (Smith et al., 2003). However, the American Cancer Society (2004) and Ministry of Health Malaysia (2002) encourage women to be aware of how their breasts look and feel, so that they will be able to recognize changes and promptly report them to their clinicians (Smith et al., 2003). In order to achieve this goal, women need to be taught to practice BSE competently with the monthly recommended frequently.

In this study, most women had heard or read about breast cancer (97%) but only 36.7% of respondents performed BSE. These findings are support by Parsa et al. (2011) that reported 90% of the participants heard about BSE, only 19% stated that they performed BSE on a regular monthly basis. This poor practice could be contributed by the apparently unconvincing and somewhat contradicting perceptions towards BSE found in this study. Even though more than 70% of them felt that BSE is not time consuming or troublesome but almost 50% also felt that it wasn't necessary for them to do and the need wasn't there since they do not have any breast problems at that time. However, it is assuring to find that majority of them would have done BSE had they known the benefits. The belief that young women are not at risk for breast cancer is also noted by other study (Johnsona et al., 2008).

Variables such as age, marital status, religious, family monthly income, family history of breast cancer of respondents were not shown to be significant factors in the BSE practices. Since independent variables were similar among respondents in this study, they may not be significant for the BSE practice. Similarly in Parsa's study (2008), it was found that targeting socio-demographic variables were not effective for BSE practice. In contrast Redhwan et al. (2011) reported that there was a statistically significant correlation between age and family history of breast cancer and women's practice of breast self-examination. Another study found that the low rate of BSE among Iranian women was related to socio-economic status, low level of education and lack of knowledge regarding the conduct of BSE (Montazeri et al., 2008).

The study showed that media (magazine and television) were the main sources of information about breast cancer and breast self-examination practice. These findings are support by Redhwan et al. (2011) that suggested radio and television as the main sources of information for breast cancer and BSE practice among female students from a private university in Malaysia. Another similar study reported that the most important information sources about BSE were radio and television (37.8%), followed by health professionals (doctors and nurses; 19.1%) and printed materials (25.5%) (Noroozi et al., 2011).

In this study there were significant differences between knowledge of BSE between those who practice BSE and those who did not practice BSE. The mean knowledge score for those who did not practice BSE is higher than those practices BSE. This may be explained by the fact the awareness of breast cancer among the respondents could be attributed to the level of education

of the respondents. The most common reason that women cited for not performing BSE is that they "forgot", BSE practice not being needed if they are in good health status. Also, having knowledge does not equate to good practice, it must be combined with positive health belief. More effort need to be looked at on the accuracy of the details of the information and the underestanding of the condition. In current study, respondents said "If I knew the benefit of BSE I would have done it". This just shows that the underestanding is very vital in disseminating the knowledge. Similarly a study done by Abdulbari Bener et al. (2009) in Qatar showed that despite of having a sufficient level of knowledge about breast cancer among Qatari women, but there was low breast cancer screening in Qatari women. Of these Qatari women, only 24.9% identified breast self examination, 23.3% reported having clinical breast examination and 22.5% underwent mammography. Benford et al. (2012) in study among USA female college students reported 66% having knowledge of BSE, but only 50% of these students indicated that they practiced BSE.

The results of this study showed that subjects who performed BSE are more BSE self-efficacy and motivation than those young students who had never performed this behavior. This finding was supported by Tavafian et al. (2009); women who were more confident in their ability to conduct BSE-subjects with higher self efficacy scores were more likely to perform BSE. Also, this result is in contrast to what was reported in a study among Turkish women regarding perceived benefits; this study concluded that women who perceived more benefits in relation breast self examination, were more likely to engage in the behavior (Gozum and Aydin, 2004).

There are some limitations in our research. Firstly, the findings cannot be generalized beyond the study sample because it focused on young educated women. Secondly, all data were self-reported with no objective measures to evaluate the women. However, the results of this study provide some understanding on BSE practices among Malaysian women.

In conclusion, the results indicate that the practices of BSE are inadequate among the young undergraduate women in this university.

Thus, efforts to promote BSE during the breast awareness campaign should target these women's understanding on the benefit of BSE and increase their confidence as well as motivate them to carry on with BSE.

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