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Sousan Valizadeh
Faculty of Nursing and
Midwifery,
Tabriz University of
Medical Sciences,
P.O. Box 51745-347,
Tabriz, Iran

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Health Beliefs of Nurses about Breast Self Examination

Sousan Valizadeh, Neda Akbari and Aleheh Seyyed Rasuli

Breast Self-examination (BSE) appears to be an effective method for earlier detection of breast cancer. Because health behaviors usually result from healthy beliefs, so the cognition of these beliefs related to breast self examinations is essential to design program for promoting this activity. The present study evaluates the healthy beliefs of 420 nurses about BSE in 21 therapeutic centers of Tabriz. Most (90%) of nurses received information about breast cancer and BSE and most (70.2%) nurses had practiced it and frequency of BSE in majority (39%) of nurses was every 2 months and more. Level of perceived susceptibility in most nurses (58.1%) was moderate, level of perceived seriousness in most nurses (56.6%) was good, level of perceived benefits in most nurses (81%) was good, level of perceived barriers in most nurses (52.9%) was poor and level of perceived confidence in most nurses (57.4%) was moderate. Also, there was significant relations between some nurses characteristic and variables of Health Belief Model ($p < 0.05$). Because level of perceived susceptibility and confidence in most nurses was moderate, the provision of specialized training programs in BSE may reinforce positive health beliefs, modify poor health beliefs, increase the awareness of breast cancer and improve the practice of BSE among nurses.

Key words: Self-examination, susceptibility, confidence, breast cancer

INTRODUCTION

Cancer is the second leading cause of death after cardiovascular disease, with breast cancer being the most common form of cancer among females in both developed and developing countries (Pisani *et al.*, 2002; Zeeb *et al.*, 2002). Breast cancer with its uncertain causes, had captured the attention of health care providers throughout the ages (Coleman *et al.*, 1993; Greenlee *et al.*, 2001). Currently, 50% of American women will consult their surgeon for breast disease, 25% will undergo breast biopsy and 12% will develop some variant of breast cancer (Kirby *et al.*, 2005).

Although breast cancer is rare, it can occur in young women and adolescents. By the age of 25 years, the chance of receiving a diagnosis of breast cancer is 1 in 19,608 (Michnovicz, 1994). Even more prevalent than breast cancer are fibrocystic breast changes that affect 50 to 90% of the female population (Leslie and Leight, 1999).

In 33% of breast cancers, the woman discovers a lump in her breast (Kirby *et al.*, 2005). Given the current incidence, prevalence and fatality of breast cancer especially among young African American women (Breen *et al.*, 1999; Marbella and Layle, 2001), there is a need to increase early detection through Breast Self-examination (BSE). Many deaths may be delayed or averted by secondary prevention methods, screening and early detection. This is especially true for women 40 years of age and younger in whom the disease is more aggressive and difficult to treat. Although there has been technological advancement in the area of detection through mammography, BSE remains the predominant early identification tool for women under 40 years of age (Costanza, 1992).

Therefore, teaching breast care involves an important lifelong skill for all women. Yet, there are many missed opportunities for teaching. Many health authorities have considered offering training programs in BSE and considerable research has been conducted into the most effective way of providing such teaching (personal instruction, with or without models, etc.) and its success in terms of the proportion of women who use BSE after attending a training program (Clarke and Savage, 1999).

Nurses are mainly involved with secondary prevention efforts. For breast cancer, primary prevention includes educating women on breast cancer risk factors and influencing behavior change, whereas secondary prevention includes screening for and early detection of the disease. Previous studies have shown that lack of breast cancer screening knowledge among the nurses is an obstacle in encouraging patients to obtain screening (Tessaro and Herman, 2000).

To date, the research on BSE training shows that women can be trained to improve the accuracy of their examination technique and enhance their perception that they have the skills or self-efficacy to successfully do BSE (Valdez *et al.*, 2001). Nurses performing BSE are more likely to adopt the health professional's role of teaching and recommending BSE to the clients. In other words, nurses' BSE performance is important because it can be linked to clients' BSE. Nurses have an excellent opportunity to play a valuable role in increasing the utilization of breast cancer screening behaviors. The studies show that women learning BSE from a nurse perform it more likely. So, the nurses can have an important role in encouragement of women to perform BSE (Budden, 1998; Raynolds, 1995).

Thus, a way needs to be found to increase Iranian nurses' BSE performance. To do so, influencing variables on nurses' BSE performance should be identified. However, little is known about the variables. Therefore, the purpose of this study was to investigate variables associated with BSE performance among nurses.

The present study was performed over nurses working in therapeutic centers of Tabriz for assessing of their health beliefs about BSE. So, we evaluated the individual characteristics and variables of Health Belief Model (perceived susceptibility, seriousness, benefits, barriers and confidence) about BSE in nurses.

A literature review on BSE demonstrates that the Health Belief Model (HBM) has been used in numerous studies to explain and predict factors that encouraged or discouraged BSE behaviors. The HBM proposes that an individual's readiness to take action is influenced by that person's knowledge of the threat from a disease balanced against ease of action. The threat or risk for disease evolves from an individual's perceived susceptibility (How likely am I to get ill?) and perceived severity (How bad is this illness?). Countering this knowledge are the benefits (What will I gain?) and barriers (How difficult is it to perform or obtain screenings?) (Champion and Scott, 1997).

Several researchers pointed out the significant increase of breast cancer screening behavior rates in interventions, on which the HBM variables were based. Some studies have also found positive correlations between participation in breast cancer screening behaviors and the HBM concepts (Champion and Scott, 1997; Fidaner *et al.*, 2001). From the theoretical framework, susceptibility, seriousness, benefits, barriers and confidence, may be predictive of BSE performance. Thus, this study tested the following hypothesis: Susceptibility, seriousness, benefits, barriers and confidence, will predict BSE performance among nurses.

MATERIALS AND METHODS

The present study evaluates the healthy beliefs of nurses about BSE in 21 therapeutic centers of Tabriz, Iran. The number of samples was 420. For sampling we used stratified random method, in which the statistical society was divided in smaller groups and then random sampling was performed from any of the groups (therapeutic centers). All studied cases have Associate of Sciences, Baccalaureate (BS), or Master's Degree in nursing. All of them are employee in one of Tabriz therapeutic centers and all are female.

The present study was mainly guided by the Health Belief Model (HBM), which is based on the assumption that particular types of attitudes will predict preventive health behaviors. Preventive health behaviors are defined as any activity undertaken by a person who believes him or herself to be healthy, for the purpose of preventing disease or detecting disease that is asymptomatic. Breast self-examination is a screening method for detecting breast cancer in the early stage. Thus, BSE performance may be called a preventive health behavior.

According to the HBM, the major attitudinal predictors are susceptibility to an illness, seriousness of the illness and benefits of and barriers to engaging in a preventive health behavior related to the illness. Susceptibility denotes perceived vulnerability to a disease or the risks of contracting it. Seriousness refers to the perceived severity of the consequences of contracting a disease. Perceived severity includes evaluation of the medical clinical consequences (e.g., death) and possible consequences (e.g., effects of a disease on work, family life and social reaction). Benefits are the perceived positive results of steps taken to avoid contracting the condition. Barriers are defined as the perceived negative aspects of undertaking health behaviors. Barriers are presented as subjective phenomena of psychological variables, such as pain or embarrassment behaviors.

The data were collected by a questionnaire which was developed by using Champion and Scott questionnaire. Our questionnaire was constituted of 6 parts with 59 questions about individual characteristics and variables of Health Belief Model (perceived susceptibility [5 items], seriousness [6 items], benefits [4 items], barriers [13 items] and confidence [10 items]) in nurses. The measurement criteria were in the form of a 5-point Likert-type scale from Strongly Agree to Strongly Disagree.

Content validity of the instrument in Persian was established by using 12 experts in the area of breast cancer screening and control, including nursing and medical oncologists. Reliability for the original scales

follows: susceptibility (Cronbach's $\alpha = .79$), seriousness (Cronbach's $\alpha = .77$), benefits (Cronbach's $\alpha = .87$) and barriers (Cronbach's $\alpha = .72$).

The collected data were analyzed by SPSS/PC 12 and EP15 statistical software. The data were qualitative and quantitative and were classified by using normal, interval and ordinal measure scales. The present study used descriptive static for organizing the tables for frequency and inferential static for determination of relation between studied variables. The relation between personal-social characteristics of studied cases and their healthy beliefs was defined by Chi-square and Fisher's exact test.

RESULTS

The most of cases (46.9%) were belong to age group of ≤ 29 . 59.5% of them were married; 93.1% had baccalaureate (BS) degree of nursing; the most of them (26.2%) had 1-5 year(s) history of employment; 89.8% were employee of governmental centers; the most of them (78.3%) were stuff of wards without relation with breast cancer. 92.9% were Turk; the most of them (51.2%) had BMI of 20-24 kg m⁻² and 44% had the age of ≤ 30 at the first pregnancy (Table 1).

The familial history of breast cancer was reported only in 12.6 of cases; 6.2% had breast cancer in third degree relatives and 2.6% had in second degree relatives.

According to the Table 2, the majority (57%) of studied nurses did not believe that they are susceptible to breast cancer and believed that breast cancer is a serious condition. Nevertheless, more than 80% of nurses recognized the benefits of BSE and 54.3% perceived themselves confident in BSE.

Table 1: The frequency of familiarity with BSE among studied nurses

Familiarity with BSE	Answer	No. (%)
Achievement of information about BSE	Yes	387 (90)
	No	41 (9.8)
	Without answer	1 (0.2)
Being familiar with BSE method	Yes	364 (86.7)
	No	55 (13.1)
	Without answer	1 (0.2)
Performing BSE	Yes	295 (70.2)
	No	125 (29.8)
The interval between BSEs	A month	129 (30.7)
	2-6 months	100 (23.8)
	≥ 7 months	64 (15.2)
	Without answer	127 (30.3)

Table 2: Frequency of participants' responses to questionnaire subscales

Subscale	Strongly disagree (%)	Disagree (%)	Neither agree No. disagree	Strongly agree (%)	Agree (%)
	(%)	(%)		(%)	(%)
Susceptibility	17.10	39.9	33.3	14.4	3.3
Seriousness	3.95	14.3	15.3	43.0	23.5
Benefits	17.00	49.0	7.8	41.6	46.7
Barriers	19.50	48.4	12.8	15.3	4.0
Confidence	3.10	18.7	24.0	41.2	13.0

Figure 1 shows the perception of studied nurses about susceptibility to breast cancer. The perception about susceptibility to breast cancer was the greatest in age group of 20-29 and was minimum in age group of 50 and more. The perception was the most in nurses with Master's degree and was at least in nurses with associate of Sciences. Also, the perception was more in nurses with individual or familial history of breast cancers and nurses working in wards related with breast cancers. However, Chi-square test showed that there was no significant relation between the perception of studied nurses and following factors ($p>0.05$): age, marital status, academic degree, the years of employment, the ward type, BMI, individual or familial history of breast tus, being familiar with or performing BSE and their interval.

Figure 2 shows the perception of studied cases about seriousness of breast cancer. The perception of about seriousness of breast cancer was the greatest in age group of 30-39 and was minimum in age group of ≥ 50 . The perception was the most in nurses with master's degree and was at least in nurses with degree of associate of science but these differences were not significant. According to the χ^2 test, modified by Yates method, there was significant relation between performing BSE and the perception about seriousness of breast cancer ($\chi^2 = 4.64$, $p = 0.03$). However, according to the χ^2 test, the relation of perception about seriousness of breast cancer with age, marital status, academic degree, the years of employment, the ward type, BMI, the

individual or familial history of breast tus and interval between BSEs was not significant ($p>0.05$).

Figure 3 shows the perception of studied cases about benefits of BSE. According to the χ^2 test, the relation of perception about benefits of breast cancer with age, marital status, academic degree, the years of employment, the ward type, BMI, the individual history of breast tus, menarche age, the age at the first pregnancy and the interval between BSEs was not significant ($p>0.05$). However, the relation was significant between this perception and the years of employment ($\chi^2=15.33$, $p = 0.009$), the familial history of breast cancer ($\chi^2 = 5.20$, $p = 0.02$), being familiar with ($\chi^2 = 5.72$, $p = 0.016$) and performing BSE ($\chi^2 = 14.87$, $p = 0.0001$).

Figure 4 shows the perception of studied cases about barriers of BSE. Hundred percents of nurses in age group of ≥ 50 in comparison with 40.8% of nurses in age group of 40-49 had poor perception about barriers of BSE. According to the χ^2 test, there was significant relation between age and the perception about barriers of BSE ($\chi^2 = 8.77$, $p = 0.01$).

Also, 100% of widowed nurses in comparison with 46% of married nurses had poor perception about barriers of BSE and according to the χ^2 test, the relation between marital status and the perception about barriers of BSE was significant ($\chi^2 = 10.92$, $p = 0.0009$).

67.6% of nurses with less than one year employment in comparison with 43.1% of nurses with 16-20 years employment had poor perception about barriers of BSE

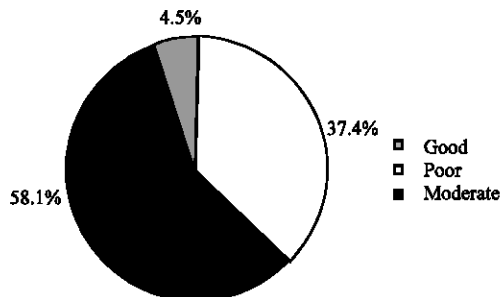


Fig. 1: The perception of studied cases about susceptibility to breast cancer

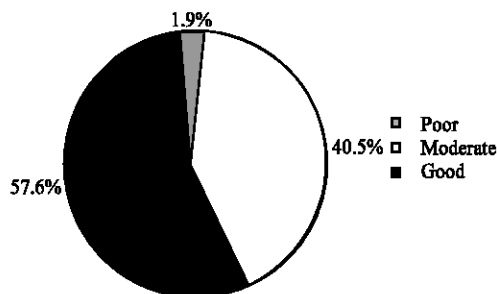


Fig. 2: The perception of studied cases about seriousness of breast cancer

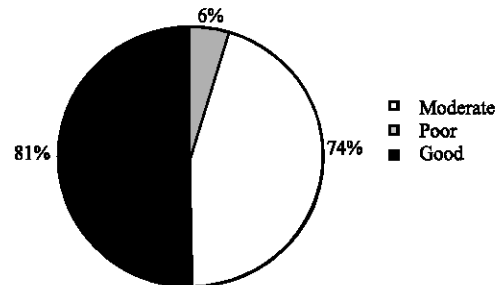


Fig. 3: The perception of studied cases about benefits of BSE

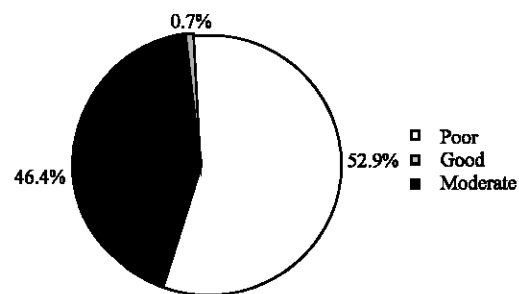


Fig. 4: The perception of studied cases about barriers of BSE

and according to the Chi² test, the relation between years of employment and the perception about barriers of BSE was significant ($\chi^2 = 13$, $p = 0.02$).

Further, the relation of perception about barriers of BSE with achievement of information about BSE and breast cancer ($\chi^2 = 12.47$, $p = 0.0004$), being familiar with BSE ($\chi^2 = 12.38$, $p = 0.0004$), performing BSE ($\chi^2 = 18.41$, $p = 0$) and the interval between BSEs ($\chi^2 = 12.08$, $p = 0.01$) was significant.

Figure 5 shows the perception of studied cases about confidence in BSE. Hundred percents of nurses in age group of ≥ 50 in comparison with 27.6% of nurses in age group of 40-49 had good perception about confidence in BSE. According to the Chi² test, there was significant relation between age and the perception about confidence in BSE ($\chi^2 = 10.94$, $p = 0.004$).

Also, 100% of widowed nurses in comparison with 32.4% of married nurses had good perception about confidence in BSE and according to the Chi² test, the relation between marital status and the perception about confidence in BSE was significant ($\chi^2 = 14.77$, $p = 0.0006$). The perception of studied cases about confidence in BSE was the most among nurses with master's degree and was at least in nurses with degree of associate of science ($\chi^2 = 7.38$, $p = 0.007$).

The perception about confidence in BSE among nurses with >20 years of employment was higher than it among nurses with 6-10 years of employment ($\chi^2 = 19.73$, $p = 0.001$). However, the relation between the ward type and perception about confidence in BSE was not significant ($p > 0.05$). Also, there was no significant relation between individual and familial history of breast tumor and perception about confidence in BSE.

The perception of studied nurses about confidence in BSE was the most in nurses with BMI of 25-29 and was at least in nurses with BMI of 30-39 and the relation between the BMI and perception about confidence in BSE was significant ($\chi^2 = 7.93$, $p = 0.09$).

Also, the relation of confidence in BSE with achievement of information about BSE ($\chi^2 = 22.51$, $p = 0$), being familiar with BSE ($\chi^2 = 14.92$, $p = 0.0001$), performing

BSE ($\chi^2 = 12.45$, $p = 0.002$) and the interval of BSEs ($\chi^2 = 8.24$, $p = 0.02$) was significant. The perception of studied nurses about confidence in BSE was the greatest in nurses performing BSE every month and was minimum in nurses performing BSE every 7 months or less.

DISCUSSION

Up to the early 1990s, 70 to 80% of breast cancers were identified by self-detection. Breast self-examination (BSE) is one of the simplest, most effective and most economical screening methods in early detection of breast cancer. It is recommended that women over 20 years of age perform a monthly BSE (Foster *et al.*, 1992). The practice of BSE results in earlier detection of breast changes and consequently, women who have regularly practiced BSE have smaller tumor sizes and fewer have experienced spread of cancer when diagnosed. Several lines of evidence suggest that for at least some subgroups of women, training in and execution of BSEs remains important for their first-line protection from breast cancer. With no known prevention, early detection is key to reducing mortality resulting from breast cancer (Baxter, 2001).

Fagih-Safaii *et al.* (1995) in Tehran about assessment of the rate and method of BSE among 270 female nurses working in therapeutic centers showed that the most of them are belong to age group of 25-29 and the minority had the age of ≥ 40 . In their study, the most of cases had the baccalaureate (BS) degree in nursing and also the majority of them were married. These data are compatible with our study in which 59.5% of cases were married and 93.1% had the baccalaureate (BS) degree in nursing.

It is reported that familial history is involved in up to 20% of breast cancers; as is compatible with our study. The risk is increased for first, second and third degree relatives, as high as 1.35, 1.82 and 2.45%, respectively (Morrison, 1996). A similar study showed that women with a family history of breast cancer had significantly better general breast cancer knowledge and awareness about breast cancer screening because they have had to consider the disease (Madanat *et al.*, 2002).

Regarding the information of nurses about BSE (90%), their familiarity with practical methods of BSE (86.7%) and performing the BSE (70.2%), present findings is in support of the 82-98% of American nurses found by Clarke and Sandler (1989) and Han *et al.* (1996), 93% of Australian nurses (Budden, 1998) and 77.6% of Greek female healthcare professionals (Patistea *et al.*, 1992). The rate from this study is much more than 37% of Korean nurses working in a hospital (Choi, 1994) and the 34-35% of general Korean women (Chung and Suh, 1997).

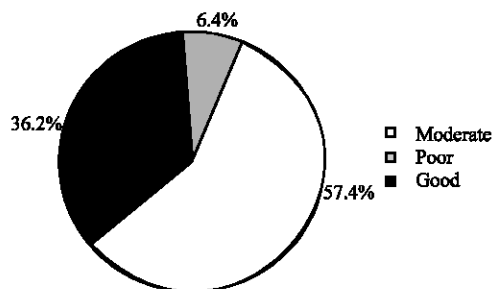


Fig. 5: The perception of studied cases about confidence in BSE

From these figures, it can be said that Iranian nurses' BSE performance rate is good; this finding is satisfactory because they are health professionals expected to be role models of good health behaviors. Investigators found that BSE-performing nurses are more likely to teach BSE to their clients because of confidence and ease with the procedure. Teaching of BSE by nurses has a positive impact on clients' practice of BSE (Budden, 1998; Ludwick, 1992).

A study by Budden (1998) over 171 post-graduated Australian nurses showed that 93% of them during the recent year have performed BSE and 43% have performed it every month and this result is compatible with present findings.

A study by Lu (1995) over 174 Chinese women showed that the majority of them have not sense themselves at the risk of breast cancer and have not believe it to be serious. Anderson and McFarlane (1998) suggest that changing or not changing in individual behavior depends on personal belief about susceptibility to a disease or its seriousness. Some people neglect the probability of affection by a disease and some strongly are in afraid of having it (McCorke *et al.*, 1996).

Wienstock (1991) suggests that the mental problems, such as isolation, anxiety, depression, psychosis and sexual disorders, are probably more prevalent among younger women with breast cancer. Champion and Scott (1997) suggest that the seriousness of breast cancer is a general belief. The results showed that the level of nurses' belief about the seriousness of breast cancer is significantly related with performing BSE. Lu (1995) suggest that the individuals probably will do healthy behaviors if believe that have susceptibility of affection by that disease and that the disease is serious.

A similar study over 174 Chinese women showed that more than 80% were familiar with the benefits of BSE (Lu, 1995); this result is compatible with present study. Another study showed that women performing BSE more relay that breast disorders can be recognized by BSE (Salazar, 1994). The present study showed that the relation of nurses' belief about benefits of BSE with the years of employment, the familial history of breast cancer, being familiar with BSE and performing BSE was significant. Heath (1995) suggest that healthy beliefs are somewhat formed by subjective variables such as awareness or unawareness, academic degree and prior practices. The women, who perceive the more benefits and the fewer barriers in performing BSE, are more likely to do it (Foxal *et al.*, 1998).

The most (43.4%) of our cases were agree with I am afraid of finding breast tus in BSE. This result is compatible with the result obtained by Ghazanfari *et al.*

(1995) which showed that the most of women do not perform BSE regularly, because of fear from finding the breast tu, forget or neglect. A study by Foxal *et al.* (1998) over 32 American-African and 78 Caucasian nurses showed that 43% of American-African nurses have performed BSE 12 times or more in comparison with 20% of Caucasian nurses. The belief that BSE is useless, saddening and time-consuming, was more in Caucasian than American-African nurses.

A study by Sensiba and Stewart (1995) over 374 women showed that there was significant relation between the perceptions about barriers of doing BSE among various age groups with different levels of academic degrees; these results are in support of present study. A similar study showed that age was inversely related to breast cancer screening knowledge, possibly due to younger nurses having more current screening knowledge. Further, it has been reported that supportive relations of husbands affect on physical health of wives and can enhances the trend to do healthy behaviors (Waggle *et al.*, 1997). Groenwald *et al.* (1997) suggest that unawareness about BSE technique is one of the most important barriers of doing it. The perceived barriers are the most important and strong predictors of healthy behaviors.

A similar study showed that 39% of women rely on BSE (Lu, 1995), which is compatible with the present study. Also, another study by Waggle *et al.* (1997) showed that the level of perceived confidence to performing BSE has significant relation with academic achievement. Ludwick (1992) suggest that nurses who were confident in doing the exam on themselves were more likely to examine the breasts of clients.

Therefore, it is no surprise that increasing nurses' confidence levels of BSE is a way for nurses to perform BSE and further, to examine clients. In present study the good perception about confidence to BSE was the most (39.2%) in nurses with BMI of 25-29 kg m⁻² and was at least (12.5%) in nurses with BMI of 12.5 kg m⁻². Nevertheless, the prior studies suggest that the probability of diseases is 1.5-2 times more in obese persons than others; for example, the fatality rate in Japanese women has direct relation with their height and weight (Kirby *et al.*, 2005). Another study showed that confidence in BSE and its frequency both are predictors of doing BSE (Lee, 2003).

CONCLUSIONS

The results obtained from this study provide important baseline information about breast cancer awareness. Such information may be used to develop

tailored breast cancer education programs, increase primary and secondary prevention efforts and evaluate the effectiveness of prevention programs.

Based on the level of breast cancer knowledge among the nurses surveyed in this study, the promotion of future health policies, such as mandatory continuing education, which involves breast cancer screening guidelines and general breast cancer awareness, may be justified. More education programs would increase the early detection of breast cancer, reducing the public health burden of disease. The authors asserted that BSE education should be included in the curricula of all of nursing schools.

Results from this study provide partial support for the Health Belief Model to predict BSE behavior among nurses. From the theoretical framework, susceptibility, seriousness, benefits, barriers, general health motivation, confidence and knowledge may be predictive of BSE performance. BSE performers among nurses are more likely to be nurses who perceived a higher susceptibility to breast cancer, perceived a higher benefits from performing BSE, perceived fewer barriers to BSE performance, perceived a higher confidence about BSE performance and possessed knowledge about BSE and breast cancer. Thus, it is recommended to consider the five significant predictors when planning a program to enhance nurses' BSE behavior.

SUGGESTIONS

Future studies may focus on other healthcare professionals, such as physicians in both the public and the private sectors. In addition, emphasis should also be placed on the relation between breast cancer awareness and screening practices.

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