

RESEARCH ARTICLE

Beliefs and Behavior of Saudi Women in the University of Tabuk Toward Breast Self Examination Practice

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Abstract

Background: Breast cancer is one of the most frequent types of malignancy worldwide, Breast Self Exam (BSE) is considered as a simple method to screen and detect breast cancer, then early beginning of treatment and enhancing survival rates. **Aim:** To Identify the health beliefs about breast Self-Examination and its relationships with the frequency of BSE among the women in the University of Tabuk at Saudi Arabia. **Methods:** Descriptive, cross-sectional correlational design was used; Champion Health Beliefs Model (CHBM) was utilized to assess health beliefs among 400 women who answered a self-administered questionnaire. **Results:** Among the 400 respondents, almost all the sample (382,95.5%) heard about BSE. However, only (7.8%) practiced BSE regularly each month in the past year, and (9%) is intended to perform BSE monthly in future. There was a positive relationship between performing BSE last year and the beliefs of susceptibility and confidence. While, intention to perform BSE in the future was significantly correlated to seriousness and confidence. Perceived barriers were negatively related to BSE performance in last 12 months and in future. **Conclusion:** Health beliefs affect the behavior of women in practicing BSE. Confidence was related positively to BSE in past year, and future practice, while barriers belief was as the negative factor to perform BSE.

Keywords: Breast self-exam (BSE)- breast cancer- health beliefs model (HBM)- Saudi Arabia

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Introduction

Breast cancer (BC) is a serious health problem threatening women more than men. In 2012 an estimated 14 million people were newly diagnosed with cancer worldwide, of them the most frequent type of malignancy affecting women was BC in both developing and developed countries (American Cancer Society, 2015). Early detection of BC helps to improve treatment outcome; breast self-exam (BSE) is considered the cornerstone diagnostic method for screening and early detection of breast cancer (World Health Organization, 2006).

Women who regularly perform BSE are more liable to detect BC early (Rashidi and Rajaram, 2000). Findings from the Canadian National Breast Screening Study suggest that the performance of regular BSE components may reduce the risk of death from BC (Miller, 1997). To enhance this practice, nurses should understand women's attitude toward breast self-examination and breast cancer, and how these attitudes affect the practice of breast self-examination (Champion, 1993).

Although there is some literature on BSE practices with relation to health beliefs, knowledge about breast cancer and detection in western countries (Yilmaz and

Durmuş, 2016), and eastern countries (Hajian-Tilaki and Auladi, 2014), there is no published study testing the relationship between frequency of BSE practices and health beliefs as well as knowledge among women in Tabuk, Saudi Arabia.

Literature review

Breast cancer continues to be ranked on the top between all types of cancer diagnosis and the major cause of death among women, it's responsible for 14 % of cancer mortality (American Cancer Society, 2007); In 2012, the US national cancer institute estimated a total of 182, 460 new cases of BC. In Saudi Arabia, BC accounted for 16.1% of total cancer cases that were discovered during 2013, more specifically, the incidence of BC in Tabuk region was 24.9% which is fifth (out of thirteen) highest area with BC in Saudi Arabia (Saudi Cancer Registry, 2016).

Screening measures for breast cancer such as mammography, clinical breast exam (CBE), and breast self-exam (BSE) are the standard procedures for detecting breast cancer (Berry et al., 2006). Despite the global recommendation to perform breast cancer screening measure, the regular practice is still poor (Hajian-Tilaki

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and Auladi, 2014) In another study conducted in Turkey by Yılmaz and Durmuş (2016), it was found that adherence to BSE, CBE, and mammography is relatively low.

Although, World Health Organization (2006) and (American Cancer Society, 2015) do not recommend BSE as a powerful screening measure for diagnosis of BC, it still can increase the awareness about BC and alert the women and the physician about the need to perform more advanced screening measure, specially women with positive family history of breast cancer (Petro-Nustas et al., 2012).

Cancer incidence is growing worldwide, in both developing (56.1%) and developed countries (43.9%) (Saudi Cancer Registry, 2008). Early detection of breast cancer can guide to a better prognosis (American Cancer Society, 2015). Unfortunately, in developing countries, women seek medical attention when cancer has already reached an advanced stage. This delayed practice might be due to many reasons. Deficient Knowledge and lack of awareness on the significance of cancer screening measures are the frequently reported causes of ignoring screening measures (Elkum et al., 2007). In Saudi Arabia, a higher noncompliance rate to breast cancer screening measures (89 %) was reported (El Bcheraoui et al., 2015).

Compliance with breast cancer screening measures is strongly affected by health beliefs. Moreover, the health belief model provides a helpful framework for understanding health behavior and has commonly been applied to breast screening (Champion, 1993). Health belief model has a worldwide acceptance as a psychological model able to predict and enhance preventive and health screening behavior (Ogden, 2012). Many studies have explored the level of knowledge and attitudes toward breast cancer and BSE utilizing health belief model (Abolfotouh et al., 2015; Akhtari-Zavare et al., 2013; Akhtari-Zavare et al., 2015; Hajian-Tilaki and Auladi, 2014; Petro-Nustas et al., 2012; Yılmaz and Durmuş, 2016).

In a study conducted in Saudi Arabia, health beliefs model was used to identify the level of knowledge and attitudes toward practicing BSE. It was found that the level of knowledge about breast cancer was low, negative attitudes toward BSE, and only 21 % of Saudi women performing BSE regularly (Abolfotouh et al., 2015).

To sum up, breast cancer is the most common cancer among women; and if not discovered early, it can be fatal. Early detection can enhance survival and improve ending. Many diagnostic tools were developed to promote early detection of cancer. World health organization recommends CBE and mammography as primary diagnostic tools and BSE as secondary tool in absence of CBE and mammography. Despite this, BSE is still valuable to enhance awareness and detect any abnormal changes in the breast. Health beliefs model can encourage early detection of cancer by increasing level of knowledge and awareness on BSE. In Saudi Arabia, few studies have explored health beliefs and BSE using Champions health beliefs model. no study has yet investigated the between frequency of BSE and health beliefs as well as knowledge in Tabuk. Therefore, this study was conducted identify the relationship between health beliefs (Perceived

susceptibility, barriers, seriousness confidence benefits, and health motivation and breast self-examination frequency among Saudi women in Tabuk.

Materials and Methods

Design and sample

Descriptive, correlational, cross-sectional design was used to assess THE relationships between BSE frequency and health belief variables. A convenient sample of 400 women was recruited. The women must be able to read, write, and understand because data collection method is a form of self - report questionnaire. In addition, BSE is recommended for 20-50 years women as potential age group for an early detection practice for breast cancer (Rutledge et al., 2001). Therefore, the participants were students and employees from different Tabuk university departments.

Instrument

The Arabic translation of the revised version of health beliefs model scale (HBMS) was developed by the Champion, which has a high Cronbach's alpha ranges from 0.73-0.93 (Champion, 1993). The scale was translated and validated by Mikhail and Petro-Nustas (2001). HBMS includes 42 questions to measure six subscales, involving susceptibility (five questions), seriousness (seven questions), benefits (six questions), barriers (six questions), health motivation (seven questions), and confidence (eleven questions). Five-level Likert scale was used for scoring ranging from strongly disagree (1 point) to strongly agree (5 points).

The questionnaire also includes demographic data about the participant's age, marital status, educational level, medical insurance, personal, and family history of breast cancer. In addition, it consists of questions regarding the participants' knowledge of BSE, the source of information, as well as their intention to practice BSE.

Procedure

This study was conducted at the University of Tabuk in the north-western area of Saudi Arabia from January 2017 to February 2017. Ethical Committee of Tabuk University of approved this study (HAP-07-TU001) . Recruitment of the women was done face to face by the researchers for those who fit the inclusion criteria. Participation was on voluntary base in which a brief explanation of the research purpose and benefits was told without exaggeration or misleading information. Moreover, participants were informed that they have the right to withdraw from the study anytime. Returning the questionnaire after filling it was considered as an implied consent to participate in the study.

Data Analysis

Data were entered and analyzed using SPSS 20.0 (IBM Corporation, Armonk, NY, USA). Demographic data variables were analyzed using descriptive statistics which included mean, standard deviation, percentage, and frequency. Moreover, multile linear regression was used to investigate the relationship between health beliefs and

frequency of BSE practice as well as intention to perform BSE in future.

Results

Demographics of the sample

The mean age of the respondents was 23.7 years with standard deviation of 4.75. Most of the women were single (67%) while 28.5% were married and only 4.5% were divorced or widowed. Regarding educational level, (41.8%) of respondents were undergraduate students; whereas, bachelor degree holders were (37.2%), secondary level (7.8%), diploma holders (7.2%), and women with postgraduate studies accounted for (6%). Further, personal history of breast cancer was reported by (3.5%) of the respondents, and the family history of

Table 1. Characteristics of Participants (n=400)

Variables	Frequency	Percent (%)
Age		
M & SD	23.7 (4.75)	
Marital status		
Single	268	67
Married	114	28.5
Divorced or Widow	18	4.5
Educational level		
Secondary level	31	7.8
Diploma	29	7.2
Undergraduate student	167	41.8
Bachelor	149	37.2
Higher education	24	6
Medical insurance		
No	256	64
Private	40	10
Governmental	37	9.3
Military	65	16.2
Others	2	0.5
Personal History of breast cancer		
Yes	14	3.5
No	386	96.5
Family history of breast cancer		
No	331	82.8
Mother	19	4.8
Sister	11	2.8
Second degree relatives (aunts, grandmothers, cousins)	39	9.6
Have you heard about breast cancer		
Yes	361	90.5
Source of information (n=361)		
Family	40	10
Doctor of nurses	55	13.8
Friends	8	2
Radio or TV	117	29.3
Newspaper of magazine	68	17
Internet	72	18.6

M, Mean; SD, Stander Deviation

Table 2. Knowledge and Practice on Breast Self Examination (n=400)

Variables	Frequency	Percent (%)
Knowledge		
Have you heard about BSE		
Yes	382	95.5
No	18	4.5
Source of information (n=382)		
Family	24	6
Doctor of nurses	87	21.7
Friends	23	5.7
Radio or TV	161	40.3
Newspaper of magazine	34	8.5
Internet	53	13.3
Practice		
Did you practice BSE in the last year		
No	230	57.5
Monthly	31	7.8
Once per 2-3 months	20	5
Once every 6 months	15	3.7
Yearly	104	26
Are you practicing BSE		
yes	18	4.5
No	292	73
Sometimes	90	22.5
Do you plan to practice BSE in the future		
No	94	23.5
Monthly	36	9
Once per 2-3 months	47	11.8
Once every 6 months	120	30
Yearly	103	25.7

BSE, breast self examination

breast cancer was reported by (17.2%) of participants; (4.8%) for mothers, (2.8%) for sisters, and (9.6%) for second-degree relatives, including aunts, grandmothers, and cousins. Almost all the women in the sample (90.5%) heard about breast cancer. The main source of information about breast cancer was Radio or TV (29.3%), followed by internet (18.6%), newspapers or magazines (17%), nurse or doctor (13.8%), family member (10%) and finally 2% only from their friends (Table 1).

Breast Self Exam practice and intention

Table (2) shows that the majority of the sample (95.5%) reported that they have heard about BSE, the primary source of information about BSE was Radio or TV (40.3%).The second major source was doctor or nurse (21.7%), while the internet was responsible for (13.3%) of information, newspaper or magazines were (8.5%), and finally family and friend accounted for (6%) of information for each. (57.5%) of the respondents had not practiced BSE in the last year, and only (7.8%) practiced BSE monthly. Furthermore, (26%) stated that they performe BSE once a year, while who performed

Table 3. Average Responses to Health Belief Model Subscale (%)

Variables	Strongly disagree	disagree	Neutral	Agree	Strongly agree
Susceptibility	16	42.3	36.2	5	0.5
Seriousness	3.5	17.8	45.4	31	2.3
Benefits	0	4	13.2	52.8	30
Barriers	30.8	47.4	12.5	7.8	1.5
Confidence	4.2	24	50.3	21.5	0
Motivation	0	1.8	24.8	65	8.5

Table 4. Multiple Linear Regression Analysis for HBM Variables and Last Year Frequency of BSE

Variables	B	SE	β	t
Susceptibility	0.075	0.029	0.125	*2.569
Seriousness	-0.023	0.031	-0.04	-0.747
Benefits	0.052	0.035	0.082	1.492
Barriers	-0.11	0.026	-0.212	*-4.247
Confidence	0.13	0.031	0.208	*4.212
Motivation	-0.078	0.04	-0.097	-1.953

R, 0.279; R², 0.078; F, 11.103; * P< 0.001; SE, standard error; BSE, Breast Self Exam

BSE once per 2-3 months and every 6 months were (5%) and (3.7%) respectively. Nevertheless, (76.5%) of women intended to practice BSE in future, they divided to (25.7) intended to perform BSE yearly, (30%) once every 6 months, (11.8%) per2-3 months, and only (9%) monthly.

Health beliefs

Table (3) reveals that more than half of the respondent (58.3%) considered themselves not susceptible to breast cancer, where (36.2%) were not sure. About (45.4%) of participants were uncertain about the seriousness of breast cancer, in contrast only (33.3%) believed that it is serious. A total of (82.8%) identified the benefits of BSE. Furthermore, only (8.3%) of the women reported barriers to performe BSE. Moreover, one fifth of the respondents (21.5%) were confident to perform BSE, while near to the half were not sure. Finally, about seventy percent were motivated to examine themselves; whereas, (24.8%) were not sure.

The relationship between health beliefs and practice

To assess the relationship between HBM subscales and frequency of BSE in the last year and in future as

Table 5. Multiple Linear Regression Analysis for HBM Variables and Future frequency of BSE

Variables	B	SE	β	t
Susceptibility	0.016	0.036	0.2	0.338
Seriousness	0.185	0.07	0.127	*2.657
Benefits	-0.115	0.084	-0.071	-1.37
Barriers	-0.435	0.064	-0.332	*-6.795
Confidence	0.53	0.074	0.338	*7.170
Motivation	-0.106	0.096	-0.052	-1.105

R, 0.410; R², 0.168; F, 26.60; * P< 0.001; SE, standard error; BSE, Breast Self Exam

well, multiple linear regression analysis was performed. The overall regression was significant ($\beta = 0.373$; P < 0.001). As shown in Table 4, there is significant positive relationship between susceptibility ($\beta = .125$; P < 0.001) and confidence ($\beta = 0.208$; P < 0.001) subscale of HBM and BSE practice in the last year. While a significant negative relationships was found between last year frequency of BSE and the barriers subscale of HBM ($\beta = -0.212$; P < 0.001). Table 5 shows a significant relationships between future frequency of BSE and seriousness ($\beta = 0.127$, P < 0.001) and confidence ($\beta = 0.338$; P < 0.001) subscales of HBM. While it shows a significant negative between future BSE and the barriers ($\beta = -0.332$; P < 0.001) subscale of HBM.

Discussion

This study aimed to identify the health beliefs about BSE and their relationships with the frequency of BSE among the women in the University of Tabuk in Saudi Arabia. The findings revealed that less than half of women reported that ever practiced BSE in the previous year even though that (96%) of the women heard about it. More alarming detail that only (7.8%) performed BSE monthly. Lacking of public campaigns to teach Saudi women the skills of BSE in Tabuk region made women rely on what they heard or watched on TV and magazines which might not be enough to motivate them to practice. These findings are in line with the results of a previous study by Akhtari-Zavare et al., (2013) who found that among the (96%) of women who heard about BSE, only (26%) performed BSE and few of them practiced BSE occasionally (21%). Similarly, this finding is congruent with another study conducted in Mediterranean in 2002, in which the researcher found only (9%) of Jordanian women examined themselves regularly once per month in the previous year (Petro-Nustus and Mikhail, 2002). Other studies were done by Al-Hussami et al., (2014) and Petro-Nustas et al., (2013) who reported that around fifth and third of participants, respectively, practiced themselves regularly. In contrast, other studies found that half of the participants practiced BSE monthly (Aflakseir and Abbasi, 2012; Hajian-Tilaki and Auladi, 2014).

The present practicing of BSE was very low (23%) indicating little adherence to the recommendation of American Cancer Society in performing BSE monthly, because Arab women find breast examination inconvenient and embarrassing (Azaiza and Cohen, 2006). Therefore, encouraging women to practice BSE is suggested by providing clear, simple instructions to perform BSE on

the regular long-term basis. One study indicated that BSE training programs increase women's perceived motivation, confidence, and benefits, decrease their perceived barriers, and enhance the practice rate on both short-term and long-term basis (Gursoy et al., 2009). Earlier studies found that only (16%) of the participants performed BSE monthly at the time of the study (Al-Hussami et al., 2014), and (40%) (Petro-Nustus et al., 2013).

In the current investigation, almost all of the participants (95.5%) heard about BSE, in which Radio or TV was the primary source of information. In other studies, women got their knowledge from different sources in which was Radio or TV (Akhtari-Zavare et al., 2015; Gürsoy et al., 2011) the magazine (Petro-Nustus et al., 2013), and healthcare professionals (Al-Hussami et al., 2014). On the other hand, in another neighboring country more than half of the participants didn't hear about the BSE (Hajian-Tilaki and Auladi, 2014).

Health belief model subscales of confidence and susceptibility were significantly correlated but in the low proportion of variance with the last year frequency of BSE practice indicating that women perceived susceptibility for developing breast cancer and confident in performing BSE have positive attitudes toward BSE. This emphasizes the importance to increase the confidence by offering educational programs and training sessions for Saudi women starting at high school age which should focus on teaching BSE skills as monthly habit. In the other hand, women perceived barriers affect negatively the practice of BSE in the last year and future practice as well. Some researchers found that the Arab culture affects the performance of BSE; shyness, and embarrassment during the examination of or talking about the private areas of women body like a breast was one of these barriers that influenced BSE (Tang et al., 1999). Thus, there is a need for further research to identify barriers to BSE for Saudi women. Qualitative research may be helpful in this respect allowing for correct planning and implementing strategies to decrease these barriers. Our results are consistent with the findings reported by (Akhtari-Zavare et al., 2015; Champion, 1993; Hajian-Tilaki and Auladi, 2014; Petro-Nustus and Mikhail, 2002). Further, the results indicated that motivation, benefits, and seriousness are not influencing BSE practice the last 12 months which highlighting the need for more comprehensive educational program that motivates women to perform BSE. These findings are similar to the findings reported by Al-Hussami et al., (2014) and Abolfotouh et al., (2015).

For the future frequency of BSE, perceived seriousness and confidence were significant predictors for future practice while practice barriers were a negative predictor. In other words, confident women who considered breast cancer as serious disease were intended to perform BSE more frequently than other women; in contrast, if BSE practice barrier increased, the chance of BSE performance would be decreased. This result is compatible with the results reported by (Akhtari-Zavare et al., 2015); Petro-Nustus and Mikhail (2002) and Champion (1993) except for seriousness. In contrast, in a number of previous studies, confidence, seriousness, and decreased barriers were not a significant predictor for future BSE (Champion,

1993; Petro-Nustus and Mikhail, 2002; Al-Hussami et al., 2014).

An explanation for the present findings is fatalism perception of cancer which means that the susceptibility for cancer is God's will; most of the educational programs (governmental and non-governmental) that aim to motivate women to practice BSE are focusing on fatalism of the disease to enhance compliance to BSE practice. In addition, the prevalence of advanced stage detection of breast cancer feeds the perception that breast cancer is an inevitably fatal disease, and such fatalistic attitudes are further supported by constructions of the disease as God's will, and thus, outside a human's control. However, fatalism decreases the perceived seriousness of breast cancer which delay detection and treatment's onset (Sinky et al., 2015)

In conclusion, the findings of this study present an understanding for Saudi women practice of BSE. In other words, it discovered inadequate practice for the breast exam. It is highly recommended to start a breast awareness campaign focusing on the importance of monthly BSE as a simple measure to detect breast cancer. Besides, enhancing the confidence beliefs and motivation, as well as decreasing the barriers can increase monthly practicing rate among Saudi women.

Implications and Recommendation

This study has many practical implications for healthcare providers, curriculum developer in high schools and universities, as well as health educators at hospitals, health care centers and community service institutions. The study provides basic data on early detection of breast cancer by emphasizing on health beliefs as powerful method to increase the awareness and practice of BSE among Saudi women. Healthcare professionals and educators at national agencies can utilize the study findings to develop cancer curriculum and research. Moreover, policy makers at healthcare institutions can use the findings to focus on increasing confidence, and decreasing barriers to perform BSE. Furthermore, public community institutions may establish continuing education programs to improve the knowledge, modify the attitude, and enhance the confidence toward BSE. Public media, social websites, and smartphone applications are affordable methods for most of Saudi women to enhance the compliance of BSE. However, as the study revealed low compliance to BSE, further studies in Tabuk region and other regions of Saudi Arabia are recommended to investigate the causes for this issue.

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