Breast self–examination among Saudi female nursing students in Saudi Arabia

Abdulaziz A. Alsaif, FRCSI, FBES.

ABSTRACT

Objective: The purpose of this study was to investigate the knowledge and practice of breast self-examination (BSE) among Saudi female nursing college students in Riyadh, Kingdom of Saudi Arabia (KSA).

Methods: A cross-sectional study was conducted between October and December 2003. Saudi female nursing students (149) from the College of Applied Medical Sciences, King Saud University, and from the College of Nursing, King Abdulaziz Medical City, National Guard, Riyadh, KSA, constituted the study population. The questionnaire contained items on the demographic characteristics of the respondents, knowledge of breast cancer, attitudes toward BSE and questions regarding the practice of BSE. The analysis included descriptive statistics and chi-squared tests to examine the association between BSE and demographic, medical history, knowledge of BSE and attitudes toward BSE.

Results: The results of the study indicated that 66% of the sample performs BSE. Approximately 62% of those who perform BSE said they learned information regarding BSE in their college curricula. The significant relation was found between higher levels in nursing college and BSE practice. Except for age, no significant relation was found between the socio-demographic factors and BSE practice. The sample showed strong belief in nipple discharge as a causing factor of breast cancer and had significant correlation and BSE practice.

Conclusion: Positive correlations were found between nursing students BSE practice and their academic experience in nursing college. Studies like these can enhance the knowledge regarding BSE among nurses and other medical professionals.

Saudi Med J 2004; Vol. 25 (11): 1574-1578

Breast self-examination is a simple, very low cost, noninvasive adjuvant screening method for the detection of early breast cancer (BC) in women. Its purpose is 2 fold: to make women familiar with both the appearance and the feel of their breasts and to help women detect any changes in their breasts as early as possible. There is evidence that women who correctly practice BSE monthly are more likely to detect a lump in the early stage of its development, and early diagnosis has been reported to influence early treatment and to yield a better survival rate.[1] In a randomized, controlled assessment of the effectiveness of international screening programs for BC in Scandinavian countries, it was found that mortality had fallen by 31% after 7-years for women aged 40-70 at the beginning of the trial.[2] Unfortunately, despite the benefits of regular BSE, few women actually examine themselves; in fact, a majority does not even know how to do a BSE.[3,4] Although opinions conflict regarding the value of BSE,[5,6] the American Cancer Society continues to support the inclusion of BSE as an early detection behavior.[7] Research suggests that women who receive personal instruction on BSE from a health care professional demonstrate greater knowledge and confidence and

From the Department of Surgery, College of Medicine and King Khalid University Hospital, King Saud University, Riyadh, *Kingdom of Saudi Arabia*.

Received 24th April 2004. Accepted for publication in final form 21st June 2004.

Address correspondence and reprint request to: Dr. Abdulaziz A. Alsaif, Department of Surgery, College of Medicine and King Khalid University Hospital, King Saud University, PO Box 59854, Riyadh 11535, *Kingdom of Saudi Arabia*. Tel. +966 (1) 4670874. Fax. +966 (1) 4671376. E-mail: azsaif@yahoo.com

are more likely to practice routine BSE than those who become aware of the method from other sources.[8,9] There is no published data on the practice with which BSE is performed by the female health care professionals (nurses) in Saudi Arabia (KSA). There is also little information regarding these professionals knowledge of the procedure.

The present study explores the level of knowledge among nursing students in the Department of Nursing at College of Applied Medical Sciences, King Saud University, and at the College of Nursing, King Abdulaziz Medical City, National Guard, Riyadh, KSA, regarding facts related to BC and BSE, and the practice of BSE by those nursing students. Information regarding such a study population is important as 1. They are women and, thus, at risk of getting BC, and 2. They study and train in settings where primary health care is offered and have, as part of their duty, to give instructions to other women on how to perform BSE competently.

Methods. A cross-sectional study was conducted between October and December 2003, to investigate the research problem. The study was designed to provide a description of the knowledge and practice of performance of BSE, the socio-demographic factors, medical history and the interrelationships among these variables. All female nursing students from College of Applied Medical Sciences, King Saud University, and from the College of Nursing, King Abdulaziz Medical City, National Guard, Riyadh area constituted the study population. The total sample consisted of 149 nursing students with a mean age of 21.60 (2.60 SD). The questionnaire contained items on the demographic characteristics of the respondents; knowledge of the signs, symptoms, risk factors, early detection, and prognosis of BC; attitudes toward BSE; and questions regarding the practice of BSE. The analysis included descriptive statistics and chi-squared tests to examine the association between demographic data (age, marital status, family income) body mass index (BMI), personal and family history of breast diseases and BSE.

Statistical analysis. Data was entered using IBM compatible pc and Microsoft Excel software. Statistical analysis was performed using SPSS version 10.

Results. Participants in this study ranged in age from 18-32-years, with a mean of 21.6-years (SD =2.6) and their BMI was 22.30 (SD=4.5). Single women made up to 85% of the sample with 15% being married. Only 14% of the subjects had 3,000 SR per month, 43% of them had 3,000-7,000 SR, 27% of them had 7,000-14,000 SR and rest of them (16%) had more than 14,000 SR as per month family income. In the present study, 66% of the subjects are doing BSE regularly. Only 7% of the subjects were having positive family history of BC and 70% of them showed regular menstrual cycle. Out of the total sample, 16 subjects reported pain in their breasts. However, more than 40% of the subjects learned facts regarding BSE in their college curriculum. **(Table 1)**. **Table 2** presents the association between demographic variables and cues to action, and the practice of BSE. A chi-square was used to test the association of BSE practice with age, level in nursing college, BMI, marital status, family income and family history of BC, regular menstrual cycle and feeling pain in breasts. The variables, age (above 21-years) and higher level in nursing college (level 4 and higher) were significantly associated ($P<0.001$) with the practice of BSE. **Table 3** presents the BSE beliefs and their significant correlation with the practice of BSE. Sixty to eighty percent of subjects believe that, presence of masses in the breasts, family history of BC, nipple discharge, frequent mammograms and smoking are the causing factors for BC. Thirty-five to 55% of subjects believe that, usage of contraceptives, wearing nylon bra, using breast creams, direct sun exposure, obesity and ovarian pain are the BC causing factors. In this present study sample, pregnancy at early age and breast feedings are the least believed to be causative factors of BC. The significant correlation was seen between nipple discharge and BSE practice. **Table 4** displays the frequency, and percentage distribution of knowledge of the recommended BSE steps. The most frequently endorsed steps were examining breasts in front of a mirror or during bath, examining breasts while lying down, and feeling for lumps, hard knots, nipple discharge, or breast thickening. The least frequently endorsed step was looking at breasts in the mirror with hands on thighs. Overall, the majority of subjects knew most of the recommended steps.

Discussion. To date, the etiology of BC is uncertain and adequate primary prevention is not possible. Thus, early detection measures remain the first priority for national health promotion programmers. These measures include BSE, which is a screening behavior of relevance to women's health. It is a unique procedure in many ways: it is inexpensive, non-invasive, involves little time and physical energy, is simple and does not depend on professional help.[10] However, the effectiveness of BSE remains controversial. The American Cancer Society[11] continues to recommend monthly BSE to women, but the Canadian Task Force on Preventive Health Care has announced that physicians should no longer routinely teach BSE as a screening technique for cancer to older women as it can do

Table 1 - Characteristics of the study population.

Characteristic	Frequency	(%)
Marital status		
Married	22	14.8
Unmarried	127	85.2
Family income		
>3000 SR	20	14.2
3000-7000 SR	60	42.6
7000-14000 SR	38	26.9
<14000 SR	23	16.3
BSE practice	99	66
Learned about BSE in college	61	43
Family history of BC	9	7
Regular menstrual cycle	103	70
Feeling breast pain	16	11

BSE - breast self examination
BC - breast cancer

Table 2 - Results of Chi-square test significance for variables with BSE practice.

Variables	χ^2	*P*
Age (<21 or ≥21)	28	0.001
Level in nursing college (<4 or ≥4)	58	0.001
Body mass index (BMI) (<22 or ≥22)	0.3	0.4
Marital status	1.3	0.2
Family monthly income	2.1	0.5
Family history of breast cancer	0.5	0.4
Regular menstrual cycle	1.6	0.2
Feeling breast pain	0.1	0.7

The mean age was 21.6 years and it was dichotomized to less than 21 years of age and 21 years or older. The mean BMI was 22.3 and it was dichotomized to less than 22 and 22 or more. There are 10 different levels in nursing college, however students start to learn about BSE in level 4, so level in nursing college was dichotomized to less than level 4 and level 4 and above.

more harm than good.[12] In contrast, it is argued that a significant number of women find masses when they are bathing or dressing, and BSE once a month may contribute to a women's heightened awareness of what is normal for her.[13] In a study of 1500 patients, it was shown that 81% of women first noticed symptoms themselves.[14] Thus one may argue that if women are finding most BC themselves, it is possible that by knowing how to do a more thorough BSE they could find BC of smaller sizes, which in turn may lead to an improved prognosis. Medical professionals have knowledge of the causes of diseases and have learned to recognize the warning signs of disease when present in their patients. It seems, however, that these professionals, do not always recognize the signs of their own illness.[15,16] Nursing profession is one of them, and it is very important for self carefulness to be able to recognize the signs of their own illness. Breast self-examination is an examination that should be perfect for nurses. They have the knowledge of the clinical signs of BC and of the examination technique, and they can do it themselves without consulting a physician. Furthermore, they are especially aware of the importance of the early detection of BC for a successful treatment. It has been shown that confidence in one's BSE ability is strongly correlated to BSE practice in the general population.[17,18]

In the present study, 66% of the subjects are practicing BSE, and the significant correlation was seen between students' level of advancement in nursing curriculum and BSE practice. In a similar study, Budden[19] reported that, 96% of the nursing students performed BSE during a year but only 46% had practiced regularly as once per month. Haji-Mahmoodi et al,[20] reported from a cross-sectional study among female health care workers that, more than 70% of subjects had knowledge regarding BSE and also had strong belief on its beneficial affects but only 6% of them was performing BSE regularly. It is well documented that beliefs and behaviors surrounding BC vary with several factors such as ethnicity, age, education, and socioeconomic status.[21,22] In the present study, significant correlation was seen between age, nursing educational level, and nipple discharge. These findings are in-agreement with Budden,[23] that, the positive correlations were found between student's BSE practices and their nursing experience. However, marital status, family monthly income and family history of BC showed no significant association with BSE practice. Similar results were reported by Budden,[24] that, no significant relation was found between a family history of BC and regular BSE practice. Self-efficacy theory and behavioral self-regulation theory suggest that the most important predictor of a highly specific behavior (such as BSE) is the individual's own confidence in performing the behavior.[25,26] Our findings of the predictors of BSE were consistent with self-efficacy theory.[25] However, our results were only partially consistent with behavioral self-regulation theory.[26] Other studies have demonstrated that optimists, who anticipate good outcomes, tend to engage in beneficial behaviors, including skin self-examination, more than do pessimists.[27-29] A more optimistic attitude would appear to increase the likelihood of greater self-efficacy in performing BSE. In other words, women who anticipated

Table 3 - Breast cancer beliefs and its significance for practicing BSE (χ^2).

Factors	Frequency (%)		$\chi 2$	*P*
Family history of breast cancer	118	(80)	3.6	0.10
Breast mass	114	(78)	2.6	0.20
Nipple discharge	104	(73)	8.7	0.01
Breast pain	105	(71)	1.8	0.38
Ovarian pain	75	(52)	2.6	0.27
Smoking	91	(61)	1.0	0.58
Frequent mammogram	92	(63)	0.4	0.8
Contraceptives usage	78	(53)	4.9	0.08
Using cream on breasts	78	(54)	0.5	0.74
Obesity	52	(36)	2.8	0.24
Sun-light exposure	58	(40)	1.9	0.37
Consumption of fatty foods	26	(18)	2.0	0.36
Consumption of spicy foods	13	(9)	0.2	0.87
Pregnancy at early age	4	(0.3)	5.7	0.06
Breast feeding	1	(0.7)	2.5	0.2

Table 4 - Frequency and percentage distribution of performance of BSE steps.

Breast self examination step	Frequency (%)	
Examining breasts at end of the menstrual period	103	(72)
Look at breasts in mirror with arms at sides	71	(50)
Look at breasts in mirror with arms raised over head	112	(78)
Look at breast in mirror with hands on thigh	43	(31)
When looking at breast in mirror, looking for swelling, dimpling of skin, or changes in nipple	112	(78)
Examine breast while lying down, place a towel or pillow under shoulder before examining breast on that side	70	(49)
Examine breasts while lying down, place hand above head before examining breasts on that side	83	(58)
Use right hand to examine left breast and left hand to examine right breast	113	(79)
Examine one breast at a time	113	(79)
Examine breasts in a circular, clockwise motion moving from outside in	98	(69)
When examining breast, feel for lumps, hard knots, or thickening	120	(83)
Squeeze the nipple of each breast to look for discharge	113	(79)

favorable outcomes in general were more confident in their breasts. This theory applies to the present study; our findings showed that there is a strong belief that nipple discharge is a causative factor of BC, which was reflected on its significant correlation with BSE practice.

In conclusion, the results of this study suggest that, for nurses, if more emphasis of BSE occurs in the workplace and in undergraduate and postgraduate courses, nurses' teaching of BSE to clients may be increased. Also, the provision of BSE educational programs is necessary to increase nurses' knowledge, confidence, performance, and teaching of BSE.

References

1. American Cancer Society. Cancer statistics. CA: ***Am Cancer J Clin*** 2002; 52: 10-11.
2. Nystrom L. How effective is screening for breast cancer? ***BMJ*** 2000; 32: 647-649.
3. Stamler LL, Thomas B, Lafreniere K. Working women identify influences and obstacles to breast health practices. ***Oncol Nurse Forum*** 2000; 27: 810-835.
4. Al-Abadi N. Factors influencing BSE practice among Jordanian nurses. Unpublished master's [thesis]. Irbid (JO): Jordan University for Science and Technology; 2001.
5. Gehrke AW. (2000). Breast self-examination: A mixed message. ***J National Cancer Institute*** 2000; 92: 1120-1121.
6. Nekhlyudov L, Fletcher S. Is it time to stop teaching breast self-examination? ***Can Med Asso J*** 2001; 164: 1851-1852.
7. American Cancer Society. National breast cancer awareness month: Fast facts. Author. Retrieved January 22, 2001. Available athttp:/www.cancer.org/ NBCAM_fastfacts.html.
8. Gallup Organization. Woman's attitudes regarding breast cancer (Summary). New York (NY): American Cancer Society; 1973. p. 5-6.
9. Gifford CS, Slack WV. Profile of women practicing breast self-examination. ***JAMA*** 1983; 294: 488-491.
10. Lauver D. Theoretical perspectives relevant to breast self-examination. ***Advances Nursing Science*** 1987; 9: 16-24.
11. American Cancer Society. Cancer Facts and Figures. ***Am Cancer Society*** 1999; 1-36.
12. Baxter N. Preventive health care, 2001 update: should women be routinely taught breast self-examination to screen for breast cancer? ***Can Med Assoc J*** 2001; 164: 1837-1846.
13. Larkin M. Breast self examination does more harm than good, says task force. ***Lancet*** 2001; 357: 2109-2110.
14. Levshin V, Fedichkina T, Droggachih V. The experience of breast cancer screening (abstact). ***Eur J Cancer*** 1998; 34: 95-96.
15. Stoudemire A, Rhoads JM. When the doctor needs a doctor: Special considerations for the physician-patient. ***Annals of Int Med*** 1983; 98: 654-659.
16. Christie VM, Ingstad B. Reluctant to be perceived as Ill – the case of the physician. In Ø. Larsen, The shaping of a profession. Norwegian physicians past and present. Canton (MA): Science History Publications; 1996. p. 491-499.
17. Mamon JA, Zapka JG. Breast self-examination by Young women: I. Characteristics Associated with Frequency. ***Am J Prev Med*** 1986; 2: 61-69.
18. Coleman EA. Practice and effectiveness of breast self-examination: A selective review of the literature (1977-1989). ***J Cancer Edu*** 1991; 6: 83-92.
19. Budden L. Registered nurses' breast self-examination practice and teaching to female clients. ***J Comm Health Nur*** 1998; 15: 101-112.
20. Haji-Mahmoodi M, Montazeri A, Jarvandi S, Ebrahimi M, Haghighat S, Harirchi I. Breast self-examination: knowledge, attitudes, and practices among female health care workers in Tehran, Iran. ***Breast*** 2002; 4: 222-225.
21. Rhoads KF, Luce JA, Knudson MM. Breast cancer beliefs and behaviors at the San Francisco general hospital. ***Breast*** 2000; 6: 20-26.
22. Madan AK, Barden CB, Beech B, Fay K, Sintich M, Beech DJ. Socioeconomic factors not ethnicity predict breast self-examination. ***Breast*** 2000; 6: 263-266.
23. Budden L. Student nurses' breast self-examination health beliefs, attitudes, knowledge, and performance during the first year of a preregistration degree program. ***Cancer Nursing*** 1999; 22: 430-437.

24. Budden L. Young women's breast self-examination knowledge and practice. ***J Comm Health Nursing*** 1995; 12: 23-32.
25. Carver CS, Scheier MF. Attention and self-regulation: a control theory approach to human behavior. New York (NY): Springer-Verlag; 1981. p. 235-240.
26. Scheier MF, Carver CS. Dispositional optimism and physical well being: the influence of generalized outcome expectancies. ***J Perad*** 1987; 55: 169-210.
27. Friedman LC, Nelson DV, Baer PB, Lane M, Smith FE, Dworkin R. The relationship of dispositional optimism, daily life stress, and domestic environment to coping methods used by cancer patients. ***J Beh Med*** 1992; 15: 127-141.
28. Friedman LC, Bruce S, Webb JA, Weinberg AD, Cooper HP. Skin self-examination in a population at increased risk for skin cancer. ***Am J Prev Med*** 1993; 9: 359-364.
29. Scheier MF, Weintraub JK, Carver CS. Coping with stress: divergent strategies of optimists and pessimists. ***J Perad Soc Psychol*** 1989; 51: 1257-1264.