Original Article

Knowledge and Practice of Breast Cancer Screening Among Egyptian Nurses

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ABSTRACT

AIM To describe the levels of knowledge about breast cancer and its early detection, determine the extent of breast self-examination (BSE) practice, and assess barriers for not practicing BSE among Mansoura nurses.

METHODS This was a cross-sectional descriptive study carried out among female nurses working in different healthcare settings in Mansoura University Hospitals during five months from June to October 2008. A convenience sample of 133 eligible nurses aged 30-48 years was recruited for the study. Two questionnaires were used for data collection: one for breast cancer risk factors and early detection; and the other for the practice of and barriers to BSE.

RESULTS The total percent of correct answers for all knowledge items about different breast cancer risk factors and early detection was 39.9%. Nurses' knowledge about early-detection methods was limited, the highest score was that an early detection of breast cancer can help with successful treatment of breast cancer (60.2%), followed by knowledge that every woman who is 20 years or older should perform breast self-examination once every month (52.6%), 56.4% nurses reported performing BSE during their lifetime, only 18.8% of the nurses practiced BSE on a monthly basis.

CONCLUSION Nurses had limited levels of knowledge about breast cancer risk factors and methods of early detection; few nurses practiced BSE monthly. Continuing education programs for nurses are urgently needed to improve nurses' knowledge about breast cancer and BSE. There is also very urgent need for updating the various curricular of these nurses to include courses in screening methods for early detection of breast cancer. Regular update courses for nurses on health maintenance practices are also recommended.

Keywords: Breast Cancer; Early Detection of Cancer; Cancer Screening; Early Diagnosis of Cancer; Nurses; Self-Examination.

INTRODUCTION

Breast cancer is an important public health problem in Egypt and studies have reported low levels of awareness and practice of breast self examination (BSE) as an important method of prevention. BSE is a cost-effective method for early detection of cancer of the breast especially in resource poor countries. [1]

In Egypt, mammograms are not requested or conducted on a regular basis. Mammograms are not easily available to a high proportion of Egyptian women, especially those of low socioeconomic status, who are the majority of the population. Mammography is not incorporated into clinical

checkups in governmental health clinics, where the majority of women receive their health care. Many women have to pay for the procedure out of pocket. [1]

BSE and clinical breast examination (CBE) are the only early detection techniques that could be recommended to women in populations that are economically less privileged. BSE is even more important because even CBE might not be accessible to these women due to economic or other reasons. In studies relating BSE practice to tumor stage, most of the evidence is in favor of better survival. [2]

Competence of performance has been shown to affect the efficacy of self-examination. Most studies on BSE value, however, did not assess the examiner's competence. Because data obtained elsewhere show that most women performing BSE do not perform it competently, the significance of the positive evidence on BSE value is likely higher in reality. Most breast tumors are self-discovered, and encouraging competent BSE performance will give more women better means to discover tumors earlier.

A study on BSE practice and its impact on breast cancer diagnosis in Alexandria, Egypt, showed that BSE was practiced in 10.4% of cases. [3] There was significant association between failure to practice BSE and diagnostic delay. This emphasized the need for breast self-examination awareness campaigns as a key measure for ensuring earlier diagnosis and hence better prognoses for breast cancer patients in Egypt. Recent reports suggest that BSE is also a reliable screening tool when used as an adjunct to CBE and imaging studies [4-6]

Nurses play a crucial role in health care delivery. Literature shows a significant relationship between nurses' confidence in performing BSE and their recommendation of BSE to their clients .[7-8] Female healthcare providers, such as nurses and physicians, constitute the primary source of information about breast cancer for a large number of women. Female nurses, who make up the majority of nurses in Egypt, and other female healthcare providers could play a significant role in identifying and bridging barriers to early-detection practices among women, [9] and in alerting women to the early detection of breast cancer as they usually have the closest contacts with female patients [4,10-11]

A study in Jordan, reported that women who have learned about breast self-examination have positive attitudes toward breast cancer and practice breast self-examination more frequently, and that nurses who teach their clients about methods of early detection and breast self-examination are more knowledgeable about breast cancer screening and breast self-examination techniques than those who do not. [12] Therefore, it is important to understand nurses' knowledge about breast cancer and its early detection. For these reasons, we set out to describe the levels of knowledge of, competency in and barriers to BSE among Mansoura nurses.

METHODS

This was a cross-sectional descriptive study carried out among female nurses working in different healthcare settings in Mansoura University Hospitals during five months from June to October 2008. A convenience sample of 160 nurses was recruited for the study. Eligible nurses were those with three-year diplomas, technical and health institute (2 years nursing studies after secondary school) and baccalaureate degrees. Nurses with previous diagnosis of breast cancer were excluded. Out of this sample, 27 nurses refused to participate with a response rate of 83%. The main reasons for refusal were lack of time or fear of talking about breast cancer. The sample retained for study and analysis was 133 nurses aged 30-48 years working in medical, surgical, maternity, and intensive care units. None of them had received special education in oncology.

Two questionnaires were used for data collection: one on knowledge of breast cancer risk factors and early detection (knowledge questionnaire); and another one on the practice of and barriers to BSE (BSE practice and barriers questionnaire). These were developed by the researchers based on literature review. Content validity and reliability were checked. A pilot study test was done on 10 nurses who were excluded from the final study.

The knowledge questionnaire included 28 questions in four parts : strong risk factors (increasing age, family history, and personal history of breast cancer); moderate risk factors (exposure to radiation and chemicals); other risk factors (age at time of reproductive events, pregnancy and breastfeeding, hormone replacement therapy, height and weight,

presence of other cancers); and miscellaneous factors. Subjects responded "yes," "no," or "I don't know." Total knowledge scores were computed by adding the questions answered correctly.

The BSE practice and barriers questionnaire consisted of two parts. The first included two questions measuring the practice of BSE: one asked whether nurses had ever practiced BSE previously, and the second asked them to list the number of times they had practiced BSE in the previous 12 months. Available answers ranged from once per 12 months, once every 6 months, once every 2–3 months, and once every month. The second included questions about reasons for not practicing BSE, and the practice and barriers to CBE.

Permission was obtained from administrators of all areas of study. The questionnaires and a cover letter were given to each nurse administrator at each area. The researcher left the questionnaires with the head nurse for distribution among nurses on different shifts. All participants gave an informed consent to participate. Questionnaires were answered anonymously.

Categorical variables studied were represented by numbers and percentages. For each correct knowledge item, a score of 1 was given and the numbers of correct answers were expressed as percent of the total sample. The total knowledge score is the sum of all correct answers expressed as percent of the number of items multiplied by the sample size.

Comparison of frequencies was achieved by the chi square test at the 5% threshold of significance.

RESULTS

The participants' ages ranged from 30-48 years, 88% of the nurses were 35 or younger, 70% of the nurses had 11 years' or less clinical experience and 62% were married. Ninety-one percent of the nurses did not have a relative with breast cancer. Eighty-eight percent of them had three-year diplomas from a nursing, technical and health institute (2 years nursing studies after secondary school), 12% had baccalaureate degrees in nursing. Nurses received information about breast cancer during undergraduate studies; 69% received information about BSE during undergraduate studies, and 55% received information about different early-detection methods during their studies. None of the nurses received any training on methods of conducting CBE or BSE. Eighty one percent of the nurses had heard about mammograms during their clinical experience.

KNOWLEDGE OF BREAST CANCER RISK FACTORS AND EARLY DETECTION

Knowledge about different breast cancer risk factors and early detection ranged from 32.5% to 73.4% correct answers (Table 1). Total correct answers for all knowledge items were 39.9%. However, knowledge score for strong risk factors was 73.4% followed by knowledge about moderate risk factors (69.2%). The difference was not statistically significant. Knowledge scores of other and miscellaneous risk factors were 39.3% and 32.5% respectively, which was statistically significantly lower than knowledge about strong and moderate risk factors (P, 0.01)

Ninety point two percent of the nurses knew that a woman's risk of breast cancer is higher if her mother, sister, or daughter had breast cancer and the risk is higher if her family member got breast cancer before age 40, and that women who have been diagnosed with other cancers are more likely to develop breast cancer than women who do not have these cancers. Second in frequency was knowledge that physical activity can decrease the risk of breast cancer (82.7%). Knowledge about early-detection methods was limited. The highest scores were that early detection of breast cancer can help with successful treatment of breast cancer (60.2%), and that every woman who is 20 years or older should perform breast self-examination once every month (52.6%). Although 60.2% of nurses knew that early detection can result in more effective treatment, only 25.6% knew that every woman aged 20-39 years should have a clinical breast examination every three years. The lowest knowledge reported by nurses was that high-fat diet can increase the risk of breast cancer (22.6%). Other correct answers about knowledge of breast cancer risk factors and early detection ranged from 25.6% -68.4% (Table 1).

BSE AND CBE PRACTICE AND BARRIERS

Although 75 nurses (56.4%) reported performing

BSE during their lifetime, only 18.8% of them practiced BSE on a monthly basis. Fifty one nurses (68.0%) of those who practiced BSE were married. Forty six (79.3%) nurses reported that they did not practice BSE because they did not have a breast problem, and 40 (68.9%) of them were not convinced that BSE is important. Thirty one (53.4%) of the nurses reported that they did not know how to practice BSE. Only 10 nurses (17.2%) reported that they did not practice BSE because they are lazy.

Forty three (32.3%) of the nurses reported that they practiced CBE, 61.1% reported that they did not practice CBE because they did not have breast problems, and 58.9% mentioned that they do not feel well when thinking or talking about breast cancer and 55.6% of the nurses reported that they do not want to expose their breasts to strangers. The least frequent reason for not practicing clinical breast examination was lack of free time to go for checkup (11.1%), Table 2.

DISCUSSION

The findings in our study indicate that 56.4% nurses reported performing BSE. However, only 18.8% of them reported practicing BSE on a regular monthly basis. Alkhasawneh IM reported that although 83.5% of nurses reported performing BSE during their lifetime, only 18% of the nurses practiced BSE on a monthly basis. [13] Akhigbe and Omuemu reported that the practice of BSE was about 77.6% in their study [14] while studies among Nigerian nurses in Lagos from a general hospital reported 89% [15-16]

Onwere et al. studied knowledge and practice of BSE as a method of early detection of breast cancer among antenatal clinic attendees in South Eastern Nigeria. They reported that 78% of the respondents practiced breast self-examination regularly, only 34% of whom knew the reason for practicing breast self-examination, and that breast self-examination practice was mostly ineffective in their community so they recommend the establishment of public health programs that teach women to regularly examine their breasts and to seek early treatment for any detected lesions through the mass media, seminars, conferences, workshops at the grassroots level and health education at health facilities. [17]
G Ertem and A Kocer studied BSE among nurses and midwives in Odemis health district in Turkey. The study indicated that 52% of the participants performed BSE.[18]

The low rate of BSE practices among our nurses could be attributed to absence of feeling of breast problems and a negative attitude towards the importance of BSE as an early detection method. Some of the nurses reported that they do not know how to perform BSE. The majority of our nurses who did not practice CBE reported that they do not have breast problems and do not want to expose their breasts to strangers. Moreover they do not feel at ease when thinking or talking about breast cancer.

The findings of our study revealed that the total percentage of correct answers of knowledge about breast cancer risk factors and early detection was 39.9% which is far below any satisfactory level. The scores were higher for strong and moderate factors; dropping to very low levels for the multitude of other and miscellaneous risk factors.

Alkhasawneh found that respondents' knowledge about breast cancer risk factors and early detection was 51%. [13] Akhigbe and Omuemu reported that the majority of female health worker respondents in a Nigerian urban city had very poor knowledge (55.0%) about breast cancer screening. [14] Seif and Aziz studied the effect of BSE training programs on knowledge, attitudes and practice of a group of working women in Egypt. The study revealed that knowledge and BSE level of the participants were 10.1% and 11.5% respectively [19]

In our study, years of education were not associated with increased knowledge. Although 90% of the nurses knew that early detection can improve treatment of breast cancer, only 18.8% practiced BSE on a monthly basis. Of those who practiced BSE regularly, 13.3% were younger than 40 years old. Knowledge is a very important controllable risk factor for cancer prevention, and can be increased through educational awareness and training programs.

Findings of our study are consistent with those of other studies that report nurses' limited knowledge about risk factors and early-detection methods. Although 90% of nurses know that early detection can result in more effective treatment, only 10% know that prognosis of the disease differs with stage at diagnosis. Thirty-eight percent of nurses believe that breast cancer is a fatal disease regardless

Table 1. Knowledge of Breast Cancer Risk Factors and Early Detection (N=133)

FACTORS	NO.	%
STRONG RISK FACTORS		
Increasing age: The chance of getting breast cancer goes up as a woman gets older. Most cases of breast cancer occur in women over 50	91	68.4
Family history: A woman's risk of breast cancer is higher if her mother, sister, or daughter had breast cancer. The risk is higher if her family member got breast cancer before age 40. Having other relatives with breast cancer may also increase a woman's risk. Breast cancer risk is higher among women whose close blood relatives have the disease.	120	90.2
A personal history of breast cancer: A woman who had breast cancer in one breast has an increased risk of getting cancer in her other breast	82	61.7
Subtotal	**293**	**73.4**
MODERATE RISK FACTORS		
Exposure to radiation: Women who have undergone high-dose radiation therapy to the chest region, usually as part of cancer treatment, have an increased risk for breast cancer compared to women who have never had radiation therapy	92	69.2
Subtotal	**92**	**69.2**
OTHER RISK FACTORS		
Age at time of reproductive events		
The longer a woman is exposed to estrogen, the greater her risk for breast cancer.	52	39.1
Women who started menstruation at earlier ages (before age 12) are at lower risk for developing breast cancer	40	30.1
Women who reached menopause at later ages (after age 50) are at higher risk for developing breast cancer	50	37.6
Pregnancy and breastfeeding		
Women who have no children are at higher risk for developing breast cancer	46	34.6
Women who had their first child after the age of 30 are at higher risk for developing breast cancer	41	30.8
Hormone replacement therapy (HRT): Long-term use of combined estrogen-progestin (approximately five years) in women ages 50 to 79 increases a woman's risk of breast cancer	40	30.1
Height and weight		
Tall women are more likely than short women to develop breast cancer.	33	24.8
Obese women are more likely than thin women to develop breast cancer after menopause	49	36.8
Presence of other cancers: Women who have been diagnosed with cancer likely to develop breast cancer than women who do not have these cancers.	120	90.2
Subtotal	**471**	**39.3**
MISCELLANEOUS FACTORS		
Women of high socioeconomic status are more likely than women of low socioeconomic status to develop breast cancer.	22	16.5
Women who live in urban settings are more likely than women who live in rural settings	29	21.8
A high-fat diet can increase the risk of breast cancer.	37	27.8
A painful breast lump could not be cancer cells	45	33.8
Breastfeeding can decrease the risk of breast cancer	90	67.7
Obesity increases the risk of breast cancer	40	30.1
A high-fat diet can increase the risk of breast cancer	30	22.6
Physical activity can decrease the risk of breast cancer	110	82.7
Trauma of the breasts increases the risk of breast cancer	50	37.6
Egyptian women are more likely to develop breast cancer at later stages.	31	23.3
Breast cancer has the same prognosis regardless of stage at diagnosis.	41	30.8
Detecting breast cancer in early stages can lead to cure	62	46.6
Early detection of breast cancer can help with successful treatment of breast cancer	80	60.2
Every woman older than 40 years of age should have an annual mammogram	45	33.8
Every woman aged 20–39 years should have a clinical breast examination every three years	34	25.6
Every woman older than 40 years should have an annual clinical breast examination	47	35.3
Every woman who is 20 years or older should perform breast self-examination once every month	70	52.6
Subtotal	**863**	**32.5**
Total	**1593**	**39.9**

Table 2. Description of the Practice of Breast Self- Examination (BSE) (N=133)

DESCRIPTION	NO.	%
Had performed BSE during your lifetime	75	56.4
Had never performed BSE during your lifetime	58	43.6
Rate of BSE in the past 12 months (n=75)		
Once every 12 months	26	34.7
Once every 6 months	25	33.3
Once every 2–3 months	10	13.3
Once every month	14	18.8
Reasons for not practicing breast self examination(n=58)		
Did not have a breast problem	46	79.3
Would not gain benefit from practicing it	19	32.8
Did not feel like doing it	21	36.2
Would not find anything	24	41.4
Left it to doctors	15	25.9
Carelessness	14	24.1
Not pregnant	21	36.2
Laziness	10	17.2
Did not know how to do it	31	53.4
Did not think it was important	40	68.9
Practiced clinical breast examination	43	32.3
Did not practice clinical breast examination	90	67.7
Reasons for not practicing clinical breast examination (n=90)		
Did not have a breast problem	55	61.1
Did not know when it should be done	11	12.2
Did not want to expose breasts to strangers	50	55.6
Did not feel well when thinking or talking about breast cancer	53	58.9
Did not have time to go for check up	10	11.1

of its stage at diagnosis.[13] In order to function as effective promoters of breast cancer control through early detection, health workers must possess the relevant knowledge as well as appropriate attitude and belief concerning the disease and its early detection .[20] Akhigbe and Omuemu reported that if health workers are to be included as role models for creating awareness about breast cancer screening, an enlightenment program must be introduced as part of the general health maintenance knowledge for them.[14] Abd El Aziz et al. enforce the continuing need for more breast cancer education programs that are intended to attract the attention of women with low literacy skills. [1]

CONCLUSION

Nurses had limited levels of knowledge about breast cancer risk factors and methods of early detection. Few nurses practiced BSE regularly. Intervention studies that aim to increase nurses' knowledge of breast cancer and their practice of early-detection methods should be encouraged. Continuing education programs for nurses are urgently needed to improve nurses' knowledge about breast cancer and early detection and change misconceptions about risk factors and attitude towards cancer screening even among the apparently normal woman. This should run in parallel to and in preparation for well studied screening programs through mammographic examination which hopefully will become the preferred technique in the near future.

FOOTNOTES

Conflicts of interest: The authors declare no competing conflicts of interest.

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