Research Article

Breast cancer awareness and breast self-examination among future female university graduates: comparison between medical and non-medical students

Elsadig Yousif Mohamed*, Waqas Sami, Abdullah Atallah Alenezi, Abdulrahman Mubarak Almutairi, Ahmad Khalid Alsalboud, Khalid Mohammad Alhusainy, Mohammad Awadh Almutairi, Syed Meraj Ahmed, Khalid Altohami Medani, Mohammed Abdullah Al Mansour, Mansour Khatir Alzahrani, Talal Shakhs Algamdi, Fahad Bin Mohamed Alfhaid, Tahir Ansari

College of Medicine, Majmaah University, Saudi Arabia

*Correspondence:
Dr. Elsadig Yousif Mohamed,
E-mail: elsadigoo@gmail.com

ABSTRACT

Background: Breast cancer is a common health problem among females in Saudi Arabia. The disease account for 27% of all female malignancies representing 25.1% of all newly diagnosed female cancers. The objectives of the current study were to assess the level of carcinoma breast awareness of female university students, Majmaah University in Saudi Arabia and to compare the level of awareness, breast self-examination and breast cancer screening between medical and non-medical students.
Methods: The current study was a cross-sectional, conducted among female students in Majmaah University in Saudi Arabia. The stratified and the systematic sampling were employed to select the colleges and the students respectively. The sample size was calculated as 325. Data was collected by a pre tested questionnaire and analyzed by SPSS.
Results: The university students who acquired good knowledge were 111 (34.2%). Students who acquired average and poor knowledge were 42.2% and 23.6% respectively. Medical students who had good knowledge were 37.6% compared to 26.9% of non-medical students. The results showed that 94 (28.9%) of the participants practice breast self-examination and 25 (7.6%) performed a screening test.
Conclusions: The study concluded that Majmaah University students' awareness of carcinoma breast is low. There is no significant difference in the level of awareness between students of medical colleges and those of non-medical colleges. The level of practicing breast self-examination and performing screening test for carcinoma breast among female university students is low. There is a significant difference in performing carcinoma breast screening test between medical and non-medical students.

Keywords: Breast cancer, Awareness, Breast self-examination, Screening test

INTRODUCTION

Breast cancer is the most common cancer in women in both developed and developing world. It is estimated that 508,000 women died in 2011 due to breast cancer.[1] The incidence of breast cancer is increasing in the developing world due to increase life expectancy, increase urbanization and adoption of western lifestyles. Although some risk reduction might be achieved with prevention, these strategies cannot eliminate the majority of breast

cancers because many patients present at very late stages in many countries. Therefore, early detection in order to improve breast cancer outcome and survival remains the cornerstone of breast cancer control.[2]

Incidence rates of breast cancer vary greatly worldwide from 19.3 per 100,000 women in Eastern Africa to 89.7 per 100,000 women in Western Europe. In most of the developing regions the incidence rates are below 40 per 100,000 women.[3]

Breast cancer survival rates vary greatly worldwide, ranging from 80% or over in North America, Sweden and Japan to around 60% in middle-income countries and below 40% in low-income countries. The low survival rates in less developed countries can be explained mainly by the lack of early detection programs, resulting in a high proportion of women presenting with late-stage disease, as well as by the lack of adequate diagnosis and treatment facilities.[4]

Although the incidence of breast cancer is lower in Asia, the cause-specific mortality in most countries is much higher compared to Western countries. Up to 25% of all breast cancer patients in Asia are young. Young age, by itself, is a known indicator of poor prognosis among breast cancer patients.[5]

In the Eastern Mediterranean region (EMR), breast cancer is the most commonly diagnosed cancer in women and the second leading cause of cancer-related deaths.[6]

In the gulf region, profound lack of knowledge about breast cancer was noted among female university students in UAE universities and school teachers in Quait.[7] The most prominent gaps in knowledge identified were those concerning breast cancer screening methods.[8]

In Saudi Arabia, the absence of a national breast cancer control program combined with cultural barriers to screening explain the fact that most of the breast cancer cases present at advanced stage than in developed countries.[9,10] Breast cancer in Saudi Arabia account for 27% of all female malignancies in 2010, representing 25.1% of all newly diagnosed female cancers.[11,12] Studies of breast cancer awareness among Saudi females in different regions found that Saudi female's level of awareness of breast cancer was very inadequate.[13-15] Little is known about breast cancer knowledge and awareness among students of Majmaah University, Saudi Arabia. Therefore, the objectives of the current study were to assess the level of awareness of female university students of Majmaah University in Saudi Arabia, to compare the level of awareness between medical and non-medical students, to assess the level of practicing breast self-examination and to determine the rate of breast cancer screening among the study population.

METHODS

This study was a cross-sectional about breast cancer awareness of female students in Majmaah University in Saudi Arabia. Majmaah city is the capital of Majmaah province in Riyadh region. Majmaah University, which contains thirteen collages for both sexes, was established in 2009 to serve the population in Sudair area in the centre of the kingdom.

The study population was the undergraduate female students at the Colleges of Majmaah University which included the applied medical science college, college of medicine, education college as well as the computer sciences and information technology college. The study population confined to the registered and regular students. External students and students who deleted the semester were excluded from this study.

The stratified random sampling was used to select the collages. Stratification was based on the collage being medical or non-medical. At the level of the selected collages, students were chosen by systematic sampling.

The sample size was selected according to the following Formula:

$$Z^2 \times pq/d^2$$

Z= Standard normal deviate= 1.96

P= prevalence =0.3 [16]

q= 1-p

d= accepted error= 0.05

Sample size= 1.96× 1.96× 0.3*0.7/0.05×0.05= 323 taken as 325.

The data was collected by a pre-tested questionnaire to assess awareness of breast cancer among undergraduate female students in Majmaah University. The questionnaire contained socio-demographic characteristics (age, gender, and occupation), knowledge and awareness of breast cancer (nature, risk factors and screening test), breast self-examination awareness/practice. In answering the questions, participants have to choose from (Yes/ No/ I do not know). Each correct answer assigned a score of 1, while an incorrect answer or "don't know" scored zero. A total score for each participant was computed by summation of the number of correct answer.

The mean percentage score for awareness was calculated as follows:

(Sum of scores obtained/maximum scores that could be obtained × 100).

Then the studied variables were expressed as falling between 0% and 100% with the highest percentage reflecting the increase in that characteristic/variable. For example, a 100% mean percentage score indicated the highest level of awareness and 0% indicates no awareness at all. The students who had a total mean score from 0% to 33.3% were considered to have poor knowledge, those who acquired a mean score knowledge between 33.4%-67.6% and 66.7%-100% were considered to have average and good knowledge respectively. Data was analysed by the computer program using SPSS Version 20. Informed concert was obtained from the participants and the study was approval by the ethics committee of the basic health and medical research centre, Majmaah University. Permission and coordination took place with the administration of the selected collages.

RESULTS

Figure 1 shows the level of awareness about carcinoma breast of Majmaah University students which shows that

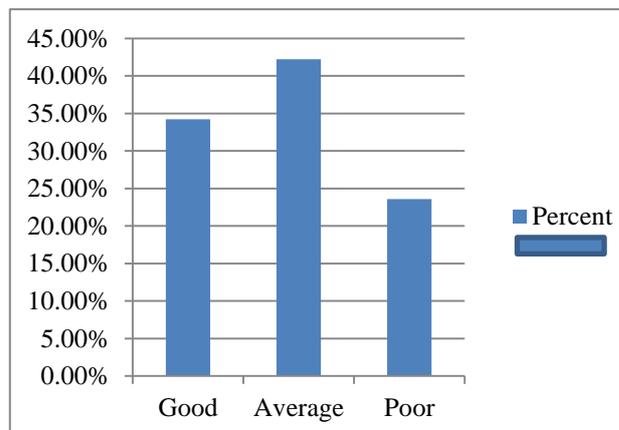111 (34.2%) had good knowledge, 137 (42.2%) had average knowledge while 77 (23.6%) had poor knowledge.

Figure 1: Level of awareness of the students about breast cancer.

Table 1: Level of awareness and type of students.

Type of students	Level of awareness			Total	P
	Good	Average	Poor		
Medical	86 (37.1%)	98 (42.2%)	48 (20.7%)	232 (100%)	
Non- medical	25 (26.9%)	39 (41.9%)	29 (31.2%)	93 (100%)	0.15
Total	111(34.2%)	137(42.2%)	77(23.7%)	325(100%)	

Table 2: Status of practicing breast self-examination according to student type.

Type of student	Performing breast-self examination		Total	p
	Yes No. (%)	No No. (%)		
Medical	66 (28.4%)	166 (71.6%)	232	
Non-medical	28 (30.1%)	65 (69.9%)	93	
Total	25 (28.9%)	300 (71.1%)	325	0.79

Table 3: Performing screening test according to students' type.

Type of student	Performing screening test		Total	p
	Yes No. (%)	No No. (%)		
Medical	12 (5.2%)	220 (94.8%)	232	
Non-medical	13 (14%)	80 (86%)	93	0.035
Total	25 (7.6%)	300 (92.4%)	325	

Table 1 shows the level of awareness and type of students. Eighty six (37.06%) of medical students had good knowledge, 98 (42.24%) had average knowledge and 48 (20.7%) had poor knowledge. In non-medical

students, 25 (26.9%) had good knowledge, 39 (41.9%) had average knowledge while 29 (31.2%) had poor knowledge.

Table 2 shows the status of practicing breast self-examination. Overall 94 (28.9%) of the participants practice regular BSE. Sixty six (28.4%) of the medical students and 28 (30.1%) of the non-medical students practice BSE regularly; the relation between student type and BSE practice is not significant (p=0.79).

Table 3 shows that the status of performing screening test according to student type, twenty five (7.6%) of all the students performed a screening test for breast cancer in the past. Twelve (5.2%) of the medical students and 13 (14%) of the non-medical students performed a screening test for Ca breast.

DISCUSSION

Breast cancer is a common health problem in Saudi Arabia. Raising awareness will lead to early detection of breast cancer and play an important role in reducing complications and mortality.[17] Regarding the level of awareness results showed that 34.2% of the respondents had good knowledge. This level awareness is higher than that reported among students of University of Sharjah and Ajman of UAE and Jordan.[18-20]

This level of knowledge is less than what had been reported by Latif R, among Saudi University females in Al Madina Al Munawara This finding of inadequate breast cancer knowledge is consistent with other studies in Saudi Arabia.[11,21] The level of Ca breast awareness among medical students was higher than the non-medical students but the relation was not significant (p= 0.15). This finding is expected since medical students may have some knowledge of Ca breast in their curriculum. They also increase their knowledge through elective readings, workshops and conferences.

Regarding breast self-examination (BSE), only 28.9% of the subjects perform regular BSE. This rate is lower than the students in Kirkuk University, Iraq, where 42.6% practice BSE.[18] Compared to studies in Saudi Arabia, this level of practicing regular BSE is less than what has been reported from Al Madina Al Munawara (57.8%).[11] However this rate of BSE is higher than the rate of 8.7% reported in University of Dammam.[21] Twenty eight (30.1%) of the non-medical students perform regular BSE. This rate is higher than the 21% of women who practice BSE in Kuwait and women from different regions of Saudi Arabia.[15,22] This rate of BSE is lower than the 49.9% reported in Hail north Saudi Arabia.[35] Most female medical students in our sample don't perform BSE; those who perform were 28.4%. This rate is higher than the rate of 17% of medical students in Taief University.[23]

The finding of low BSE practice especially among medical university students is very alarming for the medical students practice less than the non-medical students, this may be an obstacle to screening and raising awareness programs as long as an early diagnosis of breast cancer in the community.

In this study, only 25 (7.6%) of the participants performed the screening test for Ca breast. This finding is consistent with the results of a survey in different regions of Saudi Arabia.[24] This result of conducting screening test was less than some findings from Egypt (32.3%), Qatar (26.9%) and eastern province of Saudi Arabia (14.5%).[25-27] The rate of performing screening test in this analysis is higher than the finding in students of University of Dammam where none of the participants had undergone a screening test for Carcinoma breast.[21]

CONCLUSION

The study concluded that Majmaah University students' awareness of carcinoma breast is low. There is no significant difference in the level of awareness between students of medical colleges and those of non-medical colleges. The level of practicing breast self-examination among female university students is low; there is no significant difference between the medical and non-medical students in performing BSE. Few students used to perform screening test for carcinoma breast. Performance of non- medical students in screening for carcinoma breast is significantly higher than in medical students. The study highlighted the importance of establishment of carcinoma breast control program.

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