

Awareness and attitudes regarding breast cancer and breast self-examination among female Jordanian students

Abstract

Background: Despite huge efforts to increase the level of breast cancer awareness, breast self-examination (BSE) is still poorly practiced across Jordan. This baseline study aimed to assess the awareness of female Jordanian students about breast cancer and their practice of BSE.

Materials and Methods: Using a cross-sectional research design, a self-administered survey was used, via a pre-validated pre-piloted questionnaire was distributed to 900 female students aged between 18 and 37 years recruited from the University of Jordan in Amman. The questionnaire was divided into four domains: Socio-demographic characteristics; the respondent's knowledge of breast cancer and BSE; their attitude towards risk factors for breast cancer; their experience of breast cancer screening and BSE. Statistical analysis was performed using Epi-Info version 6.4 statistical Software.

Results: The overall response rate was 93.3%. Approximately half of the respondents 435 (51.8%) were aware of breast cancer. Of these, 99 (22.7%) believed that it was caused by a medical condition, followed by old age (71; 16.4%), lack of breastfeeding (58; 13.3%), heredity (56; 12.8%), late marriage (44; 10.3%), pregnancies in older women (33; 7.5%), the use of brassieres (18; 4.1%), excessive breastfeeding (17; 3.9%), being unmarried (14; 3.2%), and spirituality (11; 2.6%). Overall, 152 participants (34.9%) were aware of BSE, but only 93 (11%) had performed it.

Conclusions: The current status of awareness of breast cancer in Jordanian students and their use of BSE are insufficient. Women need to be encouraged to self-monitor in order to detect abnormalities in their breasts. Appropriate educational interventions are urgently required to encourage women to engage in regular BSE.

Key words:

Awareness, breast cancer, knowledge, practice, self-examination

Introduction

Breast cancer is the most common cancer among females, and represents a major global health problem.^[1] Almost 70% of women with breast cancer are aged over 50 years, and only 5% are younger than 40 years old.^[1] Approximately 700,000 cases are reported annually worldwide, of which 57% of these cases present in developing countries.^[1-3] The global incidence of breast cancer is rising, particularly in developing countries that formerly had a low incidence.^[2,4] Omotara *et al.* proposed that the incidence of breast cancer is increasing in the developing world due to increased life expectancy, increased levels of urbanization and the adoption of western lifestyles.^[5] According to a recent report by the World Health

Organization, the largest increase in cancer incidence over the next 15 years will be in Middle Eastern countries.^[2] The mortality rate from all types of cancer in the Middle East is currently 70%, compared to 40-55% in western countries. Furthermore, by the year 2020, the number of new cancer cases diagnosed each year is estimated to increase by 40%.^[2] Urgent interventions are, therefore, needed to raise awareness of all cancers in this region in order to improve the rates of early detection and increase the chance of curative treatment.

In Jordan, cancer is the second most common cause of death after cardiovascular disease,^[6] and breast cancer was the most common of all cancers in women over the last decade.^[7] In 2008, the latest year for which the Jordan

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National Cancer Registry has available data, 4606 new cases in Jordanian citizens and 1608 additional non-Jordanian cases were recorded. The early detection of breast cancer can be achieved through a combination of monthly breast self-examination (BSE), regular clinical breast examinations and annual mammography beginning at the age of 40 years, are the best ways to limit morbidity and mortality associated with breast cancer.^[8-10] It is essential for the target population to have comprehensive knowledge, appropriate attitudes and practice of the screening methods. This is supported by evidence that earliest breast tumors are self-discovered and that the majority of early discoveries are made by BSE performers.^[9] Some studies have reported that improved knowledge and attitudes have a positive effect on the screening attendance of women.^[10,11]

Breast cancer awareness in developing countries is not well documented, and what is known is far from encouraging,^[11-17] as comparatively few women in these areas have adequate knowledge of the risk factors and preventive measures or screening techniques for early detection. The lack of knowledge and incorrectly held beliefs about breast cancer prevention among females are responsible for the negative perception of the curability of cancer detected early and of the efficacy of the screening tests.^[18] It is, therefore, important to assess the level of awareness of risk factors in our communities. This study aimed to assess awareness of breast cancer, and practice of breast cancer screening among female students in Jordan.

Materials and Methods

Using a cross-sectional research design, this study examined the knowledge of Jordanian female students with regards to breast cancer, in addition to their awareness and practice of breast cancer screening techniques, including BSE.

The target population of the study was all the Jordanian female students registered at Jordan University without inclusion or exclusion criteria of the target population. The total number of female students was around 18,900 students registered in the university during the time of this study. Based on the rule-of-thumb, sample size was determined with 643 students having 99% confidence intervals, and a margin of error of $\pm 5\%$. This study location was selected because the governorate estimated that the number of female breast cancer cases was highest in Amman, affecting 52.3 out of 100,000 females.

A quantitative research approach was conducted using a self-administered survey. Researcher used a prevalidated pre-piloted questionnaire was adapted from a previous study conducted in Northeast Nigeria.^[5] After attaining permission to use the questionnaire, the questionnaire was translated into Arabic language, modified to be applicable in Jordan, and then translated back to English to assure the translation equivalency and appropriateness. The final Arabic version was approved by a bilingual Arabic professor of pharmacy. The questionnaire was piloted on a convenience sample of fifteen out of the main target sample so that final modifications could be made to the questionnaire. Cultural differences were discussed by the author, and the data from the pilot sample were excluded from the final analysis. The study protocol

was approved by the departmental Ethics Committee at our institution.

The questionnaire included four sections: (i) The demographic background of the respondent; (ii) the respondent's knowledge of breast cancer and BSE; (iii) their attitude towards risk factors for breast cancer; and (iv) their current practice for breast cancer screening and BSE.

Data collection took place between 2nd June 2012 and 10th September 2012. Based on a convenience sampling method 900 questioners were distrusted to ensure the highest response, participating was invited by a formal covering letter to complete the pre-piloted questionnaire. The covering letter explained the main objectives of the study and assured participants of the confidentiality and anonymity of data. The questionnaire was hand-delivered by researcher to the students with appropriate instructions regarding its completion, and picked up at a later time after completion, with no reminders. Subjects were informed about the increased incidence of breast cancer in Jordan, especially among younger women. Respondents were informed that participation in the study was voluntary where, a small box was created fixed at the main entrance of the pharmacy school allows participants to drop the completed questionnaires. Thus, their responses would be confidential and analyzed only as part of a cohort.

The questionnaire data were anonymized, numbered and assessed manually for errors, before being entered into a computer database for analysis and data were assessed in an observational manner using Epi-Info version 6.4 Statistical Software.

Results

Of 900 questionnaires distributed to all colleges of the University of Jordan, 840 were completed and returned, yielding a response rate of 93.3%. Table 1 reveals the demographic characteristics of the female students

Table 1: Demographic characteristics of participating female students at Jordan University, Amman

Demographic characteristics	Frequency (n)	Percentage
Age (years)		
18-22	364	43.3
23-27	211	25.1
28-32	169	20.2
33-37	96	11.4
Total	840	100
Religion		
Islam	678	80.7
Christianity	162	19.3
Other	0	0
Total	840	100
Marital status		
Single	691	82.3
Married	111	13.2
Divorced	38	4.5
Total	840	100

who participated. The study group was aged from 18 to 37 years (median, 5.0). Of the 840 female students that responded, only 435 (51.8%) had any awareness of breast cancer as shown in Table 2. The majority of these respondents had obtained their knowledge from either friends or health workers [Figure 1].

Table 3 indicates that, of the 435 respondents who were aware of breast cancer, 99 (22.7%) perceived the cause to be brought about by a medical condition. This was followed, in descending order, by 58 (13.3%) who felt that the lack of breastfeeding caused breast cancer, 56 respondents (12.8%) who attributed the cause to heredity, 71 (16.3) to old age, 44 (10.3) to individuals marrying at a later age, 33 (7.5) to pregnancy at a later age, 18 (4.1%) to the use of brassieres, 17 (3.9%) to excessive breastfeeding and 11 (2.6%) to spirituality.

Table 2: Breast cancer awareness among participating female students at Jordan University, Amman

Response	Frequency (n)	Percentage
Aware	435	51.8
Not aware	405	48.2
Total	100	100

Table 3: Perceived risk factors for breast cancer among participating female students at Jordan University, Amman

Response	Frequency (n)	Percentage
Use of brassieres	18	4.1
Spiritual	11	2.6
No breast feeding	58	13.3
Old age	71	16.4
Old age marriage	44	10.3
Old age pregnancy	33	7.5
Inherited/familial	56	12.8
Unmarried	14	3.2
Medical condition	99	22.7
Excessive breastfeeding	17	3.9
Diet	9	2.1
Other	5	1.2
Total	435	100

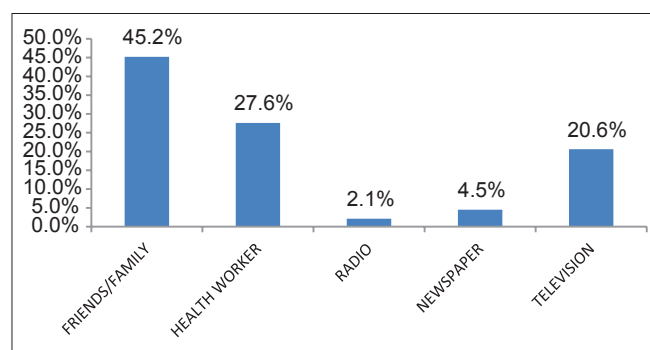


Figure 1: Source of breast cancer information among participating female students at Jordan University, Amman

A total of 340 (78.2%) out of the 435 did not agree that breast cancer patients should be isolated or stigmatized and 308 (70.8%) did not believe that the disease was a punishment from God. The majority agreed that breast cancer patients should live in the community (95.6%) and be supported (97.9%). Nevertheless, 292 (67.1%) of the respondents were afraid of patients with the disease [Table 4].

With regards to BSE, only 152 (34.9%) of those aware of breast cancer knew of BSE as a method for the early detection of breast cancer, and only 93 (61.1%) had ever undergone screening or performed BSE themselves [Table 5]. Of those 93, 23 (24.7%) did so on the advice of health workers, and 28 (30.2%) did so as part of a routine medical examination. As for those respondents who were aware of breast cancer, 198 (45.5%) would undergo screening or perform BSE if it was of benefit to them, 111 (25.5%) if their family agreed, and 84 (19.3%) only if there was a known cure for breast cancer.

Discussion

The evaluation of public awareness, attitudes and practice of BSE is of fundamental importance for the successful implementation of breast cancer control activities.^[19] There are no known proven means to prevent breast cancer, which increases our reliance on the methods for early detection in order to improve patient outcomes. The primary goal of breast cancer awareness programs in developing countries is to promote and develop awareness about the importance of its early detection.^[5]

Projections show that the population in Jordan will have increased from the current figure of 6.3-7.1 million by 2020, with the number of breast cancer cases in Jordanians increasing from 5110/year into 7281/year.^[3] Cancer is increasing at a faster rate than population growth, for unknown reasons, but these projections should be used to properly plan for future cancer care requirements and to pinpoint resources to improve survival rates.

The current study revealed that Jordanian women had worryingly poor levels of knowledge of breast cancer. This finding is supported by the study of Jaradeen,^[20] which revealed a low mean level of knowledge about breast cancer (49%) in 150 female hospital workers in Jordan. In addition, Ahmed *et al.*^[21] found that knowledge of breast cancer was low among 411 Jordanian woman aged 18-70 years in Amman, the capital of Jordan. As the current study involved highly educated university students, it was expected that they would have greater awareness and knowledge of breast cancer than the general population. However, the findings were disappointing.

In the current study, of the 435 respondents who were aware of breast cancer, 51.8% obtained their information on breast cancer from friends and health workers. This was in contrast to the results of a study conducted in South Eastern Nigeria by Ibrahim and Odusanya,^[19] which showed that health workers were the main source of information about breast cancer. Friends and family also seem to play a major role in terms

Table 4: Assessment of attitudes towards breast cancer among female students who were aware of breast cancer at Jordan University, Amman (n=435)

Statement	Agreed (%)	Disagreed (%)	Not sure (%)
Breast cancer patients should be isolated	18 (4.1)	340 (78.2)	77 (17.7)
Breast cancer patients should be allowed to live freely in the community	416 (95.6)	12 (2.7)	7 (1.7)
Breast cancer is a punishment from God	21 (4.8)	308 (70.8)	106 (24.3)
Breast cancer patients should be provided with support and home care by the community	426 (97.9)	0	9 (2.3)
Breast cancer patients should not be allowed to breast feed	391 (89.8)	5 (1.3)	39 (8.9)
Women should be afraid of breast cancer	292 (67.1)	128 (29.4)	15 (3.5)

Table 5: Awareness and practice of BSE among participating female students at Jordan University, Amman

Awareness/practice	Frequency (n)	Percentage
Are you aware of BSE?		
Yes	152	34.9
No	283	65.1
Total	435	100.0
Have you ever performed BSE?		
Yes	93	61.1
No	59	38.9
Total	152	100.0
If yes, for what purpose?		
Advice from a health worker	23	24.7
Medical reason	15	16.1
Noticed a breast lump	8	8.6
One of my family members had cancer	19	20.4
Routine medical examination	28	30.2
Total	93	100.0
If no, why?		
Not convenient	3	5.0
Too expensive	12	20.3
Not necessary	19	32.2
Too busy	17	28.8
Others	8	13.7
Total	59	100.0
Condition that warrants going for breast cancer screening		
If my family agrees	111	25.5
If the result will be of benefit	198	45.5
If there is a known cure for breast cancer	84	19.3
If it is free	14	3.2
Others	28	6.5
Total	435	100.0

BSE: Breast self-examination

of breast cancer awareness in Middle Eastern communities, as exemplified by the finding that 25.5% of the respondents who were aware of breast cancer would only undergo breast cancer screening if their family agreed. In the Middle East, breast cancer comes with a heavy cultural stigma, as exemplified by the study in which Laura Bush stated that, "Women in [the] Middle East are sometimes abandoned by their family when the disease is diagnosed, [and] such stories are discouraging".^[22]

In this study, the majority of women who were aware of breast cancer (308, 70.8%) did not believe that breast cancer was a punishment from God, which was in contrast to the findings of previous studies from developing countries.^[5,12] The majority of respondents in the current study (78.2%) disagreed that breast cancer patients should be isolated and nearly all agreed that these patients should be allowed to live freely in their community (95.6%). This may be due to the Islamic religious beliefs of the majority of respondents, which encourages communities to support those suffering from any kind of disease.^[20]

The current study shows that the practice of BSE was low amongst the sample tested. Only 152 (34.9%) of those aware of breast cancer knew of BSE as a method for detecting breast cancer, and only 93 of those respondents (61.1%) had ever performed it. This is in line with the findings of Abdel Hadi,^[23] who found that 37.3% of his study population practiced BSE. In studies of other populations, the percentage of BSE awareness was 52% among Jordanian nurses,^[24] 37% among Australian students,^[25] and 31% among Pennsylvania women.^[26] Other studies that showed low rates of BSE practice suggested that the practice is globally low among women, regardless of their age and occupation.^[21,23] However, the rates reported in this current study were higher than those described by previous Egyptian and Iranian studies, in which only 6% and 2.65% of the general study populations practiced BSE monthly, respectively.^[21,27]

The current study suggested several reasons why Jordanian female students did not partake in breast cancer screening practices. More than a third of students who were aware of breast cancer did not feel that screening was necessary, and 28.8% of women reported being too busy. The provision of systematic health education (e.g. at college) may help to encourage breast cancer screening and change perceptions regarding screening. It is important to raise women's awareness regarding the potentially life-saving benefits of BSE practice. In addition, the accessibility of screening practices should be expanded with government support.

Limitations of the study

One of the limitations of the study is that the participants in the questionnaire enrolled in the study voluntarily. The results might therefore be biased as the sample was not selected at random. The students who chose to participate may have had different attitudes or knowledge than those who did not volunteer.

