RESEARCH ARTICLE

Breast Self Examination Practice and Breast Cancer Risk Perception among Female University Students in Ajman

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Abstract

Breast cancer is the top cancer in women worldwide and its incidence is increasing, particularly in developing countries. In the United Arab Emirates (UAE), many cases are first diagnosed in later stages and at younger age compared to those seen in developed countries. Early detection in order to improve breast cancer outcome and survival remains the cornerstone of breast cancer control. Performance of breast self examination is one of the important steps for identifying breast disease at an early stage, by the woman herself. No information has hitherto been available about the frequency of this practice among female university students in UAE or about their breast cancer risk perception and therefore the present study was conducted in Ajman. It was found that 22.7% of the participants practiced BSE but only 3% of them practiced BSE monthly. Marital status but not age as significantly associated with age likelihood. The most frequent reported barriers for BSE were lack of knowledge, considering oneself not at risk and the absence of doctor advice. These factors need to be taken into account in intervention efforts.

Keywords: Breast cancer - breast self examination - risk perception - United Arab Emirates

Introduction

Breast cancer is the most common cancer among women in the world (www.who.int/cancer/detection/breastcancer/en/index1.html). Although breast cancer is thought to be a disease of the developed world, majority (69%) of breast cancer deaths occur in developing countries (http://www.who.int/healthinfo/global_burden_disease/GBD_report_2004update_full.pdf). The estimated numberof new cases is expected to rise from 10 million in 2002 to 15 million by 2025, with 60% occurring in developing countries (http://www.emro.who.int/dsaf/dsa696.pdf. 2006).

Breast cancer survival rates vary greatly worldwide, ranging from 80% or over in developed countries to less than 40% in low-income countries (Coleman et al., 2008). The low survival rates in less developed countries have been attributed to the lack of early detection programmes, resulting in a high proportion of women presenting with late-stage disease, as well as lack of adequate facilities for diagnosis and treatment (www.who.int/cancer/detection/breastcancer/en/index.html).

Early diagnosis is an important strategy, particularly in low- and middle-income countries where the diseases is diagnosed in late stages and resources are very limited. There is some evidence that this strategy can produce "down staging" of the disease to stages that are more amenable to curative treatment (Yip et al.,

2008). Evidence showed that breast cancer deaths can be reduced significantly if the tumor is discovered at an early stage (Luquis and Irma, 2006). The American Cancer Society (ACS) guidelines (http://www.cancer.org/acs/groups/content/@nho/documents/document/caff2005brfacspdf2005pdf.pdf) for the early detection of breast cancer vary depending on women age and include mammography and clinical breast examination (CBE). In 2003, the American Cancer Society dropped its recommendation for all women to perform monthly breast self examination (BSE) (Smith et al., 2003). The recommendations, however, encourage all women to become familiar with both the appearance and feel of their breasts so that they can notice any changes and report them promptly to a doctor or nurse.

Evidences suggest that BSE is a reliable screening tool when used as an adjunct to clinical breast examination and imaging studies (Chong et al., 2002; Loescher, 2004). In addition, early diagnosis of breast cancer has been related to the frequency of BSE (Abdel-Fattah, 2000).

In the UAE, cancer among women is a problem of public health concern (Al-Hosani, 2000). UAE, National Cancer Incidence Report (Al Khatib, 2002) showed that the majority of cases (47.9%) had regional lymph node involvement and distant metastasis was observed in 9% of the cases, which indicated late diagnosis for the majority of cases. The UAE Standards for Screening and Diagnosis of Breast Cancer indicated that women between 20-39

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years need to be "Breast Aware" which means that they should be encouraged and educated on how to conduct breast self-exam to become aware of the feel and shape of their breasts, so that they are familiar with what is normal for them and to report any changes immediately to her healthcare provider (http://www.haad.ae/HAAD/LinkClick.aspx?fileticket=RbGqiUnqiSk%3D&tabid=819).

To date, the most important strategy in improving survival and breast cancer outcome is still breast cancer screening and early detection (www.who.int/cancer/detection/breastcancer/en/index1.html). In the UAE, available data showed marked underutilization of the existing public screening services. In 2007, only 12% of the target population of women underwent screening via mammography (Global Initiative for Breast Cancer Awareness Team.Health Authority Abu Dhabi (HAAD) Public Health and Policy Department, Community Profile Summary of Findings 2008).

No available information about the frequency of this practice among females' university students in Ajman, UAE or about their breast cancer risk perception.

To assess the prevalence of Breast Self Examination (BSE) practice among female university students in Ajman. To identify the most important discouraging factors for BSE. To assess breast cancer risk perception of female university students.

Materials and Methods

A cross sectional study was conducted between April 2011- june 2012. The study included female students in three large Universities in Ajman namely; Gulf Medical University [referred to as U1], offering health related programs; Ajman University of Science and Technology [referred to as U2] offering mostly science and technology programs; and Preston University Ajman [referred to as U3] offering science programs. A stratified random sampling procedure was adopted in recruiting the participants. Validated, pilot tested self administered questionnaire was used as a tool for data collection. The

questionnaire included in addition to demography data, information whether they practice BSE, and if the response was yes, then frequency of BSE, timing of BSE in relation to menstruation and if they were using measure to remind themselves about the timing. For participants who were not doing BSE, the questionnaire included questions related to factors that discouraged them. Perception of the participants was assessed by a question whether they considered themselves to be at-risk of having breast cancer or not and for those whose reply was yes, how much the risk they apt to. The tool also includes a question about their willing to participate ineducation program for breast cancer and to encourage female relatives and friends for screening. Data was entered in to excel sheets and analyzed by using PASW 19. The test used was X^2 test.

Results

The study included 392 participants, their distributions by age, nationality, marital status and university are shown in Table 1, which showed that participants are most frequently between 18-22 years old (63.5%), from Eastern Mediterranean Countries (72.2%), and unmarried (82%).

Figure 1 shows the family history of breast cancer which was reported by 9.2% (n=36) of the participants and the disease affected mostly second degree relatives (63.9%, n=23). None of the students had a personal history of breast cancer.

Figure 2 shows distribution of participants by Breast Self Examination (BSE) practice. Although BSE was ever practiced by 89 participants (22.7%), only 3.3% (n=13) were practicing monthly, while 77.3% (n=303) admitted that they were not practicing BSE. Among participants who practiced BSE, 34.8% of them (n=31) practiced at the correct timing in relation to menstruation and 16.9% of them (n=15) were putting marks on the calendar for the next BSE.

Participants' responses for factors that might discourage BSE practice showed that the most frequent discouraging factor were; lack of knowledge how to do
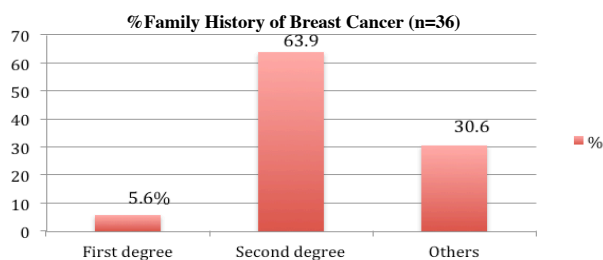
Table 1. Distribution of Participants by Age, Nationality, Marital Status and University

Variables (n=392)	Categories	No	%
Age (in years)	<18	57	14.5
	18-20	133	33.9
	20-22	116	29.6
	22-24	48	12.2
	25+	38	9.7
Nationality*	Europe	4	1.0
	South East Asia	52	13.3
	West Pacific	16	4.1
	Africa	28	7.1
	America	9	2.3
	Eastern Mediterranean	283	72.2
Marital status	Unmarried	349	89
	Married	37	9.4
	Separated/ widows	6	1.5
University	U1	142	36.2
	U2	137	34.9
	U3	113	28.8

*WHO Region

Figure 1. Family History of Breast Cancer
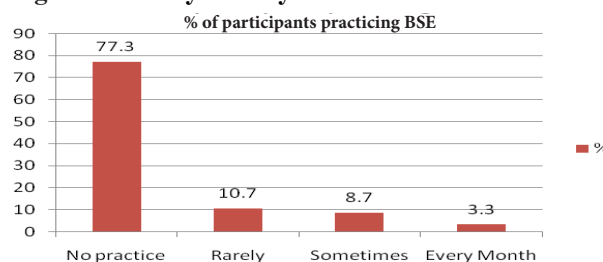
Figure 2. Percentage of Breast Self Examination Practice

BSE Practice and Breast Cancer Risk Perception among Female University Students in Ajman, UAE

Table 2. Distribution of Participants by Age, Nationality, Marital Status, University and BSE Practice

Variables (n=392)	Categories	No (100%)	BSE Yes	BSE No	p
Age (in years)	<18	57	15 (26.3)	42 (73.7)	>0.05
	18-20	133	22 (16.5)	111 (83.5)	
	20-22	116	31 (26.7)	85 (73.3)	
	22-24	48	12 (25.0)	36 (75.0)	
	25+	38	9 (23.7)	29 (76.3)	
Nationality*	Others	109	26 (22.3)	83 (76.1)	>0.05
	Eastern Mediterranean	283	63 (23.9)	220 (77.7)	
Marital status	Unmarried	349	69 (19.8)	280 (80.2)	<0.001
	Married/Separated/Widows	43	20 (46.5)	23 (53.5)	
University	U1	142	36 (25.4)	106 (74.6)	>0.05
	U2	137	33 (24.1)	104 (75.9)	
	U3	113	20 (17.7)	93 (82.2)	

*WHO Region

Table 3. The Relationship between Breast Cancer Risk Perception and Both Family History of Breast Cancer and the Breast Self Examination Practice

	Yes No. %	No No. %	Total No. (100%)
Breast cancer risk perception: Family History of breast cancer*			
Yes	19 54.3	16 45.7	35
No	83 26.1	235 73.9	318
Total	102 28.9	251 71.1	353
Breast self examination practice: Breast cancer risk perception**			
Yes	31 30.4	71 60.6	102
No	54 21.5	197 78.5	251
Total	85	268	353

*X^2 test. p=0.077, **p>0.05

Table 4. Distribution of Participants by Family History and Perceived Level of Risk for Breast Cancer

	Low No. %	Moderate No. %	High No. %	Total
Family history of breast cancer: Yes	11 57.9	4 21.1	4 21.1	29
No	32 43.2	35 47.3	7 9.5	74
Total	43 46.2	39 41.9	11 11.8	93

*p>0.05

BSE (59.9%), no previous doctor advice for doing BSE (51.5%), do not have time (44.4%), feeling shy to do BSE (24.2%), afraid to do BSE (24.2%), and think that BSE is harmful (12.7%).

The frequency of BSE among participants who had and those who did not have family history of breast cancer were 22.2% (n=8) and 22.8% (n=81) respectively. No significant association was noticed between family history of breast cancer and the practice of BSE (p>0.05).

No significant associations were noticed between BSE Practice and age, nationality, and university. Married female had significantly higher frequency of BSE practice (Table 2).

With regarding to breast cancer risk perception, among participant who responded to the inquiry about their risk perception for breast cancer (n=353), only 28.9% (n=102) perceived themselves to be at risk for breast cancer. Significant association was found between risk perception and family history of breast cancer (Table3). Participants who perceived themselves to be at risk of breast cancer, practiced BSE more commonly (Table 3). As regard

opinion on the perceived risk, out of the 93 respondents, the perceived risk was low in 43 (46.2%), moderate in 39 (41.9%) and high in 11 (11.8%). High-risk perception was noticed more commonly among females with positive family history of breast cancer (Table 4).

Comparing the frequency of breast cancer to other cancers, Out of the total 274 respondents, breast cancer was correctly identified as the most frequent women cancer by 207 (75.5%), incorrectly reported breast cancer to be the least frequent cancer among women by only 12 (4%) and 51 respondent(19%) they did not know about the magnitude of this problem. Among the 392 participants 259 (66.1%) were willing to participate in education program for breast cancer awareness (83.2%) to encourage female relatives to attend the screening.

Discussion

Breast cancer is the most common female cancer in the UAE. It accounts for 38.5% and 22.7% of women cancer in 2004 and 2005 respectively (UAE, 2006). Early detection of breast cancer plays a leading role in reducing mortality rates and improving the patients' prognosis (Montazeri, 2005). Ministry of Health, UAE 2008 report showed that 28% of deaths attributed to breast cancer occurred in women less than 45 years of age (UAE, 2008). Young women breast cancer is generally more aggressive and result in lower survival rates, making early detection even more important (UAE, 2008). Although evidence showed that breast self examination does not reduce breast cancer mortality (Thomas et al., 2002; Rosen and L-Rashwan, 2003; Gilani, 2011).

However, findings supported that BSE makes women more alert and aware which in turn could lead to an earlier diagnosis of breast cancer (Akhtari-Zavare, 2011). Moreover, the practice of BSE has been shown to empower women regarding responsibility of their own health (www. who.int/cancer/detection/breastcancer/index1.html).

In this study 23% of the participants practiced BSE but only 10% of them practiced it monthly. This is lower than that reported in study among female university students in Malaysia (Akhtari-Zavare et al., 2011) (36.7% ever practiced BSE and 19% practiced monthly) and that reported from Nigeria (Kayode et al., 2005) (54.8%). In Turkey (Karayurt et al., 2008) 6.7% of the high school students were performing BSE monthly and 20.3% of the students were performing BSE irregularly. In Iran (Montazeri et al., 2008), 37% of respondents practiced BSE and 17% of women do regular BSE.

In the present study, family history of breast cancer was reported by about 9% of the participants, and this percentage is very close to that reported in another study (9.8%) among female high school and college students in Saudi Arabia (Sait et al., 2010). The 2009 Lebanese National Mammography Campaign showed that 8.9% of participants had family history of breast cancer (Kobeissi et al., 2012). In Pakistan (Gilani et al., 2010), among the one thousand women interviewed recently, 13.4% reported family history of breast cancer amongwhich 18% had their 1st degree relatives affected. No significant association was noticed between family history of breast cancer and BSE

practice and this is in agreement with another study done in Iran (Montazeri et al., 2008). A study to investigate the knowledge and practice of breast self-examination (BSE) among Saudi female nursing college students showed no significant association between family history of breast cancer and BSE practice (Alsaif, 2004). Evidence shows that having a family history is the strongest predictor of lifetime risk. Moreover, a perception of personal risk, which is important for appropriate prevention efforts, is found to be exaggerated among individuals with family history (Montgomery et al., 2003). A recent study showed that family history of cancer significantly influenced the practice of the BSE among Malaysian women (Al-Naggar et al., 2011).

In the present study no significant association between age and BSE and this was also noticed in a study including women in rural area of Turkey (Dündar et al., 2006), but this finding disagree with that of studies from Iran (Parsa and Kandiah, 2005; Montazeri et al., 2008). In this study, marital status was significantly associated with BSE practice and this is in agreement with studies from Iran (Parsa and Kandiah, 2005; Montazeri et al., 2008).

The most frequent reported barrier for BSE in the present study group was the lack of knowledge for BSE (about 60%), a finding consistent with reports from Nigeria (Bassey et al., 2011) (stated by 87.5%), and Turkey (Karayurt et al., 2008) (98.5%). The perception that most of the young women (71%) do not consider themselves at risk for developing breast cancer can discourage them from doing BSE. In Turkey (Karayurt et al., 2008), 45.6% of respondents don't expect themselves to get breast cancer. In a study from Saudi Arabia (Habib et al., 2010), the reported frequencies for the previous two barriers (lack of knowledge for BSE, women do not consider themselves at risk) were 65% and 55% respectively. Identification of barriers regarding BSE is very essential and can be used to design appropriate educational interventions which promote this preventive behavior. Applications of this have been reported by researchers from Iran (Hajian et al., 2011) who have used information on perceived barriers as a predictor of BSE behaviour.

In this study, the higher frequency of BSE practice observed among participants who perceived themselves to be at risk of breast cancer emphasize the Health Believe Model which stipulates that health-related behaviour is influenced by a person's perception of the threat posed by a health problem and by the value associated with his or her action to reduce that threat (Hajian et al., 2011).

Regarding the participants perceived magnitude of breast cancer, most of the respondents (75.5%) correctly reported breast cancer as the most frequent cancer among women and this is in agreement with a study among Myanmar women (Mon et al., 2009). In a study from Germany, only one-third of the respondents correctly estimated the incidence of breast cancer (Pöhls et al., 2004), the authors suggested that such knowledge can influence the efficacy of programme for early detection of breast cancer.

Evidence showed an association between perceived risk and undertaking of screening measures like mammography or genetic testing (Katapodi et al., 2004).

Positive attitudes toward breast cancer education and screening were noticed among majority of the study participants. Evidences showed the efficiency of education regarding BSE, CBE, and mammography, especially among females with family history of breast cancer results in awareness and positive attitudes towards benefits of early breast cancer screening (Kayode et al., 2005). A study among nursing students in Nigeria (Bassey et al., 2010) showed that most of the respondents (98.5%) thought BSE was necessary. Another study among female undergraduates in Nigeria (Salaudeen et al., 2009) showed that while 42.8% of the respondents believed that it was necessary to perform breast self examination, only 18.3% of the respondents actually sought the knowledge about breast self examination.

In conclusion, the study showed low prevalence of ever practice and very low monthly practice of BSE among the studied participants. The most frequent discouraging factors for BSE were lack of knowledge for how to do BSE and absence of doctor advice. One quarter of the respondents perceive themselves to be at risk for breast cancer and in about half of them the perceived risk was low.

References

Abdel-Fattah M, Zaki A, Bassili A, El-Shazly M, Tognoni G (2000). Breast self-examination practice and its impact on breast cancer diagnosis in Alexandria, Egypt. *East Mediterr Health J*, **6**, 34-40.

Akhtari-Zavare M, Juni MH, Abdul Manaf R, Ismail IZ, Said SM (2011). Knowledge on breast cancer and practice of breast self examination among selected female university students in Malaysia. *Medical and Health Science Journal*, **7**, 49-56.

Al Khatib F (2002). Cancer Incidence Report 1998-2002. 1st Ed. UAE: United Arab Emirates Ministry Of Health Preventive Medicine, 2002, 8-10.

Al-Hosani H (2000). Health for all in the United Arab Emirates. *East Mediterr Health J*, **6**, 838-40.

Al-Naggar RA, Al-Naggar DH, Bobryshev YV, Chen R, Assabri A (2011). Practice and barriers toward breast self-examination among young Malaysian women. *Asian Pac J Cancer Prev*, **12**, 1173-8.

Alsaif AA (2004). Breast self-examination among Saudi female nursing students in Saudi Arabia. *Saudi Med J*, **25**, 1574-8.

Bassey RB, Irurhe NK, Olowoyeye MA, Adeyomoye AA, Onajole AT (2011). Knowledge, attitude and practice of breast self-examination among nursing students in Lagos University Teaching Hospital, Nigeria. *Educ Res*, **2**, 1232-6.

Bassey RB, Irurhe NK, Olowoyeye MA, Adeyomoye AA, Onajole AT (2010). Knowledge, attitude and practice of breast self examination among nursing students in Lagos University Teaching Hospital. *Acad J Cancer Res*, **3**, 11-5.

Chong PN, Krishnan M, Hong CY, Swash TS (2002). Knowledge and practice of breast cancer screening amongst public health nurses in Singapore. *Singapore Med J*, **43**, 509-16.

Coleman MP, Quaresma M, Berrino F, et al (2008). Cancer survival in five continents: a worldwide population-based study (CONCORD). *Lancet Oncol*, **9**, 730-56.

Dündar PE, Ozmen D, Oztürk B (2006). The knowledge and attitudes of breast self-examination and mammography in a group of women in a rural area in western Turkey. *BMC Cancer*, **6**, 43.

Elmore JG, Armstrong K, Lehman CD, Fletcher SW (2005).

Screening for breast cancer. *JAMA*, **293**, 1245-56.

Gilani SI, Khurram M, Mazhar T, et al (2010). Knowledge, attitude and practice of a Pakistanifemalecohorttowardsbreastcancer. *J Pak Med Assoc*, **60**, 205-8.

Habib F, SalmanS, Safwat M, Shalaby S (2010). Awareness and knowledge of breast cancer Among University Students in Al Madina Al Munawara Region. *Middle East J Cancer*, **1**, 159-66.

Hajian S, Vakilian K, Najabadi KM, Hosseini J, Mirzaei HR (2011). Effects of education based on the health belief model on screening behavior in high risk women for breast cancer, Tehran, Iran. *Asian Pac J Cancer Prev*, **12**, 49-54.

Karayurt O, Ozmen D, Cetinkaya AC (2008). Awareness of breast cancer risk factors and practice of breast self examination among high school students in Turkey. *BMC Public Health*, **8**, 359.

Katapodi MC, Lee KA, Facione NC, Dodd MJ (2004). Predictors of perceived breast cancer risk and the relation between perceived risk and breast cancer screening: a meta-analytic review. *Prev Med*, **38**, 388-402.

Kayode FO, Akande TM, Osagbemi GK (2005). Knowledge, attitude and practice of breast self examination among female secondary school teachers in Ilorin, Nigeria. *Eur J Sci Res*, **10**, 42-7.

Kobeissi L, Hamra R, Samari G, Khalifeh M, Koleilat L (2012) The 2009 Lebanese National Mammography Campaign: Results and Assessment Using a Survey Design. *Epidemiol*, **2**, 112.

Loescher L (2004). Nursing roles in cancer prevention position statements. *Semin Oncol Nurs*, **20**, 111-20.

Luquis RR, Irma J (2006). Villanueva Cruz. Knowledge, attitudes, and perceptions about breast cancer and breast cancer screening among hispanic women residing in South Central Pennsylvania. *J Community Health*, **31**, 25-42.

Mon MM, Mon M, Than KK (2009). Women's awareness, knowledge and perceived magnitude regarding common female cancers in Yangon, Myanmar. *Asian Pac J Cancer Prev*, **10**, 1047-50.

Montazeri A, Vadhaninia M, Harirchi I, et al (2008). Breast cancer in Iran: need for greater women awareness of warning signs and effective screening methods. *Asia Pac Fam Med*, **7**, 6.

Montgomery GH, Erblich J, DiLorenzo T, Bovbjerg DH (2003). Family and friends with disease: their impact on perceived risk. *Prev Med*, **37**, 242-9.

Parsa P, Kandiah M (2005). Breast cancer knowledge, perception and breast self-examination practices among Iranian women *Int Med J*, **4**, 17-24.

Parvani Z (2011). Breast self examination; breast awareness and practices of systematic review. *Professional Med J*, **18**, 336-9.

Pöhls UG, Renner SP, Fasching PA, et al (2004). Awareness of breast cancer incidence and risk factors among healthy women. *Eur J Cancer Prev*, **13**, 249-56.

Rosenberg R, Levy- Schwartz R (2003). Breast cancer in women younger than 40 years. *Int J Fertil Womens Med*, **48**, 200-5.

Sait WA, Al-Amoudi SM, Tawtai DA, Abduljabbar HS (2010). The knowledge of breast cancer among young Saudi females. *Saudi Med J*, **31**, 1242-4.

Salaudeen AG, Akande TM, Musa OI (2009). Knowledge and attitudes to breast cancer and breast self examination among female undergraduates in a state in Nigeria. *Eur J Social Sci*, **7**, 157-65.

Smith RA, Saslow D, Sawyer KA, et al (2003). American Cancer Society guidelines for breast cancer screening: update 2003. *CA Cancer J Clin*, **53**, 141-69.

Thomas DB, Gao DL, Ray RM, et al (2002). Randomized trial of breast self-examinationin Shanghai: final results. *J Natl Cancer Inst*, **94**, 1445-57.

UAE (2006). Ministry of health. Annual Report. Preventive medicine sector.

UAE (2008). Ministry of Health. Annual report of health policy sector.

Yip CH, Smith RA, Anderson BO, et al (2008). Guideline implementation for breast healthcare in low- and middle-income countries: early detection resource allocation. BreastHealth Global Initiative Early Detection Panel. *Cancer*, **113**, 2244-56.