ORIGINAL ARTICLE

Fatma Betül Karaman[1]
Hatice Sekmen[2]
Tuncay Müge Alvur[1]

[1] Çay Family Health Center, Çay, Afyonkarahisar, Turkey
[2] Yeniköy Family Health Center, Başiskele, Kocaeli, Turkey
[3] Kocaeli University, Faculty of Medicinei Department of Family Medicine, Kocaeli, Turkey

Corresponding Author:
Tuncay Müge Alvur
Kocaeli University, Faculty of Medicinei Department of Family Medicine, Kocaeli, Turkey
Tel: +90 262 303 74 10
E-mail: mugealvur@gmail.com

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konuralptipdergi@duzce.edu.tr
konuralptipdergisi@gmail.com
www.konuralptipdergi.duzce.edu.tr

Breast Cancer Awareness and Breast Self-Examination among Undergraduate Medical School Female Students: Kocaeli University-Turkey

ABSTRACT

Objective: Cancer is the second most common cause of death in Turkey, following cardiovascular diseases. The aim of this study was to investigate the knowledge and practice of breast self-examination (BSE) among undergraduate female medical school students of Kocaeli University.

Methods: This study was carried out among 533 female (mean age 21.2 ±1.9 years; range 17-28) students in the 2014-2015 educational year. A semi-structured questionnaire with five parts (socio-demographics, anthropometric measurements, individual and familial reproductive and obstetric histories, breast self-examination knowledge and practice frequency, knowledge about breast cancer risk factors) was used.

Results: More than half of the students (n=309, 58%) indicated that they had enough information about breast cancer. Main source of information was "Medical School Lectures" (n=330, 61.9%). According to The Breast Cancer Risk Assessment Form, all of the students had "low risk / below 200 score". Self-rated breast cancer risk was "0" according to 43(9.1%) students; 40.4% (191/472) of students perceived their risks 50% and over. Mean knowledge score was 13.53±2.46; 41/533 students had 17/17 points. Breast self-examination was performed "at least monthly" by 128 (57.7%) although 414 (77.7%) of the students declared to know BSE. More than a quarter of the participants (n=165, 30.9%) described BSE and 122 (73.9%) of these descriptions were "sufficient". As for the reasons of "not performing BSE"; 109 of the students reported BSE as "unnecessary".

Conclusions: Female medical school students who have low risk scores for breast cancer are knowledgeable about breast cancer but still a considerable part of them refrain BSE.

Keywords: Female Medicine Students, Breast Cancer, Breast Self Examination, Risk Assessment

Kocaeli Üniversitesi Tıp Fakültesi Kız Öğrencilerinde Meme Kanseri Farkındalığı ve Kendi Kendine Meme Muayenesi

ÖZET

Amaç: Türkiye'de kanser, kalp damar hastalıklarının ardından, ikinci sıradaki ölüm sebebidir. Bu çalışmanın amacı Kocaeli Üniversitesi Tıp Fakültesi'ndeki kız öğrencilerin kendi kendine meme muayenesi (KKMM) hakkında bilgi ve davranışlarını araştırmaktır.

Gereç ve Yöntem: Bu çalışma 2014-2015 eğitim yılında yaşları 17 ile 28 arasında bulunan 533 kız öğrencinin katılımı ile gerçekleşmiştir. Beş bölümden oluşan yarı yapılandırılmış anket ile sosyodemgrafik bilgiler, beden ölçüleri, bireye ve aileye ait tıbbi öykü, KKMM bilme ve uygulamasına dair bilgiler ile meme kanseri risk faktörleri hakkındaki bilgiler sorgulanmıştır.

Bulgular: Öğrencilerin yarısından fazlası (n=309, %58) meme kanseri hakkında yeterli bilgiye sahip olduklarını belirtmişlerdir. Bilginin ana kaynağı 330 öğrenci (%61,9) tarafından "Dersler" olarak gösterilmiştir. Meme Kanseri Riski Değerlendirme Ölçeği'ne göre öğrencilerin tamamı "düşük risk" grubunda yer almaktaydı. Kırküç öğrencinin kendilerine atfettikleri meme kanseri riski "0" iken 191 öğrenci bu riski %50 ve üzerinde belirtmiştir. Ortalama bilgi puanı 13,53±2,46 idi ve 41 öğrenci 17 tam puan aldı. KKMM bildiğini söyleyen 414 (%77,7) öğrenci olmasına rağmen 128'i (%57,7)"ayda en az bir defa" KKMM yapıyordu. KKMM tarifini yapan 165 (%30,9) öğrenciden 122'si (%73,9) "yeterli" olarak değerlendirildi. KKMM 109 öğrenci tarafından "gereksiz" bulunduğu için yapılmıyordu.

Sonuç: Meme kanseri için düşük riske sahip tıp fakültesi kız öğrencileri yeterli bilgiye sahip olmalarına rağmen düzenli KKMM yapma oranları düşüktür.

Anahtar Kelimeler: Tıp Fakültesi, Kız Öğrenci, Meme Kanseri, Kendi Kendine Meme Muayenesi, Risk Değerlendirme

INTRODUCTION

Breast cancer is the most frequent cancer among women with nearly 1.7 million new diagnosed cancer case in 2012 (25% of all cancers). While breast cancer is seen more frequently in developed countries (883,000 vs. 794,000 cases), the mortality rates are higher in developing countries (1).

While breast cancer is rarely observed in women under the age of 30, it shows a strong increase rate after this age. This strong increase occurs in postmenopausal years (2,3). According to the Turkish Breast Cancer Registry program, 45% of the breast cancer cases in Turkey have diagnosed in the premenopausal period (1,2). Breast cancer is the most widespread cancer type in women. In Turkey there was 15230 new cases, which accounts for 24.5% of all female cancers in 2012(1). Currently, cancer is the second most common cause of death in Turkey, after cardiovascular diseases (4). According to 2016 data of Turkey Statistics Institution, breast cancer is the most frequent cause of death (14%) among all cancer types of women (5).

Breast cancer risk factors can be classified as non-modifiable risks, including age, ethnicity, genetics/family history, and age of menarche; and modifiable risk factors, including diet, physical inactivity, overweight, smoking and alcohol consumption (6–8). The differences in breast cancer incidence between developed and developing countries can partly be explained by dietary effects, lower parity, first childbirth in older ages and short time breastfeeding (9–11).

Early detection of breast cancer is important for reducing its morbidity and mortality. The most effective procedures to diagnose breast cancer are by breast self-examination (BSE), clinical breast examination (CBE) and mammography which is still considered as the "gold standard" for early diagnosis (12).MRI and ultrasound is a screening method too, recommended in high-risk populations (13).

In early detection of breast cancer, breast self-examination is a safe, effective, and economical screening method (4).Practicing BSE could provide an opportunity for women to know how their breasts normally feel and able to discern changes in their breast tissue (3,14). Women who practice BSE have a higher chance of early detection, and by this way survival rates can increase and treatment options can be better. BSE is recommended women since than 20 years, monthly (4). However, few Turkish women perform BSE regularly. It was reported in Ministry of Health of Turkey that 10.1 % of women perform BSE once a month regularly, 19.4% of them perform casually(rare than once in 3 months), 5.4% of them perform once in 2-3 months and 65.1%never perform BSE(15).'Health Belief Model' used in our country to have information about the awareness, knowledge and practice of BSE and there is a few article about BSE (1–3).

Cancer Early Diagnosis an Screening Center (KETEM) -an institution under Ministry of Health of Turkey- conducts tests and studies on the prevention/early diagnosis of breast, cervix, and colon cancer.

The aim of this study was to investigate the knowledge and practice of BSE among undergraduate female medical school students of Kocaeli University. Besides, the students were inquired about the risk factors for breast cancer.

MATERIAL AND METHODS

This study among female undergraduate students in Kocaeli University School of Medicine was carried out between March 2015 and July 2015. Medical education is six years at Kocaeli University School of Medicine and there were 674 female students in the 2014-2015 educational year. In the first three years of the education lectures are mostly theoretical (Group 1), during the second half of their education the students (Group 2) have clinical rotations in which they have the opportunity to contact patients.

A semi-structured questionnaire which consists of 45 questions was used to collect data. The questionnaire was prepared by the researchers, and had five parts; socio-demographic characteristics (5 questions), anthropometric measurements (2 questions), personal and familial reproductive health and obstetric histories (11 questions), breast self examination knowledge and practice levels (8 questions), knowledge about breast cancer risk factors (17 questions). Knowledge is scored as one point for each correct answer (minimum=0, maximum=17 points). The students were also asked about their perceived risk of their breast cancer probability between 0(none) and 10(absolute).

The "Breast Cancer Risk Assessment Form" developed by the American Cancer Society and is recommended for breast cancer risk assessment by the Ministry of Health of the Republic of Turkey. The form was used to determine the risk of having breast cancer among women.

The Breast Cancer Risk Assessment Form is composed of 6 parts and 21 sub-items. The items include the age, family breast cancer history, individual breast cancer history, childbearing age, menstrual history and body structure. Body Mass Index (BMI); less than 18.5 kg/ m2was categorized as underweight, 18.5-24.9 kg/m2as normal, and more than 25 kg/m2as overweight.

Total scores determined the levels of risk as low (scores of 200 and below), moderate (scores between 201- 300), high (scores between 301-400) and the highest (scores above 400).

Informed consents: Ethical approval of Kocaeli University Ethical Committee for Clinical Researches was obtained for this study with KOÜ KAEK 2015/82 protocol number. Besides this Dean for Kocaeli University School of Medicine was informed about the study and their written approval to conduct the study was also obtained.

Data analysis: Data were analyzed by using SPSS Statistics 20.0 program. We used descriptive statistics and chi square test. We presented our results as frequency, percentage, mean and standard deviation (SD).

RESULTS

We reached 600 students and 533 returned their questionnaires (response rate=88.83%). Mean age of the 533 participants was 21.2 ±1.9 years (between 17 and 28 years). The most frequent participation was by Phase 1 students (n=134; 25.1%). Two hundred-twenty (220) of the students were living at a dormitory (41.3%), 149 of them were living at house with friends (28%) and 124 of them were living at house with their family. Most of the students (84.6%) indicated that their monthly incomes were enough for their living. Only nine of the students were married or living with a partner. According to their BMIs 39 (7.3%) of the participants were "overweight" or "obese".

More than half of the students (n=309, 58%) indicated that they had enough information about breast cancer. However Group 2 (87.1%) students claimed more competence in breast cancer than Group 1 (40.3%) ($X2(1)=113.56$, N=524, $p<0.001$). The most frequently mentioned source of information was "Medical School Lectures" by 330 students (Group1: 158, Group 2: 172; $X2(1)=53.39$, N=533, $p<0.001$) (Table 1).

Table 1. Source of knowledge and primary counsultant preference.

		Group 1 (N=320)		Group 2 (N=213)		Total (N=533)		P value
		n	%	n	%	n	%	
Source of knowledge about breast cancer	Media	145	45.3	63	29.6	208	39	0.001
	Lectures	158	49.4	172	80.8	330	61.9	0.001
	Family/Friends	47	14.7	19	8.9	66	12.4	0.031
	Physician	41	12.8	50	23.5	91	17.1	0.001
	Other	15	4.6	3	1.4	18	3.3	0.011
Primary consultant in case of finding a mass during BSE	General Surgeon	181	56.6	153	71.8	334	62.7	0.001
	Family Physician	54	16.9	12	5.6	66	12.4	0.001
	Other speciality	96	30	89	41.8	185	34.7	0.003

Response rate of self assessment about breast cancer risk was 88.5% (472/533) and revealed that 43(9.1%) students attributed "0" risk, and 11 (2.3%) attributed absolute risk of breast cancer; 40.4% (n=191) of students perceived their risks as 50% and more. Very few students (n=24, 4.5%) reported a history of breast problem-all benign. Forty-five students (8.4%) declared to have a family member diagnosed with breast cancer; eight of them were first degree relatives. According to The Breast Cancer Risk Assessment Form, all of the students had "low risk / below 200 score".

Mean knowledge score was 13.53±2.46; Group 2 had significantly high score than Group 1 (14.6±1.9 vs. 12.8±2.5; $p<0.001$). Forty-one students (7.7%) had 17 points, 33(80.4%) of them were from Group 2 and 8(19.6%) were from Group 1.

Four hundred and fourteen (414) of the participants (77.7%) declared to know breast self examination and most of them (n=222, 54%) practiced BSE - the majority (128, 57.7%) with a frequency of "at least once in a month". There were two students who performed BSE with "irregular" intervals among the students who declared not to know BSE.

More than quarter of the participants (n=165, 30.9%) described their BSE performance and 122 (73.9%) of these descriptions were "sufficient".

Most of the participants (n=467,87.6%) indicated that they can find a mass performing

BSE; 92 students walnut-size mass, 248 students nut-size mass, 127 students pease-size mass.

When asked about the reasons for "not performing BSE" 109 of the students reported BSE as "unnecessary" and the distribution of these students into Group 1 and 2 was 75 and 34, respectively. The reason for not performing BSE was "I don't know how to perform" for 90 students and 86 (95.6%) of them were Group 1 students (Table 2).

Table 2. Source of awareness, knowledge and practice by groups

	Perceived breast cancer risk less than 50%	Perceivedbreast cancer risk more than 50%	Know how to BSE	Don't know how to BSE	Practise BSE	Don't practice BSE
Group1	165(51.6%)	113(35.3%)	209(65.3%)	106(33.1%)	119(37.1%)	212(66.3%)
Group2	116(54.5%)	78(36.6%)	205(96.2%)	7(3.3%)	104(48.8%)	93(43.7%)
p value	0,923 x2(1)=0.009		0.0001 x2(1)=69.594		0.0001 x2(1)=28.042	

Primary consultant in case of finding a mass during BSE was "general surgeon" for 334 (62.7%) students. Preference of general surgeon was more frequent among Group 2 students (153/213 vs. 181/320; 71.8% vs. 56.6%)(X2(1)=12.74, N=533, p<0.001) (Table 1).

"Have you ever heard of Cancer Early Diagnosis and Training Center (KETEM)?" was answered affirmatively by only 80 (15.3%) students.

DISCUSSION

The emergence of breast disease and development cancer tend to be more aggressive in young women compared with the older population (16). Young women aged 20-29 years with breast cancer diagnosed mortality rate of 72.4% from the diseases (17). The cause of high mortality rate among young women is mainly lack of breast cancer awareness (16). Therefore we carried out our study among young women to investigate the health belief and of BSE practice and assessed breast cancer risk in Kocaeli-Turkey.

The lifetime risk in the highest incidence countries is in the order of 12 % and this means one of each 8 women will be diagnosed breast cancer(18,19). It is crutial to conduct population educations about breast cancer, it's early detection and screening tests by health professionals. KETEM is an institution where these education and counseling is performed. Besides these services; periodic health control for breast and servical cancers are held by doctors and nurses. Knowledge about KETEM was low (n=80, 15.3%) among our female students.

Sociodemographic Data: In studies about the risk of being overweight, it was noticed that 25-76% of women with breast cancer were overweight(20–22). In our study 39 (7.3%) of the students were overweight or obese with respect to the other risk factors of breast cancer these students' overall risk were also low.

If a woman have breast cancer or have a family history about breast cancer with a first degree relative (mother, sister or daughter), the woman has 2-4 times higher risk of developing breast cancer(3,20,21,23,24). Breast cancer history was present in 1.5% (n=8) of our study group'sfirst-degree relatives, and none of the students had a history of breast cancer. Although family history puts these students in to a relatively high risk of breast cancer; only tool to protect them from the disease is counseling and close follow-up.

The Women's Health Initiative Clinical Trial reported that long exposure to exogenous estrogens and progestins in hormone therapy increases developing breast cancer. The results of a meta-analysis are shown that use of oral contraceptives is associated with an increase rate breast cancer risk among women younger than 50 years and premenopausal. The Oxford study compared that women who began oral contraceptives use before the age of 20 years and who began use after the age of 20 years, the results concluded that women who began using oral contraceptives before 20 age were in higher risk to have breast cancer (25,26). In our study 92 of the students used oral contraceptives, and 16 of them were younger than 20 years of age, and all of them were at "low" risk according to breast cancer risk assessment form. With regard to the above mentioned study their risks for breast cancer were higher than their peers'.

According to "Breast Cancer Risk Assessment Form" all of the participants were at "low risk". They were below 30 years of age, eight of them were married and none of them had a child. However, when asked to evaluate their breast cancer risk between 0 and 10;191 of them mentioned five or above. Among eleven students

who think that they absolutely will develop breast cancer in future only four had family history and only one of them was a first degree relative. From these 11 students only three declared to perform BSE regularly. The general perception is that young women do not consider themselves at risk for developing breast cancer as they believe that "it is a problem that affects old(er) women"(14,27). This high risk attribution to breast cancer among our study population thought to be due to their future profession; medicine.

BSE Awareness Knowledge and Practice: For women to recognize their own breast tissues and be aware of changes that occur can practicing breast self-examination (BSE) regularly each month. The women who perform BSE regularly are detected breast cancer in earlier stage than in women who do not perform BSE regularly. Detecting in early stage is important because, when the stage decreases, the survival rate increases. At 80-90% of the women who diagnosed breast cancer noticed the masses themselves when they are performing BSE(28–30). Practicing BSE regularly, correctly at the right time is the most simple, non invasive and inexpensive way for early detection of breast cancer(28). The American Cancer Society has recomment that women between 14-54 years of age have the risk for breast cancer and that they should start performing BSE at 20 years of age (31). BSE is a woman's periodic and systematic examination to identify unusual masses and changes of the breast tissue(32–34). Thus, mortality has been shown to be decreased by as much as 19%(2). Besides common result of studies on BSE in Turkey shows that percentage of women having adequate knowledge on BSE and performing BSE regularly is extremely low (12).In our study, four hundred and fourteen (77.7%) of the participants declared to know breast self examination and most of them (n=222, 41.6%) practiced BSE –128 (24.0%) with a frequency of "at least once in a month". There were two studies,in which mean ages were comparable with our group, BSE practicing percentages were 9.4%(31) and 19.6%(14). This difference with these studies may be explained by our participants' education area of medicine.

"Medical Lectures" was the most frequently mentioned source of knowledge, which is an expected result. But inspite of this education, 199 students (37.3%) explained their not performing BSE by either "BSE is redundant" or "I don't know how to perform". We may assume that lectures don't cover BSE specifically.

Conclusion

Female medical students' regular BSE performance is higher than general population but as for being physicians of the future this may be assumed as low. Students' high level of breast cancer knowledge can be explained by the the medical school curriculum, but low rates of practice and appropriate technique implies need of amendment of clinical practice courses. BSE is supposed to have importance in terms of breast cancer detection; medical students have to be encouraged to perform BSE and the curriculum should support counseling about breast cancer and BSE.

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