Evaluation on the Practice and Behaviour of Women Applied for Gynecology Outpatient Clinics About Screening Methods for Early Diagnosis of Breast Cancer

Meryem Hocaoğlu[1], Aynur Adeviye Erşahin[2], Esra Akdeniz[3]

[1]Obstetrics and Gynecology Clinic, Istanbul Medeniyet University, Göztepe Training and Research Hospital, İstanbul, Turkey
[2]Department of Obstetrics and Gynecology, Bahçeşehir University Faculty of Medicine, İstanbul, Turkey
[3]Division of Biostatistics, Marmara University School of Medicine, İstanbul, Turkey

ABSTRACT

Objective: Breast self-examination (BSE), clinical breast exam (CBE), mammography and ultrasound imaging (UI) are screening methods used for early diagnosis of breast cancer (BC). The purpose of this study is to put forth the utilization frequency of these screening methods among women presenting to the gynecology outpatient clinics and the relation of these data with the socio-demographic characteristics of the women.

Materials and Methods: A survey was conducted among 429 women (age, 16-80 years) who were admitted to the gynecology outpatient clinics. The survey inquired about the rate and frequency of the performance of BSE, CBE, mammography and UI; personal and family history of breast cancer and social-demographic characteristics of the women.

Results: The mean age was 40.08 (SD: 3.67). More than half of the women above 40 years of age (59.7 %) had never undergone mammography. 99.8 % of the women who had undergone mammography had also received ultrasound imaging. A significant relationship was identified between the BSE performance and having mammography. 57.4% of the women above 40 years of age (117) had UI, 53.9% (110) had CBE and 57.3% (117) performed BSE. There was a significant relationship between the age, education status and regular BSE; positive family history of BC and having CBE and mammography.

Conclusion: The results reveal that the rate of BSE performance, having mammography and CBE are at less-than-ideal levels. In this context, it is apparent that breast cancer screening methods are needed to be introduced and guidance about their application frequency should be provided for women in gynecology outpatient clinics.

Keywords: Breast cancer, mammography, breast self-exam, clinical breast exam, ultrasound imaging

Introduction

Breast cancer accounts for more than one million cases globally per year; it is the most frequently diagnosed type of cancer among the women. Also it ranks the first among reasons for death among patients (1). It is the cancer type with the highest incidence rate among women in the United States of America and ranks the second among reasons for death (2).

In Turkey, breast cancer incidence is 45.9/100000. One out of every four cancer cases diagnosed in the year 2013 is breast cancer. It is seen that 45% of patients diagnosed with breast cancer in Turkey are aged 50-69 while 40% are in the age range of 25-49 years. Regarding the breast cancer stages, only 10% of invasive cases in the database are in the distant stage (3).

The fact that it is a frequently seen type of cancer and ranks the first among reasons for death of patients demonstrates how important the breast cancer screening programs are. A practicable and effective screening program may reduce morbidity and cancer-related deaths. There are several studies reporting that screening mammography and regularly conducted breast self-examinations (BSE) decrease breast cancer-related mortality (4-7).

The aim of breast cancer screening is to capture malignancy at the early phase before any clinical signs occur; mortality reduction is thus achieved (8). However, the current protocols indicating the age when screening should start and the frequency with which it should be

maintained and when it should be ended vary among countries and per individual risk status.

Mammography ranks the first among the imaging methods used for breast cancer screening. Breast ultrasonography (USG), breast magnetic resonance imaging (MRI), tomosynthesis and molecular imaging are often used as methods that aid in mammography. Furthermore, an important step of screening includes clinical breast exam (CBE) and breast self-exam (BSE).

The aim of this study is to identify the behaviors of women aged between 16-80 presenting to the gynecology outpatient clinic to undergo mammography, breast USG, CBE and perform BSE as part of early breast cancer diagnosis methods, to determine their frequency of implementing these methods and to demonstrate their correlations with the socio-demographic characteristics of women. Another aim of the study is to emphasize the important role of gynecologists and obstetricians in ensuring that early breast cancer diagnosis methods are known and applied by the patients.

Materials and Methods

This study, which was defined as a descriptive study, was conducted at the Istanbul Medeniyet University Göztepe Research and Training Hospital gynecology outpatient clinic between May-July, 2016. Approval was obtained from the Istanbul Medeniyet University Faculty of Medicine ethics committee to be able to conduct this study. 429 women aged between 16 and 80 presenting to the gynecology outpatient clinic and were examined, who volunteered to participate, were included in the study. The study data were obtained by receiving responses to a questionnaire with 11 questions by means of face-to-face interview conducted by the examining physician after the informed consent forms were signed by the women. The women were asked about which methods they perform among mammography, breast USG, clinical breast exam and breast self-exam and the frequency at which they perform them, presence of breast cancer in them and their family as well as demographic characteristics such as age, menopause, profession and education.

Statistical analysis

The data obtained were analyzed using the Statistical Package for the Social Sciences (SPSS) version 22 statistics software (IBM Corp.; Armonk, NY, USA). To analyze the data, the percentage distributions and Fisher (Fisher's Exact Test) t-test, Chi-square test and logistic regression model were used.

Results

In total, 429 people took part in the study. Two people in the study were 77 and two people were 79 years old. The ages of these people were higher than the other patients participating in the study. The average age of study participants was 40.08 and standard deviation was 13.67. The median age was 39 and the age range was 16-79. 332 people were not in menopause and 97 people (23%) were in the post-menopausal period. Among the patients who took responded to the questionnaire, 336 people (78%) were not working while 84 people (20%) were working. Six people (2%) were retired. 276 people among the questionnaire respondents (64%) were primary school graduates constituting the biggest group. It was learned that 11.7% of the patients had relatives with breast cancer in their family. 8% (35) reported that they had 1st degree relatives with breast cancer and 3% (13) re-

Socio-demographic characteristics	(n)	(%)
Age Group		
<40 years	221	51.5
40-49 years	111	25.9
50-59 years	50	11.7
60-69 years	34	7.9
>70 years	13	3.0
In menopause		
Not in menopause	332	77
Post-menopause	97	33
Occupation		
Unemployed	339	79
Employed	84	19.6
Retired	6	1.4
Educational Status		
No Education	19	4.4
Primary School	276	64.3
High School	69	16.1
University	64	14.9
Master	1	0.2
Breast Cancer Patient		
Yes	4	0.9
No	425	99.1
Breast Cancer in Family		
Yes	50	11.7
No	379	88.3
Total	429	100

Table 1. Patients' socio-demographic characteristics

ported that they had 2nd degree relatives with breast cancer. The socio-demographic characteristics of patients are provided in Table 1. 4 of the patients (0.9%) that took part in the study were diagnosed with breast cancer. These women were not included in the investigation for their behaviours related to early breast cancer diagnosis methods.

The distribution of women according to their performance of undergoing mammography, breast ultrasonography, CBE and BSE is provided in Table 2 as per their age group.

Based on the latest gynecological examination date, it was learned that 57.3% of women (240) above the age of 40 had mammography scan at least once in their life while 42.7% of them (87) never underwent mammography. The data according to the last date of mammography scan are given in Table 3. It was seen that 99.8% of women undergoing mammography had received breast USG. Furthermore, it was identified that 93.5% of patients undergoing mammography received CBE. A statistically significant relationship was found between the status of undergoing mammography and BSE (p=0.000). According to the

Table 2. Distribution of mammography, breast USG, CBE and BSE according to the age groups

Age Group	Mammography		Breast USG		CBE		BSE	
	Yes n (%)	No n (%)	Yes n (%)	No n (%)	Yes n (%)	No n (%)	Yes n (%)	No n (%)
<40 years	44 (19.9)	177 (80.1)	42 (19.0)	179 (81.0)	42 (19.0)	179 (81.0)	93 (42.1)	128 (57.9)
40-49 years	55 (50.5)	55 (50.5)	55 (50.5)	55 (50.5)	53 (48.6)	56 (51.4)	59 (54.1)	50 (45.9)
50-59 years	37 (75.5)	12 (24.5)	37 (75.5)	12 (24.5)	35 (71.4)	14 (28.6)	31 (63.3)	18 (36.7)
60-69 years	21 (61.8)	13 (38.2)	21 (61.8)	13 (38.2)	18 (52.9)	16 (47.1)	21 (61.8)	13 (38.2)
>70 years	4 (33.3)	8 (66.7)	4 (33.3)	8 (66.7)	4 (33.3)	8 (66.7)	6 (50.0)	6 (50.0)
Total	161 (37.9)	264 (62.1)	159 (37.4)	266 (62.6)	152 (35.8)	273 (64.2)	210 (49.4)	215 (50.6)

USG: ultrasonography; CBE: clinical breast exam; BSE: breast self-exam

Table 3. Last date of undergoing mammography according to the women's age groups

Mammography Date	<40 years	40-49 years	50-59 years	60-69 years	>70 years	Total
No	177	54	12	13	8	264
2016	6	7	5	2	1	21
2015	14	24	9	10	0	57
2014	10	11	12	1	0	34
2013	5	6	3	2	0	16
2012	0	2	1	0	0	3
2011	2	0	0	1	1	4
5-10 years	7	4	6	4	2	23
11-15 years	0	0	1	0	0	1
16-20 years	0	1	0	1	0	2
Total	221	109	49	34	12	425

Table 4. Last date of undergoing breast ultrasound according to the women's age groups

Ultrasound Scan Date	<40 years	40-49 years	50-59 years	60-69 years	>70 years	Total
No	179	54	12	13	8	266
2016	4	7	5	2	0	18
2015	14	24	9	10	1	58
2014	10	11	12	1	0	34
2013	5	6	3	2	0	16
2012	0	2	1	0	0	3
2011	2	0	0	1	1	4
5-10 years	7	4	6	4	2	23
11-15 years	0	0	1	0	0	1
16-20 years	0	1	0	1	0	2
Total	221	109	49	34	12	425

Table 5. Last dates of undergoing clinical breast examination (CBE) according to the women's age groups

CBE Date	<40 years	40-49 years	50-59 years	60-69 years	>70 years	Total
No	179	56	14	16	8	273
2016	6	7	4	0	0	17
2015	15	25	9	7	1	57
2014	7	9	11	2	0	29
2013	4	5	3	2	0	14
2012	1	1	1	0	0	3
2011	0	0	0	2	1	3
5-10 years	9	5	6	4	2	26
11-15 years	0	0	1	0	0	1
16-20 years	0	1	0	1	0	2
Total	221	109	49	34	12	425

CBE: clinical breast exam

logistic regression analysis performed, it was identified that one unit of increase in the women's age increased their chance of undergoing mammography by 5.6% (p value<0.01).

Based on the date of the latest gynecological examination, it was found that 57.4% of women above the age of 40 (117) received mammography at least once in their lives while 42.6% (87) never received breast USG. The data according to the date of the latest breast ultrasound are specified in Table 4.

Based on the date of the latest gynecological examination, 53.9% of women above the age of 40 (110) underwent CBE at least once while 46.1% (94) never received CBE. The data according to the last date when a clinical breast examination was performed are specified in Table 5. It was determined that one unit of increase in the women's age increased the chance of undergoing clinical examination by 5.5% with all the other variables being unchanged (p<0.01).

Based on the date of the latest gynecological examination, it was identified that 49% of all women (210) and 57.3% of women above the

Table 6. Women's status of performing breast self-exam (BSE) according to their age groups

BSE Frequency	<40 years	40-49 years	50-59 years	60-69 years	>70 years	Total
None	128	50	18	13	6	215
Every Day	3	2	0	0	0	5
Twice a week	7	7	6	4	0	24
Once a week	18	12	6	10	1	47
Once a month	42	22	12	5	5	86
Once every 1-3 months	2	2	0	0	0	4
Once every 3-6 months	10	11	3	1	0	25
Once a year	11	3	4	1	0	19
Total	221	109	49	34	12	425

BSE: clinical breast exam

Table 7. Multivariate analysis results explaining the relationship between breast cancer early diagnosis methods and socio-demographic characteristics

Breast Cancer Early Diagnosis Methods and Characteristics	p	OR	95% CI
Mammography			
Age	0.000*	1.056	1.029-1.085
Education	0.963	1.007	0.759-1.336
Family History of Breast Cancer	0.037*	1.965	1.041-3.707
CBE			
Age	0.000*	1.055	1.027-1.084
Education	0.678	0.941	0.707-1.253
Family History of Breast Cancer	0.012*	2.261	1.200-4.261
BSE			
Age	0.003*	1.038	1.013-1.064
Education	0.003*	1.498	1.148-1.955
Family History of Breast Cancer	0.314	1.382	0.736-2.595

OR: odds ratio; CI: confidence interval; CBE: clinical breast exam; BSE: breast self-exam; *: significant at the level of 0.05

age of 40 performed BSE. 11.2% of those performing BSE remarked that they were performing examinations regularly on a weekly basis. The largest group among patients performing BSE (20%) was those who stated that they did it once a month. The data according to the last date when a BSE was performed are specified in Table 6. It was found that one unit of increase in the women's age increased their possibility of performing BSE by 3.8% (p value=0.03). Furthermore, a significant relationship was also identified between their educational background and BSE (p value=0.003). It was found that having family history of breast cancer increased the possibility to undergo mammog-

raphy by 9.65% (p value=0.037). No significant relationships were identified between the educational background of women and their status of undergoing mammography (p=0.96). It was found that the chance of a women with no family members with breast cancer to undergo a clinical examination was 2.26 times higher than that of a person who does not have a family member with breast cancer (p=0.037). The data are provided in Table 7.

Discussion and Conclusion

Similarly to the European countries and the USA, breast cancer is the most frequently diagnosed type of cancer in Turkey (2, 3, 9). It is well known that breast cancer-related deaths can be reduced if the disease is diagnosed early and an effective treatment is administered (4, 10). The effectiveness of a screening program provides information on the level of development of countries. While breast cancer is diagnosed at an early stage in developed countries (Stages 0 and 1), it is made at later stages in developing countries (11). For that reason, it is extremely critical to conduct a cost-effective and sufficient screening program and raise the awareness of healthcare professionals.

Mammography for screening purposes is performed on women with no complaints, signs and symptoms. There are differences among countries in terms of the time to start screening by mammography. American Congress of Obstetricians and Gynecologists (ACOG) recommends that screening start at the age of 40 (12). According to the breast cancer screening program national standards, it is recommended that screening mammography be performed in women aged between 40-69 once every 2 years (13).

Based on the latest gynecological examination date, it was learned that 57.3% of women above the age of 40 had mammography scan at least once in their lives. While the rate of undergoing mammography in the USA is 72.4%, this rate is 34.2% in Japan (14-16). In Turkey, a study conducted on women attending the educative meeting found that the ratio of women above the age of 40 undergoing at least once in their lives was 40.6%, another community-based study found that the ratio of undergoing mammography within the last two years was 41.6% (17, 18). In our study, the rate of undergoing mammography was found low as compared to developed countries and high as compared to the average rate in Turkey. Considering that all women aged between 40-69 need to be included in a screening program, the number of women undergoing mammography is still insufficient according to the data in our study. The gynecologists and obstetricians informing and guiding women who present for a gynecological examination with regards mammography would greatly increase the number of women included in the scope of screening programs.

93.5% of women undergoing mammography had CBE. In a study from Turkey, this ratio was 6.2% (19). It is seen that the majority of patients undergoing mammography present to the clinic and are thus included in the screening program.

A significant relationship was found between the presence of breast cancer in the family and the rate of undergoing mammography. However, it was determined that no statistically significant difference existed between educational background and undergoing mammography. Two separate studies conducted in the urban and rural areas in Turkey identified that the rate of undergoing mammography was not significantly influenced by the educational background in a way similar to our study (20, 21). In another study, it was stated that women with a higher educational level underwent mammography more often (18).

Breast USG is not one of the primary diagnostic methods for breast cancer screening. It is preferred for the diagnostic assessment of masses palpated during examination or identified during mammography. There is very limited scientific evidence supporting the primary use of ultrasound for breast cancer screening in any age group (22). In our study, it was found that 99.8% of women undergoing mammography received breast ultrasound. It has been understood that almost all of the women undergoing mammography had received ultrasound.

Clinical breast exam is not a screening modality per se; it is administered in conjunction with mammography. ACOG recommends that clinical breast examination be performed once every 1-3 years for women aged between 20-39 and every year after the age of 39 (12). According to the national screening standards, women above the age of 20 are recommended to undergo clinical breast examination once every two years and women above 40 once a year (23). In our study, it was found that 53.9% of women above the age of 40 underwent CBE at least once while 46.1% (94) never received CBE in their lives based on the date of the latest gynecological examination. In Sinop, a study conducted with patients presenting to a secondary care hospital found that the ratio of women undergoing CBE was 24% (24). A study conducted with female members of faculty reported that 20.9% of the participants received CBE (25). Another study stated that 32.9 of women received CBE (19). In Turkey, the perception about breast cancer screening in general is concentrated on mammography, which starts as of the 40s. It was determined in our study that 81% of women (179) below the age of 40 never had CBE. Similarly to our study, it is seen in studies conducted elsewhere than Turkey that a significant part of women do not know the importance of CBE for themselves with respect to breast cancer screening (19, 24).

American Congress of Obstetricians and Gynecologists recommends BSE to the patients in the high risk group rather than the general population (12). BSE has certain limitations; today, it is considered as an auxiliary method for essential breast cancer screening methods (26, 27). There are several studies from the past mentioning the effectiveness of BSE and the requirement to recommend its administration (6, 28, 29). It is a economical method that is easy to implement and keeps the patients' awareness alive. It may be considered that patients performing BSE would also be willing to undergo mammography. Based on the date of the latest gynecological examination, it was identified that 49% of all women (210) and 57.3% of women above the age of 40 performed BSE. The largest group among women performing BSE (20%) was those who stated that they did it once a month. The other studies conducted in Turkey specified the rates of performing BSE regularly every month as 24%-56.6% (19, 30, 31). In two different studies conducted in Nigeria with patients and teachers presenting to a tertiary care hospital, the rates of performing BSE were 62.1% and 54.8% (32, 33). It was found in our study that the age and educational levels of women were directly proportional to their possibility to perform BSE. A study investigating the educational levels of women and their status of performing BSE found a positive relationship between a high educational level and performing BSE (34). In that case, raising the educational level of women increases their awareness, thereby facilitating their adoption of methods for protecting against breast cancer.

The fact that breast cancer is the type of cancer with the highest rate of incidence in the female population has an important role in the practice of gynecology. In Turkey, breast diseases are in the scope of training and practices of gynecology and obstetrics. However, it is required that patients which present to a gynecology outpatient clinic for any reason be informed about the breast cancer modality they should perform and the frequency thereof. Thereby, the malignant diseases of the breast that do not lead to any complaints, signs and symptoms can be captured at an early phase to reduce morbidity and mortality. Within this framework, gynecologists and obstetrics have important roles to play.

Our study was conducted at a tertiary care reference hospital providing healthcare services to people from every socioeconomic group. Important data about the types of breast cancer screening methods and the frequencies thereof have been provided for the literature. Furthermore, the important role of gynecologists and obstetricians in the implementation of a breast screening program based on the principle of a holistic approach to the patient has been demonstrated.

References

1. Globocan 2012. Fast Stats. Most frequent cancers: both sexes. (Accessed on December 12, 2013). Available from: URL: http:/ www.uptodate.com

2. Siegel RL, Miller KD, Jemal A, Cancer statistics, 2016. CA Cancer J Clin 2016; 66: 7-30. [CrossRef]

3. Türkiye Halk Sağlığı Kurumu-Kanser Daire Başkanlığı. Available from: http://kanser.gov.tr/daire-faaliyetleri/kanser-istatistikleri/1793-2013-yılı-türkiye-kanser-istatistikleri.html.

4. Njor S, Nyström L, Moss S, Paci E, Broeders M, Segnan N, Lynge E. Breast cancer mortality in mammography screening in Europe: a review of incidence- based mortality studies. J Med Screen 2012; 19: 33-41. (PMID: 22972809) [CrossRef]

5. Myers ER, Moorman P, Gierisch JM, Havrilesky LJ, Grimm LJ, Ghate S, Davidson B, Mongtomery RC, Crowley MJ, McCrory DC, Kendrick A, Sanders GD. Benefits and Harms of Breast Cancer Screening: A Systematic Review. JAMA 2015; 314: 1615. (PMID: 26501537) [CrossRef]

6. Pillay AL. Rural and urban South African women's awareness of cancer of the breast and cervix. Ethn Health 2002; 7: 103-114. (PMID: 12511197) [CrossRef]

7. Underwood SM. Breast cancer in African American women: Nursing Essentials. ABNF J 2006; 17: 3-14. (PMID: 16596895).

8. Arda Kayhan, Erkin Arıbal. Meme Kanseri Taraması neden Yapıyoruz? Ne Zaman? Değerlendirmede Yaşanan Sorunlar. Trd Sem 2014; 2: 230-240. [CrossRef]

9. Ferlay J, Steliarova-Foucher E, Lortet-Tieulent J, Rosso S, Coebergh JW, Comber H, Forman D, Bray F. Cancer incidence and mortality patterns in Europe: estimates for 40 countries in 2012. Eur J Cancer 2013; 49: 1374-1403. (PMID: 23485231) [CrossRef]

10. Berry DA, Cronin KA, Plevritis SK, Fryback DG, Clarke L, Zelen M, Mandelblatt JS, Yakovlev AY, Habbema JD, Feuer EJ. Effect of screening

and adjuvant therapy on mortality from breast cancer. N Engl J Med 353: 1784-1792. (PMID: 16251534) [CrossRef]

11. Anderson BO, Braun S, Carlson RW, Gralow JR, Lagios MD, Lehman C, Schwartsmann G, Vargas HI. Overview of breast health care guidelines for countries with limited resources. Breast J 2003; 9: 42-50 (PMID: 12713496) [CrossRef]

12. American College of Obstetricians-Gynecologists. Practice bulletin no. 122: Breast cancer screening. Obstet Gynecol 2011; 118: 372-382. (PMID: 21775869) [CrossRef]

13. Türkiye Halk Sağlığı Kurumu-Kanser Daire Başkanlığı. http://kanser.gov.tr/ /Dosya/tarama/meme.pdf

14. Tsuchida J, Nagahashi M, Rashid OM, Takabe K, Wakai T. At what age should screening mammography be recommended for Asian women? Cancer Med 2015; 4: 1136-1144. (PMID: 25914223) [CrossRef]

15. National Cancer Center. Center for Cancer Control and Information Services. Estimation of cancer incidence Available from URL: http://ganjoho.jp/reg_stat/statistics/stat/screening_p01.html. Accessed 5 Apr 2015.

16. Uematsu T. The need for supplemental breast cancer screening modalities: a perspective of population-based breast cancer screening programs in Japan. Breast Cancer 2017; 24: 26-31. (PMID: 27259342) [CrossRef]

17. Dişcigil G, Şensoy N, Tekin N, Söylemez A. Breast health: knowledge, behaviour and performance in a group of women living in the Aegean region. Marmara Medical Journal 2007; 20: 29-36

18. Ozmen V, Nilüfer Ozaydin A, Cabioglu N, Gulluoglu BM, Unalan PC, Gorpe S, Oner BR, Aribal E, Thomas DB, Anderson BO. Survey on a mammographic screening program in Istanbul, Turkey. Breast J 2011; 17: 260-267. (PMID: 21450016) [CrossRef]

19. Açıkgöz A, Çehreli R, Ellidokuz H. Determination of knowledge and behavior of women working at a hospital on breast cancer early detection methods, and investigation of efficiency of planned education. Eur J Breast Health 2015; 11: 31-38. [CrossRef]

20. Dündar PE, Özmen D, Öztürk B, Haspolat G, Akyıldız F, Coban S, Cakiroglu G. The knowledge and attitudes of breast self-examination and mammography in a group of women in a rural area in western Turkey. BMC Cancer 2006; 6: 43. (PMID: 16504119) [CrossRef]

21. Seçginli S, Nahcivan NO. Factors associated with breast cancer screening behaviours in a sample of Turkish women: a questionnaire survey. Int J Nurs Stud 2006; 43: 161-171. (PMID: 16427965) [CrossRef]

22. Teh W, Wilson AR. The role of ultrasound in breast cancer screening. A consensus statement by the European Group for Breast Cancer Screening. Eur J Cancer 1998; 34: 449-450. (PMID: 9713292) [CrossRef]

23. Türkiye Halk Sağlığı Kurumu-Kanser Daire Başkanlığı http://kanser.gov.tr/Dosya/Kitaplar/turkce/DunyadaveTurkiyedeMamografiProgramlari.pdf

24. Koç Z, Sağlam Z. Determination of the knowledge and the practice of female patients about breast cancer, preventive measures and breast self examination and effectiveness of education. Eur J Breast Health 2009; 5: 25-33.

25. Ekici E, Utkualp N. Women instructors behaviors towards breast cancer. Eur J Breast Health 2007; 3: 136-139.

26. Thomas DB, Gao DL, Ray RM, Wang WW, Allison CJ, Chen FL, Porter P, Hu YW, Zhao GL, Pan LD, Li W, Wu C, Coriaty Z, Evans I. Randomized trial of breast self-examination in Shanghai: final results. J Natl Cancer Inst 2002; 94: 1445-1457. (PMID: 12359854) [CrossRef]

27. World Health Organization. Breast cancer: prevention and control; 2015; Available from: URL: http:/ www.uptodate.com

28. Dorsay RH, Cuneo WD, Somkan CP, Tekawa IS. Breast self-examination: improving competence and freguency in a classroom setting. Am J Public Health 1988; 78: 520-522. (PMID: 3354734) [CrossRef]

29. Gastrin G, Miller AB, To T, Aronson KJ, Wall C, Hakama M, Louhivuori K, Pukkala E. Incidence an mortality from breast cancer in the mama program for screening in Filland, 1973-1986. Cancer 1994; 73: 2168-2174. (PMID: 8156521) [CrossRef]

30. Şen S, Başar F. Breast cancer and breast self examination knowledge of women who live in Kutahya region. Eur J Breast Health 2012; 8: 185-190.

31. Kabataş MS, Kızıl H, Duman D. Evaluation on information, attitude and behavior about breast cancer and breast self- examination (bse) of female teachers. Eur J Breast Health 2010; 6: 150-155.

32. Ogunbode AM, Fatiregun AA, Ogunbode OO. Breast self examination practices in Nigerian women attending a tertiary outpatient clinic. Indian J Cancer 2015; 52: 520-524. (PMID: 26960493) [CrossRef]

33. Kayode FO, Akande TM, Osagbemi GK. Knowledge, attitude and practice of breast self examination among secondary school teachers in Ilorin, Nigeria. Eur J Sci Res 2005; 10: 42-47.

34. Gürdal SÖ, Saraçoğlu GV, Oran EŞ, Yankol Y, Soybir GR. The Effects of Educational Level on Breast Cancer Awareness: A Cross-Sectional Study in Turkey. Effects of Educational Level on Breast Cancer Awareness: A Cross-Sectional Study. Asian Pac J Cancer Prev 2012; 13: 295-300. (PMID: 22502688) [CrossRef]