

RESEARCH ARTICLE

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Evaluation Knowledge, Attitude, and Behaviour for Breast Cancer among Young Women Living in Two Different Habitats of Turkey

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Abstract

Background: Breast cancer is the most frequently diagnosed cancer among women in Turkey and worldwide, and is ranked as the second-leading cause of death in women after lung cancer. Early diagnosis of breast cancer is possible, and breast cancer is included in cancer-screening programs in Turkey. The aim of this study was to evaluate the knowledge, attitude, and behaviour of young women (older than 20 years of age) on breast self-examination and breast cancer screening methods, and to determine the effect of sociodemographic characteristics. **Methods:** A total of 489 patients were included in the study. The mean age of participants was 36.53 ± 11.22 years. 346 (70.8%) of the participants were married. The study was a cross-sectional, non-randomized study in public health. The participants in this study were women over 20 years old, who presented to Arnavutkoy State Hospital General surgery polyclinic and Sisli Hamidiye Etfal Family Medicine polyclinic. **Results:** The rate and duration of breastfeeding were higher among participants living in rural areas than those living in urban areas ($p < 0.001$). The awareness of breast cancer increased as the level of education increased ($p < 0.001$). Having a family history of a high incidence of breast cancer significantly increased the rate of breast self examination practice by 1.93 fold ($p = 0.016$). **Conclusion:** Breast Cancer is a disease that can be treated 100 % with early diagnosis. Primary care physicians especially works in lower socioeconomic conditions have to tell the importance of early diagnosis of breast cancer, and properly explain breast self examination and other screening tools.

Keywords: Breast cancer- breast self examination- cancer screening

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Introduction

Breast cancer is the most frequently diagnosed cancer among women in Turkey and around the world, and is ranked as the second-leading cause of death in women after lung cancer. Early diagnosis of breast cancer is possible, and this type of cancer is included in cancer screening programs in Turkey. Mammography, breast ultrasonography, breast self-examination (BSE) and are clinical examination used in the screening programs (Turkish Public Health Institution Directorate of Cancer., 2016).

Cancer may cause social, financial, and emotional difficulties, in addition to physical difficulties. According to World Health Organization data, 14.1 million newly-diagnosed cases of breast cancer occurred worldwide in 2012. 57% of the patients diagnosed with breast cancer and 65% of those who died from breast cancer lived in developing countries (American College of Surgeons., 2014 Clinical Congress).

A major risk factor for breast cancer is long-term

exposure to estrogen. Pregnancy before 35 age, multiple pregnancies and breastfeeding reduce the risk. Late menarche and early menopause also decrease the risk of breast cancer (Key et al., 2001). Breast cancer shows genetic transition in 5–10% of patients, and up to 15% of patients indicate a familial predisposition to the disease. 7% of breast cancer cases are diagnosed before the age of 40. The survival time for cancer patients has increased with the modern treatment methods developed in recent years. Breast cancer can be diagnosed early by screening with many methods. Early diagnosis, tumor progression and age are the most important factors affecting survival in patients with breast cancer.

The aim of this study was to evaluate the knowledge, attitudes and behaviours of women older than 20 years of age on BSE and breast cancer screening methods, and to determine the effect of sociodemographic characteristics on these parameters.

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Materials and Methods

The participants in this study were women over 20 years old who presented to Arnavutkoy State Hospital General surgery polyclinic and Sisli Hamidiye Etfal Family Medicine polyclinic between July 1, 2017 and September 30, 2017. A questionnaire was used to identify the sociodemographic characteristics of these participants and their knowledge, attitudes and behaviours regarding breast cancer and screening methods. In turkey, montly minimum income is 1,600 Turkish liras (about 570 USD). This amount is taken from Turkish Statistical Institute. The valid and reliable Champion's Health Belief Model Scale for breast cancer (CHBMS) was used.

Adaptation of Champion's Health Belief Model Scale for Turkish women and used for breast cancer screening in Turkey was developed in 2007 on the basis of the health belief model, to measure beliefs about breast cancer and screening methods (Karayurt et al., 2007). CHBMS is composed of 6 sections with 42 items in total. The sections "Susceptibility" (3 items), "Seriousness" (7 items) and "Health-Motivation" (7 items) assess the individual's judgment about breast cancer and general health, and the remaining sections of "Benefit" (4 items), "Barrier" (11 items) and "Confidence and self-efficacy" (10 items) concern BSE.

On a five-point Likert-type scale, each item was scored from 1 to 5, with scores varying according to responses. The minimum possible score was 42, and the maximum possible score was 210. A higher score indicates increased sensitivity and attention, the benefits of perception and the obstacles for perception are perceived as high.

Participants from Sisli were categorized as urban, and those from Arnavutköy were categorized as a rural. The education levels of the participants were categorized as high or low, according to the level graduated. A middle school diploma or lower (education ≤ 8 years) was categorized as a low level of education, and higher diplomas or degrees (education > 8 years) were categorized as a higher level of education.

The results of patients' mammography or breast ultrasound in the last one year were evaluated. Ethical approval was provided by Sisli Hamidiye Etfal Ethical committee

Patients who had previously been diagnosed with breast cancer, patients under regular follow-up for any type of breast disease and those with a history of surgery due to a breast mass were excluded from the study.

Data Analysis

Data were analysed using SPSS version 19.0 to determine mean, standard deviation and frequency, and for the Kolmogorov-Smirnov test (to assess the distribution of the variables), the independent sampling t-test and the Mann-Whitney U test (for quantitative data), chi-square test (for qualitative data) and Pearson and Spearman correlation analyses.

Results

A total of 489 patients were included in the study. The

mean age was 36.53 ± 11.22 years (range, 20–68 years). 346 (70.8%) of participants were married, 118 (24.1%) were single and 25 (5.1%) were widows. 69 (14%) participants were illiterate, 144 (29%) were elementary school graduates, and 76 (15%) were high school graduates. The number of patients with a monthly income of ≤ 570 american dolar was 299 (61.2%) The distribution of the demographic data is shown in Table 1.

Of the 489 participants, 76 (15.5%) experienced menarche before the age of 12 years, 172 (35.2%) were nulliparous and 27 (5.5%) had given first birth after the age of 30 years. 178 (37%) of the participants did not breastfeed their babies, and 150 (30.7%) breastfed their babies for less than two years (Table 2). The rate of breastfeeding and the duration of breastfeeding were significantly higher ($p < 0.001$). Among those living in rural areas than those living in urban areas. Table 2 shows the distribution of menarche, age at time of first birth and breastfeeding status of the participants

44 (9%) of the participants had never heard about breast cancer; however, participants who had previously been diagnosed as having some type of cancer other than breast cancer were significantly more knowledgeable about breast cancer ($p = 0.004$). 86 (17.6%) of the participants did not know about the possibility of early diagnosis, and 25 participants believed that breast cancer was incurable (Table 3). The awareness of breast cancer and knowledge about the likelihood of treatment were higher in participants from urban areas than for those in rural areas (Table 3).

Breast cancer awareness was significantly higher ($p < 0.001$) in participants who had a higher level of education. It was also higher in married participants compared with those who were single or widowed ($p = 0.003$), and in participants > 40 years old compared with 40 and younger age ($p < 0.001$).

Among the participants, BSE was considered the first method to be used for early diagnosis; 347 (71%) of the participants described the primary symptom as a palpable mass. A family history of breast cancer was the first-ranked risk factor based on the knowledge of the participants ($n = 372$; 76%). Participants' knowledge of early-diagnostic

Table 1. Demographic Datas

	Rural	Urban	p
Patients	n=302	185	
Median age (years)	38.25 ± 11.405 (range, 20-67)	33.76 ± 10.43 (range, 20-68)	0
Marital status			
Married	248 (82.1%)	Married: 98 (52.4%)	
Single	Single: 39 (12.9%)	Single: 79 (42.2%)	0
Widow	Widow: 15 (5%)	Widow: 10 (5.3)	
Education			
Low	198 (65.6%)	15 (8%)	0
High	104 (34.4%)	172 (92%)	
Monthly income			
Less than 570\$	238 (78.8%)	61 (32.6%)	0
Over than 570 \$	64 (21.2%)	126 (67.4%)	

Table 2. Etiologic Factors of the Patients

	Rural		Urban		p
	n	%	n	%	
Age of menarche					
< 12 years	42	13.9	34	18.2	0.248
≥ 12 years	260	86.1	153	81.2	
Giving Birth					0.000*
Nulliparous	65	21.5	107	57.2	
< 30 years	232	76.8	58	31	
≥ 30 years	5	1.7	22	11.8	
Breast-feeding					0.000*
No breast-feeding	72	23.8	111	59.4	
< 2 years	88	29.1	62	33.2	
≥ 2 years	142	47	14	7.5	

Table 3. Knowledge about Breast Cancer

	Rural		Urban		p
	n	%	n	%	
Is early diagnosis possible?					
Yes	223	73.8%	180	96.3%	
No	79	26.2%	7	3.7%	0.000*
Is breast cancer a curable disease?					
Yes	280	92.7%	184	98.4%	
No	22	7.3%	3	1.6%	0.005*

tools and risk factors are shown in Table 4.

The number of participants who perform regular BSE was very low (n=80;16.3%). Only 119 (24.3%) of the participants had contacted a physician for a breast examination in the last two years, and 88(18%) had regular gynecologic examinations (Table 5). The percentages of those having regular gynecological examinations and performing BSE were very low among women living in both rural and urban areas (p>0.05) (Table 5).

Data from the CHBMS revealed that the belief of the benefit and reliability of BSE and their confidence to properly perform the BSE were low among participants who presented to the clinic in rural, and their perception of sensitivity and attention to breast cancer was higher than those of participants who presented to the clinic in urban. The health motivation of participants who presented to Sisli was higher than that of participants at Arnavutköy (Table 6). There was no difference in the average of the scores from the questionnaire based on marital status or

Table 4. Tools for Early Diagnosis-Risk Factors

	Rural		Urban	
	n (%)	n (%)	n (%)	n (%)
How can breast cancer be diagnosed in the early period ?				
Breast self-examination	189 (62.6)	151 (80.7)		
Physician's examination	166 (55.5)	120 (60.4)		
Mammography	126 (41.7)	126 (67.4)		
Ultrasonography	117 (38.7)	84 (44.9)		
Other	-	7 (3.7)		
Symptoms?				
No symptom	7 (2.3)	10 (5.3)		
Pain	18 (6)	19 (10.2)		
Palpable mass	189 (62.6)	162 (86.6)		
Discharge from the nipple	9 (3)	21 (11.2)		
Deformation in the breast	10 (3.3)	14 (7.5)		
Factors increasing the risk				
Breast cancer history in the family	191 (63.2)	181 (96.8)		
Not breast-feeding	117 (38.7)	76 (40.6)		
Nulliparity	96 (31.8)	62 (33.2)		
Ovarian cancer history in the family	34 (11.3)	42 (22.5)		
Older patients (age)	28 (9.3)	7 (3.7)		
Giving birth after age 30 years	37 (12.3)	42 (22.5)		
Drinking alcohol	10 (3.3)	9 (4.8)		
Intestinal cancer history in the family	7 (2.3)	10 (5.3)		
Menopause after age 55 years	11 (3.6)	33 (19.3)		
Menarche before age 12 years	20 (6.6)	27 (14.4)		

the place of residency. However, the total scores were higher for those who had higher levels of education and income, those who had breast cancer, those with a family history of breast cancer, those who regularly perform BSE and those who believed that breast cancer was treatable (p>0.05).

Evaluation of the sub-groups of CHBMS revealed that susceptibility was higher among married participants in rural areas, those who were less educated and had low income levels and those with a family history of breast cancer. Seriousness was higher among participants living in rural areas, those with less education and those with lower incomes than among those living in urban areas, those with greater education and those with higher incomes, respectively. Conversely, benefit was found to be higher among the participants who were living in urban areas, those older than 40 years of age, those with a higher level of education, those with high income, those who had

Table 5. Practice of Breast Self-Examination-Gynecologic and Breast Examination

	Rural		Urban	
	n	(%)	n	(%)
Breast self-examination				
I have never done before	82	27.2	38	20.3
I sometimes do	167	55.3	122	65.2
I regularly do (monthly)	53	17.5	27	14.4
Regular gynecologic examination (every year)	38	12.6	50	26.7
Visit physician for breast examination in last 2 years	67	22.2	52	27.8

Table 7a. Breast Self Examination Status

	B	Sig.	Exp (B)	95.0% C.I.for EXP(B)	
				Lower	Upper
Susceptibility	0.041	0.495	1.042	0.927	1.171
Seriousness	-0.002	0.927	0.998	0.948	1.05
Benefit	0.232	0	1.261	1.119	1.421
Barrier	-0.031	0.189	0.97	0.927	1.015
Confidence-self-efficacy	0.059	0.001	1.061	1.025	1.098
Health-Motivation	-0.081	0.012	0.922	0.865	0.982

Table 7b. Breast Self Examination Status

	B	Sig.	Exp (B)	95,0% C.I.for EXP(B)	
				Lower	Upper
Marital status	-0.376	0.269	0.687	0.353	1.337
Age	-0.191	0.503	0.826	0.473	1.444
Income	-0.217	0.473	0.805	0.444	1.458
Family anamnesis	0.658	0.016	1.93	1.129	3.3
Awareness of breast cancer	-0.756	0.176	0.47	0.157	1.404
Place of residency	-0.201	0.504	0.818	0.454	1.474
Education	-0.19	0.437	0.827	0.511	1.3

knowledge about breast cancer and regularly perform BSE and those who was think that breast cancer could be treated ($p < 0.05$). Barrier, confidence and self-efficacy and health motivation were significantly related to all other parameters ($p < 0.05$) (Table 6). Barrier was higher in those living in rural areas, those more than 40 years old, those with lower education and income levels, those who do not know about breast cancer and those who think that there is no cure for breast cancer.

Confidence and self-efficacy were higher in those who were from urban areas single less than 40 years of age, and a family history of breast cancer, those who regularly performed BSE and those who thought that breast cancer is treatable. Health motivation was significantly higher ($p < 0.001$) in participants who were from urban areas, those who were single, those under 40 years of age, those with higher education and income levels, those who had knowledge about breast cancer and had a family history of breast cancer and those who thought breast cancer could be treated. Although sensitivity and severity-significance perception were higher in participants from rural areas, those participants were less likely to believe that BSE is reliable and that they can adequately perform BSE. The health motivations of participants from urban areas were higher than those of people from rural areas (Table 6).

When we compare the scores which is taken from CHBMS and breast self examination status of participant, higher scores of benefit and self-confidence perceptions correlated with an increase in the performing of regular BSE by 1.26 times and 1.06 times, respectively. Higher scores of health perception were significantly negative correlation with the regular performer of BSE ($p = 0.012$) (Table 7a). However, having a high incidence of breast

Tables 6. Champion's Health Belief Model Scale at Breast Cancer Screening

PR	Benefit		Barrier		Confidence-self-efficacy		Health-Motivation		Total	
	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban
p	15.07±2.91	15.64±3.27	29.09±6.92	23.25±5.94	29.72±9.78	34.67±7.8	22.52±4.01	25.68±6.37	126.8±13.32	126.87±15.09
E	Low	High	Low	High	Low	High	Low	High	Low	High
p	14.69±2.92	15.76±3.1	31.13±5.43	23.57±6.56	27.28±7.42	34.96±9.38	21.62±3.16	25.35±5.96	125.21±10.89	128.08±15.91
FA	Negative	Positive	Negative	Positive	Negative	Positive	Negative	Positive	Negative	Positive
p	15.16±3.21	15.75±2.44	27.41±7.24	24.95±6.51	30.95±9.08	33.94±10.06	23.38±5.24	24.94±5.21	126.07±13.43	129.47±15.63
BSE	NP	P	NP	P	NP	P	NP	P	NP	PP
p	14.97±3.12	16.94±2.1	27.46±6.90	23.79±7.67	30.63±9.48	36.64±6.98	23.6±5.27	24.4±5.26	125.96±14.55	131.28±9.71
	0.000*		0.000*		0.000*		0.213		0.002*	

PR, Place of residency; E, Education; FA, Family anamnesis; BSE, Breast Self Examination; NP, Non-perform; P, Perform.

cancer in the family was significantly correlated with a 1.93-fold increase in the rate of BSE practice ($p=0.016$) (Table 7b). There is no correlation between breast self examination and marital status, monthly income and educational status ($p>0.05$).

Discussion

A major risk factor for breast cancer is the long-term exposure of breast tissue to estrogen. Studies have shown that the risk of breast cancer can be decreased by about 30% with a young age at first pregnancy, multiple pregnancies and breastfeeding. In addition, late menarche and early menopause decrease the risk of developing breast cancer (Key et al., 2001). The rate of breast cancer in those with menarche at ages below 12 years was 7.8% in a study conducted in Turkey (Özaydın et al., 2009); however, in the present study, that rate was 19.6%. The rate of having a baby under the age of 30 was 82.8% in the previous study; the rate was 76% in participants at Arnavutköy and 31% in participants in Şişli in this study. Women who entered puberty before 10 age should be aware that they are more likely to develop breast cancer.

A study conducted in England demonstrated that, although people with cancer who are of a high socioeconomic status are more likely to be diagnosed earlier, there was almost no difference between different socioeconomic levels in patients receiving medical treatment (Lyratzopoulos et al., 2012a; Lyratzopoulos et al., 2012b). However, there was a significant difference between socioeconomic groups in the time between the patients realized their first symptoms and presented to a physician (Macleod et al., 2009). In this study, breast cancer awareness was significantly associated with higher education and income levels. Socioeconomic status plays a major role in terms of receiving treatment, which is of great importance in preventable diseases where early diagnosis is possible, such as breast cancer (Lyratzopoulos et al., 2012a, Lyratzopoulos et al., 2012b).

The relationships between the mean score of CHBMS subscales and the marital status, age, level of education, income level, knowledge of breast cancer and treatment options, family history of breast cancer and BSE attitudes of the participants were examined (Table 6). Although the participants who were ≥ 40 years old had more information about breast cancer, the benefit perception of BSE, health motivation and self-efficacy perception were lower in this age group. This is consistent with the literature (Aydin., 2004; Canbulat., 2006) and suggests that those participants actually did not have enough information about the benefits of BSE, which is why they are less likely to seek health care.

The high level of sensitivity, confidence and self-efficacy and health motivation, and low level of obstacle perception of the participants who had breast cancer in their families indicates that these women are more aware of breast cancer risks. The findings in this study were consistent with those in a previous study that reported fatalist attitudes are prevalent and fear of cancer is frequent among those who live in lower socioeconomic conditions (Byrne, 2009). The sensitivity perception and

awareness were higher in participants who were of a lower socioeconomic status; however, those participants were less likely to believe in the benefit of BSE, had higher perceptions of barriers and had less perception of trust for BSE and health motivation. The existence of such a contradiction should motivate health care professionals to inform their patients, especially women from low socioeconomic levels, about the importance of BSE. Although public awareness of breast cancer has risen, many people still are not aware of the importance of BSE in the protection from breast cancer.

Interestingly, the participants who were in a lower socioeconomic and educational status were more likely to be aware of BSE, but they doubted their ability to perform BSE properly. Thus, they did not believe the benefits of BSE and made excuses not to examine themselves. This fallacy is an important reason for the decreased rates of BSE among women. Dahiya et al., (2017) shows that in their study too. However, 90% of breast cancer cases are detected by the patients themselves (Şimşek et al., 2002). A scientific investigation on some patients undergoing oncologic treatment for breast cancer revealed that 84.8% of the patients noticed the disease themselves. The same study also showed that, although the primary complaint of 68% of the patients was the mass in their breasts, only 29.7% of them were performing BSE regularly (Bayer., 2014). Another study conducted in Turkey revealed that 88.9% of the patients with breast cancer detected the disease themselves, but the diagnosis was at an advanced stage because they had not been performing BSE on a regular basis (Özgün et al., 2009).

Early detection and prevention are the most important control strategies of cancer in the twenty-first century. A sudden statistically significant decrease in the rates of breast cancer-related deaths was observed in the 1990s in developed countries, including Sweden, Denmark and United States of America, with the use of mammography in screening programs. Since the aim of a screening program is to provide a decrease in morbidity and mortality due to the target disease the screening tests should be inexpensive, easy to perform and accessible to everyone (Baskan et al., 2012).

Some studies showed that BSE provided no decrease in mortality rates (Lee et al., 2010; The Canadian Task Force on Preventive Health Care, 2011) In contrast to these studies, before the routine mammography examination, 65% of women between 40 and 45 years of age noticed breast cancer by themselves (Harvey et al., 1997). In the present study, 16% of participants regularly performed BSE. BSE education must be provided to every woman, since it is an important element in increasing the awareness for breast cancer and in understanding breast changes. 5–10% of breast cancer cases are identified through physical examination without any requirement to perform mammography. Therefore, clinical breast examination and BSE must be included with mammography in screening programs.

A study conducted in women aged 20 to 60 years having a breast cancer family anamnesis and high level education, increase in the percentage of women practicing BSE (Altunkan et al., 2008). However, the present study

found that regardless of educational, socioeconomic or demographic status, having a high incidence of breast cancer in the family plays the greatest role in determining whether an individual practices BSE. When the effects of the subscale scores of the participants on the performance of BSE were examined, no correlation was observed on sensitivity, severity/importance and on perception of obstacles. However, as the self-confidence perception increased, the BSE practice percentage increased. The decline in the frequency of performing BSE as people's health motivation increases suggests that they are not aware of the importance of BSE.

There is no consensus on common cancer screening programs worldwide because the screening programs in each country vary depending on sociocultural and ethnic structures. Breast cancer screening programs have been actively conducted in Turkey to national standards of Cancer Early Diagnosis, Screening and Education Centers, which were established under the Directorate of Public Health. More than 70% of female population must be included in the screening programs to reach the targeted aim of "decreasing the mortality of breast cancer". A questionnaire study on the awareness of early breast cancer diagnosis conducted in the Turkish city of Bursa revealed that more than half of the participants had never undergone mammography or ultrasonography examinations (Yılmaz et al., 2012). In the present study, the rate of patients who had had mammography screening was 13.3%, and the rate of patients who had never had any screening tests was 68.9%. These findings show that Turkey has not reached the targeted aims of the breast cancer screening programs. Health care professionals should inform their patients of screening programs and encourage them to have mammography screening.

Studies showed that the rates of performing regular monthly BSE among nurses ranged from 6% to 67%. (Chong et al., 2002; Lee., 2003) In the present study, only 16% of the health care professionals were performing BSE. This result is similar to all participants. There are various ways that information can be obtained about cancer and early diagnosis. The study of Dahlui et al., (2011) revealed that university students gathered most of their information from family and friends, and the internet was the second tool they used for acquiring information. A study conducted in Turkey showed that patient gained most of their information from health care professionals (Yılmaz et al., 2013). The impact of health care professionals on Turkish citizens is very high. Therefore, the education and encouragement given by health care professionals to patients is of vital importance in increasing the practice of BSE and in early breast cancer diagnosis.

In conclusion, although breast cancer is the most common type of cancer worldwide, the mortality and morbidity of the disease can be decreased through early diagnosis. The most important tools in early diagnosis are the national screening programs. Reminders from physicians have a big impact on women going for mammography. Primary care physicians should educate the public about BSE and other early-diagnostic methods for breast cancer, depending on the age of the patients. For

a better service to the public, all health care professionals should be trained about the breast cancer symptoms, risk factors and early-diagnostic methods, and about the screening centers and how patients can receive screening services. The importance of early diagnosis and screening tools can be explained properly, and in Turkey, services can be provided particularly to those who live in lower socioeconomic conditions.

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