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Research Article

Risk Assessment of Breast Cancer in Women in the Reproductive Age 18-49 Years

Şirin Meyan[1], Seçil Arıca[1], İrem Aktar[2], Naci Şenkal[3]

[1]Department of Family Medicine, T.R. Ministry of Health, Prof. Dr. Cemil Taşcıoğlu City Hospital, Istanbul, Turkey;[2]Department of Family Medicine, Istanbul University, Istanbul, Turkey;3Ağrı Eleşkirt State Hospital, Internal Medicine, Ağrı, Turkey

ABSTRACT

Aim: In this study, it was aimed to evaluate the risk of breast cancer, the relationship between breast cancer and body structure and breastfeeding period in women reproductive aged 18-49 who applied to Gaziosmanpaşa Hürriyet Education Family Health Center of İstanbul Prof. Dr. Cemil Taşcıoğlu City Hospital.

Materials and methods: The women, who were 18-49 years old, volunteer and literate, who were admitted to Gaziosmanpaşa Hürriyet Education Family Health Center of İstanbul Prof.Dr.Cemil Taşcıoğlu City Hospital, "individual feature form" and "breast cancer risk assessment form", were filled in the patients. In addition, body measurements were taken. Breastfeeding times, self and clinical breast examinations, smoking and alcohol use were questioned. Risk levels of the cases were grouped according to the scores they received from the questionnaire. NCSS (Number Cruncher Statistical System) 2007 (Kaysville, Utah, USA) program was used for statistical analysis. Statistical significance was given as $p<0.05$ level. The study is a descriptive, cross-sectional study.

Results: The study is about 213 female cases. The ages of the cases ranged between 19 and 49, with an average of 36.86 ± 8.17 years. When the body structures are examined; It was determined that 3.3% (n=7) were weak, 46.5% (n=99) were moderate, 34.7% (n=74) were obese and 15.5% (n=33) were obese. When the body types are examined; 27.7% (n=59) of apples, 69.5% (n=148) of pears and 2.8% (n=6) of hourglass. According to the distributions regarding breast cancer risk assessment form, 93.9% (n=200) of breast cancer risk is low, 3.3% (n=7) is medium risk and 2.8% (n=6) is the highest risk.

According to the age and educational status of the cases ($p=0.001$, $p=0.008$; $p<0.05$). Breast cancer risk levels of the cases do not differ statistically according to their marital status and working status ($p>0.05$).

While no statistically significant difference was found between the breast circumference measurements of the patients according to breast cancer risk levels ($p>0.05$), there was a statistically significant difference between the waist circumference and buttocks circumference measurements of the cases ($p=0.042$; $p=0.025$). Breast cancer risk levels of the cases do not differ statistically according to their body structures and body types ($p>0.05$). There was a statistically significant difference between the breastfeeding times of cases with children according to breast cancer risk levels ($p=0.003$; $p<0.05$).

Conclusion: Although breast cancer risk assessment gives an idea about the level of risk, it does not provide precise information about the possibility of breast cancer. When talking about breast cancer risk, it is necessary to take into consideration the risk of breast cancer, which may occur at a certain time, and since no risk factor can be detected in the majority of women with breast cancer, age-appropriate screening, which is the most important independent risk factor, is required. Obesity should be fought and breastfeeding should be supported.

Keywords: Woman; Reproductive age; Breast cancer; Risk assessment

Correspondence to: İrem Aktar, Department of Family Medicine, Istanbul University, Istanbul, Turkey; Email: iremaktar34@gmail.com

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INTRODUCTION

The most common cancers in the world; lung, breast and colorectal cancers. When cancers in women are examined, breast cancer is the most common malignant tumour and constitutes approximately 30% of all cancers [1]. According to the data of the World Health Organization, there are approximately 7 million women with breast cancer in the world, when the last 5-year period is evaluated in 2018. Breast cancer also remains the most lethal cancer.

When we look at the situation in Turkey, according to Turkey Unified Database 2015 data, the most common cancers in men are; lung, prostate and colorectal cancers, the most common cancers in women, respectively; breast, thyroid, and colorectal cancers. Genetic, environmental, hormonal and sociobiological factors are thought to play a role in the etiology of breast cancer [2].

Many models have been developed to calculate breast cancer risk. The leading of these are Gail and Claus models. The Gail model was developed in 1970 after a broad-based breast cancer screening study. The age of the woman, the age of first menstruation, the age of first birth, the number of first-degree relatives with breast cancer, the number of benign breast biopsies, the number of breast biopsies resulting in atypical hyperplasia, and the race are parameters used in the Gail model. T is more suitable for women with no family history. Since factors such as personal breast cancer, lactation and hormone replacement therapy are not included in the parameters, the risk can be miscalculated. Five-year and lifetime risk of invasive breast cancer is calculated with the Gail model. The Claus model shows the prevalence of highly transitive genes with a genetic predisposition for breast cancer [3]. In this model, other risk factors other than family history such as first menstrual age, birth age, breast biopsy results, hormone replacement therapy are not used as parameters. Both of these methods are not recommended for use in breast cancers that are thought to be inherited. Other models have been developed for those at risk of genetically inherited breast cancer.

Breast cancer also draws attention as it is a cancer that can be prolonged if diagnosed at an early stage and has a cure chance. For this purpose, the methods determined by American Cancer for the first time in 1980 were accepted as gold standards and are still valid [4]. These are the "Breast Self-Examination" (BSE), which is recommended to be performed regularly every month for all asymptomatic women between the ages of 20 and 39, the "clinical examination by health personnel" (CBE), which is recommended to be done every 3 years to the same group, and It is the "mammography" recommended annually to asymptomatic women [4]. As a part of the community-based breast cancer screening program carried out by the Public Health Institution of Turkey in our country, it is recommended that asymptomatic women between the ages of 40-70 should have mammography every 2 years.(In those with risk factors, more frequent and/or different methods can be used). The purpose of screening is to diagnose early and start the treatment process early in this disease, which can be detected when it is asymptomatic.

The stage of the disease at the time of diagnosis is one of the most important factors affecting mortality and survival [2]. While many studies have been conducted to determine the risk factors in women with breast cancer in our country, there are not many studies on breast cancer development risk assessment in healthy women.

In this study; it was aimed to determine the distribution of breast cancer risk level by applying the "Breast Cancer Risk Assessment Form" to women of reproductive age (18-49 years old), to evaluate the relationship between breast cancer and body structure and breastfeeding period [5-22].

MATERIALS AND METHODS

This study included, as a case group between July 2019 and February 2020, 213 women aged 18-49 who applied to Hürriyet Education Family Health Centre affiliated to Istanbul Prof. Dr. Cemil Taşcıoğlu City Hospital for any reason. In the study, "individual characteristics form" and "breast cancer risk assessment form" were applied after obtaining the consent of the patients. Body measurements were taken. Breastfeeding durations, self and clinical breast examinations were questioned.

The risk levels of the cases were grouped as low if <200, medium if 201-300, high if 301-400 and the highest risk if 400 and above.

Women and men who were illiterate, under 18 and over 49 years of age and who did not agree to participate in the study were not included in the study.

All patients were compared according to age, family history of breast cancer, personal breast cancer history, childbearing age, menstrual history, duration of breastfeeding, and body structure.

NCSS (Number Cruncher Statistical System) 2007 (Kaysville, Utah, USA) program was used for statistical analysis. Descriptive statistical methods (mean, standard deviation, median, frequency, and ratio, minimum, maximum) were used while evaluating the study data. The suitability of quantitative data to normal distribution was tested by Kolmogorov-Smirnov, Shapiro-Wilk test and graphical evaluations. Mann Whitney U test was used in the comparison of two groups of data that did not show normal distribution. Fisher-Freeman-Halton Exacttest and Fisher's Exact test were used to compare qualitative data. Significance was evaluated at the $p<0.05$ level.

RESULTS

The study was conducted between July 2019 and February 2020 in Hürriyet Education Family Health Center affiliated to Istanbul Prof Dr Cemil Taşcıoğlu City Hospital with 213 female cases. The ages of the cases ranged from 18 to 49, with a mean of 36.86 ± 8.17 years;

Distribution of demographic features

Of those included in the study, 74.2% (n=158) were married, 24.9% (n=53) were single, and 0.9% (n=2) were widowed.

While 22.1% (n=47) of women are working in any job, 77.9% (n=166) are not. 33.3% (n=71) of the cases were primary school graduates, 8.9% (n=19) were secondary school graduates, 37.1% (n=79) were high school graduates and 20.7% (n=44) were university graduates.

When the cigarette and alcohol use of the women participating in the study was questioned, 13.8% (n=39) smokers, 71.9% (n=153) non-smokers, 9.8% (n=21) stated that they used and quit.

The mean amount of smoking among smokers was 14.60 (± 11.96) packs/year. The mean amount of smoking in those who had quit was 19.301 (±12.11). Those who stated that they used alcohol were

13.1% (n=28), those who did not use alcohol were 86.9% (n=185).

Distribution of anthropometric properties

Chest circumference measurements of the cases ranged from 75 cm to 137 cm, with an average of 94.29 ± 11.13 cm; waist circumference measurements vary between 59 cm and 123 cm, with an average of 81.64 ± 11.86 cm, and buttocks circumference measurements between 77 and 149, with an average of 103.35 ± 13.27 cm.

When the body structures are examined; It was determined that 3.3% (n=7) were underweight, 46.5% (n=99) were moderate, 34.7% (n=74) were obese, and 15.5% (n=33) were obese.

When body types are examined, it is seen that 27.7% (n=59) are apples, 69.5% (n=148) are pears and 2.8% (n=6) are hourglasses.

Distributions of descriptive features

When the menstrual histories are examined; It was determined that 14.6% (n=31) were 11 years old and under, 71.4% (n=152) were between 12-14 years old, 14.1% (n=30) were 15 years old and over.

When the family history of breast cancer is examined; While 86.4% (n=184) had no family history of breast cancer, 9.4% (n=20) had it in their aunt-grandmother, and 4.2% (n=9) in their mother or sister.

When the personal breast cancer history is examined; 2.8% (n=6) of the cases had a history of breast cancer.

When the childbearing ages are examined; 29.1% (n=62) had no children, 61.5% (n=131) had their first birth under the age of 30, and 9.4% (n=20) had their first birth above the age of 30.

Breastfeeding durations of those with children ranged from 0 to 96 months, with a mean of 30.19 ± 20.13 months and a median of 27 months.

Distribution of breast examination and frequencies

77.9% (n=166) of those included in the study perform breast self-examination; the number of breast examinations performed per year varies between 1 and 100, with a mean of 19.91 ± 21.27 and a median of 12.

38.0% (n=81) of the cases went to the doctor and had a breast examination;

The number of breast examinations performed by the doctor per year varies between 1 and 4, with a mean of 1.36 ± 0.73 and a median of 1 (Table 1).

Accordingly, the total breast cancer risk score varies between 50 and 465. Mean 127.11 ± 66.30 and median 115. While the risk of breast cancer was low in 93.9% (n=200) of the cases, it was medium risk in 3.3% (n=7) and highest risk in 2.8% (n=6) (Table 2).

Women over the age of 40 have a higher intermediate/high risk of breast cancer than those younger than 30 and in the 30-40 age range. (p=0.001; p<0.05).

A statistically significant difference was found between breast cancer risk levels according to the education level of the cases (p=0.008; p<0.05). The middle/highest risk rate of breast cancer in primary school graduates is higher than in secondary and high school graduates (Table 3).

A statistically significant difference was found between the waist circumference measurements of the cases according to the breast cancer risk levels. (p=0.042; p<0.05); Waist circumference measurements of those at medium/highest risk of breast cancer are higher than those at low risk.

A statistically significant difference was found between the buttocks circumference measurements of the cases according to the breast cancer risk levels (p=0.025; p<0.05); those with medium/high breast cancer risk have higher buttocks circumference measurements than those with low risk.

Breast cancer risk levels of the cases did not show a statistically significant difference according to body structures and body types (p>0.05) (Table 4).

A statistically significant difference was found between the breast cancer risk levels of the cases according to the presence of a family history of breast cancer. (p=0.001; p<0.05). Those who have a history of breast cancer in their mother or sister and relatives such as aunt-aunt-grandmother have a medium/higher risk of breast cancer.

A statistically significant difference was found between breast cancer risk levels according to the presence of personal breast cancer history in the cases. (p=0.001; p<0.05). Women with a personal history of breast cancer have a higher intermediate/higher risk of breast cancer.

A statistically significant difference was found between breastfeeding durations of cases with children according to breast cancer risk levels (p=0.003; p<0.05); those with medium/highest risk of breast cancer have higher breastfeeding durations than those with low risk (Table 5).

There was no statistically significant difference between the breast cancer risk levels of the cases according to the status of performing breast self-examination (p>0.05).

A statistically significant difference was found between the breast cancer risk levels of the cases according to the status of breast examination by the doctor. (p=0.001; p<0.05). Those who have a breast examination by a doctor have a higher intermediate/higher risk of breast cancer.

Table 1: Distribution of breast cancer risk assessment form.

		n (%)	Risk score	
			Min-Max (Median)	Ort ± Ss
Age (year)	<30 years	50 (23,5)	50-200 (100)	107,5 ± 33,2
	30-40 years	83 (38,9)	55-205 (85)	97,5 ± 33,7
	41-50 years	80 (37,6)	90-465 (150)	170 ± 83
Family history of breast cancer	Not	184 (86,4)	50-200 (100)	107,5 ± 33,2
	An aunt-grandmother	20 (9,4)	55-205 (85)	97,5 ± 33,7
	Mother or sister	9 (4,2)	90-465 (150)	170 ± 83

Personel history of breast cancer	Not	207 (97,2)	50-250 (115)	118 ± 40
	Yes	6 (2,8)	415-465 (438)	438,3 ± 19,4
Child bearing age	<30 years first birth	131 (61,5)	50-450 (115)	124,8 ± 73,1
	>30 years first birth	20 (9,4)	85-250 (140)	139 ± 48,6
	No children	62 (29,1)	85-465 (110)	128 ± 55,1
Menstural history	≥ 15 years	30 (14,1)	60-165 (90)	95,8 ± 35
	12-14 years	152 (71,4)	50-465 (115)	127,7 ± 73,1
	≤ 11 years	31 (14,6)	105-250 (150)	154,5 ± 34,1
Body structure	Weak	7 (3,3)	55-150 (85)	90,7 ± 28,6
	Medium	99 (46,5)	50-465 (100)	114,1 ± 60,9
	Fat	74 (34,7)	60-425 (125)	131,9 ± 62,6
	Obese	33 (15,5)	95-450 (150)	162,7 ± 80,2
Total breast cancer risk score	Low risk (≤ 200 puan)	200 (93,9)	50-200 (113)	114,4 ± 35,4
	Medium risk (201-300 puan)	7 (3,3)	205-250 (225)	222,8 ± 14,1
	High risk (301-400 puan)	0 (0)	-	-
	Highest (≥ 400 puan)	6 (2,8)	415-465 (438)	438,3 ± 19,4

Table 2: Breast cancer risk level by demographic characteristics.

		Breast cancer risk level		p
		Low risk (n=200)	Medium/Highest risk (n=13)	
		n (%)	n (%)	
Age(years)	<30 years	50 (100)	0 (0)	a0,001**
	30-40 years	82 (98,8)	1 (1,2)	
	>40 years	68 (85,0)	12 (15,0)	
Marital status	Married	147 (93,0)	11 (7,0)	a0,582
	Single	51 (96,2)	2 (3,8)	
	Widow	2 (100)	0 (0)	
Working status	Working	45 (95,7)	2 (4,3)	b0,533
	Not working	155 (93,4)	11 (6,6)	
Education status	Primaru school	61 (85,9)	10 (14,1)	a0,008**
	Middle school	19 (100)	0 (0)	
	High school	78 (98,7)	1 (1,3)	
	University	42 (95,5)	2 (4,5)	

Significance: [a]Fisher-Freeman-Halton Exact Test; [b]Fisher's Exact Test; **p<0.05

Table 3: Evaluation of breast cancer risk level based on Anthropometric measurements.

		Breast cancer risk level		P
		Low risk (n=200)	Medium/Highest risk (n=13)	
		n (%)	n (%)	
Chest circumference (cm)	Min-Max (Median)	75-137 (92)	75-122 (104)	c0,127
	Ort ± Ss	93,8 ± 10,6	100,4 ± 16,6	
Waist circumference (cm)	Min-Max (Median)	59-123 (80)	63-120 (93)	c0,042*
	Ort ± Ss	81 ± 11,1	90,9 ± 18	
Buttocks circumference (cm)	Min-Max (Median)	77-149 (102)	85-140 (114)	c0,025*
	Ort ± Ss	102,6 ± 12,6	113,9 ± 18,3	
Body structure	Weak	7 (100)	0 (0)	a0,549
	Medium	95 (96,0)	4 (4,0)	
	Fat	68 (91,9)	6 (8,1)	
	Obese	30 (90,9)	3 (9,1)	
Body type	Apple	56 (94,9)	3 (5,1)	a0,837
	Pear	138 (93,2)	10 (6,8)	
	Hourglass	6 (100)	0 (0)	

Measurements: aFisher-Freeman-Halton Exact Test; cMann Whitney U Te

Table 4: Evaluation of breast cancer risk level by descriptive characteristics.

		Breast cancer risk level		p
		Low risk (n=200)	Medium/Highest risk (n=13)	
		n (%)	n (%)	
Menstural history	≤ 11 years	27 (87,1)	4 (12,9)	[a]0,108
	12-14 years	143 (94,1)	9 (5,9)	
	≥ 15 years	30 (100)	0 (0)	
Family history of breast cancer	Not	178 (96,7)	6 (3,3)	[a]0,001**
	An aunt-grandmother	16 (80,0)	4 (20,0)	
	Mother or sister	6 (66,7)	3 (33,3)	
Personel history of breast cancer	No	200 (96,6)	7 (3,4)	[b]0,001**
	Yes	0 (0)	6 (100)	
Child bearing age	<30 years first birth	60 (96,8)	2 (3,2)	[a]0,160
	>30 years first birth	123 (93,9)	8 (6,1)	
	No children	17 (85,0)	3 (15,0)	
Breast-feeding time (months) (n=151)	n	140	11	
	Min-Max (Median)	0-96 (25)	4-76 (48)	[c]0,003**
	Ort ± Ss	28,7 ± 19,2	49 ± 22	

Significance: [a]Fisher-Freeman-Halton Exact Test; [b]Fisher's Exact Test; [c]Mann Whitney U Test; **p<0.01

Table 5: Evaluation of breast cancer risk level according to the status of performing a breast examination.

		Breast cancer risk level		
		Low risk (n=200)	Low risk (n=200)	
		n (%)	n (%)	p
The state of performing breast self-exam	Yes	156 (94,0)	10 (6,0)	[b]1,000
	No	44 (93,6)	3 (6,4)	
The state of breast examination by doctor	Yes	68 (84,0)	13 (16,0)	[b]0,001**
	No	132 (100)	0 (0)	

Significance: [b]Fisher's Exact Test; **p<0.01

DISCUSSION

Today, the prevalence of cancer is increasing and "risk analysis and prevention" gains more importance in the health strategies of societies. Various risk measurement methods are used for early detection of breast cancer. For this purpose, in our study, we questioned the "breast cancer risk assessment form" proposed by the Ministry of Health to assess breast cancer risk, breast self-examination, clinical breast examination, breastfeeding status and duration. We made body type determination by taking chest-waist-buttocks measurements and examined the relationships between breast cancer. When the risk scores of 213 women participating in our study were calculated, 93.3% were in the low risk group, 3.3% were in the medium risk group, and 2.8% were in the highest risk group. All of the women in the highest risk group were those with a previous history of breast cancer.

In the breast cancer risk level determination study conducted by Aslan and his friends on 1085 women, 98.5% of the participants were in the low risk group, 0.7% in the medium risk group, and 0.8% in the high risk group [1]. In the breast cancer risk assessment study conducted by Eroğlu et al. on 5000 cases, 94.4% of the participants were in the low risk group, 4.9% in the medium risk group, 0.4% in the high risk group and 0.3% in the very high risk group [23]. In the study conducted by Tümer et al. it was determined that 96.3% of women had a low risk, 3.1% a moderate risk, 0.3% a high risk, and 0.3% a very high risk [24]. In the study of Duman et al. conducted with 445 women aged 65 and over who applied to a university hospital, 79.8% of the women were in the low-risk group, 16% in the medium-risk group, 1.6% in the high-risk group, and 2.7% were in the highest risk group [25]. In the study by Kutlu et al. which included 867 women at a university, 87.3% of the participants were in the low-risk group, 12.6% in the medium-risk group, and 0.1% in the high-risk group [26]. In Balcı's study, on the other hand, 93.7% of the participants were at low risk, 2.3% at medium risk, 0.7% at high risk, and 3.3% at highest risk [18].

While evaluating the breast cancer risk level, age is a very important factor among demographic characteristics, after being female. In our study, the mean risk score of cases younger than 30 years old was 107.5 (low risk, 23.5%, n=50), and the mean risk score of patients aged between 30 and 40 years was 97.5 (low risk, 38.9%, n=83), 41 The mean risk score of those aged between 50 and 50 years was 170.0 (low risk, 37.6%, n=80). Breast cancer risk score increases with age. This rate was found to be statistically significant (p=0.001). The risk score of breast cancer in women over 40 years of age was found to be higher than those less than 30 years of age and in the 30-40 age range.

In the study of Aslan et al. the highest mean risk score was reported as 174.14 (low risk, 5.4%, n=59) in cases over 60 years of age, while the highest mean risk score in Eroğlu et al. was 189.49 (low risk) in cases over 60 years of age. Risk was found to be 6.7%, n=335) [1,23]. In the study of Tümer et al. when the distribution of breast cancer risk score according to age was examined; The mean risk

score of women under the age of 30 is 108.21 ± 38.23, while the mean risk score of those aged 51-60 is 178.00 ± 46.58 [24]. In the study of Duman et al. the mean risk score of women was 371.04. The mean risk score was quite high as only women aged 65 and over were included in this study [25]. Our study results were found to be similar to other studies. In the study of Kutlu et al. when age and risk score were compared; Those under the age of 30 with a breast cancer risk score of 201 points or more, 2.8%, those between the ages of 30 and 40, 11.9% between the ages of 41 and 50, and 39.4% between the ages of 51 and 60. They constituted 43.1% of those over the age of 60 [26].

It has been shown that the risk of breast cancer increases as the level of education increases [27]. This increase can be explained by factors such as age, number of births, age at first birth, body-mass index, hormone replacement therapy, which are other known risk factors for breast cancer. Risk Factors, Evaluation of Risk and Prevention in Breast Cancer: In the Istanbul 2010 Consensus Report High socioeconomic level means a 2-fold increased risk for the development of breast cancer, but this situation will not be considered as an independent risk factor; it has been stated that it is thought to occur due to changes in reproductive habits. In our study, the rate of having a middle/highest risk of breast cancer in primary school graduate women was higher than secondary school and high school graduates. An inversely significant relationship was found between education level and risk level (p=0.008) however, there was no statistically significant difference in breast cancer risk levels of the cases according to marital status and working life, which are other sociodemographic characteristics (p>0.05).

A family history of breast cancer is an important risk factor for breast cancer. Having one first-degree relative with breast cancer increases the risk of breast cancer 1.80 times, while the risk of having two first-degree relatives increases 2.9 times. If the relative with breast cancer was diagnosed before the age of 30, the risk increases 2.9 times, and if it is diagnosed after the age of 60, the risk increases 1.5 times [28]. In our study, 86.4% had no family history and the highest mean risk score was 253.03 (moderate risk, 9.4%, n=20) and 131.2% (low risk, 3%) had breast cancer in a mother or sister.3, n=10) Cases with breast cancer in an aunt-grandmother were followed up.

In Aslan's study, 91.7% had no family history and the highest mean risk score was 202.27 (moderate risk, n=26) with a family history of mother or sister. In the study of Eroğlu et al. 94.4% had no family history and the highest mean risk score was 280 [28] (intermediate risk, %0,4, n=21) 234.18 cases (intermediate risk, 4.7%, n=233) whose mothers and sisters had breast cancer were followed by those whose mother or sister had breast cancer. Since most of the women participating in our study did not have a family history of breast cancer, they were in the low risk group for developing breast cancer. Even if it is in the low risk group for the development of hereditary breast cancer in our country, it will become important when the age of breast cancer starts to increase in the younger age group.

The risk of developing breast cancer in the other breast in cases with breast cancer is higher than in the healthy population. 97.2% of the participants in our study had no personal history of breast cancer, and the mean risk score of those who did was found to be 438.3 (highest risk, 2.8%, n=6).

In the study of Aslan et al. 99.8% did not have a personal history of breast cancer, and the mean risk score of those present was 395.00 (high risk, 0.2%, n=2); In the study of Eroğlu et al. 99.7% of them did not have a personal history of breast cancer, and the mean risk score of existing ones was 461.33 (highest risk, 0.3%, n=15).

It should be noted that cases with personal breast cancer showing the highest mean risk score can be seen in approximately 3 out of every 100 women. These patients should be followed up regularly; Care should be taken in terms of recurrence, spread and the possibility of second breast cancer.

Because studies have shown that; a personal history of invasive or in situ breast cancer increases the risk of developing invasive cancer in the contralateral breast. The risk of contralateral invasive breast cancer in in situ lesions is 5% at 10-years. In those with invasive breast cancer, the risk of developing contralateral breast cancer increases by 1% per year in premenopausal women and 0.5% per year in postmenopausal women [2].

Early birth is one of the most important factors to reduce the risk of breast cancer. In our study, the rate of birth before the age of 30 was 61.5% (n=131) and the highest mean risk score was 139.0 (low risk, 9.4%, n=20) as the first birth after the age of 30.

In the study of Aslan and Gürkan, the rate of first birth before the age of 30 was 60.9% (n=661) and the highest mean risk score was 105.17 (low risk, 35.3%, n=383), while the cases who never gave birth were Eroğlu et al. The first birth rate before the age of 30 was 94.1% (n=4707) and the highest mean risk score was 143.15 (low risk, 1.9%, n=95).

Having the first childbearing age after 30 years is thought to increase the risk of breast cancer more than not having any children [12].

Approximately 64% of births in Turkey occur before the age of 30. The rates in our study are also compatible with the literature and appear to be a protective factor against breast cancer [29].

There is a close relationship between the age of menarche and regular ovulatory cycles and breast cancer. In our study, 71.4% (n=152) of them started menstruation at the age of 12-14, while the highest mean risk score was 154.5 (low risk, 14.6%, n=31) and the cases starting menstruation at the age of 11 years or younger. In the study of Aslan et al. 74.1% (n=804) of the subjects aged 12-14 years with the age of onset of menstruation 11 and below and the highest mean risk score of 119.23 (low risk, 7.2%, n=78); In the study of Eroğlu et al. most of the cases (80.6%) started menstruation at the age of 12-14 years and the highest mean risk score was 145.72 (low risk, 2.6%, n=131) as those who started menstruation under the age of 11 years.

According to studies, the first menstruation before the age of 12 increases the risk of breast cancer compared to the age of 14 and later [30]. We can say that this result is compatible with the literature in our country that the age of onset of menstruation is 13.28 and poses a low risk for breast cancer. However, it should be noted that approximately 5% of the population we work with poses a risk of breast cancer due to the onset of menstruation at the age of 11 or younger. [31].

Obesity is a health problem that has an increasing frequency in the world and has much comorbidity. Overweight and obesity are associated with an increased risk of postmenopausal breast cancer, but with poor prognosis in early-stage breast cancer [32]. In our study, 3.3% of the participants were underweight, 46.5% were normal, 34.7% were obese and 15.5% were obese. The mean risk score of those with obese body structure was 162.7 (low risk),

higher than the other groups.

In Aslan's study, postmenopausal weight gain was found in 60% of postmenopausal women. In the study of Eroğlu et al. most of the cases (75.9%, n=3794) had an obese body structure and the highest mean risk score was found in this group with 136.38 (low risk).

Although the effect of being obese on the total score is low in calculating the risk level, the majority of the participants in our study also evaluated the breast cancer risk level according to anthropometric measurements and While there was no statistically significant difference between the chest circumference measurements of the cases according to the breast cancer risk levels (p>0.05), there was a statistically significant difference between the waist circumference measurements of the cases (p=0.042) and buttocks circumference measurements (p=0.025).

There was no statistically significant difference in breast cancer risk levels of cases according to body structures and body types (p>0.05).

Being in this group is an issue that should be emphasized because it will increase the risk of breast cancer in the future and is associated with many additional diseases.

Breast-feeding; It has been shown in many studies that it is important for maternal and infant health and reduces the risk of breast cancer. As expected, this effect is more pronounced especially in premenopausal women [33]. A statistically significant difference was found between the breastfeeding durations of the women who participated in our study, 70.8% (n=151) of the women who breastfed for at least 6 months, and who had a child according to breast cancer risk levels (p=0.003). In the literature review by Callen J et al. Europe and Australia have higher breastfeeding rates than the USA and Canada. Breastfeeding rates for 6 months are between 19-52% in Europe and between 50-52% in Australia. In Canada, breastfeeding rates for 6 months have been shown to be between 31-41%. Compared to other countries, breastfeeding rates for 6 months in the USA are between 19 and 32.5% and are the lowest [34].

In the study of Lee et al. with 110,604 women aged 20 and over, 51.9% of them breastfeed their children; found that breast cancer risk decreased in women who breastfeed [35].

The effect of breastfeeding rates, together with other risk factors, is very important in the low incidence of breast cancer in our country compared to these countries. Preservation of this social feature should be encouraged, emphasizing that breastfeeding is protective in breast cancer in mothers and expectant mothers, and breastfeeding should be encouraged.

The rates of application of breast self-examination vary in studies conducted in the world and in our country. Considering that not all women have access to healthcare providers, breast self-examination is an appropriate and effective approach. In our study, 77.9% (n=166) of the cases stated that they performed breast self-examination on average 19 times a year, and no statistically significant difference was found between breast cancer risk levels (p>0.05).

In the study of Gençtürk, it was found that 26.3% of the participants performed breast self-examination (BSE), and in the study of Göçgeldi et al. 66.5% performed BSE at least once in their lifetime [36]. In the study of Göçgeldi et al. the difference between the frequencies of BSE of the participants according to their relatives with a history of breast disease/cancer was not found statistically significant. A significant relationship was found between breast examination by the doctor and BSE. It should not be forgotten that the first finding in approximately 70% of all breast cancers is a mass in the breast, and breast self-examination should be taught.

38% (n=81) of the cases in our study stated that they had breast examination by a doctor 1.36 times a year on average, and this situation revealed a statistically significant difference between breast cancer risk levels (p=0.001).

In the study of Dundar et al. it was stated that 3% of the women had breast self-examination within the last year. In this study, 31.3% of women stated that they had breast self-examination [37]. In the study conducted by third et al. 22.2% of women living in rural areas and 27.8% of urban women stated that breast self-examination was performed in the last two years [38]. In the study of Göçgeldi et al. 25.2% of women stated that breast self-examination was performed [39] In the study of Sönmez et al. 56.5% of women stated that breast self-examination was performed [40]. In the study conducted by Koçyiğit et al. it was stated that 37.4% of the women had never been examined by a physician [41]. In the study conducted by Chat et al. 15.5% of the participants stated that clinical breast examination was performed by the physician [42]. In the study by Dişçigil et al. 42.7% of the participants had a clinical breast examination at least once in their lives [43]. In the study of Dahlui et al. 78% of women stated that they had a clinical breast examination in the last two years [44]. The rate of performing breast self-examination was found to be significantly higher in those who were married and had a higher level of knowledge about breast cancer [44]. In the study of Lee et al. 53.2% of women stated that breast self-examination was performed, while 46.8% stated that it was never done [35]. In the study of Klug et al. it was determined that 82.8% of women had a breast examination by a physician before [45].

A woman's application to a physician for any reason should be considered as an opportunity for clinical breast examination. It should be emphasized that women should apply to a physician for regular examinations without any complaints by increasing public awareness activities on breast cancer [46,47].

CONCLUSION

Breast cancer, which is an important health problem both in the world and in our country, is a group of diseases that can be cured and prolonged life span with early diagnosis and screening programs.

Although breast cancer risk assessment gives an idea about the level of risk, it does not give precise information about the possibility of breast cancer. While talking about the risk of breast cancer, it is necessary to take into account the risk of breast cancer that may occur over a certain period of time, and since no risk factor can be detected in the vast majority of women with breast cancer, age-appropriate screening is the most important independent risk factor.

In our country, in addition to breast self-examination in women aged 20-40, routine clinical examination by a physician annually in women with a first degree relative with a history of breast cancer and every two years in women who do not, routine clinical examination by a physician annually in all women aged 40-69. It is recommended by the Ministry of Health to perform a mammogram every two years.

In our study, in which we examined the breast cancer risk level

and risk factors in women, it was found that the majority of them were in the low-risk group, and approximately 5-6 out of every 100 women were high-risk. It was observed that the risk level was significantly associated with age, education level, personal and familial history of breast cancer, age at first birth, age of onset of menstruation, and high body mass index.

Women's application to a physician for any reason should be considered as an opportunity to teach clinical breast examination and breast self-examination technique. It should be emphasized that women should apply to a physician for regular check-ups (clinical breast examination and mammography) without any complaints by increasing public awareness activities on breast cancer.

Family Physicians in primary health care take on the most important role in primary prevention, with their comprehensive, holistic, person-centered and community-oriented features. With these features, the role of family medicine is very important in reducing the risk level by interfering with modifiable factors in terms of breast cancer risk factors, recognizing high-risk patients, screening with examination and imaging methods, and follow-up and guidance.

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