ARAŞTIRMA / *Research Articles*

Knowledge and Attitudes of Women Living in Rural Areas on Breast Cancer Prevention

Kırsal Alanda Yaşayan Kadınların Meme Kanserinden Korunma Konusundaki Bilgi ve Tutumları

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ABSTRACT

Objective: To determine the breast cancer preventive behaviors of rural women and the factors affecting them.
Methods: In a descriptive study with 215 women, data were collected using the "Personal Information Form" and the "Instrument for Measuring Factors Affecting Women's Breast Cancer Prevention Behaviors (ASSISTS)".
Results: The mean total score of ASSISTS was found to be 113.48±18.44, and the mean sub-dimension scores were as follows: support systems 13.26±4.13, self-efficacy 14.65±3.17, self-care 17.79±5.24, stress management 10.89±2.77, motivation 16.04±3.34, attitude 26.51±4.60, and information 14.31±3.69.
Conclusion: Economic status, health insurance, performing breast self-examination and having received training, knowing when to have clinical breast examination, mammography and ultrasonography positively affect preventive behaviors.

Keywords: *Breast Cancer, Women, Screening, Rural*

ÖZ

Amaç: Kırsal alanda yaşayan kadınların meme kanserine yönelik koruyucu davranışlarını ve etkileyen faktörleri belirlemektir.
Yöntemler: 215 kadın ile yapılan tanımlayıcı çalışmada veriler "Kişisel Bilgi Formu" ve "Kadınların Meme Kanseri Önleme Davranışlarını Etkileyen Faktörleri Ölçme Aracı (MEKÖD)" ile toplanmıştır.
Bulgular: MEKÖD toplam puan ortalaması 113,48±18,44, alt boyut puan ortalamaları ise; destek sistemleri 13.26±4.13, öz yeterlilik 14.65±3.17, öz bakım 17.79±5.24, stres yönetimi 10.89±2.77, motivasyon 16.04±3.34, tutum 26.51±4.60 ve bilgi alma 14.31±3.69 olarak bulunmuştur.
Sonuç: Ekonomik durum, sağlık güvencesi, kendi kendine meme muayenesi yapma ve eğitimini almış olma, klinik meme muayenesi, mamografi ve ultrasonografi yaptırma zamanını bilme koruyucu davranışlarını olumlu yönde etkilemektedir.

Anahtar Kelimeler: *Meme Kanseri, Kadınlar, Tarama, Kırsal Alan*

INTRODUCTION

According to 2022 Global data, breast cancer, which is seen in every country of the world, is the most common type of cancer in women in 157 of 185 countries. According to World Health Organisation data, approximately half of breast cancers, 0.5-1% of which are seen in men, are seen in women without any specific risk factors other than gender and age. In 2022, 670,000 people died of breast cancer worldwide (1). On the other hand, screening methods are reported to be the most effective approach to reducing mortality rates[2]. Breast cancer screening methods enable early detection of pathological changes in the breast, which increases the success of treatment. Therefore, it is important to know the symptoms and screening methods and to apply these methods regularly for early diagnosis of breast cancer (3,4). Recommendations of countries regarding breast cancer screening methods may vary. For example; in our country, the recommended screening methods of the Department of Cancer of the Public Health Directorate of Türkiye are breast self-examination (BSE) every month from the age of 20 for women without symptoms, Clinical breast examination (CBE) every year and mammography every two years between the ages of 40-69 (5). Mammography, CBE, and BSE examinations are frequently used as breast cancer screening methods (6). Although BSE is not an ideal method among breast cancer screening methods, it is the best alternative for situations where resources are limited (7). It is recommended that women perform BSE to raise

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awareness about their bodies and health and to develop a sense of responsibility. In addition, being easy to learn, being cost-effective, having high patient acceptability, and not being an invasive intervention are among the advantages of BSE (8). Some women know the importance of breast cancer screening, but do not have sufficient knowledge about screening skills and therefore do not benefit from services such as care and screening. In addition, women do not participate in breast cancer screening programs due to reasons such as lack of adequate knowledge about breast cancer, fear and shame regarding breast examinations, or fear of a disease that may occur as a result of screening, with the effect of sociocultural factors (9). In short, women stay away from breast cancer screening programs for financial or moral reasons, and these reasons constitute an obstacle to early detection.

Health professionals also have responsibilities in breast cancer screening programs. Healthcare professionals, who have important roles in informing and raising awareness of women about breast cancer risk factors, symptoms, signs and symptoms, and screening methods used in early diagnosis, are expected to have sufficient knowledge about breast cancer (10). Women living in every region of our country should be informed and made aware of breast cancer screening programs. Breast cancer screening programs are vital for women living in rural areas, which are among the groups that will have difficulty accessing health services, and health service providers should support women in these regions. Based on this necessity, this study examined the knowledge and attitudes of women registered at the family health center located in a rural area in Konya province towards breast cancer prevention.

MATERIALS AND METHODS

Study Design

This study was a cross-sectional descriptive study.

Study Setting

This study was conducted with women registered in a Family Health Center in Konya between 20.12.2023 and 20.03.2024.

Sample Size

The population of the study consisted of women over the age of 18 registered in a family health center in Konya. In the sample calculation, 215 women who met the inclusion criteria were included in the study. There are 1000 women in the total population registered with the Family Health Center. The minimum sample size required for the research was calculated using the sample calculation engine (https://tr.surveymonkey.com/mp/sample-size-calculator/). With a 5% margin of error and 95% confidence interval, the sample size was determined as 215.

Inclusion Criteria for Research

Women over 18 years of age who volunteered were included in the study.

Exclusion Criteria for the Study

Women with dementia, Alzheimer's disease, hearing or vision loss, women with psychiatric disorders, and women with breast cancer were not included in the study.

Data Collection Instruments

The Personal Information Form and Instrument to Measure Factors Influencing Women's Breast Cancer Prevention Behaviors (ASSISTS) were used for data collection. The data were collected by two researchers using by face-to-face interview method after the women registered with the family health center were explained to them when they came to the center, and their consent was obtained. The study was completed when a sufficient sample was reached.

Personal Information Form: A personal information form was prepared by the researcher after reviewing the literature. This form consists of 12 questions about sociodemographic and descriptive characteristics including age, marital status, employment status, educational status, economic status, presence of health insurance, diagnosis of breast cancer in a first-degree

relative, status of BSE training, status of BSE practice, frequency of mammography, breast ultrasonography (USG), frequency of breast examinations, and frequency of clinical breast examinations.

Instrument to Measure Factors Influencing Women's Breast Cancer Prevention Behaviors (ASSISTS): The scale developed by Khazaee-Pool et al. in Iran in 2016 to determine the factors affecting women's breast cancer prevention behaviors is a 33-item 5-point Likert-type scale ("1" never, "2" rarely, "3" sometimes, "4" often, "5" always) with attitude, motivation, self-efficacy, support systems, information seeking, self-care and stress management sub-dimensions (11). The lowest score that can be obtained from the scale is 33, and the highest score is 165. The high average obtained from the relevant dimension of the scale indicates that the participant exhibits positive behavior in that direction. The scale adapted into Turkish by Turan and Yiğit (2019) consists of 33 items in total (12). It was determined that the overall Cronbach alpha coefficient of the scale was 0.758, and its sub-dimensions ranged between 0.70 and 0.76. In this study, the overall Cronbach's alpha coefficient of the scale was 0.878. The items in the factors of the scale and the score ranges that the participants can get from the factors of the scale are given in Table 1.

Study Procedure

Preliminary interviews were conducted with all patients, and the purpose of the study was explained in detail. The women who agreed to participate in the study were then given an informed consent form, a personal information form, and an instrument to measure factors influencing women's breast cancer prevention behaviors (ASSISTS).

Data Analysis

SPSS 25.0 (Armonk, NY, USA: IBM Corp.) was used for data analysis. Descriptive statistics such as mean, standard deviation, percentage, and number were used to analyze categorical and continuous variables. The conformity of the data to normal distribution was determined by the Kolmogorov-Smirnov test, normal distribution curve, Skewness Kurtosis test, and parametric tests were used when the data showed normal distribution and nonparametric tests were used to analyze the data that did not conform to normal distribution. In pairwise comparisons, "Student's t-test" was used when the data fit the normal distribution, and "Mann-Whitney U test" was used when the data did not fit the normal distribution. For comparisons of three or more variables, one-way analysis of variance and Games Howel was used for those with normal distribution, while Kruskal-Wallis and Hocberg's Gt2 and test were used for those without normal distribution. Significance was evaluated at a 95% confidence interval and $p<0,05$ was taken.

Table 1. Items included in the factors of the scale and the factor score ranges

ASSISTS and its subdimensions	Items	Min-Max
Support systems (includes 4 items)	10,11,12,13	4.00-20.00
Self-efficacy (includes 4 items)	7,8,9,30	4.00-20.00
Self-care (includes 6 items)	24,25,26,27,28,29	6.00-30.00
Stress Management (includes 3 items)	31,32,33	3.00-15.00
Motivation (includes 4 items)	4,5,6,14	4.00-20.00
Attitude (includes 8 items)	1,2,3,18,19,21,22,23	10.00-36.00
Information Retrieval (includes 4 items)	15,16,17,20	4.00-20.00

Table 2. Comparison of ASSISTS and its sub-dimensions according to sociodemographic characteristics of women (n=215), Konya-2024

Sociodemographic Variables	Number (n)	Percentage (%)	Support Systems Score Mean±ss	Self-efficacy Score Mean±ss	Self-Care Score Mean±ss	Stress Management Score Q(Q1-Q3)	Motivation Score Q(Q1-Q3)	Attitude Score Mean±ss	Information Retrieval Score Q(Q1-Q3)	ASSISTS Total Score Mean±ss
Age (year)										
18-30	79	36.7	12.39±4.20	14.02±3.18	17.02±5.23	3.7(4.3-3.0)	4.0(4.8-3.5)	26.84±4.55	3.5(4.3-3.0)	110.78±18.50
30-45	101	47.0	13.82±4.00	15.04±3.12	18.27±5.34	3.7(4.3-3.0)	4.0(4.9-3.8)	26.10±4.69	3.5(4.5-3.0)	114.87±18.59
45 and above	35	16.3	13.62±4.11	14.91±3.13	18.14±4.89	4.0(4.3-3.3)	4.3(4.8-3.8)	26.94±4.47	3.5(4.3-3.0)	115.57±17.60
Test value			2.860[3]	2.491[3]	1.360[3]	2.427[4]	3.072[4]	0.749[3]	0.079[4]	1.361[3]
p			0.060	0.085	0.259	0.297	0.215	0.474	0.961	0.259
Marital status										
Married	134	62.3	13.57±3.99	14.75±3.17	17.83±4.94	3.7(4.3-3.0)	4.0(4.8-3.5)	26.43±4.38	3.5(4.3-3.0)	113.79±17.13
Single	81	37.7	12.75±4.33	14.48±3.18	17.72±5.73	3.7(4.5-3.0)	4.0(4.8-3.5)	26.65±4.97	3.5(4.5-3.0)	112.96±20.51
Test value			1.415[1]	0.609[1]	0.145[1]	-0.594[2]	-0.602[2]	-0.341[1]	-0.202[2]	0.321[1]
p			0.158	0.543	0.885	0.552	0.547	0.733	0.840	0.748
Working status										
Working	94	43.7	13.50±3.91	14.75±3.07	18.54±5.23	3.8(4.3-3.0)	4.0(4.8-3.5)	26.85±4.87	3.6(4.5-3.0)	115.57±17.58
Not working	121	56.3	13.08±4.30	14.57±3.25	17.21±5.19	3.7(4.3-3.0)	4.0(4.8-3.5)	26.25±4.38	3.5(4.5-3.0)	111.85±18.98
Test value			0.733[1]	0.424[1]	1.852[1]	-0.594[2]	-0.170[2]	0.939[1]	-1.284[2]	1.469[1]
p			0.464	0.672	0.065	0.553	0.865	0.349	0.199	0.143
Education										
Illiterate	2	0.9	10.50±9.19	13.00±7.07	12.50±7.77	4.2(-----4.0)	3.9(----3.3)	25.50±2.12	2.0(----1.0)	97.50±36.06
Primary School / Elementary Education	79	36.7	13.08±4.06	14.18±3.24	16.97±4.90	3.7(4.0-3.0)	4.0(4.8-3.5)	25.98±4.68	3.5(4.3-3.0)	110.43±18.15
High School	87	40.5	13.55±4.02	14.93±2.99	18.22±5.40	3.7(4.3-3.0)	4.0(4.8-3.5)	26.79±4.63	3.8(4.5-3.0)	115.85±18.00
University	47	21.9	13.14±4.33	14.97±3.21	18.59±5.28	3.7(4.3-2.7)	4.0(4.5-3.8)	26.93±4.50	3.5(4.3-3.0)	114.91±18.68
Test value			0.494[3]	1.134[3]	1.913[3]	3.509[4]	0.500[4]	0.612[3]	5.021[4]	1.816[3]
p			0.687	0.336	0.129	0.320	0.919	0.608	0.170	0.145

Economic situation										
Income more than expenditure	35	16.3	12.17±4.19	13.94±3.35	16.82±5.82	3.7(4.7-3.0)	4.0(4.3-3.3)	27.11±4.54	3.3(3.8-2.5)	108.54±18.66
Income matches expenditure	131	60.9	13.71±3.95	14.95±3.16	18.34±4.98	3.7(4.3-3.0)	4.3(5.0-3.8)	26.45±4.47	3.8(4.5-3.0)	116.05±17.72
Income less than expenditure	49	22.8	12.83±4.45	14.34±3.01	17.02±5.33	3.7(4.3-3.0)	4.0(4.4-3.5)	26.24±5.03	3.5(4.1-2.9)	110.14±19.26
Test value			2.300[3]	1.709[3]	1.860[3]	1.109[4]	**9.846**[4]	0.388[3]	**10.877**[4]	**3.408**[3]
p			0.103	0.184	0.158	0.574	**0.007****	0.679	**0.004****	**0.035***
Presence of health insurance										
Yes	185	86.0	13.43±4.16	14.83±3.14	17.96±5.15	3.7(4.3-3.0)	4.3(4.8-3.6)	26.68±4.70	3.5(4.5-3.0)	114.82±18.23
No	30	14.0	12.23±3.84	13.53±3.15	16.76±5.77	3.3(4.0-2.9)	3.8(4.0-3.0)	25.50±3.87	3.4(4.0-2.9)	105.20±17.83
Test value			1.478[1]	**2.098**[1]	1.159[1]	-1.753[2]	**-4.303**[2]	1.305[1]	-1.725[2]	**2.691**[1]
p			0.141	**0.037***	0.248	0.080	**0.000****	0.193	0.084	**0.008****
Presence of first-degree relatives diagnosed with breast cancer										
Yes	30	14.0	14.13±4.11	14.66±3.03	18.50±5.09	3.3(4.4-2.6)	4.1(5.0-3.5)	26.20±4.74	3.5(4.5-3.0)	115.10±20.06
No	185	86.0	13.12±4.13	14..64±3.20	17.68±5.27	3.7(4.3-3.0)	4.0(4.8-3.5)	26.56±4.59	3.5(4.3-3.0)	113.22±18.20
Test value			1.242[1]	0.029[1]	0.793[1]	-1.148[2]	-0.926[2]	-0.405[1]	-0.653[2]	0.517[1]
p			0.216	0.977	0.429	0.251	0.354	0.686	0.514	0.606
TOTAL	**215**	**100**								

*p<0,05; **p<0,01; [1] t-testi (t); [2] Mann-Whitney U testi (z); [3] Varyans analizi (F); [4] Kruskal-Wallis Testi (H); Summary statistics are given as X±standard values.

Table 3. Comparison of ASSISTS and its sub-dimensions according to the descriptive characteristics of women (n=215), Konya-2024

Descriptive variables	Number (n)	Percentage (%)	Support Systems Score Mean±ss	Self-efficacy Score Mean±ss	Self-Care Score Mean±ss	Stress Management Score Q(Q1-Q3)	Motivation Score Q(Q1-Q3)	Attitude Score Mean±ss	Information Retrieval Score Q(Q1-Q3)	ASSISTS Total Score Mean±ss
Receipt of training on breast self-examination (BSE)										
Yes	78	36.3	14.65±3.83	15.29±2.86	19.42±5.04	4.0(4.7-3.3)	4.0(4.8-3.5)	27.52±4.09	3.9(4.8-3.0)	120.08±17.42
No	137	63.7	12.47±4.10	14.28±3.28	16.86±5.14	3.7(4.3-3.0)	4.0(4.8-3.5)	25.94±4.79	3.5(4.0-2.9)	109.72±17.99
Test value			**3.833**[1]	**2.268**[1]	**3.525**[1]	-1.887[2]	-0.854[2]	**2.453**[1]	**-3.041**[2]	**4.108**[1]
p			**0.000****	**0.024***	**0.001****	0.059	0.393	**0.015***	**0.002****	**0.000****
Do you do breast self-examination?										
I do it regularly, once a month	9	4.2	15.44±4.79	16.33±2.29	22.11±4.56	4.3(4.7-4.0)	5.0(5.0-4.5)	30.44±3.53	4.5(4.9-4.0)	133.88±12.56
Sometimes, when I think of it, I do it	132	61.4	13.84±3.65	14.93±2.97	18.78±5.00	3.7(4.3-3.0)	4.3(4.8-3.8)	26.33±4.38	3.8(4.5-3.0)	116.32±16.70
No, I never did.	74	34.4	11.97±4.54	13.94±3.45	15.50±4.88	3.3(4.3-2.7)	3.8(4.1-3.3)	26.36±4.93	3.3(4.0-2.7)	105.93±18.84
Test value			**6.458**[3]	**3.706**[3]	**14.022**[3]	**8.382**[4]	**25.553**[4]	**3.499**[3]	**13.857**[4]	**15.023**[3]
p			**0.002****	**0.026***	**0.000****	**0.015***	**0.000****	**0.032***	**0.001****	**0.000****
Do you know how often mammography and breast USG (ultrasonography) should be performed?										
Yes	95	44.2	14.21±3.72	15.34±2.80	18.74±5.00	4.0(4.3-3.0)	4.3(5.0-3.8)	27.11±4.44	3.8(4.5-3.0)	118.41±17.47
No	120	55.8	12.51±4.29	14.10±3.33	17.04±5.32	3.7(4.3-3.0)	4.0(4.5-3.5)	26.04±4.69	3.5(4.0-2.8)	109.58±18.32
Test value			**3.040**[1]	**2.915**[1]	**t=2.395**[1]	-1.257[2]	**-2.331**[2]	1.706[1]	**-2.859**[2]	**3.581**[1]
p			**0.003****	**0.004****	**0.018***	0.209	**0.020***	0.089	**0.004****	**0.000****

Have you ever had mammography and breast USG (ultrasonography) for breast examination?										
Never had a mammogram										
Less than 1 year ago	151	70.2	13.07±4.21	14.27±3.21	17.35±5.12	3.7(4.3-3.0)	4.0(4.8-3.5)	26.23±4.52	3.5(4.5-3.0)	111.78±18.54
1-5 years ago	15	7.0	15.53±3.27	16.80±2.00	21.26±4.47	4.0(4.3-3.7)	4.3(5.0-4.0)	30.26±4.18	4.3(4.5-3.3)	129.46±14.04
More than 6 years ago	35	16.3	14.02±3.65	15.60±2.85	19.05±5.73	3.3(4.3-3.0)	4.3(4.8-3.8)	26.42±4.26	3.5(4.3-3.0)	117.02±16.73
Test value	14	6.5	10.92±4.00	14.00±3.25	15.64±4.03	4.0(4.1-2.6)	4.3(4.8-3.8)	25.78±5.32	2.9(3.8-2.0)	105.78±16.04
p			**3.623**[3]	**4.440**[3]	**4.182**[3]	3.371[4]	5.817[4]	**3.772**[3]	**7.857**[4]	**5.791**[3]
			0.014*	**0.005****	**0.007****	0.338	0.121	**0.011***	**0.049***	**0.001****
How often do you have a clinical breast examination?										
I have never had one	160	74.4	12.88±4.23	14.25±3.22	17.16±5.22	3.7(4.3-3.0)	4.0(4.7-3.5)	26.30±4.47	3.5(4.3-3.0)	111.17±18.53
I do it at least once a year	15	7.0	15.46±3.81	16.20±3.78	23.26±4.57	4.0(5.0-3.7)	4.3(5.0-3.8)	28.93±5.70	3.5(4.5-3.0)	128.80±19.74
I do it at irregular intervals	40	18.6	13.95±3.54	15.65±2.25	18.25±4.34	3.8(4.3-3.1)	4.3(4.8-3.8)	26.47±4.53	3.8(4.3-3.0)	116.97±14.14
Test value			**3.418**[3]	**5.214**[3]	**10.277**[3]	4.974[4]	**7.497**[4]	2.271[3]	0.884[4]	**7.585**[3]
p			**0.035***	**0.006****	**0.000****	0.083	**0.024***	0.106	0.643	**0.001****
TOTAL	**215**	**100**								

*p<0,05; **p<0,01; [1] t-testi (t); [2] Mann-Whitney U testi (z); [3] Varyans analizi (F); [4] Kruskal-Wallis Testi (H); Summary statistics are given as X±standard values.

Table 4. Mean Scores of ASSISTS Subdimensions (n=215), Konya - 2024

ASSISTS and its subdimensions	$\bar{x}$±SD	Min-Max	Scale Min-Max
Support systems	13.26±4.13	4.00-20.00	4.00-20.00
Self-efficacy	14.65±3.17	4.00-20.00	4.00-20.00
Self-care	17.79±5.24	6.00-30.00	6.00-30.00
Stress Management	10.89±2.77	3.00-15.00	3.00-15.00
Motivation	16.04±3.34	4.00-20.00	4.00-20.00
Attitude	26.51±4.60	10.00-36.00	10.00-36.00
Information Retrieval	14.31±3.69	4.00-20.00	4.00-20.00
ASSISTS Total Points	113.48±18.44	61.00-159.00	61.00-159.00

Ethical Considerations

For the implementation of the study, permission of the "XXX" University Drug and Non-Medical Device Research Ethics Committee was obtained.

The women to be included in the study were informed about the purpose of the study and the steps of the application by the researcher before the application and their written permission was obtained by using the "Informed Consent Form". Permission was obtained from the authors of the scale for the Turkish version of the "Instrument to Measure Factors Influencing Women's Breast Cancer Prevention Behaviors (ASSISTS)" used in the study via e-mail.

RESULTS

It was found that 47% of the 215 women who participated in the study were between the ages of 18-30. It was found that 62,3% of the women were married, 56,3% were not employed, 40,5% were high school graduates, 60,9% had an income equivalent to their expenses, 86,0% had health insurance, and 86,0% had no first-degree relatives diagnosed with breast cancer (Table 2).

Among the women who participated in the study, 63,7% reported that they had not received training on breast self-examination (BSE), 61,4% reported that they sometimes performed breast self-examination when they thought of it, 55,8% reported that they did not know how often mammography and breast ultrasonography (USG) should be performed, 70,2% reported that they had never had mammography and breast USG for breast examination, and 74,4% reported that they had never had clinical breast examination (Table 3).

There was no difference between the ASSISTS scores and scale sub-dimension scores according to the age groups and marital status of the women. It was found that there was a significant difference ($p<0.05$) between the economic status of the women and their ASSISTS scores and motivation and information retrieval sub-dimension scores. According to the result of the Gabriel test conducted to find the source of the difference between the groups, it was found that those whose income was more than their expenses had higher ASSISTS scores and motivation and information-seeking sub-dimension scores than those whose income was equal to their expenses. It was found that the ASSISTS scores, self-efficacy, and motivation scores of those with health insurance were significantly higher than those without health insurance ($p<0.05$) (Table 2).

Those who received training on BSE ASSISTS scores and scores in the sub-dimensions of support, self-efficacy, self-care, attitude, and information seeking were found to be significantly higher than those who did not receive training ($p<0.05$) (Table 3).

A significant difference was found between the answers given to the question "Do you perform breast self-examination?" in the scores of ASSISTS and all sub-dimension scores ($p<0.05$). According to Hochberg's GT2 test conducted to find the source of the difference between the groups, it

was found that those who did it once a month, regularly, sometimes, whenever they thought of it, and sometimes whenever they thought of it had higher scores than those who never did it ($p<0.05$) (Table 3).

It was found that those who knew how often mammography and breast USG should be performed had significantly higher ASSISTS scores and support, self-efficacy, self-care, motivation, and information-seeking sub-dimension scores than those who did not know ($p<0.05$) (Table 3).

There is a significant difference ($p<0.05$) in ASSISTS scores and support, self-efficacy, self-care, and attitude sub-dimension scores according to the status of having mammography and/or breast USG for breast examination. According to Hochberg's GT2 test conducted to find the source of the difference between the groups, it was found that the score of those who had mammograms less than 1 year ago was higher than those who had never had mammograms and those who had mammograms more than 6 years ago ($p<0.05$) (Table 3).

When the frequency of clinical breast examinations of women was compared, there was a significant difference ($p<0.05$) in ASSISTS scores and support, self-efficacy, self-care, and attitude sub-dimension scores. According to Hochberg's GT2 test performed to find the source of the difference between the groups, it was found that the ASSISTS scores and self-care scores of those who had clinical breast examinations at least once a year were higher than those who never had them and those who had them at regular intervals ($p<0.05$) (Table 3).

The mean ASSISTS score of the women was found to be 113.48±18.44. Among the sub-dimensions of ASSISTS, the mean score of support systems was 13.26±4.13, the mean score of self-efficacy was 14.65±3.17, the mean score of self-care was 17.79±5.24, the mean score of stress management was 10.89±2.77, the mean score of motivation was 16.04±3.34, the mean score of attitude was 26.51±4.60, and the mean score of receiving information was 14.31±3.69 (Table 4).

DISCUSSION

Many factors are involved in the etiology of breast cancer and some of them are preventable. Every preventable factor reduces the development of breast cancer. In the study, the mean ASSISTS total score of the women was found to be at a moderate level. When the sub-dimensions of the ASSISTS scale were evaluated, it was found that the mean scores of support systems, self-efficacy, stress management, motivation, attitude, and information were high and the mean score of self-care was at a medium level. Okan et al (2023) and Güneş et al (2022) studies, it was determined that the mean ASSISTS scale total score of women was at a moderate level (13,14). Among the women who participated in the study, it was found that those whose income was equal to or higher than their expenses had high ASSISTS scale scores. In the study of Okan et al (2023), in parallel with the results of the study, it was found that the ASSISTS scale score of those whose income and expenditure were equal was higher than those whose income was less than expenditure (13). Women have multiple responsibilities in society such as childcare, housework, and meeting parental needs. Considering that good socio-economic status contributes significantly to supporting these responsibilities, it can be said that this situation facilitates women's ability to allocate sufficient time for health seeking. In the study of Karabulutlu et al (2023), it was determined that there was no significant difference between the ASSISTS scale score and income status (15). In addition to economic security, it was found that women with health insurance had higher ASSISTS scale scores than those without health insurance. Today, with increasing health technologies, there is a corresponding increase in health expenditures. It can be said that knowing that the tests and examinations are covered by any institution increases women's sense of competence and positive health-related behaviors.

Inadequate knowledge about breast cancer screening and treatment may lead individuals to have negative perceptions and rely on inaccurate alternative treatments (16). This may lead to late detection of the disease and more difficult

treatment. In the study, it was found that those who received training on breast self-examination (BSE) had higher ASSISTS scores and all sub-dimensions. In a study examining the relationship between knowledge and attitude towards BSE in women, it was reported that the attitudes of women with high levels of knowledge were also positive (17). In a study by Khiyali, Aliyan, and Kashf (2017), they increased the knowledge level of women through training on breast cancer and BSE and stated that this training improved BSE behaviors that can be used in early diagnosis (18).

It was found that the ASSISTS scale scores of those who regularly and sometimes practiced BSE were higher than those who never practiced BSE. In parallel with the results of the study, Karabulutlu et al (2023) also reported that the ASSISTS scale scores of women who performed BSE examination increased significantly (15). When the BSE status is examined, there are studies indicating that less than half of the participants regularly perform BSE (19). Türkmen (2017) found that more than half of the women in her study did not know the symptoms of breast cancer and that the BSE practice behaviors of those who knew the symptoms increased 4 times (20). According to the results of the study, it can be said that women who practice BSE examination have a higher awareness of breast cancer and take measures to diagnose the disease at an early stage.

Prevention and treatment interventions need to be improved due to the incidence, mortality, and economic burden of cancer (21). It was found that those who knew how often mammography and breast USG should be performed had higher ASSISTS scale scores than those who did not know and those who had mammography and breast USG in less than one year. In parallel with the results, studies are showing that the attitudes and practices of women who know about BSE are more positive (22,23,24). Women who do not follow breast cancer screening recommendations such as BSE, mammography, and clinical breast examinations are more likely to have the disease detected at later stages (25). It can be said that women who have a high level of knowledge and attach importance to screening take precautions to prevent the disease.

It was found that women who had clinical breast examinations at least once a year had higher ASSISTS scores than those who never had them and those who had them regularly. In a study by Aytekin et al. in which women's knowledge and practice of clinical breast examination were questioned, it was concluded that 51.5% of women had not heard of clinical breast examination and 13.5% of women had clinical breast examination (26). It is reported that those who have regular clinical breast examinations have increased compliance with screening and breast health awareness (25). According to the socio-cultural structure, clinical breast examination is seen as an embarrassing behavior in some women and therefore low awareness in these groups is an expected picture. It can be said that women who have continuous examinations realize their responsibilities related to the disease in the hospital environment and do not take any individual precautions.

Strengths of the Study

Women living in rural areas are disadvantaged in terms of access to health screenings due to the limited facilities in their region. The strength of this study is that it was conducted in a disadvantaged group. It may be possible to provide health screening support to women living in rural areas in line with the information obtained about breast cancer preventive interventions and screenings.

Limitations of the Study

The limitation of this research is that the results represent only the relevant population. The results cannot be generalized.

CONCLUSION

The factors affecting women's breast cancer prevention behaviors were influenced by economic status, health insurance, and having received education on BSE. Social media and public service campaigns can be utilized, and providing free mammography services to low-

income women can be a supportive factor. In addition, since primary health care services are usually the units that come into contact with women, awareness raising and dissemination can be ensured here. Raising awareness of screening can also contribute to reducing the burden on secondary and tertiary health services.

Training on screening methods is important for the early detection of breast cancer. The educational role of nurses, which is among their contemporary roles, is significant in protecting women's breast health. Nurses, who have an important place in the healthcare team, have an important role in education because they are in constant communication with women in therapeutic institutions such as hospitals, units providing preventive health services such as schools, family health centers, centers providing rehabilitation services such as cancer associations, and homes. In terms of education, nurses must first evaluate what women know or want to know about BSE practices. In addition, nurses, as role models and responsible individuals for the people they serve, should perform the BSE methodically and correctly, and regularly turn clinical breast examination and mammography checks into routine behavior, and have extensive knowledge about the signs and symptoms of breast cancer and risk groups. They should also be familiar with current guidelines for breast cancer prevention and be able to answer questions from patients about breast cancer risk and breast cancer prevention interventions. For this reason, nurses' knowledge levels on this subject should be evaluated, their participation in in-service training should be encouraged, and their participation in organized training programs should be supported. Breast cancer risk assessments, general lifestyle modification initiatives, and breast cancer prevention strategies, including screening, should be included in training programs for health professionals.

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Declaration of competing interest

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Informed Consent

Informed written consent was obtained from all individual participants included in the study.

Availability of Data and Materials

All data generated or analyzed during this study are included in this article. Further inquiries can be directed to the corresponding author.

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