



## ARAŞTIRMA / RESEARCH

# Prevalence and determinants of breast self-examination in Karabük, Turkey

Karabük'te kendi kendine meme muayene sıklığı ve belirleyicileri

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### Abstract

**Purpose:** The aim of this study was to evaluate the awareness of women about breast self-examination and to examine the factors affecting this

**Materials and Methods:** This was a descriptive and analytical study, conducted on female patients presenting at the Karabük University Training and Research Hospital between 15 October 2015 and 15 February 2016. The study sample comprised 483 females willingly participating, with no cognitive problems and no diagnosis or treatment of breast cancer and no history of breast surgery.

**Results:** While 63.8% of the participants stated that they knew about breast self-examination, only 8.5% performed it regularly and 50.9% stated that they examined themselves occasionally. When the relationship between status of performing breast self-examination and variables were examined, a significant difference was observed in respect of age, level of education, employment, marital status, history of breast cancer in family/friends. It was determined that women of a younger age, with a higher level of education, fewer children and who were employed, had greater knowledge of breast self-examination and application rates, whereas the majority of those who did not perform breast self-examination were worried that they would get breast cancer and thought that they would not be able to detect a mass in their breast.

**Conclusion:** These findings indicate that there is a need for widespread community-based education and the target group for this education should primarily be older women, with low education, a greater number of children and who do not work outside the home.

**Keywords:** Breast self-examination, breast cancer, breast.

### Öz

**Amaç:** Bu çalışmanın amacı kadınların kendi kendine meme muayenesi konusunda farkındalıkları ve etkileyen faktörleri değerlendirmektir.

**Gereç ve Yöntem:** Analitik ve tanımlayıcı katılmaya katılmayı kabul eden, yapılan bu çalışma, Karabük Üniversitesi Eğitim ve Araştırma Hastanesi'nde 15 Ekim-15 Şubat 2016 tarihleri arasında yürütülmüştür. Çalışmanın örneklemini, çalışmaya katılmaya gönüllü, anlama ve konuşma problemi bulunmayan, meme kanseri teşhisi ya da tedavisi almamış, herhangi bir meme cerrahisi geçirmemiş 483 kadın oluşturmuştur.

**Bulgular:** Araştırmada katılımcıların %63.8'inin kendi kendine meme muayenesini bilmesine rağmen, sadece %8.5'i düzenli ve %50.9'u bazen meme muayenesi yaptığı belirlendi. Kendi kendine muayene yapma durumu ile değişkenler arasındaki ilişki incelendiğinde, yaş, eğitim düzeyi, çalışma durumu, medeni durum, aile/aarkadaşlarda meme kanseri öyküsü açısından anlamlı bir fark gözlemlendi. Çalışmada yaşı genç, eğitim seviyesi yüksek, çocuk sayısı daha düşük ve çalışan kadınların kendi kendine meme muayenesini daha fazla bildiği ve uyguladığı, kendi kendine meme muayenesi yapmayan kadınların çoğunluğunun meme kanserine yakalanabileceği endişesine sahip olduğu ve memesindeki kitleyi bulamayacağını düşündüğü belirlenmiştir.

**Sonuç:** Bu bulgular bize, konu hakkında toplum tabanlı yaygın eğitimler yapılmasını ve bu eğitimlerde öncelikli hedef kitlenin ileri yaşta, eğitim seviyesi düşük, çocuk sayısı fazla, herhangi bir işte çalışmayan kadınlar olması gerektiğini düşündürmektedir.

**Anahtar kelimeler:** Kendi kendine meme muayenesi, meme kanseri, meme.

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## INTRODUCTION

Breast cancer is the most commonly seen cancer type in females and is one of the leading causes of female death in many countries. Breast cancer was at the head of the 10 most frequently seen cancers in females with a mean incidence of 24%. In almost all countries, breast cancer incidence has shown an increase in recent years<sup>1,2</sup>.

Early diagnosis in all cancer types can be life-saving. When the high rates of morbidity and mortality of breast cancer are considered, early diagnosis emerges as an important factor in increasing survival rates. Mammography, clinical breast examination and breast self-examination are recommended for the early diagnosis of breast cancer<sup>3</sup>. The American Cancer Society has recommended annual mammography for females aged  $\geq 40$  years, clinical breast examination at least once every 3 years for females in their 20s and 30s and all those over the age of 20 years should be making a breast self-examination regularly each month<sup>4</sup>.

Breast self-examination, which is usually recommended for early diagnosis of breast cancer in developed countries, is a simple, cost-free, easily learned method, which also protects the woman's privacy<sup>5-7</sup>. In the vast majority of breast cancer cases (90%), the patients have noticed a problem in their breast themselves. In many studies, the intervals in particular of breast self-examination have been shown to be effective in the determination of breast cancer<sup>8</sup>. For the breast tissue to be better understood and therefore, changes which could occur to be recognised, breast self-examination must be applied at regular intervals, women must want to examine their breasts, they must know the examination technique well and feel responsible for the application to themselves<sup>2,3</sup>.

The aim of this study was to evaluate the awareness of women about breast self-examination and to examine the factors affecting this.

## MATERIALS AND METHODS

This was a descriptive and analytical study, conducted on female patients presenting at the Obstetrics and Gynaecology department of Karabuk University Training and Research Hospital between 15 October 2015 and 15 February 2016. The study sample comprised 483 females willingly participating, with no cognitive problems and no diagnosis or treatment of breast cancer and no history of breast surgery.

Approval for the study was granted by the Local Ethics Committee (No: 2015/07, dated 25/06/2015). The questionnaire consisted of questions related to some socio-demographic characteristics of the participants, identifying their knowledge of breast self-examination and status of applying it and their attitude to breast cancer.

In the first part of the questionnaire, socio-demographic characteristics of the participants such as age, education, study, marital status, economic status perception, number of children, age at first birth and menopause were questioned, the second part of the questionnaire included their knowledge and competence on self-breast examination and their attitudes towards the breast cancer. The questionnaires were applied to the women in the outpatient clinic of the hospital. After interviewing the participants face-to-face, the aim and importance of the research is explained, they are given to fill in the forms. It took 8-10 minutes to complete the forms

### Statistical analysis

When examining the conformity of the data to normal distribution, the Shapiro Wilks test was used due to the unit numbers. The level of significance of 0.05 was used when interpreting the results. As the data of differences between the groups did not show normal distribution, the Mann Whitney U-test and the Kruskal Wallis H-test were used. The relationships of nominal variables between the groups were examined with the Chi-square test and when the expected values were not of sufficient volume, Fisher's Exact test and Pearson Chi-square analysis with Monte Carlo simulation were applied. A value of  $p < 0.05$  was accepted as statistically significant.

## RESULTS

The mean age of the participants was  $38.1 \pm 11.5$  years (range, 19-69 years) and 75.16% were married. Educational level was reported as primary school only by 45.5%, 80.5% stated that they did not work outside the home and 64.8% described their economic status as moderate. The age of menarche was  $13.2 \pm 1.36$  years, the age of first giving birth was  $22.66 \pm 3.99$  years and the number of children was  $2.25 \pm 0.96$ . In 89.4% of the participants, there was no history of breast cancer in family or friends, 81.4% had not started menopause and only 13.5% reported that they had received any training on breast self-examination. While 63.8% of the participants stated

that they knew about breast self-examination, only 8.5% performed it regularly and 50.9% stated that they examined themselves occasionally (Table 1).

When the relationship between knowledge of breast self-examination and some variables were examined, a statistically significant difference was observed in respect of age ( $p<.05$ ). The mean age of those who knew about breast self-examination ( $37.07\pm 10.91$  years) was significantly lower than the age of those with no knowledge ( $39.91\pm 12.30$  years). A statistically significant difference was found between the number of children and knowledge of breast self-examination ( $p<.05$ ). The number of children of

those who knew about breast self-examination was significantly lower than that of those with no knowledge (Table 1).

Knowledge of breast self-examination was stated by 28% of illiterate respondents, by 54.1% of those who had primary school level of education, 61.1% of those who attended middle school, 74.6% of those who had finished high school and by 81.5% of those who had graduated from university, and the difference was determined to be statistically significant ( $p<.01$ ). As the level of education increased, so the rate of knowledge about breast self-examination increased (Table 1).

**Table 1. Comparison of knowledge of breast self-examination among women**

		Knowledge of breast self-examination			P-values
		No	Yes	Total	
		Mean±Sd	Mean±Sd	Mean±Sd	
Age		39.91±12.30	37.07±10.91	38.1±11.50	<0.05
Number of children		2.44±1.15	2.14±0.8	2.25±0.96	<0.05
		n (%)	n (%)		
Level of education	Illiterate	18 (72.0)	7 (28.0)	25(100)	<0.001
	Primary school	101 (45.9)	119 (54.1)	220 (100)	
	Middle school	14 (38.9)	22 (61.1)	36 (100)	
	High school	17 (25.4)	50 (74.6)	67 (100)	
	University or higher	25 (18.5)	110 (81.5)	135 (100)	
Total		175 (36.2)	308 (63.8)	483 (100)	
Employment status	Unemployed	157 (40.4)	232 (59.6)	389 (100)	<0.001
	Employed	18 (19.2)	76 (80.8)	94 (100)	
	Total	175 (36.2)	308 (63.8)	483 (100)	
Perception of economic status	Good	45 (31.1)	100 (68.9)	145 (100)	0.124
	Moderate	116 (37.4)	194 (62.6)	310 (100)	
	Poor	14 (50.0)	14 (50.0)	28 (100)	
	Total	175 (36.2)	308 (63.8)	483 (100)	
Marital status	Married	139 (38.3)	224 (61.7)	363 (100)	<0.05
	Single	18 (21.7)	65 (78.3)	83 (100)	
	Other *	18 (48.6)	19 (51.4)	37 (100)	
	Total	175 (36.2)	308 (63.78)	483 (100)	
History of breast cancer in family/friends	No	159 (36.8)	273 (63.2)	432 (100)	0.445
	Yes	16 (31.4)	35 (68.6)	51 (100)	
	Total	175 (36.2)	308 (63.8)	483 (100)	
Menopausal status	No	130 (33.1)	263 (66.9)	393 (100)	<0.05
	Yes	45 (50.0)	45 (50.0)	90 (100)	
	Total	175 (36.2)	308(63.8)	483 (100)	

Sd: Standart deviation \*separated/divorced/widowed

A statistically significant relationship was determined between employment status and knowledge of breast self-examination ( $p < .05$ ). Of those who did not work outside the home, 59.6%, and 80.8% of those who were employed reported that they knew about breast self-examination. Of the total sample, 61.7% of the married participants, 78.3% of the single females and 51.4% of those who were separated, divorced or widowed had knowledge of breast self-examination and the difference was statistically significant ( $p < .01$ ). 50% of those who had entered the menopausal period and 66.9% of those who had not yet started menopause, knew about breast self-examination and the difference was statistically significant ( $p < .01$ ) (Table 1).

No statistically significant relationship was determined between knowledge of breast self-examination and perceptions of economic status or a familial history of breast cancer (Table 2).

When the status of performing breast self-examination was examined according to level of education, 68% of the illiterate participants, 48.6% of those with primary school level education, 41.7% of middle school level, 34.3% of high school level and 25.2% of those who graduated from university or above, did not perform breast self-examination and a statistically significant difference was determined in respect of level of education ( $p < .05$ ). According to these findings, as the level of education increased so the rate of breast self-examination increased (Table 2).

**Table 2. Comparison of some variables according to the status of applying breast self-examination**

		Application of breast self-examination				p
		Never	Occasionally	Regularly once a month	Total	
		n (%)	n(%)	n (%)	n (%)	
Level of education	Illiterate	17 (68.0)	8 (32.0)	-	25 (100)	<0.001
	Primary school	107 (48.6)	96(43.6)	17(7.8)	220 (100)	
	Middle school	15 (41.7)	18 (50.0)	3 (8.3)	36 (100)	
	High school	23 (34.3)	35 (52.3)	9 (13.4)	67 (100)	
	University and higher	34 (25.2)	89(65.9)	12 (8.9)	135 (100)	
	Total	196 (40.6)	246 (50.9)	41 (8.5)	483 (100)	
Employment status	Unemployed	173 (44.5)	189 (48.6)	27 (6.9)	389 (100)	<0.001
	Employed	23(24.5)	57 (60.6)	14 (14.9)	94 (100)	
	Total	196 (40.6)	246 (50.9)	41 (8.5)	483 (100)	
Perception of economic status	Good	49 (33.8)	82 (56.5)	14 (9.7)	145 (100)	0.152
	Moderate	135 (43.6)	148 (47.7)	27 (8.7)	310 (100)	
	Poor	12 (42.9)	16 (57.1)	-	28 (100)	
	Total	196 (40.6)	246 (50.9)	41 (8.5)	483 (100)	
Marital status	Married	155 (42.7)	175 (48.2)	33 (9.1)	363 (100)	<.0.05
	Single	23 (27.7)	56 (67.5)	4 (4.8)	83 (100)	
	Other *	18 (48.7)	15 (40.5)	4 (10.8)	37 (100)	
	Total	196 (40.6)	246 (50.9)	41 (8.5)	483 (100)	
History of breast cancer in family/friends	Absent	183 (42.4)	212 (49.1)	37 (8.5)	432 (100)	< 0.05
	Present	13 (25.5)	34 (66.7)	4 (7.8)	51 (100)	
	Total	196 (40.6)	246 (50.9)	41 (8.5)	483 (100)	
Menopausal status	No	152 (38.7)	204 (51.9)	37 (9.4)	393 (100)	0.110
	Yes	44 (48.9)	42 (46.7)	4 (4.4)	90 (100)	
	Total	196 (40.6)	246 (50.9)	41 (8.5)	483 (100)	

\*separated/divorced/widowed

A statistically significant difference was determined in the rates of performing breast self-examination according to employment status ( $p < .05$ ). Regular breast self-examination once a month was applied by 6.9% of women who did not work outside the home and by 14.9% of those who were employed, whereas 44.5% of the non-employed and 24.5% of the employed women stated that they never performed breast self-examination. In respect of marital status, 42.7% of the married women, 27.71% of the single and 48.65% of the separated/divorced /widowed stated that they did not perform breast self-examination and the difference between these groups was statistically significant ( $p < .05$ ).

Of the study participants with a family or friend history of breast cancer, 25.5% never performed breast self-examination, 66.7% performed it occasionally and 7.8% performed examinations regularly every month. Of those with no family or friend history of breast cancer, 42.4% never

performed breast self-examination, 49.1% performed it occasionally and 8.5% performed examinations regularly every month ( $p < .05$ ).

In the study, some statements about breast cancer were given to the women and the responses to these statements were examined according to their status of performing breast self-examination. In response to the statement, 'I think I have a high probability of getting breast cancer', 37.5% of those who never performed breast self-examination agreed, 40% did not agree, and 43% did not know. The responses to this statement of those who regularly performed breast self-examination were that 11.5% agreed and 8.2% did not agree, with no statistically significant difference found between the groups. Similarly, no difference was seen between the status of performing breast self-examination in respect of agreement with the statement, 'Getting breast cancer will negatively affect my whole life' ( $p > .05$ ) (Table 3).

**Table 3. Comparison of responses given to statements about breast cancer according to the frequency of breast self-examination**

		Do you perform breast self-examination?				p	
		Never	Occasionally	Regularly once month	Total		
		n (%)	n (%)	n (%)	n (%)		
I think I have a high probability of getting breast cancer	I agree	39 (37.5)	53 (51.0)	12 (11.5)	104 (100)	0.692	
	I disagree	77 (40.0)	100 (51.8)	16 (8.2)	193 (100)		
	I don't know	80 (43.0)	93 (50.0)	13 (7.0)	186 (100)		
	Total	196 (40.6)	246 (50.9)	41 (8.5)	483 (100)		
Getting breast cancer will negatively affect my whole life	I agree	117 (39.3)	152 (51.0)	29 (9.7)	298 (100)	0.271	
	I disagree	44 (45.4)	44 (45.4)	9 (9.2)	97 (100)		
	I don't know	35 (39.8)	50 (56.8)	3 (3.4)	88 (100)		
	Total	196 (40.6)	246 (50.9)	41 (8.5)	483 (100)		
When performing breast self-examination, the thought that I could get breast cancer worries me	I agree	86 (49.4)	76 (43.7)	12 (6.9)	174 (100)	<0.001	
	I disagree	72 (31.6)	135 (59.2)	21 (9.2)	228 (100)		
	I don't know	38 (46.9)	35 (43.2)	8 (9.9)	81 (100)		
	Total	196 (40.6)	246 (50.9)	41 (8.5)	483 (100)		
If there is a mass in my breast, I think I would be able to find it during breast self-examination	I agree	105 (35.2)	159 (53.4)	34 (11.4)	298 (100)	<0.05	
	I disagree	38 (52.0)	31 (42.5)	4 (5.5)	73 (100)		
	I don't know	53 (47.3)	56 (50.0)	3 (2.7)	112 (100)		
	Total	196 (40.6)	246 (50.9)	41 (8.5)	483 (100)		

Of those who agreed with the statement, 'When performing breast self-examination, the thought that I could get breast cancer worries me', 49.4% did not perform breast self-examination, 43.7% examined themselves occasionally and 6.9% regularly. Of those who did not agree with the statement, the majority (59.2%) performed breast self-examinations occasionally, 9.2% examined themselves regularly and 31.6% stated that they never performed self-examinations. The difference between the groups was statistically significant ( $p < .05$ ). (Table 3).

Of the study participants who thought that they would be able to detect a mass in their breast, 35.2% did not perform breast self-examination, 53.4% examined themselves occasionally and 11.4% regularly. Of those who thought that they would not be able to detect a mass in their breast, the majority (52%) did not perform breast self-examination, 42.5% examined themselves occasionally and 5.5% regularly. The difference between the groups was statistically significant ( $p < .05$ ).

## DISCUSSION

Breast self-examination is an important method in the early determination of breast cancer. Although this is a simple and cost-free method, there are known obstacles for women on the subject of breast self-examination. Although the majority (63.7%) of the study participants stated that they knew about breast self-examination, 40.6% did not examine their breasts, 50.9% made an examination occasionally and only 8.5% examined regularly. Several studies in literature have shown differences between knowing about and applying breast self-examination. In a study in Iran, 69.1% of the study participants stated a knowledge of breast self-examination but only 57.4% of those with knowledge performed examinations<sup>9</sup>. In another study in Saudi Arabia, the rate of knowledge of breast self-examination was found to be 82% and the application rate 41.2%<sup>10</sup>. The results of another study in Iran examining the knowledge and attitudes of women towards breast cancer, showed that while the majority (83.1%) of participants knew how to apply breast self-examination, only 12.9% examined themselves regularly<sup>11</sup>. In studies by Gölbaşı et al<sup>12</sup>, it was reported that only 4.3% of the study participants examined their breasts monthly, and 63.4% had not examined themselves at all in the last year. Consistent with previous findings in literature, it was seen in the current study that although women knew about

breast self-examination, there were obstacles to them performing the examination.

In this study, a significant relationship was determined between age, education level and knowledge of breast self-examination. The mean age of those with knowledge of breast self-examination was significantly lower than the age of those with no knowledge. As the level of education of the study participants increased, so there was also seen to be an increase in knowledge of breast self-examination.

In a recent study by Otaibi et al<sup>13</sup>, examining the awareness of women living in Riyadh on the subject of breast cancer, age and education level were found to be a significant variable affecting knowledge of breast self-examination, with a higher rate of breast self-examination knowledge determined in younger women with a higher level of education. Similarly, in a study in Turkey by Taşçı and Usta<sup>14</sup>, statistically significantly higher rates of knowledge of breast self-examination were determined in women of a younger age and with a higher level of education. In another study conducted on nurses working in a state hospital, nursing students and patients presenting at the hospital, which evaluated knowledge and application of breast self-examination, the rate of knowledge of breast self-examination in the patient group was found to be 68.2% in those who had a primary school level of education and 87.5% in those who had graduated from further education<sup>15</sup>. It has been reported in studies made in different regions of Turkey that as the level of education increases, so the application of breast self-examination increases<sup>16,17</sup>. The results of the current study were seen to previous findings in literature.

In addition to the knowledge of the women in the study about breast self-examination, the relationship was examined between the application of examination and various variables. The results of the study showed that as education level increased, so the application of breast self-examination increased and the employed women performed examinations at a higher rate than those who were not employed. These results agreed with previous findings in literature<sup>3,18-20</sup>.

When examination made regularly every month was examined according to marital status, those who were separated/divorced/widowed made examinations more regularly, and this rate was determined to be lower in those who were single ( $p < .05$ ). Although no studies in literature have shown a difference in

respect of the variable of marital status, there are studies which have found the rate of examination to be higher both in single women or in married women<sup>21</sup>. When the study sample is considered, the finding related to marital status could be related to the lower mean age of the women with knowledge of breast self-examination. Women who are young and still single have knowledge of breast self-examination and although they examine occasionally, it seems that they tend to neglect regular monthly examinations.

In the study, it was determined that women with a history of breast cancer in family or friends applied breast self-examination significantly more than those with no such history ( $p < .05$ ). In a study by Dundar et al.<sup>22</sup>, in a rural region, the knowledge levels of breast cancer were determined to be higher in those with a familial history of breast cancer. Ekici and Utqualp<sup>23</sup>, examined the behaviour of female teaching staff towards breast cancer and it was found that 55% of those with a family history of breast cancer made breast self-examination regularly every month, whereas this rate was only 7.7% in the other teachers. Taşçı and Usta<sup>14</sup> reported similar findings. Behaviour and attitudes are learned in three basic ways, namely through associations, through direct experience of the subject, or from another's experience. When looked at from this perspective, the findings are not surprising that there is an association between a higher rate of breast self-examination in women with a family or friend history of breast cancer.

Of the women who agreed with the statement "When performing breast self-examination, the thought that I could get breast cancer worries me", 49.4% did not perform breast self-examination, 43.7% performed it occasionally and 6.9% examined regularly and when these rates were compared with those who did not agree with the statement, the difference was determined to be statistically significant. In addition, 35.2% of the participants who agreed with the statement, 'If there is a mass in my breast, I think I would be able to find it during breast self-examination', and 50% of those who disagreed, did not perform breast self-examination, and this difference was determined to be statistically significant. In a study which examined the behaviour of university students studying in departments related to health towards the early diagnosis of breast cancer, almost all the students feared breast cancer and stated that they worried about finding a mass<sup>24</sup>. From literature it can be understood that the main reasons for negative associations of breast cancer screening

are the fear of finding a mass and the thought that breast cancer is an untreatable disease<sup>20,25</sup>.

Fear, suspicion and denial are behavioural factors that cause a delay in seeking medical care. When an individual is in a situation that makes them fearful or uncomfortable, they often alienate themselves from the situation. The fear of cancer is one of the barriers to breast cancer screening for Asian women<sup>26,27</sup>. A woman who fears getting breast cancer or who worries about finding a mass, avoids breast self-examination as a self-defence mechanism. Therefore, educational programs to be made on the subject of awareness of breast cancer, should eliminate the fear and emphasise the life-saving importance of early diagnosis and should also encourage women to undertake breast self-examination.

One of the different findings of this study from the literature is that women who have a concern about breast cancer have low rates of self-breast examination. The findings of our study, similar to the literature, indicate that women are aware of breast self-examination but do not apply them regularly. When evaluated from this perspective, "fear of breast cancer" and "worrying about finding a mass" is an important barrier for self-breast examination. The most important limitation of our study is that women's knowledge about breast cancer is not questioned. For this reason, it is recommended to carry out qualified studies that will reveal the relationship between the fear of being breast cancer and self-breast examination. The results of this study suggest that women living in Karabük have low self-breast examination rates and are in need of education on the subject.

Although the majority of the women in the study knew about breast self-examination, it was found that only 8.5% performed regular monthly examinations. It was determined that women of a younger age, with a higher level of education, fewer children and who were employed, had greater knowledge of breast self-examination and application rates, whereas the majority of those who did not perform breast self-examination were worried that they would get breast cancer and thought that they would not be able to detect a mass in their breast. These findings indicate that there is a need for widespread community-based education and the target group for this education should primarily be older women, with low education, a greater number of children and who do not work outside the home. In addition, these education programs should be structured to increase

the self-confidence of women and increase their motivation to adopt healthy lifestyle behaviours and should certainly include methods to develop the capability of detecting a mass in the breast.

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