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Research article

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Do women living in northeast Anatolia get mammography screening? A hospital-focused cross-sectional study

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Ethics Committee Approval
Research data were collected after ethical approval (15.04.2021 / 4-60) from the Ethics Committee of Kafkas University Faculty of Medicine.
All procedures in this study involving human participants were performed in accordance with the 1964 Helsinki Declaration and its later amendments.

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Abstract

Background/Aim: In Turkey, women between 40–69 years of age are routinely subjected to mammography screening for breast cancer. Despite this, the mammography rate is only 28.9% in women aged 15 years and above. This is an indication that women in Turkey are not sufficiently interested in mammography screenings. This study aimed to determine the factors that affect the decision to not have mammography screening for women aged 40 and above.

Methods: The study was designed as a hospital-focused cross-sectional study. The population of the study comprised 7,239 women aged 40 years and above. The sample size that would represent the population was calculated as 365 women with 50% prevalence, 95% confidence interval, and 5% deviation in the Epi Info program. A Chi-square test used in the binary analysis ($P<0.05$ was considered statistically significant); and backward LR logistic regression analysis was used in multiple analyses.

Results: Based on the findings of the study, 57.0% of women did not have mammography screening. This was 2.047 times (CI: 2.341–5.841) higher among those living in rural areas when compared with women living in the city/district center, 2.639 times (CI: 1.291–3.247) higher in women with eight years or less of education as compared with those who had nine or more years of education, and 1.9 times (CI: 1.172–3.081) higher in women not informed by family doctor/family health staff (AH/ASE) when compared with women receiving information.

Conclusion: The percentage of mammography screening is low in women over the age of 40. The risk factors were determined to be low education, rural areas of residence, and a lack of information provided by the family doctor.

Keywords: Mammography, Breast, Breast cancer, Risk factor

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Introduction

Breast cancer is the most prevalent type of cancer in women in Turkey as well as throughout the world. The level of incidence of 46.0 per hundred thousand worldwide is similar to the incidence in Turkey (45.6 per hundred thousand); whereas, in developed countries, the incidence rises to 79.0 per hundred thousand [1]. The survival rate in developed countries is higher than that of developing countries. It has been suggested that the reason for higher survival rate is due to the extensive use of mammograms in developed countries [2].

Breast self-examination, clinical breast examination, and mammography have been recommended as the main early diagnosis methods for breast cancer. Among these methods, mammography is known to be a powerful screening method and used in routine breast cancer screening in a number of countries [3].

In Turkey, women between 40–69 years of age are routinely subjected to mammograms in screening for breast cancer [4]. Despite this, the rate of mammography is only 28.9% in women aged 15 years and above [1]. This is an indication of the fact that women in Turkey are not sufficiently interested in mammography screenings. This study aims to determine the contributing factors to this phenomenon.

Materials and methods

Type of study: Hospital-focused cross-sectional study

Research population: In 2020, 7,239 women aged 40 and above were examined in the general surgery outpatient clinic . It was assumed that the same number of women would apply for examination in 2021. Thus, the research population was determined to be 7,239 women.

Research sample: The sample size that would represent the population was calculated as 365 women with 50% prevalence, 95% confidence interval, and 5% deviation in the Epi Info program.

Research variables

Dependent variable: Women's status of having a mammogram at any point in time

Independent variables: Sociodemographic, socioeconomic, and bio-demographic characteristics

Data collection form: The data form of the research was prepared by the researchers.

Ethics committee approval and verbal consent: The research data were collected upon obtaining ethical approval (15.04.2021 / 4-60) and verbal consent.

Preliminary trial of the study: Conducted with nine women who presented to the outpatient clinic. After the preliminary trial, the issues related to the data collection form were corrected.

Selection of subjects in the study and collection of data: Data from female patients age 40 and above who presented to the outpatient clinic were collected using a face-to-face interview technique until the sample size was reached.

Statistical Analysis

SPSS version 20 for Windows was used for data analysis. Chi-square test in paired analysis (P<0.05 was considered statistically significant); backward LR logistic regression analysis was used in multiple analyses.

Results

In this study, 57.0% of women did not undergo mammography screening.

A review of Table 1 shows that there was a statistically significant difference between the place of residence (P=0.001), educational background (P=0.001), and information provided by family physicians and/or family health staff (AH/ASE) in regard to mammography (P=0.003). It also indicates whether the total income of the family was significant (P=0.044) in having mammography screening. There was no statistically significant difference between the age of the women (P=0.114), type of family (P=0.112), health insurance (P=0.209), family history of cancer (P=0.564), profession of women (P=0.835), and the total number of pregnancies (P=0.081).

Table 1: Distribution of the demographic characteristics of women aged 40 years and above on the status of not having mammography

Independent variables		Dependent variable: mammography		Total	X^2	*P*-value
		Yes	No			
		n (%)*	n (%)*	n (%)**		
Residing at	Village/town	43 (25.9)	123 (74.1)	166 (45.5)	36.364	0.001
	City/district center	114 (57.3)	85 (42.7)	199 (54.5)		
Age	40–49	71 (48.0)	77 (52.0)	148 (40.5)	2.498	0.114
	≥50	86 (39.6)	131 (60.4)	217 (59.5)		
Educational status	8≤	84 (36.4)	147 (63.6)	231 (63.3)	11.352	0.001
	9≥	73 (54.5)	61 (45.5)	134 (36.7)		
Family type	Nucleus	134 (45.0)	164 (55.0)	298 (81.6)	2.526	0.112
	Large	23 (34.3)	44 (65.7)	67 (18.4)		
Did AH/ASE provide information?	No	39 (32.0)	83 (68.0)	113 (33.4)	9.123	0.003
	Yes	118 (48.6)	135 (51.4)	252 (66.6)		
Health assurance	Yes	136 (44.4)	170 (55.6)	306 (83.8)	1.581	0.209
	No	21 (35.6)	38 (64.4)	59 (16.2)		
Family history of cancer	Yes	11 (37.9)	18 (62.1)	29 (7.9)	0.332	0.564
	No	146 (43.5)	190 (56.5)	336 (92.1)		
Woman's profession	Unemployed	117 (43.3)	153 (56.7)	270 (74.0)	0.043	0.835
	Employed	40 (42.1)	55 (57.9)	95 (26.0)		
Total income	Sufficient	46 (52.3)	42 (47.7)	88 (24.1)	4.056	0.044
	Insufficient	111 (40.1)	166 (59.9)	277 (75.9)		
Total no. of pregnancy	3 and less	119 (40.8)	173 (59,2)	292 (80.0)	3.043	0.081
	4 and more	38 (52.1)	35 (47.9)	73 (20.0)		
Total*		157 (43.0)	208 (57.0)	365 (100.0)		

* row percentage, ** column percentage, *** AH/ASE = Family Doctor, Family Health Staff

Table 2 shows the results of logistic regression analyses. The number of women not having mammograms was 2.047 times (CI: 2.341–5.841) higher in women living in rural areas when compared with those living in the city/district center, 2.639 times (CI: 1.291–3.247) higher in women with eight years or less of education when compared with those with those who had nine or more years of education, and 1.9 times (CI: 1.172–3.081) higher in women not informed by family doctor/family health staff (AH/ASE) when compared with those who received information.

Table 2: Results of logistic regression analyses

Independent variables		B	SE.	Wald	Odds Ratio	95% CI (Minimum-Maximum value)
Residing at	Rural Areas	1.308	0.233	31.449	3.698	2.341–5.841
	Urban Areas				Reference	1
Educational status of woman (years in education)	8≤	0.717	0.235	9.275	2.047	1.291–3.247
	9≥				Reference	1
Family doctor information	No	0.642	0.247	6.782	1.900	1.172–3.081
	Yes				Reference	1

Dependent variable: Mammography

Discussion

Determination of risk factors for breast cancer and the possibility of early diagnosis is of great importance. Nevertheless, there is an insufficient number of studies that aim to determine the factors that have an impact on breast cancer early diagnosis behaviors in women, both on a local level and throughout Turkey. In this context, our research provides health administrators with guidance in developing health policies that aim at to increase the level of having mammograms at a local level.

In the study, 57.0% of the women had never had a mammogram. According to data provided by Turkey Statistical Institute, in Turkey approximately 65.1% of women aged 15 years and above never had mammography as of 2019 [5]. However, this level varies in localized studies conducted in different regions of Turkey. Two field studies conducted with rural women aged 40 years and above determined that 76.9% [6] and 74.7% [7] of women had not undergone mammography screening. Studies conducted in an urban setting reported that 44.1% [8] and 34.5% [9] of women did not undergo mammography exams. Another study found that 52.8% of women never had mammography [10]. In general it may be suggested that the level of having mammography is quite low in Turkey.

The number of women who did not have a mammogram was 2.047 times (CI: 2.341–5.841) higher in women living in rural areas when compared with those living in the city/district center. As a matter of fact, as mentioned in the above paragraph, the rate of not having mammography in rural women was 74.7%–76.9%, while the same rate in urban residents varied between 34.5%–52.8% [6-10]. It may be inferred that the reason for this situation includes inadequate access to health services and the patriarchal relationship in rural life. A previous study reported that patriarchal relations were important in regard to utilizing the public space related to health, even for people who have migrated from rural areas to urban centers [11].

In our study, the number of women who did not have mammography screening was 2.639 times (CI: 1.291–3.247) higher among those who had an educational background of eight years or less, when compared with women who had nine or more years of education. Relevant studies have also emphasized that women with a lower educational level also had lower levels of mammography screening [10, 12]. In many studies, the educational level of the mother has been associated various health behaviors. This is explained by the fact that educated women have increased knowledge about healthcare issues, are more effective in domestic decision-making mechanisms, have a job, and thus have health insurance [11, 13, 14].

The number of women who did not have a mammogram was 1.9 times (CI: 1.172–3.081) higher among those who were not provided information by AH/ASE, compared to women who received such information. According to the findings of a study held in the Aegean region, the number of women who had mammography was 3.923 times (2.248–6.848) higher when they were provided information by doctors as compared with women who did not receive information [15]. Another study emphasized that the source of information for 45.6% of women who had mammograms was the physician [16]. In a field study conducted in western Turkey, 43.5% of women stated that they had mammography screening upon recommendations of a physician [10]. In a study conducted in Istanbul, 60.4% of women underlined that they received relevant information about mammography from doctors [9]. As a result, it may be suggested that information provided by the physicians to their patients or by family physicians to the women in the registered population increases the level of those obtaining mammograms.

Limitation of the study

The most important limitation of the study is that the research was hospital-oriented; in other words, it created a limitation with regard to generalization.

Conclusion

This study indicated that the having mammography screening was low in women 40 years and over in the research area. Risk factors that affected whether mammograms were obtained included the place of residence, the educational background, and whether women were provided relevant information by the family doctor.

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