

# Assessment of knowledge, attitudes, and behaviors regarding breast and cervical cancer among women in western Turkey

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## Abstract

**Objective:** We aimed to assess knowledge, attitudes, and practices regarding breast and cervical cancer and screening methods among women living western Turkey.

**Methods:** A questionnaire survey was administered to women aged  $\geq 21$  years. Data were collected using a 12-item questionnaire measuring women's knowledge, attitudes, and practice levels, including among participants who were health workers.

**Results:** A total 668 women were included in the study. The average age was  $37.48 \pm 11.85$  years. Most women had a primary-level education (43.4%) and most (50.3%) were homemakers; 27.1% of participants were health care workers. The differences in age, education, and occupation among participants were evaluated according to whether participants perform breast self-examination and have undergone Pap testing. The distribution of women according to age group showed that with increased age, the frequency of performing these two behaviors decreased, with women over 55 years old accounting for a significantly higher proportion than other age groups.

**Conclusions:** In our study, the level of knowledge and attitudes regarding breast and cervical cancers among women was similar to that in previous studies and was higher than expected, especially among women who were health workers. However, all women had inadequate frequency of performing screening tests.

## Keywords

Knowledge, attitudes, breast cancer, cervical cancer, screening, women

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## Introduction

According to the World Health Organization's (WHO) World Cancer Report published in 2008, breast cancer is one of the most common cancers among women globally. The disease accounts for 23%–25% of all cancers in women and 1.1 million new cases of breast cancer occur each year.<sup>1,2</sup> Breast cancer incidence increases by 1%–2% annually worldwide, and about 410,000 women globally die from this disease.<sup>3</sup> With early identification and appropriate treatment, the survival rate for breast cancer is high.<sup>4</sup> Breast self-examination (BSE) is recommended for early recognition of breast cancer by many experts around the world. BSE is recommended as an effective method for the early diagnosis of breast cancer if performed regularly each month. BSE has the advantage of being easy to apply at home, thereby representing a cost-free method for the early recognition of disease.<sup>5–7</sup>

It has been reported that 90% of breast cancers are first recognized by the patient herself. Nevertheless, whether BSE is useful for early detection of breast cancer is still debated. In some countries, including Turkey, breast cancer is the leading cancer among women and the age of occurrence is gradually decreasing. Breast cancer is an important public health problem because it can lead to death, yet such outcomes can be avoided by early detection. After the age of 20 years, BSE is an important component of early detection for breast cancer. For women living in regions with limited accessibility to screening facilities, performing BSE in a consistent and correct manner is beneficial.<sup>8,9</sup>

Cervical cancer is another major health problem among women. Routine screening of cervical cancer is recommended for women older than 20 years of age.<sup>10</sup> Every year, around 500,000 new cases are diagnosed worldwide and 274,000 women die

owing to cervical cancer.<sup>11,12</sup> Screening programs for cervical cancer have been implemented in developing countries for decades and have been shown to be effective in reducing mortality from this disease.<sup>13</sup>

In this study, we aimed to investigate women's knowledge and attitudes regarding cancer risk and secondary and primary prevention, as well as their related health behaviors. In addition, we conducted comparisons with the knowledge, attitudes, and practice among participants who were health workers. Health care workers have an important role in helping to increase public awareness of disease prevention, together with other occupational groups. We believe that health care workers have incomplete knowledge regarding breast and cervical cancers, which can affect all of society. Thus, we aimed to determine whether there is a lack of information and practice among health workers, as well as a general population of women in Turkey.

## Materials and methods

All participants gave their verbal informed consent to participate in this study. Thereafter, questionnaires prepared by the investigators were administered in a personal interview. In the first part of the questionnaire, we collected sociodemographic data of participants. The second part of the questionnaire included questions about breast and cervical cancer knowledge; the last part of the survey queried attitudes and behaviors regarding BSE, gynecological examination, mammography and ultrasonography, Pap testing, as well as sexual activity.

For this study, we recruited women who were or had been sexually active, aged 21 years or older, and who attended the Family Medicine Polyclinic between October and December in 2015. Women who had previously been diagnosed with cervical cancer or breast cancer were

excluded from the study. We collected information about participants' age, education, occupation, and level of knowledge and attitudes about breast and cervical cancer, as well the frequency of undergoing Pap testing or breast examination at a clinic. We obtained approval for this study from the Dumlupınar University Local Ethics Board (decision number 2015/12) and all required ethics committees.

### Statistical analysis

Continuous data are given as mean  $\pm$  standard deviation (SD). Categorical data are given as percentage (%). The Shapiro–Wilk test was used to investigate the normal distribution of the data. Statistical significance between women and health workers was analyzed using Mann–Whitney U tests. The Kruskal–Wallis H test was used to analyze the cases for three or more groups. Pearson chi-square, Pearson exact chi-square, and Fisher's chi-square tests were used to analyze the cross tabulations. IBM SPSS version 21.0 was used for analyses (IBM Corp., Armonk, NY, USA). Differences were considered significant at  $P < 0.05$ .

### Results

The total study population included 668 women, with average age  $37.48 \pm 11.85$  (range, 20–69) years. A total 22.9% of participants were university graduates and 7% were illiterate. Most (50.5%) participants in our study were homemakers and 27.1% were health care workers. The sociodemographic characteristics of participants are summarized in Table 1.

Differences in age, education, and occupation of participants were evaluated according to their performance of BSE and receiving a Pap test. We examined the distribution of women according to age group. We found that the above two

**Table 1.** Sociodemographic characteristics.

	N	%
Age (y)		
<25	112	16.8
25–34	223	33.4
35–44	162	24.3
45–54	105	15.7
$\geq 55$	66	9.9
Education		
Uneducated	47	7.0
Primary education	290	43.4
High school	178	26.6
University	153	22.9
Profession		
Homemaker	336	50.3
Office worker	151	22.6
Health care worker	181	27.1
Total	668	100

behaviors decreased with increased age. This was particularly true for women over age 55 years, with a significantly higher proportion than for other age groups ( $P < 0.05$ ), as shown in Table 2.

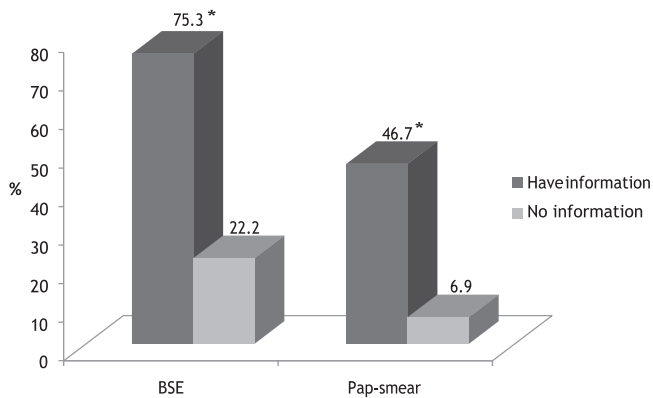
As participants' education level increased, the frequency of performing BSE and undergoing Pap testing increased, but with no statistically significant difference ( $P > 0.05$ ). When we examined the distribution of these health behaviors among women according to occupation, homemakers and health workers performed these practices more often, but with no significant difference ( $P > 0.05$ ). The results of these analyses are presented in Table 2.

Figure 1 shows the percentage of participants who perform BSE and have undergone Pap testing according to their knowledge of these practices. Women with higher knowledge levels regarding BSE and Pap testing had significantly higher rates of performing both of these health behaviors ( $P < 0.001$ ).

When participants were asked about the most common cancer and the most lethal cancer, breast cancer was the response

**Table 2.** Comparison of sociodemographic characteristics among participants, according to BSE and Pap testing.

	Performs BSE		Undergoes Pap testing	
	No n (%)	Yes n (%)	No n (%)	Yes n (%)
Age (y)				
<25	41 (36.6)	71 (63.4)	83 (74.1)	29 (25.9)
25–34	86 (42.2)	118 (57.8)	151 (74.0)	53 (26.0)
35–44	85 (47.0)	96 (53.0)	144 (79.6)	37 (20.4)
45–54	55 (52.4)	50 (47.6)	88 (83.8)	17 (16.2)
≥55	44 (66.7)	22 (33.3)	58 (87.9)	8 (12.1)
P	0.001		0.051	
Education				
Uneducated	28 (59.6)	19 (40.4)	38 (80.9)	9 (19.1)
Primary education	132 (45.5)	158 (54.5)	233 (80.3)	57 (19.7)
High school	90 (50.6)	88 (49.4)	142 (79.8)	36 (20.2)
University	61 (39.9)	92 (60.1)	111 (72.5)	42 (27.5)
P	0.065		0.250	
Profession				
Homemaker	149 (44.3)	187 (55.7)	262 (79.0)	74 (22.0)
Office worker	76 (50.3)	75 (49.7)	119 (78.8)	32 (21.2)
Health care worker	86 (47.5)	95 (52.5)	144 (79.6)	37 (20.4)
P	0.451		0.914	



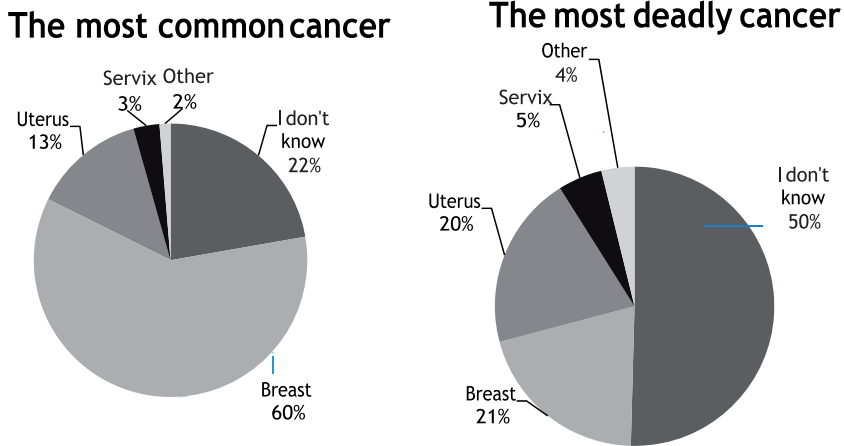
**Figure 1.** Level of knowledge regarding BSE and Pap testing. Percentage of participants who perform BSE and undergo Pap testing, according to their knowledge (\* $P < 0.001$ ).

given by 61.9% (n=320) and 19.5% (n=101) of participants, respectively (Figure 2).

When we queried sexual activity status, 77% of health workers and 78.3% of the

remaining participants reported that they were sexually active. The difference between these groups was not significant ( $P > 0.05$ ).

Interestingly, we observed that 52% of participants were primary and secondary



**Figure 2.** Knowledge about the most common cancer and the most lethal cancer.

school graduates, but only 15% of university graduates reported undergoing Pap testing. Among participants aged  $\geq 40$  years, the proportion who had received mammography and/or breast ultrasonography at least once was 12.6%.

We queried whether participants regularly attended a gynecology clinic; 82.6% ( $n = 551$ ) of participants reported that they did not and only 17.4% ( $n = 117$ ) reported having regular gynecological examinations. Most women who were regularly followed in gynecology outpatient clinics had lower educational levels, but this was not statistically significant.

## Discussion

Breast cancer is the second leading and cervical cancer the fourth leading cancer-related cause of death worldwide.<sup>14</sup> According to the WHO, in 2018 breast cancer was newly diagnosed in 2.1 million women and cervical cancer was newly diagnosed in 570,000 women.<sup>15</sup> According to the literature, the incidences of breast and cervical cancer increase in women over aged  $\geq 40$  years.<sup>16,17</sup> In women 50–75 years old, mortality from breast and cervical cancer is reduced by 25%–30% with routine

mammography and Pap testing. In women aged  $\geq 40$  years, especially those with a high risk for breast cancer, BSE and screening mammography provide early detection with high accuracy. For this reason, monthly BSE, annual clinical examination, and mammographic screening every 2 years is recommended for women aged  $\geq 40$  years.<sup>16,17</sup> Pap screening is recommended for all women aged 35–40 years at least once; the test is then repeated at intervals of 5 years. Screening can be terminated in women aged 70 years who have negative results in their previous three tests.<sup>18</sup> In our study, BSE and Pap testing decreased significantly with increased age. The age-related decline in screening behaviors in health care workers among our study participants was similar to that in other participants. As health workers are a source of information about preventive health behaviors in the community, these results are concerning.

Previous studies show that women generally have insufficient knowledge about screening methods for breast and cervical cancer, and if they are knowledgeable about these, they do not regularly perform BSE or receive regular mammography.<sup>19,20</sup> In our study, although the level of

knowledge among participants was adequate, health screening behaviors were lacking. In this respect, our results are compatible with the literature.

Another study showed that 36% of women did not perform BSE, according to results of a questionnaire;<sup>21</sup> the prevalence of BSE performed correctly was 6% among medical staff and 0.4% in the general population. In that study, there was a statistically significant difference among level of education, socioeconomic status, being a medical professional, and the prevalence of BSE.<sup>21</sup> In our study, we determined that about half of health professionals (43.8%) did not undergo regular mammography and/or breast ultrasonography; the fact that most health workers in our study were under 40 years of age is thought to be a factor in these findings.

Özçam et al. noted that about one-third of women who were specialist physicians and half of those who were nurses had never undergone any breast cancer screening tests.<sup>21</sup> It is known that female health workers, who serve as models for the population at each step of their occupational life, do not undergo early diagnostic testing for several reasons, such as “forgetting”, “finding it unnecessary”, or “lacking the time”.<sup>22</sup>

In our study, the rates of cancer screening were generally low. When we evaluated health care workers separately, the rate of breast cancer screening remained low. In similar studies in Turkey, it has been reported that female health care workers, who are expected to have greater awareness about this issue, very rarely undergo gynecological examination.<sup>23</sup>

## Conclusion

Our findings showed that the level of knowledge about breast and cervical cancer among our population of women in Turkey was similar to that of previous studies and was

higher than expected, especially for health workers. However, all women had inadequate rates of performing screening tests. Our results suggest that the rate of Pap testing has decreased, regardless of education level. Therefore, it is important to regularly provide preventive cancer education regardless of professional group or education level, to increase community awareness about breast and cervical cancers.

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## Declaration of conflicting interest

The author declare that there is no conflict of interest.

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