

Association of knowledge and cultural perceptions of women with delay in breast cancer diagnosis: A single center experience

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Abstract

Aim: Breast cancer is the most common cause of cancer-related death among women worldwide and is the highest case mortality rate in low-income countries. The purpose of the current study is to investigate whether awareness, knowledge and socio-cultural-economic factors are effective in the stages of patients diagnosed with breast cancer.

Material and Methods: This study was conducted retrospectively at Ortadogu Private Hospital, breast outpatient clinic between January 2016 and January 2018 in Adana, Turkey. Two hundred - three females diagnosed as breast carcinoma were included. Females with recurrent, previous breast carcinoma and those who refused to participate were excluded from this study. Data was collected using demographic status, self-administered questionnaire consisted of knowledge about breast cancer and awareness of mammography.

Results: A statistically significant difference was found between age and stage.

There was no significant relationship between marital status, family history, income, body mass index, and stage of breast cancer at diagnosis. When we compare the stages with education, we see that the stages are higher as the education rate decreases. There was a significant relationship between location, occupation, routine screening, self-breast examination, awareness, knowledge, and stage.

The independent variables that enable the diagnosis of patients at an early stage were routine screening, awareness, and knowledge.

Conclusion: Our research showed that awareness, education, knowledge of breast cancer, self-breast examination, and routine screening were the most important factors in early detection of breast cancer.

Keywords: Breast Cancer; Stage; Awareness; Knowledge; Screening.

INTRODUCTION

Breast cancer is the most common malignancy of woman's health worldwide.

It is one of the main causes of cancer-related deaths in women after lung cancer. Based on the World Health Organization, the overall incidence of breast cancer is increasing gradually (1). Most of the diagnosed cases have been demonstrated in advanced stages showing the negative social-cultural perception of the disease. Insufficient knowledge, geographic isolation, and poverty may be the possible causes of delayed breast cancer detection (2).

Early detection of breast cancer plays an essential role in

reducing mortality rates and improving the prognosis of patients (3). Early detection of breast cancer has a 5-year survival rate of 92%. However, the survival rate with local invasion drops to 71% and if it is diagnosed at the latest stage, only 18.0% of the patients survive (4).

Based on the data present in the Turkey breast cancer, 24.1% of all cancer types diagnosed in women is the most common malignancy and binds to 18% of mortality due to cancer (5). The probability of diagnosing breast carcinoma in life-long is 12.3% (6). The number determined for the development of breast cancer in Turkish women is estimated to be approximately 10,000 new cases each year (7). Consistent with other countries, it is also likely to develop breast cancer more presumably in older age

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in Turkey. It is declared that one out of every 66 women in the 4th decade and one out of every 40 women in the 5th decade is under at-risk developing breast carcinoma in Turkey (8).

The suggested screening methods for early detection of breast cancer are mammography, clinical breast examination, and breast self-examination. However, mammography stays the most effective screening tool in comparison with clinical breast examination and breast self-examination (9).

In most low-income developing countries, most women refer to the outpatient clinic with advanced stage or metastatic breast cancer. The Breast Health Global Initiative aims at satisfying breast cancer awareness, knowledge levels, and high breast self-examination rates to achieve the goal of early detection of breast cancer in developing countries. (10).

Information about breast cancer is important because it affects the likelihood of a woman entering appropriate primary and secondary prevention behaviors.

The aim of this study is to investigate whether awareness, knowledge and socio-cultural-economic factors are effective in the stages of patients diagnosed with breast cancer.

MATERIAL and METHODS

This study was conducted retrospectively at Ortadogu Private Hospital, breast outpatient clinic between January 2016 and January 2018 in Adana, Turkey. Two hundred-three females diagnosed as breast carcinoma were included. Females with recurrent, previous breast carcinoma and those who refused to participate were excluded from this study. Two patients had recurrent breast cancer, 1 patient had previous breast cancer and 5 patients did not want to participate in the study. A total of 8 patients were excluded from the study. Written approval was obtained from Cukurova University Faculty of Medicine Clinical Ethical Board and informed consent was obtained from all patients.

Data was collected using demographic status; self-administered questionnaire consisted of knowledge about breast cancer and awareness of mammography. Self-administered questionnaires regarding knowledge about breast cancer were as follows: question one: "Is there a hereditary transition??", question two: "Is it a recoverable disease?", question three: "Is this a fatal disease?", question four: "Is it easily spread to other organs?", question five: "Is breastfeeding protective?", question six: "Does it cause the loss of female characteristics?", question seven: "Is the sex of the physician important?". Awareness of breast carcinoma was assessed by one question "dDd you hear about mammography?"

Responses to the knowledge and awareness questions were coded as "Yes/No."

Socio-demographic variables from patients files included

age, body mass index, level of education, income level, marital status, occupation, literacy, location, family history of breast cancer.

Routine screening, routine screening type (regular, irregular), breast compliance, whether breast cancer diagnosis at routine screening or not, self-breast examination, self-administered questionnaires on how to learn self-breast examination were evaluated.

Self-administered questionnaires regarding self-breast examination learning were as follows: magazine, television, social media, and healthcare professional.

Routine screening at our clinic was annual mammography being performed in patients with 40 years and older of ages. According to mammography findings, ultrasonography and/or magnetic resonance imaging are performed when necessary. Patients under 40 years of age are routinely screened with the ultrasonography. Mammography and/or magnetic resonance imaging are performed if necessary.

Statistical analysis

SPSS 24.0 package program was used for statistical analysis of the data.

Categorical measurements were summarized as number and percentage, while continuous measurements were summarized as the mean and standard deviation (median and range where necessary). One-way analysis of variance was used in the variables that provide the parametric distribution prerequisite and the Kruskal Wallis test was used for the variables which did not provide the parametric distribution prerequisite. Chi-square test was used to compare categorical measurements. Linear regression and logistic regression analysis were used to investigate independent risk factors according to the stage. The statistical significance level was taken as 0.05 in all tests.

RESULTS

The distribution of 203 patients diagnosis at with breast cancer according to their stages, and comparison with age, and body mass index is given in Table 1.

Table 1. Distribution of breast cancer patients related to stages, and comparison with age, and body mass index

	Number	%	Age	Body mass index
Stage at diagnosis				
Stage 1	55	27.1	43.1±4.4	30.5±3.9
Stage 2	77	37.9	45.3±4.5	30.4±5.4
Stage 3	59	29.1	46.8±7.6	30.4±4.8
Stage 4	12	5.9	57.9±11.5	31.7±7.7
P	-		0.0001	0.879

A statistically significant difference was found between age and stage. The mean age of stage-4 was found to be higher than the other groups when the post-hoc analysis was performed. There is no statistically significant difference between stage 1-2 and stage 2-3 in terms of age respectively. However, the average age of stage 3 was found to be significantly higher than stage 1. No significant difference was found between body mass index and stage at diagnosis.

The relationship between socio-demographic characteristics and stage is shown in Table 2.

There was no significant relationship between marital status and stage (p: 0.587).

When we compare the stages with education, we see that the stages are higher as the education rate decreases. While there were no illiterate patients in stage 1 and 2, we found 1 patient in stage 3 and 6 in stage 4.

There was a significant association between stage and location. We found that breast cancer was detected at a higher advanced stage in the patients living in the village and small town, whereas at an earlier stage living in town and especially the city.

In terms of family history of breast cancer, there was no significant association regarding stage.

We did not find a significant relationship between the

income status of the patients and the stage of breast cancer.

In patients who underwent routine screening, we found that the stage of breast cancer was very low whereas in patients who did not undergo routine screening stage was higher (p: 0.0001).

We showed that patients underwent routine screening, regular or irregular, was detected at an earlier stage when compared to those who were not ever screened. Our work conducted that one of the factors affecting the detection of breast cancer at an early stage is a self-breast examination (p:0.001). When we assessed self-administered questionnaires on how to learn self-breast examination, there was no significant association among magazine, television, social media and health professional. The most common complaint in patients with breast cancer was breast mass and less frequently retraction (table 3).

Although pain and inflammation were rare, we found these complaints in advanced stages.

We found that awareness was significantly higher in women with early breast cancer.

We detected that one of the most important factors in early detection of breast cancer is knowledge about breast cancer, as knowledge increased breast cancer was detected at an earlier stage (table 4).

Table 2. The relationship between socio-demographic, economic characteristics, and stage

	Stage at diagnosis								p
	1		2		3		4		
	n	%	n	%	n	%	n	%	
Marriage									
Married	45	81.8	69	89.6	54	91.5	12	100.0	0.587
Single	4	7.3	3	3.9	2	3.4	0	0.0	
Divorced	6	10.9	5	6.5	3	5.1	0	0.0	
Education									
No	0	0.0	0	0.0	7	11.9	10	83.3	0.0001
Primary	3	5.5	34	44.2	49	83.1	2	16.7	
Secondary	40	72.7	40	51.9	3	5.1	0	0.0	
High School University	12	21.8	3	3.9	0	0.0	0	0.0	
Literacy No	0	0.0	0	0.0	1	1.7	6	50.0	
Location									
Village	0	0.0	3	3.9	14	23.7	8	66.7	0.0001
Small Town	2	3.6	10	13.0	17	28.8	3	25.0	
Town	23	41.8	44	57.1	17	28.8	0	0.0	
City	30	54.5	20	26.0	11	18.6	1	8.3	
Occupation	12	21.8	47	61.0	55	93.2	12	100.0	
Housewife	18	32.7	19	24.7	4	6.8	0	0.0	0.0001
Private Job	25	45.5	11	14.3	0	0.0	0	0.0	
Stateemployee									
Family History									
No	47	85.5	63	81.8	47	79.7	11	91.7	0.707
Yes	8	14.5	14	18.2	12	20.3	1	8.3	
Income									
Bad	1	1.8	3	3.9	6	10.2	1	8.3	0.839
Normal	29	52.7	38	49.4	27	45.8	6	50.0	
Good	25	45.5	36	46.7	26	44.1	5	41.7	

Table 3. Factors affecting the stage of breast cancer

	Stage At Diagnosis									
	1		2		3		4		p	
	n	%	n	%	n	%	n	%		
Routine Screening										
No	31	56.4	58	75.3	58	98.3	12	100.0	0.0001	
Yes	24	43.6	19	24.1	1	1.7	0	0.0		
Routine Screening Type										
Regular	14	58.3	8	42.1	0	0.0	-	-	0.343	
Irregular	10	41.7	11	57.9	1	100.0	-	-		
Self-Breast Examination										
No	45	81.8	73	94.8	59	100.0	12	100.0		
Yes	10	18.2	4	5.2	0	0.0	0	0.0		
How to learn self-breast examination										
Magazine	2	20.0	1	25.0	-	-	-	-	0.336	
TV	5	50.0	1	25.0	-	-	-	-		
Social	2	20.0	0	0.0	-	-	-	-		
Health professionals	1	10.0	2	50.0	-	-	-	-		
Breast Compliance										
Mass	45	83.3	49	73.1		80.8	6	50.0	0.0001	
Retraction	6	11.1	16	23.9		11.5	1	8.3		
Hyperemia	2	3.7	1	1.5		3.8	0	0.0		
Pain	1	1.9	0	0.0		0.0	3	25.0		
Inflammation	0	0.0	1	1.5		3.8	2	16.7		

Table 4. Relationship between awareness and knowledge about breast cancer and stage

	Stage At Diagnosis									
	1		2		3		4		p	
	n	%	n	%	n	%	n	%		
Knowledge										
Question 1	0	0.0	0	0.0	0	0.0	2	16.7	0.0001	
Question 2	0	0.0	0	0.0	1	1.7	8	66.7		
Question 3	0	0.0	5	6.5	40	67.8	2	16.7		
Question 4	3	5.5	37	48.1	18	30.5	0	0.0		
Question 5	23	41.8	29	37.7	0	0.0	0	0.0		
Question 6	23	41.8	4	5.2	0	0.0	0	0.0		
Question 7	6	10.9	2	2.6	0	0.0	0	0.0		
Awareness										
No	0	0.0	2	2.6	19	32.2	9	75.0	0.0001	
Yes	55	100.0	75	97.4	40	67.8	3	25.0		

We determined the factors affecting the stage that were significant in the univariate analysis, and then we tested these parameters by the multivariate linear regression

analysis. The independent variables that enable the diagnosis of patients at an early stage were routine screening, awareness, and knowledge (Table 5).

Table 5. The independent variables that enable the diagnosis of patients at early stage

Model	Unstandardized Coefficients	Standardized Coefficients	t	p	95,0% Confidence Interval for B		
					Lower Bound	Upper Bound	
1 (Constant)	4.586	.165	27.823	.000	4.261	4.911	
Routine screening	-.162	.077	-.076	-2.102	.037	-.314	-.010
Awareness	-.263	.098	-.106	-2.681	.008	-.456	-.070
Knowledge	-.389	.033	-.550	-11.690	.000	-.454	-.323

a. Dependent Variable: Stage at diagnosis

DISCUSSION

High breast cancer mortality was known to be insufficient for other cancer types, as well as for the diagnosis and treatment of disease. It is provided that prevalence of breast cancer will be the much more increasing in developing countries, including Turkey. Therefore, these countries should adjust the breast cancer prevention and early diagnosis program, especially in relation to this health problem in the world (11,12). In the present study, we investigated whether sociodemographic characteristics such as age, marital status, education, location, occupation, income, affected the stage in the patients diagnosed with breast cancer in our clinic. In addition we also clarified routine screening, self-breast examination, awareness and knowledge about breast carcinoma whether affecting the stage.

We found that marital status is not important in the stage of breast cancer. However, Gangane N. et al. showed that married women had a positive attitude towards breast cancer screening practices (13). In addition, Ghazali et al. argued that a theoretical model suggests that marriages may be beneficial to health because the spouses have a positive effect on the health behaviors of their partners (14).

Early detection through appropriate screening policies and educational interventions plays an important role in reducing prognosis and mortality rates. In our study, we found that education level is very important in detecting breast cancer at an early stage. In several studies, they showed that breast cancer was detected at an earlier stage because they had a higher education level (13,15,16).

We found that people living in urban areas had lower breast cancer stage compared to rural areas. Kanaga GC et al. conducted that rural women were shown to have less awareness compared to those living in urban areas (17).

It is thought that working women may have sufficient knowledge and high awareness of breast cancer, as they are exposed to more materials in order to the early diagnosis and treatment of breast cancer (15). In our study, breast cancer detected at an earlier stage was found to be lower in women who work in the private or public sector than housewives.

Women with high knowledge about breast cancer symptoms and risk factors were found to have higher income levels, while only women in the middle-income group provided important knowledge about breast cancer diagnosis and treatment (13). However, in the current research, there was no association between income and the stage of the breast carcinoma included in the study.

Breast self-examination has been shown to have a positive relationship with the early detection of breast cancer (18). Studies have shown that most of the early breast cancers were discovered by women who regularly perform breast self-examination (19). Health beliefs associated with the perceived sensitivity of breast cancer and the perceived

benefits of screening significantly affect screening practices (20). Women should be "aware of breasts" to facilitate their participation in screening. In a similar way to the above studies, we found that screening and breast self-examination are very important for early detection of breast cancer in women.

Inadequate knowledge and awareness of breast cancer may be one of the main causes of delayed breast cancer detection. Actually awareness and knowledge are two entirely different terms. While awareness requires just having heard about breast mammography, knowledge requires an in-depth understanding of breast cancer and its important aspects (15,21,22). In the current study, a high awareness and knowledge of breast cancer was extremely associated with detection of breast cancer at an earlier stage in females.

In the multivariate linear regression analysis, knowledge about breast cancer, awareness, routine screening correlated significantly with stage (Table 6).

Limitations

The present study was written from some sections of the community and linked with only regarding few aspects of breast cancer.

CONCLUSION

Our research showed that awareness and knowledge of breast cancer, self-breast examination, and routine screening were the most important factors in early detection of breast cancer.

Besides these, education also played an important role in detecting at an earlier stage.

In rural areas, breast cancer was detected at a more advanced stage than in urban areas. Therefore, it is important that women in rural areas must be informed through magazine, television, and health professional and social media.

Routine screening and breast self-examination should be encouraged by healthcare professionals.

Since breast self-examination is a simple, inexpensive technique would be more acceptable to diagnose patients early.

Development of guidelines to disseminate awareness and knowledge of breast cancer is imperative to control the rising incidence of the disease.

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