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ORIGINAL ARTICLE – OPEN ACCESS

Comparison of the Levels of Fear and Perceived Social Support Among the Women Having and Not Having Mammography

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ABSTRACT

Objective: Mammography rates are low and psychosocial factors may affect mammography behavior in Turkey. This study aims to compare levels of fear and perceived social support and to examine factors associated with mammography behaviour among women who did and did not have a mammography.

Materials and Methods: This is comparative- descriptive and cross-sectional study. Data were collected from women who were 40 years and older in two Family Health Centres in Denizli between April 1–July 1, 2018. Descriptive characteristics questionnaire form, Breast Cancer Fear Scale and Multidimensional Scale of Perceived Social Support (MSPSS) were used as data collection tools.

Results: Significant differences were found between marital status, knowledge about breast cancer, breast self-examination (BSE), clinical breast examination (CBE) status and mean MSPSS scores between both groups ($p<0.05$). There was not a statistically significant difference between groups concerning mean fear scores ($p>0.05$). LR analysis revealed that being married (OR: 0.08) and obtaining information about breast cancer previously (OR: 0.15) were found to affect mammography behaviour positively ($p<0.05$).

Conclusion: Being married and obtaining information about breast cancer positively affected their behaviours of having a mammography. Primary health care professionals should inform women over the age of forty about breast cancer and screening and refer them to mammography. In addition, it is also important to strengthen the referral of single people to mammography.

Keywords: Mammography, perceived social support, breast cancer fear, primary health care

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INTRODUCTION

The mortality of breast cancer has been declining in most of the high-income countries since 1990 (1). Various factors, including awareness, screening programs and improved patient management, contribute to this decrease. One of the most significant factors is mammography screening. Breast self-examination (BSE), clinical breast examination (CBE) and mammography are used for breast cancer screening. Mammography was proven to be the most effective screening method for breast cancer (2). The rate of having mammography in Turkey is only 29%, and the ratio is very low compared to the ratio in developed countries. The number of mammography devices per one million populations is 11.7 in Turkey and mammography is performed in Cancer Early Diagnosis and Education Centers (CEDEC) free of charge. In the national standards of breast cancer screening program, the target population is the ages of 40–69 (3). Mainly sociodemographic factors and health beliefs were examined to determine variables affecting breast cancer screening behaviors in Turkey (4–7). However, psychosocial and cultural factors that may have an effect on screening behaviors were not clearly understood, and these factors may have a significant relationship with breast cancer screening behaviors. Some psychosocial and cultural factors can be more important for some specific cultural and ethnic subpopulations. In the literature, contradictory results were obtained about the role of fear in breast cancer screenings and studies examining social support were found to be very few (8–10).

Fear is an emotional approach emerging against a danger that will damage the well-being of the individual. Individuals may develop compatible or incompatible responses against fear. Individuals may show compatible or incompatible responses to fear by asking questions and making plans about the disease or medical procedures and by remembering previous experiences during similar dangers and executing acquired methods. An individual could not be ready for the danger during incompatible responses and thus, he/she experiences anxiety (11). In a study, it has been stated that health professionals should consider fear emphasizing breast cancer risk in breast cancer screening programs (12). The study conducted by Al-Naggar and Bobryshev (13) found that 20% of women did not have mammography since they were afraid of breast cancer. In a study by Polat and Ersin (8), fear scores of the women who had mammography were found to be higher. Fear was defined as a motivating, as well as a preventing factor in breast cancer screening behaviors (14).

Since family, peer and neighbor relationships are important in Turkish society, it is necessary to examine the effects of social support on screening behaviors. All interpersonal relationships having an important place in people's lives, providing emotional, financial and mental (cognitive) support to the individual are defined as "Social Support Systems" maintaining health. Social support can prevent stress formation, change how the event is perceived in cases where stress is present, provide assistance in cases where the individual is having difficulty and affect the individual's coping strategies (15). Nevertheless, it is stated that a strong social network may lead to an adverse effect and obstruct other supports from time to time. Thus, it is emphasized that the support the individual feels and perceives is more beneficial for the individual rather than a social network (16). Determining the effects of possible factors being effective in psychosocial aspects, such as fear and social support on breast cancer screening, may play an important role in terms of increasing mammography rate and planning interventions to improve women's health. Therefore, the purpose of our study is to compare levels of fear and perceived social support among the women who had and did not have mammography and to examine the factors associated with mammography behavior.

MATERIALS and METHODS

Study Design and Sample

This is a comparative-descriptive and cross-sectional study. This study was conducted in two FHC (Family Health Center) having similar sociodemographic characteristics located in a city center. During the data collection, considering that the researchers and people who had mammography could affect the people who did not have, it was aimed to collect data from two different FHC. For this purpose, it was decided to remove women who had mammography using the draw method from Kayhan FHC and those who did not have mammography from Dokuzkavaklar FHC. The study's sample consisted of 60 women who referred to Kayhan FHC and 65 women who referred to Dokuzkavaklar FHC between April 1–July 1, 2020. The study inclusion criteria were (1) being a woman between 40 and 69 years of age, (2) being able to communicate in Turkish, (3) voluntary participation in this study. Data were collected in the two FHC by researchers using the face-to-face interview method.

As a result of the power analysis based on the data obtained, the effect size of the study ([d]=3.35) was found to be quite strong. Regarding this effect size, it was calculated that this study reached 100% power at 95% confidence level. According to this result, the sample size was found to be sufficient, and it was accepted that the study population could be represented.

Measures

Three measurement instruments, including one structured, were used to collect data in this study. These measurement tools were descriptive characteristics questionnaire, Breast Cancer Fear Scale (17) and the Multidimensional Scale of Perceived Social Support (MSPSS) (18). The descriptive characteristics questionnaire form, which was prepared based on the literature, was composed of two parts, including demographic features and health history (7, 10, 19). In demographic characteristics form, age was evaluated by an open--ended question, education status was evaluated by a multiple-choice question, and marital status and health insurance were evaluated by "yes" or "no" options. In the health history form, state of having mammography within the last two years, state of getting information about breast cancer and familial history of breast cancer were evaluated by "yes" or "no" options. State of having BSE and CBEand the person who referred to the last mammography (for the ones who had mammography) were assessed by multiple-choice questions.

MSPSS was developed by Zimet et al. (20). Its validity and reliability study was performed by Eker and Arkar (21) in Turkey, and its construct validity was evaluated accordingly. Factor structure in the original scale was retested by the same authors, and the generalizability of the factor structure of the scale was confirmed (18). MSPSS is an easy-to-use and short scale subjectively evaluating the qualification of social support taken from three different sources. The scale has three subscales, including totally 12 items as four per each subscale. These items are family (items 3, 4, 8 and 11), friends (items 6, 7, 9 and 12) and a special person (items 1, 2, 5 and 10). The scale having a 7-Likert type is composed of the options as "completely agree" (7 points), "mostly agree" (6 points), "agree" (5 points), "neither agree nor disagree" (4 points), "disagree" (3 points), "mostly disagree" (2 points) and "completely disagree" (1 point). The subscale scores were calculated by summing up the scores of four items within each subscale and total MSPSS score is provided by summing up all subscale scores. The lowest score that can be obtained from each subscale is 4 and the highest is 28. In addition, the lowest score of the total scale can be 12, whereas the highest is 84. Having a high score shows that perceived social support is high (18). Cronbach's alpha coefficient of all items of the scale was found to be 0.95 (18), and it was found to be 0.93 for this study.

Breast Cancer Fear Scale which was developed by Champion et al. (22) has eight items. It describes the relationship between the emotional responses of the women towards breast cancer and their mammography behaviors. The options of the scale are evaluated as 1 point for "completely disagree", 2 points for "disagree", 3 points for "neither agree nor disagree", 4 points for "agree" and 5 points for "completely agree". The total score that can be obtained from the scale ranges between 8 and 40. The women who had high scores from the scale were found to be scared of breast cancer more. Fear was described as low between 8–15 points, moderate between 16–23 points and high between 24–40 points. Cronbach's alpha value of the Turkish form of the scale was found to be 0.90 (17), and it was also found as 0.90 in this study.

Statistical Analysis

The data were analyzed using SPSS version 20.0 (SPSS Inc., Chicago, IL). A descriptive analysis (involving percentages, means, and standard deviations) was conducted to reveal descriptive data (demographics and health history). The suitability of the data for normal distribution was evaluated using Kolmogorov Smirnov ($p>0.05$ is suitable for normal distribution). Comparison of the demographic characteristics (age, education, marital status and health insurance) and health history (getting information about breast cancer, having a diagnosis of breast cancer previously, family history of breast cancer, BSE, CBE, MSPSS and breast cancer fear) of the women who had and did not have

Table 1. Comparison of the demographic characteristics and health history of women having and not having mammography

Variable	Mammography behavior Positive (n=60)		Mammography behavior Negative (n=65)		Statistic	p
	n	%	n	%		
Age						
41–49	26	43.3	31	47.7	0.239[a]	0.625
50 and older	34	56.7	34	52.3		
Mean (SD)	50.75 (6.27)		50.83 (7.94)		-0.063[b]	0.950
Educational status						
Illiterate	4	6.7	6	9.2		
Literate	9	15.0	10	15.4		
Primary and secondary (1–8 years)	39	65.0	42	64.6	0.431[a]	0.934
High (9–11 years)	8	13.3	7	10.8		
Marital status						
Not married	1	1.7	11	16.9	–[c]	0.005[d]
Married	59	98.3	54	83.1		
Health insurance						
Yes	57	95.0	57	87.7	–[c]	0.210
No	3	5.0	8	12.3		
Received information about breast cancer					27.715[a]	
Yes	43	71.7	16	24.6		0.000[e]
No	17	28.3	49	75.4		
Work status						
Yes	16	26.7	14	21.5	0.450[a]	0.535
No	44	73.3	51	78.5		
History of personal breast cancer diagnosis in previous						
Yes	5	8.3	1	1.5	–[c]	0.086
No	55	91.7	64	98.5		
Breast cancer history in the family						
Yes	6	10.0	3	4.6	–[c]	0.207
No	54	90.0	62	95.4		
BSE						
Regularly done (monthly)	17	28.3	6	9.2	7.583[a]	0.006[d]
Never or irregularly done	43	71.7	59	90.8		
CBE						
Regularly done (every year)	15	25.0	1	1.5	–[c]	0.000[e]
Never or irregularly done	45	75.0	64	98.5		

SD: Standard deviation; a: Chi-squared; b: t-test; c: Fischer's exact test; [d]p<0.01; [e]p<0.001; BSE: Breast self-examination; CBE: Clinical breast examination

mammography was assessed by basic statistical tests (Pearson's Chi-square test, Fisher's exact test and t-test) depending on their states of being continuous or categorical. As the final step of the analyses, all variables found to be effective on mammography behavior were evaluated by logistic regression (LR) model. Marital status, state of having information about breast cancer, having BSE and mean MSPSS score were included in the LR model. The level of statistical significance was set at $p<0.05$, and Confidence Interval (CI) of 95% was determined.

RESULTS

Demographic characteristics of the women who had and did not have mammography are included in Table 1. The mean age of the women who had mammography was found to be 50.7 (SD: 6.3) years old and the mean age of women who did not have mammography was 50.8 (SD: 7.9) years old. Sixty-five percent of the women who had mammography and 64.6% of the women who did not have mammography had education at the primary and secondary level. 95.0% of the women who had mammography had health

insurance and 98.3% were married, whereas 87.7% of the women who did not have mammography had health insurance and 83.1% were married. It was noted that there were not statistically significant differences between both groups concerning age, education level, work status and health insurance (p>0.05). However, their marital status was found to be statistically different (p<0.05, Table 1).

Health history of the women who did and did not have mammography is given in Table 1. While mammography screening rate was 71.7% among women who received information about breast cancer, this rate was only 24.6% among women who did not receive information. A significant difference was found between the two groups (p<0.05). The findings showed that 8.3% of the women previously diagnosed with breast cancer had undergone mammography screening, while 1.5% of the women not diagnosed with breast cancer had undergone the screening. There was no significant difference between the two groups (p>0.05). The mammography screening rate was 10% among women having breast cancer family history, while mammography screening rate was 4.6% among women having no breast cancer family history. There was no significant difference between the two groups (p>0.05) (Table 1). The findings showed that 60.0% of the women who had mammography within the last two years were referred by healthcare professionals working in FHCs (physician, nurse or midwife), whereas 26.7% by a physician or a nurse in a hospital and 13.3% by one of their family members, neighbors or friends. The findings showed that 28.3% of the women who had mammography performed BSE regularly every month, and 25.0% had CBE regularly every year. Moreover, 9.2% of the women who did not have mammography performed BSE regularly every month, and 1.5% of them had CBE regularly every year. The rates of having BSE and CBE among the women who had mammography were found to be significantly higher compared to the ones who did not have mammography (p<0.05, Table 1). It was noted as the result of LR analysis that being married (OR: 0.08) and having information about breast cancer previously (OR: 0.14) were found to enhance mammography behaviors among the participants (p<0.05, Table 2). However, LR results showed that mammography behavior was not associated with performing BSE (Table 2).

In this study, the reasons of not having mammography were found to be as follows: neglect (I have no time, I have other health problems, I do not consider it as necessary) in 35.4%, absence of any findings in the breast in 21.5%, not considering mammography as necessary in 20.0%, inability to go alone in 10.77% and other (I do not know what it is, fear from the physician, lack of health insurance) in 12.3% of the women.

Mean MSPSS scores of the women who had mammography were found to be higher compared to the women who did not (p<0.05). On the other hand, no significant difference was found between their mean fear scores (p>0.05) (Table 3). However, LR analysis revealed that MSPSS was not associated with the mammography behavior (Table 2).

Table 2. The factors affecting mammography behaviour according to the LR model

Variables	OR	(95%CI)	p
Marital status (1)	0.076	(0.008–0.694)	0.022[a]
Not married: 1			
Married: 0			
Received information about breast cancer (1)	0.15	(0.06–0.36)	0.000[b]
Yes: 0			
No: 1			
BSE (1)	0.562	(0.174–1.812)	0.335
Regularly done (monthly): 0			
Never or irregularly done: 1			
MSPSS	0.990	(0.957–1.025)	0.574
Constant	57.716		0.006

Hosmer–Lemeshow p>0.05; a: p<0.05; b: p<0.001; LR: Logistic regression; OR: Odss ratio; CI: Confidence internal; BSE: Breast self-examination; MSPSS: Multidimensional Scale of Perceived Social Support

Table 3. Comparison of MSPSS and breast cancer fear of the women having and not having mammography

Variables	Mammography behavior Positive (n=60) Mean (SD)	Mammography behaviour Negative (n=65) Mean (SD)	p
MSPSS	60.3 (9.7)	55.1(14.9)	0.023
Breast cancer fear	30.9 (7.0)	29.9 (6.0)	0.388

SD: Standard Deviation; MSPSS: Multidimensional Scale of Perceived Social Support

DISCUSSION

Being married, obtaining information about breast cancer, performing BSE, having CBE and perceived social support levels were found to be higher among the women who had mammography compared to the women who did not have mammography in this study. When factors associated with the mammography behavior of the participants were examined, it was seen that being married increased mammography behavior and it was found to be consistent with the study of Aksoy et al. (4). In two previous studies (23, 24), being married was reported to affect mammography behavior positively through the social support provided by their spouses and children. Our results highlighted the importance of social determinants of health-seeking behaviors. In another study conducted by Yıldırım and Özaydın (25), it was reported that marital status did not affect having mammography and awareness for mammography. Future studies should address the effects of unrevealed social support determinants to improve mammography screening services.

The findings obtained in this study showed that mammography behavior was not associated with performing BSE. American Cancer Society (26) have clearly reported that physical breast examinations performed either by a healthcare professional or by the individual herself did not have a certain benefit. Moreover, it was stated that all women should know the requirements to see a healthcare professional immediately when they feel a change in their breasts. On the other hand, there are other studies showing that BSE performance is positively associated with mammography behavior (27).

The findings revealed that receiving information about breast cancer increased mammography behavior, and they were found to be compatible with the results of the study of Aksoy et al. (4). In a study conducted in Lebanon, it was found that there was a positive correlation between knowledge level regarding breast cancer (knowledge, curability, symptoms, and screening) and mammography behavior (28). Moreover, in this study, the reasons of not having mammography were found as neglect (I have no time, I have other health problems, I do not consider it as necessary) in 35.4%, absence of any finding in the breast in 21.5%, not considering mammography as necessary in 20.0%, inability to go alone in 10.77% and other (I do not know what it is, fear of physician, lack of health insurance) in 12.3% of the women. In a study by Yıldırım and Özaydın (25) performed in Turkey, it was found that 43.6% of the women did not know that it was necessary and 5.9% did not have mammography due to neglect. The most important obstacles for having mammography was determined to be a lack of information, neglect and cultural factors in the study by Tuzcu et al. (7). Mammography is performed free of charge in CEDECs having been started to be established in all provinces since 2011 in Turkey. The appointment is arranged within one or two days, and all radiology technicians and physicians working in CEDECs are female due to the cultural values of Turkish women. Although CEDECs are very common today, the rate of having mammography is still low (9%). The studies performed in Turkey and the low rate of having mammography in these studies due to neglect and lack of information among women reveal the importance of providing information and encouraging women about screenings by the physicians, nurses and midwives working especially in FHCs and secondary healthcare institutions. Moreover, it is suggested that CEDECs should be more introduced, and individuals working in these centers should use reminders and provide calls for mammography.

The findings obtained in this study showed that perceived social support and breast cancer fear were not associated with mammography behavior. Similarly, in a study conducted by Kissal et al. (29), their findings showed that perceived social support and breast cancer fear were not effective in mammography behavior. A study conducted in Turkey (2020) found that women's breast cancer fear was high and fear was not related to mammography behavior (10). In a study by Shirzadi et al. (9), it was highlighted that being diagnosed with breast cancer, having undergone chemotherapy and mastectomy were the barriers in undergoing mammography screening.

The reason for the lack of identification of fear as the determining factor for mammography behavior in this research could be because women do not believe that they will develop breast cancer due to lack of knowledge. Document et al. (30) highlighted that social support is effective in adopting preventive healthcare practices and attending to breast cancer screenings. Network and support factors were found to be associated with mammography performance in a study performed with Swedish women (24). In a study, it was noted that the lack of individual or financial social support played a role in mammography screening (9). It has been suggested that social support may play a role in the diagnosis of breast cancer by encouraging mammography among Turkish women who have strong relationships with their families, friends and relatives. However, our result did not support this hypothesis. The results of our study revealed a need for an explanation of the effects of fear and the social support factor on mammography behavior through different behavioral models. In this study, obtaining information about breast cancer, BSE and CBE performance and perceived social support levels were found to be higher in women who had mammography compared to the women who did not have a mammography. It was also noted that being married and obtaining information about breast cancer were found to be positively related to mammography behavior. Furthermore, it was found that primarily the healthcare professionals at FHCs and secondly the physicians or nurses at hospitals guided women for mammography screening. In a similar study, it was reported that women would willingly undergo mammography screening only if it was advised by healthcare professionals (9). In a study performed in Turkey, it was found that women received information about mammography from television, healthcare professionals and friends/relatives, respectively (25).

CONCLUSION and SUGGESTIONS

In this study, it is an important result that health professionals direct women who have a mammography. It requires that primary healthcare personnel keep women frequently informed about breast cancer and cancer screening, provide them with training brochures and encourage them to undergo mammography. Moreover, it is also crucial to lead single women to CEDEC (Cancer Early Detection Centre), an easily accessible medical center eliminating the obstacles for undergoing mammography. The use of reminders by CEDECs every two years to have mammography performed by women over the age of 40 may be effective in increasing mammography rates.

The Limitations of this Study

This study has several limitations. First of all, sampling was performed in a single community in western Turkey. Therefore, results cannot be extrapolated necessarily to other populations of this region or elsewhere in Turkey. Secondly, a district polyclinic was established near Dokuz Kavaklar FHC in the process of collecting data. Therefore, the number of applicants to FHC decreased and the number of women who did not have mammography found to be less than expected. In the FHC, where women undergoing mammography were admitted, the women reached during the data collection process were all included in this study. The sample size could be considered small; however, the statistical power of this study was found to be enough to interpret the data obtained in this study.

Ethics Committee Approval: The Pamukkale University Non-interventional Clinical Research Ethics Committee granted approval for this study (date: 20.03.2018, number: 60116787-020/20946).

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