RESEARCH COMMUNICATION

Beliefs of Turkish Female Teaching Staff Regarding Mammography Scanning

Ayla Bayik Temel[1*], Melek Ardahan[1], Esra Sesli[2]

Abstract

    Background: To our knowledge, there has hitherto been no research to determine the beliefs of female teaching staff, who are highly educated and form a special risk group regarding breast cancer, towards mammography scanning in Turkey. Definitive research was planned to determine the beliefs of the female teaching staff working in a university. **Methods**: Data were collected by researchers via face-to-face interview using a sociodemographic questionnaire and "Health Belief Model". **Results**: The point average of the teaching staff in the mammography benefits sub-scale is 19.6± 3.87, their average item score is 3.91. The point average of the teaching staff in the mammography obstacles sub-scale is 21.17±6.87, their average item score is 1.92. **Conclusions**: They agree on the benefits of the mammography, but they do not agree on the obstacles to mammography.

Keywords: Breast cancer - mammography - belief - female - teaching staff

Introduction

Breast cancer is a commonly seen malign tumor around the world, and forms approximately 30% of the whole cancers seen in woman.180,000 new subjects are detected in Europe and 184.000 new subjects are detected in the United States (USA) each year. Frequency of the breast cancer varies from one country to another. Hawai, California and Canada take the top spots with a frequency of 80-90 in one hundred thousand, but the same value is just 12-15 in one hundred thousand in Japan. Due to the Western type development and the decrease in fertility, the difference in the breast cancer frequency is decreasing gradually starting from 1975 in Japan, Singapore and China. On the other hand, the frequency in the European countries is decreasing from north to south and west to east. The biggest increase in the frequency of the disease has occurred in Canada, USA, and Sweden (Topuz et al., 2003).

Breast cancer is seen to be taking the first place in cancers seen in woman in our country, and it is seen to be the second cause of death in among cancer patients, following lung cancer. The number of female breast cancer patients rose from 8.879 in 1999, to 12.772 in 2003. In addition, it is also stated that breast cancer forms 24.1% of the total cancer subjects in our country (Turkish Republic Ministry of Health, 1999; Aydiner and Topuz, 2007). As it can be understood from these data given, despite the developments in health sciences, developments in early diagnostic techniques, and the increase in the awareness of the society in this subject, breast cancer still continues

to threathen the female life (Vogel, 1999; Mincey, 2003). One of the steps that can be made in this subject is to display the breast cancer risks in the society, to define the risk groups and to make scanning programs more common. Because it is not possible to define just one etiological reason in breast cancer. Among these, the most important ones are being a woman and being at an older age. Having a breast cancer history at a young age in the family, early menarch, late menopause, giving first birth at an old age are among the other risk factors (Aydiner and Topuz, 2007).

Early detection and prompt treatment offer the greatest chance of long-term survival. Mammography, clinical breast examination (CBE) and breast self-examination (BSE) are the secondary preventive methods used for screening in the early detection of breast cancer. Cancer screening tests play a pivotal role in reducing breast cancer related mortalities. The American Cancer Society (ACS) recommends CBE and mammography in the early detection of breast cancer (Smith et al., 2003). According to ACS recommendations, women should know how their breasts nor mally feel and report any breast changes promptly to their health care providers. BSE is an option for women starting from the early 20 s (American Cancer Society, 2003; Lee, 2003). But, BSE seems to be an important viable optional substitute available in rural areas, where access to CBE and mammograms is difficult and might still detect breast cancer early enough for treatment which can be offered to prolong women's lives and reduce suffering. Screening is linked to perceptions of risk, benefit, and barriers through a reasoning process

*[1]Department of Public Health, School of Nursing, [2]Medical Faculty Hospital Ege University, Bornova, Izmior, Turkey *For Correspondence: melekardahan@hotmail.com, melek.ozer.ardahan@ege.edu.tr*

that includes personal and social influences and attitudes (Yarbrough and Braden, 2001).

Annual mammography is considered the most valuable tool for detecting breast cancer in the earliest possible stages, before the cancer has metastasized and when interventions are most effective and least invasive and debilitating. The decline in breast cancer mortality has been largely attributed to regular mammography screening practice (Wu and Yu, 2003). Although this trend is encouraging, static's for overall breast cancer mortality are still problematic. T.R. Health Ministry, advises self and clinical breast examination to be made regulary after the age of 20, first mammography scanning to be made at 40 years old and control mammographies to be made between the ages of 50-69 for each woman. Mammography scanning should be made in the first week following the period, when the hormone levels are relatively low. The success rate in detecting the breast cancer via mammography scanning is approximately 80% in all age groups. Mammography scanning rate in woman over the age of 40 is higher than 60% in Turkey (T.R. Ministry of Health-Press and Public Relations Chair, 2004). Mammography screening can lower the mortality risk but it is still under-used among minorities. The rate of undergoing a recommended mammography practice was 40.86% in Aydin's study performed in Ordu (Aydin, 2004). The rate of mammography performed in Istanbul was 12.6% in Secginli's study (Secginli & Nahcıvan, 2003). Because of mammography has been shown to decrease breast cancer mortality by 25%-35% in women age 50 and over when consistently used, it is extremely important to maintain screening in this age group (Roberts et al.,1990).

The number of the female instructors in Turkey is 9625. Female teaching staff carry a risk when it comes to breast cancer. Working conditions are quite difficult and they are under a great deal of stress. They are required to work constantly, and renew their knowledge. Competition exits. They have to carry both the load of work and home life. Their second working shift starts when they come home to make housework and take of the children, this gives them too much of a burden and increases their stress level even more (Cam, 2003). There is no research made present to determine the beliefs of the female teaching staff, who are highly educated and forming a special risk group in breast cancer, towards mammography scanning in our country. Health education and consultance services being carried out by the nurses towards the early diagnosis of breast cancer; determingin the beliefs towards mammography scanning, recognizing the knowledge towards the benefits and obstacles, will direct the nursing initiative, and moreover, it will save their lives (Karayurt, 2003). The aim of this study, is to determine the beliefs of the female teaching staff over the age of 40 towards mammography scanning.

The Health Belief Model (HBM) is the conceptual framework for this study. The HBM was developed in the early 1950s by Rosenstock, Hochbaum, and Kegeles to provide a framework for understanding why some people take specific actions to avoid illness, whereas others fail to protect themselves. The HBM is beneficial in assessing health protection or disease prevention behaviors. It also useful in organizing information about client views of their state of health and what factors may influence them to change their behavior (Pender, 1987; Olgun and Oguz 1997).

According to the HBM, a woman who perceives that she is susceptible to breast cancer and that breast cancer is a serious disease would be more likely to perform regular breast examinations and breast cancer screening. Similarly, a woman who perceives more benefits from and fewer barriers to BSE would be more likely to practice BSE. A woman who has an internal cue (body perception) or who has been exposed to an external cue (e.g., the positive influence of a health care provider or the media) would also more readily adopt BSE, as would a woman who wants to improve her health and who is confident of positive results (Champion, 1993).

From this model two constructs, perceived benefits and barriers, have been found predictive for mammography. According to the HBM, the benefits construct is behavior specific and relates to perceived positive features of the behavior. The barriers construct relates to the negative aspects of behavior (mammography). The model hypothesizes that persons who perceive more positive benefits for mammography and fewer negative features of the behavior will be more likely to utilize mammography. In addition, a motivated woman is concerned about her health and well-being is more likely to be in favor of mammography utilization in the future and on a regular basic (Champion, 1993; Champion, 1999).

Materials and Methods

Sample

Definitive research was made in the city of Izmir. 102 woman over the age of 40 years old coming from health sciences (44), normal (engineering) sciences (40) and social sciences (18) selected from a universe of 503 female teaching staff. Volunteering teaching staff were included in the scope of this research made by using the unprobability sampling method.

Instrument

For the data collection; a questionarre (15 questions) which includes the socio-demographic features, breast cancer and mammography scanning information of the female teaching staff and the mammography benefits (5 items) and obstacles (11 items) sub-scales of Champion health belief model scale were used. All items were scored on a Likert scale from 1 (strongly disagree) to 5 (strongly agree). The minimum point that a teaching staff can get from the "mammography benefits" sub-scale is 5.00, and the maximum point is 25.00. The minimum point that a teaching staff can get from the "mammography obstacles" sub-scale is 11.00, and the maximum point is 55.00.

Health Belief Model Scale was developed in 1984 being based on the Victoria Champion HBM in the nursing field. The latest versions of the Champion's HBM were translated into Turkish by getting consent from Victoria Champion by the two research groups of Gozum-Aydin and Karayurt. Gozum and Aydin (2004) found alphas of

mammography beliefs as .80 for benefits and .81 for barriers. The sample of this study were collected from 266 female primary schoolteachers (Gozum and Aydin, 2004). In our research, the Cronbach Alpha Coefficient was determined as (0.67) for the validity and reliability of the mammography benefits sub-scale, and the Cronbach Alpha Coefficient as (0.81) for the Mammography obstacles.

Data analysis

The Statistical Package for The Social Sciences (SPSS for Windows) was used to analyze the data. Mean, percent, cronbach alpha, t test, variance analysis were used to analyze the data.

Ethical considerations

In order to make the research, permission was granted from the Personnel Office Chairman of the related university. The teaching staff were first shown the permission granted to the research, then they were informed about the research and their oral approval of the implementation of the questionnaire was obtained. The participant teaching staff were orally informed about the facts that they were free to decide whether to participate in the study or not and that they could end their participation whenever they wanted or refuse to give information and that they had the right to be informed about the study.

Results

Socio-demographic features of the teaching staff

43.1% of the teaching staff are 50 or more years of age, 75.5% of them are married. 43.1% of the teaching staff are coming from coming from health sciences, 39.2% of them from normal (engineering) sciences and 17.7% of them from social sciences.

Breast cancer and mammography related information

It was determined that 22.5% of the teaching staff had breast disease, 20.6% of them have relatives with breast cancer, and 90.2% of them got information about breast cancer. It was also determined that 90.2% of them knows how to make BSE, and 73.5% of them made BSE. In addition, it was determined that 74.5% of them had mammography scanning and 86.3% of them want to have mammography scanning with the aim of early diagnosis.

Analysis of mammography benefits and obstacles

The determined point average of the mammography benefits sub-scale is 19.59. According to the answers given by the teaching staff, average score is the "I agree" options with 3.91 ~ 4.00 points. The determined point average of the mammography obstacles sub-scale is 21.17. According to the answers given by the teaching staff, average score is the "I do not agree" options with 1.92 ~ 2.00 points (Table 1).

According to the answers given by the teaching staff to the mammography benefits and obstacles sub-scales, these are the first three items: In the answers given to the mammography benefits sub-scale;"Having mammography scanning will help me in the early diagnosis of the masses to be found my breast" item is in the first place with an

Table 1. Determined Item Score Averages for the Mammography Benefits and Obstacles Sub-scales

Sub-scales	Average	Ss	Item score average	Min	Max
Mammography Benefits	19.59	3.87	3.91	5	25
Mammography Obstacles	21.17	6.87	1.92	11	55

Table 2. Distribution of the Item Score Averages according to the Sociodemographic Features

	Age Group	X	Ss	F/t	P
Benefits	40-44	18.40	4.45	0.943	0.393
	45-49	20.09	3.60		
	50 and over	20.04	3.62		
Obstacles	40-44	21.83	6.90	3.620	0.030
	45-49	17.66	5.24		
	50 and over	22.25	7.13		
	Marital Status				
Benefits	Married	19.68	4.11	0.062	0.951
	Single	19.75	3.43		
Obstacles	Married	20.72	6.84	0.046	0.963
	Single	20.65	5.80		
	Faculty				
Benefits	Health sciences	20.04	3.82	0.917	0.940
	Normal (engineering) sciences	19.00	3.98		
	Social sciences	20.16	4.16		
Obstacles	Health sciences	19.20	5.35	3.285	0.073
	Normal (engineering)	22.77	7.19		

average score of 4.51±0.07. Second item is the "Having mammography scanning is the best way for me to detect the smallest mass in my breast" with an average score of 4.05±0.11, and the third place is taken by the item "Having mammography scanning will decrease my chance of mortality due to breast cancer" with an average score of 3.91±0.13. In the answers given to the mammography obstacles sub-scale;"Having mammography scanning is quite painful" item is in the first place with an average score of 2.66±0.13. Second item is the "Having mammography scanning is quite disturbing" with an average score of 2.55±0.13, and the third place is taken by the item "Having mammography scanning takes too much time" with an average score of 2.16±0.11.

Comparision of the score averages for the mammography benefits and obstacles sub-scales of the female teaching staff according to the sociodemographic features revealed no statistically significant difference in the variance analysis between the age groups of female teaching staff and the mammography benefits sub-scale (F=0.943 P>0.05). A statistically significant difference was found in the variance analysis between the age groups of female teaching staff and the mammography obstacles sub-scale (F=3.620 P<0.05). According to the advanced variance analysis made, the difference was found to be happening from the female teaching staff who have 50 or more years of age (Table 2).

Comparision of the score averages for the

Table 3. Distribution of the Item Score Averages for the Sub-scales according to the Knowledge Status

	Having a Breast Disease	X	Ss	t	P
Benefits	Had	19.30	3.97	0.485	0.629
	Did not have	19.75	3.95		
Obstacles	Had	20.91	4.26	0.257	0.848
	Did not have	21.22	7.49		
	Existence of Breast Cancer in the Close Relatives				
Benefits	Exits	19.90	4.19	0.322	0.748
	Do not exist	19.59	3.90		
Obstacles	Exists	20.47	5.84	0.507	0.613
	Do not exist	21.33	7.14		
	Getting Information Status about the Breast Cancer				
Benefits	Informed	19.81	3.89	1.233	0.220
	Not informed	18.20	4.31		
Obstacles	Informed	20.71	6.82	1.986	0.050
	Not informed	25.20	6.35		
	BSE Knowledge				
Benefits	Knows	19.54	3.92	0.880	0.381
	Does not know	20.70	4.19		
Obstacles	Knows	21.31	6.94	0.704	0.483
	Doest not know	19.70	6.39		
	BSE Making Status				
Benefits	Does	19.30	3.93	1.504	0.136
	Does not	20.62	3.87		
Obstacles	Does	21.09	6.99	0.155	0.877
	Does not	21.33	6.65		
	Having a Mammography Scanning Status				
Benefits	Had	19.75	3.84	0.406	0.686
	Did not have	19.38	4.29		
Obstacles	Had	19.48	6.19	4.590	0.000
	Did not have	26.03	6.52		
	Desire to Have a Mammography Scanning for Early Diagnosis				
Benefits	Wants	19.85	3.79	1.258	0.211
	Do not Want	18.42	4.75		
Obstacles	Wants	20.53	6.64	2.340	0.021
	Do not Want	25.07	7.30		

mammography benefits and obstacles sub-scales of the female teaching staff according to their knowledge status

No statistically significant difference was found between getting information status about the breast cancer of the female teaching staff the average item score of the mammography benefits scale (t=1.233 P>0.05). A statistically significant difference was found between getting information status about the breast cancer of the female teaching staff the average item score of the mammography obstacles scale (t=1.986 P=0.05). This difference exists because of the previously uninformed participants (Table 3).

No statistically significant difference was found between having a mammography scanning status about the breast cancer of the female teaching staff the average item score of the mammography benefits scale (t=0.406

P>0.05). A statistically significant difference was found between having a mammography scanning status about the breast cancer of the female teaching staff the average item score of the mammography obstacles scale (t=4.590 P<0.01). This difference occurs due to the participants who had no mammography scanning.

No statistically significant difference was found between desire to have a mammography scanning for early diagnosis status about the breast cancer of the female teaching staff the average item score of the mammography benefits scale(t=1,258 P>0.05). However, a statistically significant difference was found between desire to have a mammography scanning for early diagnosis status about the breast cancer of the female teaching staff the average item score of the mammography obstacles scale (t=2.34 P<0.05). This difference exists because of the ones who have no desire to have mammography scanning (Table 3).

Discussion

Our study revealed that 90.2% of them had sufficient knowledge of breast cancer, half of whom had acquired the information from health professionals. The literature supports the argument that regular practice of BSE influences treatment, prognosis and survival rates. In this study 73.5 % of the participants reported practicing BSE on a regular monthly basis. In contrast, some studies have reported that less than half of their study groups actually practice BSE monthly (Nystrom, 2000; Facione et al., 2000). Various studies have been carried out about the BSE knowledge level of the woman in Turkey who have diferent cultural and educational status. In a study made by Aygin et al. (2004), the ratio of young people making BSE was determined as 46.1% (Aygin et al., 2004). In a study made by Isbilir et al. (2004), they have determined that breast cancer, knowledge about BSE, attitudes and behaviours of the woman over the age of 40, is gradually decreasing with the higher age and lower educational level (Isbilir et al., 2004). Educational level of the woman being higher in our study, has been thought to be most effective factor of their beliefs and awareness. In a study made by Harputlu on the female prisoners in the Aegean Region, he has determined that the woman had insufficient information about BSE, and their applicational behaviours are also insufficient (Harputlu, 2005).

74.5% of women had had an annual mammography over a two year period. Considering all of the woman in the scope of this research was over 40 years old, it is easily expected for them to have mammography scanning before. In this situation, it can be thought that the reason why 25.5% of them had no mammography scanning, may not be due to lack of information, but because of their work burden and late mammography dates they were given. The rate of undergoing a recommended mammography practice was similar Secginli's study which had been performed in Istanbul, and other studies from different countries (Secginli and Nahcivan, 2003; Secginli and Nahcivan, 2004; Klug et al., 2005). In a study made by Aktan et al. (2004), when the behaviours of the nurses towards BSE making and mammography scanning were examined; it was determined that 87.0% of them makes

BSE and 23.0% of them had mammography scanning (Aktan et al., 2004). Educational level is thought to be the cause of this difference. The norms and beliefs especially in the Muslim countries due to their culture; are effecting the BSE, mammography and smear scanning behaviours. Because of the constructs like feeling embaressed towards the health care personel, the feeling of privacy, not going to the male doctors, not touching oneself's body; woman may postpone the early diagnostic behaviours about breast and cervical cancer. It is constantly emphasized that there are important relationships between the attitudes and behaviours of the woman towards early diagnosis and their health care beliefs (Cam and Gümüs, 2006; Celik et al., 2009).

The HBM was utilized by several researchers to study women's beliefs of and practices in relation to the methods for breast cancer (Champion, 1995; Gözüm and Aydin, 2004). Champion (1995) conducted a study on 581 women ages 35 years and older/over for purpose to refine scales to measure HBM concepts of benefits and barriers using the context of mammography screening. Cronbach alpha reliability coefficients for the benefits scale were 0.79 and for the barriers scale was 0.73 (Champion, 1995). Holm, Frank and Curtin (1999) used the HBM in their study concerning the women's mammography behavior, health locus of control, and health beliefs. The study used a convenience sample of 25 African Americans and 72 white women ages 35 to 84. Findings showed that women who participated in mammography screening were significantly more likely to perceive greater benefits, greater health motivation, and fewer barriers to screening than those who did not participate (Holm et al.,1999). Yabroff and Mandelblatt (1999) in their study, have searched the influence of using mammography of different educational approaches, have found out that the education performed using a health belief model has a big effect in using mammography and also increases the use of mammography (Yabroff and Mandelblatt, 1999). Petro-Nustas (2001) conducted a study on 59 Jordanian women ages 18 to 45 years old for the purpose of assessing health beliefs about mammography. The overall results revealed favorable beliefs toward the use of mammography, coupled with the majority of women (76%) voicing their agreement with the overall benefits of mammography, and 24% were either not in agreement with or unsure about these benefits (Petro-Nustas, 2001). Champion et al. (2003) used the HBM in their study as conceptual framework. This study was conducted on 773 women ages 50 to 85. Tailored interventions were effective at increasing mammography adherence. The result of this study showed that women not thinking about getting a mammogram were most likely to benefit from these tailored interventions while other women might need less intensive interventions (Champion et al.,2003).

In this study, the determined point average of the mammography benefits sub-scale is 19.59. The determined point average of the mammography obstacles sub-scale is 21.17. At the end of the study it has been shown that the teaching staff perceive the benefits and barriers of mammography. So, they can feel themselves closer to mammography scanning to prevent from breast cancer.

Furthermore, the teaching staff having more knowledge about breast cancer during their training may be one of the reasons of positive effect.

Champion and Miller have indicated that sociodemographic variables may influence attitudinal variables and thus indirectly influence behavioural patterns (Champion and Miller, 1992). In this study it was found that being knowledgeable of breast cancer is the only significant variable in the practice of mammography. Similarly, in Lagerlund's study, it was found that, a sufficient levels of knowledge of breast cancer had a positive effective factor on having mammography (Lagerlund et al., 2000). That is to say, variables like age, history of breast cancer in relatives are not significant in mammography practice. Similarly, in Jirojwong's study, it was found that sociodemographic variables were not effective on mammography practice (Jirojwong and MacLennan, 2003).

In this study, BSE-benefit and BSE- barriers were significantly in explaining BSE performance on a regular basis. Benefits were a significant variable predicting BSE and mammography performance. It was supported by the findings of American studies that have reported where women who perceived more benefits from BSE behaviour were more likely to perform BSE (Champion, 1993; Holm et al., 1999; Secginli and Nahcivan, 2003). In contrast, in other studies with Asian women such as from Korea, Hong Kong and Jordan, benefits were not significant variables (Petro-Nustas, 2001; Lee and Lee, 2001).

In this study, no statistically significant difference was found between having mammography scanning status of the female teaching staff and the average point score of the mammography benefits sub-scale. On the other hand, a statistically significant difference was found between having mammography scanning of the teaching staff and the mammography obstacles sub-scale. This difference is because of the ones who had no mammography scanning. Similarly, Dündar et al. (2006) were found out that those who don't having a previous mammogram perceived the barriers of mammography higher than the others. This is an expected result. Those who don't having a previous mammogram are through to perceive the barriers higher owing to fears to the unknown, wrong beliefs about the process or different reasons (worrying about having a bad item, not to know the mammography procedure, negative attitudes of heath stuff, not having free time, problem creating activity, to forget to apply, thinking about having young age, having more serious problem, not to know how to go and worrying about being exposed to radiation) (Dündar et al., 2006).

Complaints about the breast are common in the female teaching staff and their close relatives, BSE knowledge and applications are sufficient. Our results indicate that an increase in BSE practice and recommendations for mammograms may be achieved through enhancement of breast cancer awareness and possibly by reducing barriers. Female teaching staff think that having mammography scanning is beneficial and certain reasons do not prevent mammography. They have a desire to have mammography scanning. These results can lead us that the participants accept mammography approach at early practices. It can

be advised that the teaching staff should be encouraged to have mammography scanning and they can be invited via the appointment system. Furthermore, by using the health belief model constructs for assessment, health professional can gain an understanding of the beliefs that influence women's BSE and mammography practice.

Mammography is accepted as a painful and discomforting procedure by the male teaching staff. Furthermore, the uncertainty of a possible cancer situation may cause patients to feel anxious before the procedure. Giving education to the patients before the mammography scanning is thought be helpful in reducing the anxiety of the patients. However, information given more than the individual needs, may shift the focus from the positive way to the negative way; and information given less than the individual needs, may create fear and anxiety in the individual and may turn hopefulness into hopelessness. For this reason, giving only the necessary information that the individual needs and individual being ready to get this information are both highly important. Thus, knowing the physical and psychosocial needs of the woman correctly, being respectful, careful and emphatic towards the woman before and during the procedure, and in the case of an observed anxiety, evaluating the level of anxiety correctly and developing treatment and care standards according to the individual are the advice that can be given to the health care professionals.

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