

RESEARCH COMMUNICATION

Knowledge, Attitude and Beliefs Women Attending Mammography Units have Regarding Breast Cancer and Early Diagnosis

U Nergiz-Eroglu¹, Dilek Kilic^{2*}

Abstract

Objective: Breast cancer is an extremely important issue that threatens women's health; it is the most common illness that leads to death in women, worldwide. The purpose of this descriptive-comparative study was to determine the knowledge, attitude, and beliefs women attending mammography units have regarding breast cancer and early diagnosis. **Methods:** The study population comprised 333 women visiting second and third stage mammography units for a mammography, and 1018 women visiting first stage mammography units at Cancer Surveying and Training Centres. Questionnaires determining the descriptive characteristics of women, and their attitudes towards breast cancer and early diagnosis, a knowledge evaluation form, and the Turkish version of the Champion's Health Belief Model Scale was used to gather data. **Results:** The rate of obtaining information about early diagnosis in breast cancer (88.6%), information about breast self-examination (87.6%), conducting breast self-examination (61.8%), and undergoing a clinical breast examination (99.6%) were higher in the group of women attending first stage mammography units in comparison to women attending other mammography units. The knowledge score (71.8+18.8) of women attending first stage mammography units regarding breast cancer and early diagnosis was also higher in comparison to women attending other mammography units ($p=.00$). Sub-scales of the breast cancer health belief model scale were high for women attending Cancer Surveying and Training Centres, while their perception of self breast examination limitations and mammography limitations were low. **Conclusion:** Based on the effect of peer education, this study proves that women attending first stage mammography unit have a higher level of knowledge about breast cancer and early diagnosis, and more positive health beliefs regarding breast cancer and screenings in comparison to women attending other mammography units.

Keywords: Breast cancer - screening practices - mammography units - health belief model

Asian Pacific J Cancer Prev, 12, 1855-1860

Introduction

Breast cancer is a universal issue that threatens lives of women regardless of progress in health sciences, rapid development and changes in diagnosis and treatment innovations, and the constant increase of social sensitivity towards the health risks. Breast cancer is the most common type of cancer seen in women worldwide; breast cancer is second after lung cancer when cancer cases for men and women are evaluated. Every year, one million women worldwide are diagnosed with breast cancer; 18% of all cancer cases are breast cancer (Ozmen, 2008). In Turkey, breast cancer incidence is increasing; according to current data, it is the leading type of cancer among all cancer types diagnosed in women, with 35.47 in every hundred thousand. Breast cancer is also the cancer type that has the highest death rate among women (24.1%) (Ministry of Health, 2005). The shocking increase seen in 2005 cancer incident data in Turkey makes conducting studies

regarding early diagnosis in breast cancer inevitable.

Programmes that increase awareness in the target group are necessary in order to achieve success in programmes to be conducted for early diagnosis in breast cancer. The importance of initiating early diagnosis studies is obvious when the relationship between risk, the early stage, effective treatment, and good prognosis, in terms of life styles of women with breast cancer, is taken into consideration. The objective of screening methods that include breast self-examination (BSE), clinical breast examinations (CBE), and mammography applications, is to achieve early diagnosis in breast cancer, effective/successful treatment, and extend the patient's lifespan. The Ministry of Health has established 124 Cancer Early Diagnosis and Screening Centres, one per every province educational and research hospital nationwide, in order to achieve early diagnosis in breast cancer. The purpose of these centres is to use screening to diagnose breast cancer, and other organ cancers, in its early stages and decrease

¹Palandöken Hospital, ²Department of Nursing, Health Sciences Faculty, Ataturk University, Erzurum, Turkey *For correspondence: dilekk@atauni.edu.tr

its morbidity and mortality level (Ozmen et al., 2009).

Breast cancer is a treatable illness when diagnosed at early stage. The majority of women do not use early diagnosis methods regularly, even though early diagnosis methods are extremely important in decreasing the mortality of breast cancer. Some studies conducted in Turkey state that Turkish women have insufficient knowledge on the subject of breast cancer, do not conduct Breast Self-Examinations (BSE), do not know how to conduct Breast Self-Examinations (BSE), do not attend Clinical Breast Examinations (CBE), and mammographic screenings (Budakoğlu, 2003; Kum et al., 2004; Discigil et al., 2007; Aydın-Avcı and Gozum, 2009; Yılmaz et al., 2010). Conducted studies prove that acknowledging the beliefs women have in breast self-examinations and breast cancer screenings can affect teaching and enabling women to adopt related applications (Nahçıvan and Secginli, 2003; Canbulat and Uzun, 2008; Hacıhasanoğlu and Gozum, 2008; Aydın-Avcı and Gozum, 2009; Yılmaz et al., 2010). Another study, conducted on the subject, indicated that the rate of BSE and mammographic screenings in women with a positive breast cancer health belief perception was higher in comparison to women with a low rate of health belief perception (Canbulat and Uzun, 2008).

It is of the utmost importance that the level of awareness in women is increased and they attend screening programmes in order to decrease the death rate of breast cancer at a social level. The burden breast cancer puts on society can be decreased by increasing the level of knowledge women have on breast cancer, and conducting early diagnosis methods on high risk age groups.

Health professionals should develop detailed programs in order to promote general health motivation, and educate people about breast cancer. Also, nurses, who work with women in breast cancer screening clinics, need to assess these predictive factors, including health motivation and fear of breast cancer. They should also plan, implement, and evaluate health education programs. More personalised intervention to prevent mammography-related barriers could significantly increase the regular use of such an important screening facility (Kim and Kim, 2008).

Health training programmes can be planned by investigating effective factors of attitude and behaviour, and health beliefs by taking into consideration the knowledge level of women; ultimately, positive health behaviour can be developed by women on the subject of breast health (Nahçıvan and Secginli, 2003; Aydın-Avcı and Gozum, 2009). Within this context, the purpose of this study is to determine the knowledge, attitude, and belief women, attending three different stage mammography units, have regarding breast cancer and early diagnosis.

This study specifically was conducted to determine whether or not the level of knowledge women attending three different stage mammography units differs.

Materials and Methods

Study Type, Time and Place

This study was conducted as a descriptive-comparable

study in order to determine the knowledge, attitude, and belief women, attending three different stage mammography units in Erzurum, have regarding breast cancer and early diagnosis. It was conducted at three different stage mammography units in 2007; Erzurum Provincial Directorate of Health Cancer Surveying and Training Centre (CSTC) (1st stage health organisation), the Mammography Unit at Nene Hatun Gynaecology and Obstetrics Hospital (2nd stage health organisation), and the Mammography Unit at Aziziye Education and Research Hospital (3rd stage health organisation). The purpose of the study was explained to participating women; care was taken in them being willing and voluntary on participating in the study. Written permissions were obtained from relevant organisations in order to conduct the study. Additional permission was obtained from the project team in order to gather data belonging to group of women attending the CSTC.

Population and Sample Group

No sampling group was chosen. The population of the study comprised of 1018 women willing to participate in this study; 251 women attending a 2nd stage mammography unit of the Erzurum Provincial Directorate of Health, 82 women attending a 3rd stage mammography unit, and 1040 women that registered with a 1st stage mammography unit in order to have a mammographic screening and receive training from peer trainers within the context of the “Women to women for now” educating women on early diagnosis of breast cancer project (2006-2007), between April 2007 and June 2007 (Gozum et al., 2007).

Data Collection

Data for this study was gathered during face to face interviews held with women attending 2nd and 3rd stage mammography units. Data for women attending 1st stage mammography units was gathered with the permission of the project team of the “Women to women for now: educating women on early diagnosis of breast cancer” project (Gozum et al., 2007). A personal Information Questionnaire, a Knowledge Evaluation Form, and Victoria Champion’s Health Belief Model Scale were used to gather data for this study.

a) Personal Information Questionnaire: The Personal Information Questionnaire, developed by the researcher, comprised of questions related to socio-demographic characteristics of women, and their attitude and behaviour towards breast cancer screenings.

b) Knowledge Evaluation Form: The Knowledge Evaluation Form comprised of 20 multiple choice questions that evaluated the knowledge women had regarding breast cancer and early diagnosis. The score obtainable from the Knowledge Evaluation Form ranged from 0 to 100; every question had four multiple choice answers, the correct answered was scored with “5” scores, and the wrong answer was scored with “0.”

c) Champion’s Health Belief Model Scales (CHBMS) The Health Belief Model (HBM) was used as the theoretical framework to examine variables related to

Table 1. Distribution of the Breast Cancer Early Diagnosis Knowledge, Attitude, and Application Portrayed by Women attending Mammography Units

	Third	Second	CSTC	Significance
Obtaining knowledge				
Has	42 (51.2)	177 (70.5)	902 (88.6)	$\chi^2=108.953$
Has not	40 (48.8)	74 (29.5)	116 (11.4)	P=0.000
BSE knowledge				
Has	33 (40.2)	77 (30.7)	892 (87.6)	$\chi^2=393.233$
Has not	49 (59.8)	174 (69.3)	126 (12.4)	P=0.000
BSE practice				
Does	24 (29.3)	63 (25.1)	629 (61.8)	$\chi^2=128.536$
Does not	58 (70.7)	188 (74.9)	389 (38.2)	P=0.000
Thoughts on BSE				
Necessary	71 (86.6)	237 (94.4)	1006 (98.8)	$\chi^2=19.50$
Not Nec	11 (13.4)	14 (5.6)	12 (1.2)	P=0.000
Clinical breast Examination (CBE)				
Undergoes	25 (30.5)	53 (21.2)	1014 (99.6)	$\chi^2=943.332$
Does not	57 (69.5)	198 (78.9)	4 (0.4)	P=0.000
Thoughts on CBE				
Necessary	75 (91.5)	231 (92.0)	1014 (99.6)	$\chi^2=56.545$
Not	7 (8.5)	20 (8.0)	4 (0.4)	P=0.000
Having mammogram				
Had	22 (26.8)	112 (44.6)	-	$\chi^2=8.136$
Not have	60 (73.2)	139 (55.4)	-	P=0.004
Thoughts on Mammographic Screenings				
Necessary	77 (93.9)	241 (96.0)	1014 (99.6)	$\chi^2=23.363$
Not	5 (6.1)	10 (4.0)	4 (0.4)	P=0.000

breast cancer screening. This scale was developed by Champion (1993, 1995), and arises from the health belief model related to breast cancer early diagnosis beliefs. In this study, the Turkish version of CHBMS, adapted into Turkish by Gozum and Aydın, was used (Gozum and Aydın, 2004). The Turkish version of CHBMS consists of eight sub-scales (52 items) which evaluate subjects' decisions related to an individual's breast health, and also general health: susceptibility (3 items), seriousness (6 items), health motivation (5 items), barriers of BSE (eight items), benefits of BSE (4 items), and BSE self-efficacy/confidence (10 items) mammography benefits (5 items) and barriers of mammography (11 items); in general dimensions of BSE and mammography are considered as a whole.

All items for the subscales are formatted as a five-point Likert scale; possible answers range from strongly disagree (1 point) to strongly agree (5 points). The Cronbach Alpha Coefficients of this study were .74 and .98. These values indicate that the scale had adequate reliability.

Table 2. Distribution of Sub-Scale Score Means of Breast Cancer Health Belief Model Scale

Scale Variable	Third	Second	CSTC	p value
Susceptibility	6.21±2.28	7.06±0.61	7.54±2.88	0.000
Seriousness	23.0±3.92	22.7±4.66	21.5±6.71	0.005
Motivation	20.8±3.45	20.3±2.43	20.9±3.59	0.026
BSE benefits	15.8±2.74	11.3±4.66	16.7±2.68	0.000
BSE barriers	24.6±9.19	26.9±8.98	13.2±6.22	0.000
BSE self-efficacy	36.6±6.35	22.5±11.8	39.2±6.25	0.000
Mammography				
Benefits	19.1±3.85	19.6±2.91	19.9±4.01	0.097
Barriers	27.2±7.91	22.3±5.37	18.2±7.60	0.000

Statistical Evaluation

A Statistical Package for Social Sciences (SPSS 10.0) was used to conduct statistical data analysis. Study results were analysed using percentages (%), means, the chi-square test, the t-test, variance analysis (one-way ANOVA), and Duncan's Modification Analysis.

Results

Some 48.2% of women attending mammography units were aged between 45 and 54, 96.7% of them were married, 53.3% were primary school graduates, 93.7% were housewives, and 72.7% had equal incomings and outgoings. The rate of obtaining information about early diagnosis in breast cancer (88.6%), information about breast self-examination (BSE) (87.6%), conducting breast self-examination (BSE) (61.8%), and undergoing a clinical breast examination (99.6%) was higher in the group of women attending CSTCs in comparison to women attending other mammography units (Table 1). Some of the sources women, attending mammography units, used to obtain information regarding early diagnosis in breast cancer were the information provided by their peer trainer (applicable for the majority (88.4%) of women attending CSTCs), and information obtained from mass communication and health care professionals (women attending other mammography units).

In terms of previous mammographic screenings, the majority of women that had undergone a mammographic screening before was higher in women attending 2nd stage mammography units (44.6%) in comparison to women attending 3rd stage mammography units (26.8%) (Table 1). As it was known that women attending CSTCs had previously undergone a mammographic screening, they were not included in the evaluation. In terms of reasons for visiting a mammography unit, all women attending CSTCs were undergoing mammographic screenings for control purposes, while 65.2% of women attending other two mammography units were undergoing mammographic screenings for control purposes and 34.8% were mammographic screenings upon the request of their doctor. The attitude of women, attending all three types of mammography units, was positive towards Breast Self-Examinations (BSE), Clinical Breast Examinations (CBE) and mammography (Table 1).

The knowledge about breast cancer and early diagnosis scores of women attending Cancer Early Diagnosis and Screening Centres (71.8+18.8) was higher in comparison to knowledge scores of women attending other mammography units (22.8 + 15.6 and 31.8 + 15.2, P<0.001).

In terms of breast cancer health beliefs, women attending CSTCs had a higher level of susceptibility, health motivation, the benefit of breast self-examinations, breast self-examinations self-efficacy, and mammography benefit (which all are health belief perceptions), whereas the level of seriousness was higher in women attending 3rd stage mammography units. The barriers of breast self-examination and barriers of mammography were lower in women attending CSTCs in comparison to women attending other mammography units (Table 2).

Discussion

This study analysed the level at which women attending mammography units requested information regarding breast cancer and early diagnosis; study results concluded that the level of information received by women attending CSTCs on the subject of breast cancer and early diagnosis was higher in comparison to women attending other mammography units ($p < 0.001$). Studies conducted in Turkey prove that women have insufficient and incorrect information regarding breast cancer and early diagnosis (Budakoğlu, 2003; Dundar et al., 2006). However, the educational innovations directed at breast cancer in recent years, in Turkey, have significantly increased the level of knowledge women have regarding breast cancer and early diagnosis after training (Aydın-Avcı and Gozum, 2009). Studies conducted on different cultures indicate that women have a high level of knowledge regarding early diagnosis in breast cancer (Aderounmu et al., 2006; Halbert et al., 2006; Onver et al., 2007). In this study, the reason behind the high level of information women, attending first stage mammography units, receive regarding early diagnosis in breast cancer may be due to the breast cancer and early diagnosis training provided by peers, within the context of the project.

In this study, the majority of women attending Cancer Early Diagnosis and Screening Centres stated that their main information source regarding breast cancer and early diagnosis was their peer trainers; whereas, women attending the other two mammography units stated that their main source of information was mass communication and healthcare personnel. Subject-related studies indicate that the leading source of information regarding breast cancer and early diagnosis for women is written and visual press; the rate of information obtained from healthcare personnel is a lot lower (Atlı and Yeserenoglu, 2005; Cevik, 2005; Kılıc et al., 2006; Discigil, 2007). Currently, there are no studies in Turkey that refer to the level of information women obtain from peer trainers.

Even though 74.2% of women attending mammography units knew about Breast Self-Examinations and 97.9% expresses the necessity of Breast Self-Examinations, only a minority of women (53%) conduct Breast Self-Examinations. Women in the group attending Cancer Early Diagnosis and Screening Centres knew more about Breast Self-Examinations and conducted them more frequently in comparison to women attending other mammography units. The knowledge women, attending CSTCs, had on Breast Self-Examinations, and the frequency at which they conducted them were higher in comparison to other studies conducted on the subject (Zincir, 1999; Merey, 2002; Budakoğlu, 2003); whereas, some studies concluded similar results (Discigil et al., 2007; Kılıc et al., 2006; Cevik et al., 2005). The educational studies directed at breast cancer, conducted in recent years, in Turkey, have increased the frequency at which women conduct Breast Self-Examinations after training (Hacıhasanoğlu and Gozum, 2008; Aydın-Avcı and Gozum, 2009; Secginli and Nahcivan, 2011). The fact the rate of Breast Self-Examinations is higher in women attending Cancer Early Diagnosis and Screening Centres proves the effect of peer

education offered within the province.

The majority of women attending Cancer Early Diagnosis and Screening Centres had previously undergone a clinical breast examination. Moskowitz et al. (2007) reported that health education directed at screening programmes increased the rate of clinical breast examinations undergone by women. Secginli and Nahcivan (2011) stated that innovative interventions made no difference in terms of attended clinical breast examinations.

This study concluded that 26.8% of women attending a 3rd stage mammography unit, and 44.6% of women attending a 2nd stage mammography unit, had previously undergone a mammographic screening. According to studies conducted in Turkey, the rate of mammographic screenings for women ranges between 10% and 45% (Merey, 2002; Orhan, 2002; Discigil et al., 2007; Aydın-Avcı and Kurt, 2008; Canbulat and Uzun, 2008; Gumus et al., 2010). Studies conducted in different countries report that the rate of mammography ranges between 40% and 78% (Alam, 2006; Ahmad et al., 2006; Halbert et al., 2006; Lee et al., 2006; Soskolne et al., 2007; Cui et al., 2007). While the rate of mammography obtained for this study is similar to those obtained by other studies in Turkey, the rate is significantly low in comparison to foreign literature.

One study reports that women's perceiving a high level of breast cancer fear and a low level of health motivation is a barrier of mammography (Kim and Kim, 2008). Innovative interventions directed at breast cancer screening programmes decrease the barrier of mammography, increase the perception of benefit, and increase the rate of mammography (Moskowitz et al., 2007). However, another earlier subject-related study reported that training programmes might have no effect of the rate of mammography uptake (Secginli and Nahcivan, 2011).

In terms of reasons behind undergoing mammographic screening, all women attending CSTCs were undergoing mammographic screenings for control purposes, while 65.2% of women attending other two mammography units were undergoing mammographic screenings for control purposes and 34.8% were mammographic screenings upon the request of their doctor. Orhan (2002) stated that 72.8% of women underwent mammographic screening due to a breast problems, 20% underwent mammographic screening as routine control, and 7.2% under mammographic screening because they had breast cancer. Zincir (1999) identified that 58.1% of women had mammography due to a breast problems, 40.0% had mammography as routine control, and 1.9% under mammography because they had breast cancer. Results of this study illustrate a higher rate of control-purpose mammography had by women in comparison to findings obtained by Zincir and Orhan. This is based on the effect of innovations regarding breast cancer and early diagnosis, and is due to the awareness those using the service have gained regarding early diagnosis and the overall increase in awareness.

Results of this study indicate that the knowledge (related to breast cancer and screening) score mean of women attending CSTCs is higher in comparison to

women attending the other two mammography units ($p < 0.001$). While some studies report that the level of knowledge women have regarding breast cancer and early diagnosis is low (Kum et al., 2004; Discigil et al., 2007; Soskolne et al., 2007; Lee et al., 2006; Ahmad et al., 2006), some interventional research results prove that there is a significant increase in the level of knowledge of women after training (Hacıhasanoğlu and Gozum, 2008; Aydın-Avcı and Gozum, 2009; Secginli and Nahcivan, 2011).

Results of this study conclude that the knowledge level of women attending 2nd and 3rd stage mammography units is low. The level of knowledge women attending these mammography units have regarding breast cancer and early diagnosis is similar to those expressed in literate, as stated above (Discigil et al., 2007; Lee, 2006; Ahmad, 2006; Soskolne, 2007). The fact that women attending CSTCs have a higher level of knowledge in comparison to women attending the other two mammography units proves that the training offered to women by their peers increases their level of knowledge.

Study results concluded that women attending a first stage mammography unit had a more positive breast cancer health belief perception in comparison to women attending other mammography units. However, women attending a third stage mammography unit had the highest perception of seriousness. This can possibly be due to the fact that third stage mammography units conduct advanced diagnosis and examinations, which results in women perceiving their situation as serious. The fact that women attending a first stage mammography unit have a positive breast cancer health belief illustrated the effect of peer education conducted within the province. These positive changes are an important shift in the right direction for maintaining breast health. Studies report that informing and training on breast cancer and early diagnosis causes positive changes in breast cancer health belief perceptions (Hacıhasanoğlu and Gozum, 2008; Aydın-Avcı and Gozum, 2009; Secginli and Nahcivan, 2011). These study results are compatible with those in literature, and prove that training is effective in increasing correct perceptions.

Results of this study conclude that women should benefit from peer education, offered within the breast cancer training programmes. Future studies should take the health belief perceptions of women into consideration; in particular, perceptions that restrict preventive health behaviours should be determined, and interventions should be made to minimise these restrictions. The limitation of this study is that it was only conducted at mammography units. The results of this study cannot be generalised for all Turkish women as it was only conducted on one locality in Turkey.

Acknowledgements

The authors would like to say thank you to the women that participated in the study, the staff at the mammography units, and the project team that granted us permission to gather information on those attending the first stage mammography unit.

References

- Aderounmu AO, Egbewale BE, Ojofeitimi EO, et al (2006). Knowledge, attitudes and practices of the educated and non-educated women to cancer of the breast in semi-urban and rural areas of South West, Nigeria. *J Obstet Gynaecol Can*, **28**, 728-30.
- Ahmad F, Cameron I J, Donna E, et al (2006). Tailored intervention to promote breast cancer screening among South Asian immigrant Women. *Soc Sci Med*, **60**, 575-586.
- Alam AA (2006). Knowledge of breast cancer and its risk and protective factors among women in Riyadh. *Am J Prev Med*, **31**, 142-149.
- Atlı Ö, Yeşerenöğlü H (2005). Analysing the effect training offered to women regarding breast cancer and breast self-examinations has on their level of knowledge. Ege University Nursing School. The 5th National Nursing Congress Handbook.
- Aydın-Avcı I, Kurt H (2008). Health beliefs and mammography rates of Turkish women living in rural areas. *J Nursing Scholar*, **40**, 170-175.
- Aydın-Avcı I, Gözüm S (2009). Comparison of two different educational methods on teachers' knowledge, beliefs and behaviors regarding breast cancer screening. *Eur J Oncol Nurs*, **13**, 94-101.
- Budakoğlu I (2003). The level of knowledge women aged 40 and above, residing in the Bahçelievler Neighbourhood of Gölbaşı, have regarding breast cancer and early diagnosis methods, and analysing the effectiveness of subject-related training. Gazi University Medical Faculty Department of Public Health, Dissertation, Ankara.
- Canbulat N, Uzun O (2008). Health beliefs and breast cancer screening behaviors among female health workers in Turkey. *Eur J Oncol Nurs*, **12**, 148-156.
- Champhion VL (1993). Instrument refinement for breast cancer screening behaviors. *Nursing Res*, **42**, 139-143.
- Champhion VL (1995). Development of a benefits and barriers scale for mammography utilization. *Cancer Nursing*, **18**, 53-59.
- Cui Y, Peterson NB, Hargreaves M, et al (2007). Mammography use in the Southern Community Cohort Study (United States). *J Health Care Poor Underserved*, **18**, 102-117.
- Cevik GC, Akbulut G, Erakal S (2005). The effect the level of breast self-examination knowledge women coming to hospital complaining of a possible mass in their breast has on recognising a mass. *Nursing Forum J*, **6**, 4-8.
- Dişçigil G, Şensoy N, Tekin N, et al (2007). Breast health: Knowledge, behavior, and performance of a group of women living in Aegean Region. *Marmara Med J*, **20**, 29-36.
- Dündar PE, Özmen D, Öztürk B, et al (2006). The knowledge and attitudes of breast self-examination and mammography in a group of women in a rural area in Western Turkey. *BMC Cancer*, **6**, 43.
- Gözüm S, Aydın İ (2004). Validation Evidence for Turkish Adaptation of Champion's Health Belief Model Scales. *Cancer Nursing*, **27**, 491-498.
- Gözüm S, Karayurt Ö, Kav S, et al (2007). "Women to women for now" education of women on early diagnosis of breast cancer. *European Journal of Cancer Supplements*, **5**, 424.
- Gumus-Babacan A, Cam O, Malak AT (2010). Relationships between psychosocial adjustment and hopelessness in women with breast cancer. *Asian Pac J Cancer Prev*, **12**, 433-438.
- Hacıhasanoğlu R, Gözüm S (2008). The effect of training on the knowledge levels and beliefs regarding breast self-examination on women attending a public education centre. *Eur J Oncol Nurs*, **12**, 58-64.

- Halbert CH, Kessler L, Wileyto EP, et al (2006). Breast cancer screening behaviors among African American women with a strong family history of breast cancer. *Prev Med*, **43**, 385-388.
- Kılıc S, Uçar M, Seymen E, et al (2006). Investigating the breast self-examination information practice for nurses, nursing students, and admitted female patients at GATA Training Hospital. *Gülhane Med J*, **48**, 200-204.
- Kim JH, Kim O (2008). Predictors of Perceived Barriers to mammography in Korean Women. *Asian Nurs Res*, **2**, 74-81.
- Kum S, Göksu Alp U, Kelkitli E, et al (2004). The frequency of breast self-examinations, and effective factors, in the Middle Black Sea Region. *Turkish Oncol J*, **1**, 24-28
- Lee EE, Fogg LF, Sadler GR (2006). Factors of breast cancer screening among Korean immigrants in the United States. *J Immigr Minor Health*, **8**, 223-233.
- Merey S (2002). The breast cancer screening behaviour of women. T.R. Istanbul University, Institute of Health Sciences, Postgraduate Thesis, Istanbul.
- Moskowitz JM, Kazinets G, Wong JM, et al (2007). "Health is strength": A community health education program to improve breast and cervical cancer screening among Korean American Women in Alameda County California. *Cancer Detect Prevent*, **31**, 173-183.
- Nahçıvan N, Seçginli S (2003). Meme kanserinde erken tanıya yönelik tutum ve davranışlar: Bir Rehber Olarak Sağlık İnanç Modelini kullanımı. *Cumhuriyet Üniversitesi Hemşirelik Yüksek Okulu Dergisi*, **7**, 33-39
- Onvere S, Okoro O, Chigbu B, et al (2008). Practice of antenatal clinical breast examination as a method of early detection of breast cancer by health care providers in a low resource setting. *Arch Gynecol Obstet*, **278**, 115-117.
- Orhan S (2002). The Thoughts and Behaviour of Mature Women Located in the Chosen Urban Health Centre Region of Kayseri have regarding Breast Cancer. Erciyes University Medical Faculty, Department of Public Health, Postgraduate Thesis, Kayseri.
- Ozmen V, Fidaner C, Aksaz E, et al (2009). Preparation of breast cancer early diagnosis and screening program in Turkey "Report of Ministry of Health of Turkey breast cancer early diagnosis and screening sub-committee". *J Breast Health*, **5**, 125-134.
- Ozmen V (2008). Breast cancer in the world and Turkey. *J Breast Health*, **4**, 7-12.
- Seçginli S & Nahçıvan N (2011). The effectiveness of a nurse-delivered breast health promotion program on breast cancer screening behaviours in non-adherent Turkish women: A randomized controlled trial. *Int J Nursing Studies*, **48**, 24-36.
- Soskolne V, Marie S, Manon O (2007). Beliefs recommendation and intentions are important explanatory factors of mammography screening behavior among Muslim Arab women in Israel. *Health Educ Res*, **22**, 665-676.
- T.R. Ministry of Health (2005). The most frequent ten cancers in females in Turkey 2005. (<http://www.kanser.gov.tr>) Accessed 12.04.2011 .
- Yılmaz M, Guler G, Bekar M, et al (2010). Risk of Breast Cancer, Health Beliefs and Screening Behaviour among Turkish Academic Women and Housewives. *Asian Pacific J Cancer Prev*, **12**, 817-822.
- Zincir H (1999). The knowledge, attitude, and behaviour women aged 40 and over, residing in Central Malatya, have on the subject of breast cancer and taking precautions. Department of Public Health, Postgraduate Thesis, Malatya.