

SAĞLIK İNANÇ MODELİ VE MEME KANSERİ-SAKARYA: KESİTSEL
ÇALIŞMA ⁽¹⁾HEALTH BELIEF MODEL AND BREAST CANCER IN SAKARYA: A
CROSS SECTIONAL STUDYTuncay Müge ALVUR¹, Nursan ÇINAR², Hamide ZENGİN³¹ Professor, Faculty of Medicine, Department of Family Medicine, Kocaeli University, Kocaeli, Turkey² Professor, Faculty of Health Sciences, Sakarya University, Sakarya, Turkey³ PhD Student, Division of Nursing, Institute of Health Sciences, Sakarya University, Sakarya, TurkeyORCID ID: 0000-0001-6792-5786¹, 0000-0003-3151-9975², 0000-0002-2389-6466³

Öz: Amaç: Çalışmanın amacı, kadınların meme kanseri taramalarındaki düşünce ve uygulamalarının Sağlık İnanç Modeli'ne göre belirlenmesidir. **Yöntem:** Kesitsel tipteki bu çalışmanın örneklemini Sakarya'da bulunan üç Aile Sağlığı Merkezlerine sağlık problemi nedeniyle başvuran kadınlar oluşturmuştur. Araştırmaya katılmaya gönüllü 310 kadın ile çalışma verileri toplanmıştır. Veriler yarı yapılandırılmış soru formu ve Champion Sağlık İnanç Model Ölçeği'nin (CHBMS) Türkçe versiyonu kullanılarak toplanmıştır. **Bulgular:** Katılımcıların yaş ortalaması 37.4 ± 11.7 yıl olduğu; % 78, 1'inin evli; % 59.2'unun ev hanımı; % 65.7'sinin eğitim düzeyinin lise; % 7.5'inin çocuk sahibi olduğu; % 49.7'unun gelir-gider düzeyini "iyi" olarak tanımladığı, % 22.7'sinin Kendi kendine Meme muayene (KKMM) bilgisinin olmadığı tespit edilmiştir. CHBMS alt boyutları ortalaması: duyarlılık 7.8 ± 2.7; Ciddilik 20.3 ± 5.4; KKMM yararları 15.9 ± 3.3; KKMM bariyer 19.2 ± 5.6; Öz-yeterlik 32.9 ± 8.1; Mamografi yararları 18.6 ± 3.9; Mamografi bariyer 27.6 ± 7.8; kadınların sağlık motivasyonu 20.4 ± 3.9 olarak elde edilmiştir. **Sonuç:** Bu çalışmada KKMM yararları / engelleri ve öz-yeterlik arasında güçlü bir ilişki olduğu sonucuna ulaşılmıştır.

Anahtar Kelimeler: Kadın sağlığı, Sağlık inancı, Meme kanseri, Mamografi, Kendi kendine meme muayenesi

Abstract: Aim: The purpose of this study was to identify women breast cancer screening beliefs and practice related to the Health Belief Model. **Methods:** This cross-sectional study was carried out with women who were admitted for health problems to three of the Family Practice Centers located in Sakarya, Turkey. 310 volunteer participants recruited after informed and verbal consent to participate in the study was obtained. The data were collected using a semi structured self-report questionnaire and Turkish version of Champion Health Belief Model Scale (CHBMS). **Results:** Mean age of participants was 37.4±11.7 years; 78.1% of them were married; 59.2% were housewives; 65.7% had high education level; 72.5% had child(ren); 49.7% declared to have "good" family income. Breast self examination knowledge (BSE) was reported as "none" by 22.7% women. The mean CHBMS subscales were as follows: the susceptibility subscale of women was 7.8±2.7; the seriousness subscale was 20.3±5.4; the BSE benefit subscale was 15.9±3.3; the BSE barrier subscale was 19.2±5.6; the self-efficacy subscale was 32.9±8.1; the mammography benefit subscale was 18.6±3.9; the mammography barrier subscale was 27.6±7.8; and the health motivation subscale of women was 20.4±3.9. **Conclusion:** There is strong association between performing BSE and BSE benefits/barriers, and self-efficacy in this study.

Key Words: Women health, Health belief, Breast cancer, Mammography, Self breast examination

Doi: 10.17363/SSTB.2019.30.3

(1) Corresponding Author: Prof. Nursan Cinar. Sakarya University, Faculty of Health Sciences, Esentepe Campus, 54187 Sakarya, Turkey. Telephone : 0264 295 66 21. Fax : 0264 295 66 02. E - mail: ndede@sakarya.edu.tr. Type of article: Research and Application. Conflict of Interest: None, Funding: None, Ethical Committee: None



SSTB

www.sstbdergisi.com

International Refereed Academic Journal of Sports, Health and Medical Sciences

January - February - March Issue: 30 Winter Semester Year: 2019

Uluslararası Hakemli Akademik Spor Sağlık ve Tıp Bilimleri Dergisi

Ocak - Şubat - Mart Sayı: 30 Kış Dönemi Yıl: 2019

ID:432 K:508

ISSN Print: 2146-8508 Online 2147-1711

(ISO 18001-OH-0090-13001706 / ISO 14001-EM-0090-13001706 / ISO 9001-QM-0090-13001706 / ISO 10002-CM-0090-13001706)

(TRADEMARK)

(2015/04315- 2015-GE-18972)

INTRODUCTION

Breast cancer is the most frequent cancer among women with an estimated 1.67 million new cancer cases diagnosed in 2012 (25% of all cancers). It is common in women both in more and less developed regions with slightly more cases in less developed than in more developed regions (883,000 vs. 794,000 cases). The differences in breast cancer incidence between developed and developing countries can partly be explained by dietary effects combined with later first childbirth, lower parity, and shorter breastfeeding (Peto, 2001: 390–395).

Breast cancer ranks as the fifth cause of death from cancer overall (522,000 deaths). It is the first cause of cancer death in women in less developed regions (14.3% of total) and the second cause of cancer death in more developed regions (15.4% of total) after lung cancer in more developed regions. Breast cancer survival rates vary greatly worldwide, ranging from 80% or over in North America, Sweden and Japan to around 60% in middle-income countries and below 40% in low-income countries (Coleman et al., 2008: 730-756).

There are two early detection methods; early diagnosis and screening.

A screening programme is a far more complex undertaking than an early diagnosis programme (Nelson et al., 2009).

Early diagnosis remains an important early detection strategy; particularly in low- and middle-income countries where the disease is diagnosed in late stages and resources are very limited. There is some evidence that this strategy can produce “down staging” (increasing in proportion of breast cancers detected at an early stage) of the disease to stages that are more amenable to curative treatment (Yip et al. 2008: 2244-2256).

A meta-analysis of 13 randomized trials found a 26% reduction in relative risk of breast cancer-related mortality when women 50 to 74 years of age received screening mammography (Kerlikowske, 1997: 79-86; Nystrom et al., 2002: 909-919). The specificity of mammography is about 94-99% (Peeters et al., 1987: 667-671; Baines et al., 1988: 273-276). Even with this excellent specificity false positives can occur frequently if the test is performed routinely in populations with a low prevalence of breast cancer. Thus, most abnormal results of mammograms performed on young women without known risk factors for breast cancer are likely to be false positives. Breast Cancer Detection Demonstration Project (BCDDP) data show that only 10% of women with positive (mammography and clinical examination) screening results were found to have cancer (Baker, 1982: 194-225), and another multicenter trial reported a positive predictive value of only 7% for initial



SSTB

www.sstbdergisi.com

International Refereed Academic Journal of Sports, Health and Medical Sciences

January - February - March Issue: 30 Winter Semester Year: 2019

Uluslararası Hakemli Akademik Spor Sağlık ve Tıp Bilimleri Dergisi

Ocak - Şubat - Mart Sayı: 30 Kış Dönemi Yıl: 2019

ID:432 K:508

ISSN Print: 2146-8508 Online 2147-1711

(ISO 18001-OH-0090-13001706 / ISO 14001-EM-0090-13001706 / ISO 9001-QM-0090-13001706 / ISO 10002-CM-0090-13001706)

(TRADEMARK)

(2015/04315- 2015-GE-18972)

mammographic examinations (Baines et al., 1988: 273-276). There is no study that shows that the sensitivity or specificity of mammography is increased when “baseline” mammograms are available for comparison.

Supplemental screening with MRI or ultrasound is recommended in selected high-risk populations. Screening breast MRI is recommended in women at high risk for breast cancer on the basis of family history or genetic predisposition. Ultrasound is an option for those high-risk women who cannot undergo MRI. Recent literature also supports the use of breast MRI in some women of intermediate risk, and ultrasound may be an option for intermediate-risk women with dense breasts. There is insufficient evidence to support the use of other imaging modalities, such as the mamography, breast-specific gamma imaging, positron emission mammography, and optical imaging, for breast cancer screening (Harvey et al., 2013: 742-749).

Teaching breast self-examination (BSE) does not reduce breast cancer mortality and may increase false-positive rates. A review of eight studies showed no benefit for the rate of breast cancer diagnosis, the tumor size or stage, or the rate of death from breast cancer (Baxter, 2001: 1837-1846). Two large randomized trials, one in China and the other in Russia, also, did not demonstrate a mortality benefit from teaching BSE (Semiglazov

et al., 1992: 498-502; Thomas et al., 2002: 1445-1457). Therefore, BSE is recommend for raising awareness among women at risk rather than as a screening method.

Clinical breast examination (CBE) alone was compared with CBE plus mammography, and after 13 years of follow-up the mortality rate was the same in each group (Miller et al., 1992:1477-1488; Miller et al., 2000: 1490-1499). A review of controlled trials and case-control studies that included CBE as a screening modality estimated CBE sensitivity and specificity to be 54% and 94%, respectively (Barton et al., 1999: 1270-1280). Promising preliminary results about clinical breast examination show that the age-standardized incidence rate for advanced-stage breast cancer is lower in the screened group compared to the unscreened group (Sankaranarayanan et al., 2011: 1476-1480; Grosse Frie et al., 2013: 7301-7307).

In Turkey the annual incidence of breast cancer inclined from 43% in 2014 (Şencan and Keskinçilic, 2017:19). The purpose of this study was to identify women breast cancer screening beliefs and practice related to the Health Belief Model.

MATERIAL and METHODS

This cross-sectional study was carried out with womenwho were admitted for health problems to three of the Family Practice Cen-



SSTB

www.sstbdergisi.com

International Refereed Academic Journal of Sports, Health and Medical Sciences

January - February - March Issue: 30 Winter Semester Year: 2019

Uluslararası Hakemli Akademik Spor Sağlık ve Tıp Bilimleri Dergisi

Ocak – Şubat – Mart Sayı: 30 Kış Dönemi Yılı: 2019

ID:432 K:508

ISSN Print: 2146-8508 Online 2147-1711

(ISO 18001-OH-0090-13001706 / ISO 14001-EM-0090-13001706 / ISO 9001-QM-0090-13001706 / ISO 10002-CM-0090-13001706)

(TRADEMARK)

(2015/04315- 2015-GE-18972)

ters located in Sakarya, Turkey and minimum 20 years old. Women were invited to participate in the study. Volunteer participants (n=310) recruited after informed and verbal consent to participate in the study was obtained. The data were collected using a semi structured self-report questionnaire and Turkish version of Champion Health Belief Model Scale (CHBMS) (Gozum and Aydin, 2004: 491-498; Karayurt and Dramali, 2007: 69-77). All participants were interviewed face to face. The questionnaire form included the women's age, education level, current marital status, occupation, self-declared income level, personal/family history of breast cancer, chronic diseases, knowledge about BSE, BSE frequency, any hormonal therapy, obstetric history and breast feeding status.

CHBMS was developed by Champion in 1984 (Champion, 1984: 73-85; Champion, 1995: 53-59); the scale consists of 6 concepts: Perceived susceptibility to an illness (3 items), perceived seriousness of the illness (6 items), perceived benefits of BSE (4 items), perceived barriers for BSE (8 items), general health motivations (5 items), self-efficacy (10 items), perceived benefits of mammography (5 items), perceived barriers for mammography (11 items). Each item has 1 to 5 score: "I disagree strongly" (1 point), "I disagree" (2 points), "I am not sure" (3 points), "I agree" (4 points), "I agree strongly" (5 points). Women

who had low scores in the barrier subscale and high scores in the other subscales also held positive beliefs and attitudes about breast cancer, BSE practice and mammography. The total scale's Cronbach alpha value was determined to be 0.82. The Cronbach alpha values obtained from the subscales in our study were;

1. Susceptibility to breast cancer: 0.84
2. Seriousness of breast cancer: 0.81
3. Benefits-BSE: 0.80
4. Barriers-BSE: 0.77
5. Self-efficacy / Confidence: 0.91
6. Health motivation: 0.86
7. Benefits mammography: 0.78
8. Barriers-mammography: 0.84

Age was grouped in quartiles: 1=18 to 29 years, 2=30 to 35 years, 3= 36 to 44 years and 4= 45 to 80 years. Education was dichotomized: 1 (low)=Secondary school and lower, 2 (high)=high school and higher.

Data obtained during the research were computerised and assessed by SPSS (Statistical Package for Social Sciences for Windows) 20 Statistics programme. $p < 0.05$ were statistically accepted as significant.



SSTB

www.sstbdergisi.com

International Refereed Academic Journal of Sports, Health and Medical Sciences

January - February - March Issue: 30 Winter Semester Year: 2019

Uluslararası Hakemli Akademik Spor Sağlık ve Tıp Bilimleri Dergisi

Ocak – Şubat – Mart Sayı: 30 Kış Dönemi Yıl: 2019

ID:432 K:508

ISSN Print: 2146-8508 Online 2147-1711

(ISO 18001-OH-0090-13001706 / ISO 14001-EM-0090-13001706 / ISO 9001-QM-0090-13001706 / ISO 10002-CM-0090-13001706)

(TRADEMARK)

(2015/04315- 2015-GE-18972)

RESULTS

Table 1. Socio-Demographic Factors and Health Briefs of the Study Population

Variable		Frequency	Percent
Age, years	18-29	84	27.2
	30-35	77	24.9
	36-44	74	23.9
	45+	74	23.9
Education	Low	106	34.3
	High	203	65.7
Marital Status	Single	70	22.7
	Married	239	77.3
Income status	Low	13	4.2
	Not bad	123	39.8
	Good	154	49.8
	Very good	19	6.1
Have child	No	87	28.2
	Yes	22	71.8
Did you breastfed?	No	12	5.4
	Yes	209	94.6
Chronic health condition	No	252	81.6
	Yes	57	18.4
Health perception	Very good	28	9.1
	Good	266	86.1
	Not bad	12	3.9
	Bad	3	1.0
Menarche age, years	9	2	0.6



SSTB

www.sstbdergisi.com

International Refereed Academic Journal of Sports, Health and Medical Sciences

January - February - March Issue: 30 Winter Semester Year: 2019

Uluslararası Hakemli Akademik Spor Sağlık ve Tıp Bilimleri Dergisi

Ocak - Şubat - Mart Sayı: 30 Kış Dönemi Yılı: 2019

ID:432 K:508

ISSN Print: 2146-8508 Online 2147-1711

(ISO 18001-OH-0090-13001706 / ISO 14001-EM-0090-13001706 / ISO 9001-QM-0090-13001706 / ISO 10002-CM-0090-13001706)

(TRADEMARK)

(2015/04315- 2015-GE-18972)

	10	2	0.6
	11	17	05.5
	12	48	15.5
	13	67	21.7
	14	51	16.5
	15	32	10.4
	16	9	2.9
	17	2	0.6
	Do not remember	79	25.6
Menopause	No	164	85.4
	Yes	45	14.6
Do you practice BSE	No	142	46.0
	Yes	167	54.0
Family history of breast cancer	No	285	92.2
	Yes	24	7.8

* BSE: Breast self-examination

Mean age of participants was 37.4 ± 11.7 years (range 20-80 years); 78.1% of them were married (n=222); 59.2% were housewives; 65.7% had high education level; 72.5% had child(ren); 49.7% declared to have “good” family income (Table 1). Breast-feeding was prevalent (94.6%); 222 (78.1%) women had children (min:1 max:6; mode:2); 57 (18.4%) declared to have chronic health problem but 95.1% evaluated their general health status as “very good” or “good”. Menarche changed between 9 and 17 years of age (Mode: 13 years); 45 (14.6%) women were in meno-

pause period and mode of menopause age was 50 years. Breast self examination knowledge was reported as “none” by 70 (22.7%) women; 167 (54.6%) women claimed to preform BSE and 24(7.8%) were examining their breast monthly. Breast cancer among first-degree relatives was present in 24 (7.8%) women and 14 (58.3%) of them claimed to perform BSE. Among age groups women in 18-29 had the lowest BSE proportion (40.5%, n=34); regular BSE in this group was reported by 8.3% (n=7)(Table 1).



SSTB

www.sstbdergisi.com

International Refereed Academic Journal of Sports, Health and Medical Sciences

January - February - March Issue: 30 Winter Semester Year: 2019

Uluslararası Hakemli Akademik Spor Sağlık ve Tıp Bilimleri Dergisi

Ocak - Şubat - Mart Sayı: 30 Kış Dönemi Yıl: 2019

ID:432 K:508

ISSN Print: 2146-8508 Online 2147-1711

(ISO 18001-OH-0090-13001706 / ISO 14001-EM-0090-13001706 / ISO 9001-QM-0090-13001706 / ISO 10002-CM-0090-13001706)

(TRADEMARK)

(2015/04315- 2015-GE-18972)

Table 2. Champion's Health Belief Model Scale (CHBMS) Scores

CHBMS Subscale	Mean	Standard deviation
Susceptibility	7.8	2.7
Seriousness	20.3	5.3
BSE-benefit	15.8	3.2
BSE-barrier	19.1	5.6
Self-efficacy	32.9	8.1
Health motivation	20.5	3.9
Mammography benefit	18.6	3.8
Mammography barrier	27.58	7.8

The mean CHBMS subscales were as follows: the susceptibility subscale of women was 7.8 ± 2.7 ; the seriousness subscale was 20.3 ± 5.4 ; the BSE benefit subscale was 15.9 ± 3.3 ; the BSE barrier subscale was

19.2 ± 5.6 ; the self-efficacy subscale was 32.9 ± 8.1 ; the mammography benefit subscale was 18.6 ± 3.9 ; the mammography barrier subscale was 27.6 ± 7.8 ; and the health motivation subscale of women was 20.4 ± 3.9 (Table 2).

Table 3. Champion's Health Belief Model Scale (CHBMS) Scores and Variables

	n	Susceptibility	Seriousness	BSE-benefit	BSE-barrier	Self-efficacy	Mammo graphy benefit	Mammo graphy barrier	Health motivation
Age group									
18-29	84	8.2 ± 2.7	20.8 ± 5.2	15.7 ± 2.8	18.3 ± 5.6	30.7 ± 8.4	18.4 ± 3.6	27.33 ± 7.0	20.4 ± 4.0
30-35	77	7.7 ± 2.8	20.7 ± 5.9	15.6 ± 2.8	18.8 ± 5.6	33.9 ± 7.8	18.4 ± 4.0	27.6 ± 7.0	20.6 ± 4.3
36-44	74	7.7 ± 2.6	20.3 ± 4.9	16.6 ± 2.8	19.6 ± 5.4	33.8 ± 7.3	18.9 ± 3.6	28.0 ± 8.1	20.9 ± 3.4
45+	74	7.6 ± 2.7	19.4 ± 5.4	15.6 ± 3.9	20.1 ± 5.6	33.7 ± 8.7	18.8 ± 4.4	27.5 ± 8.0	19.8 ± 4.2
p value		0.595	0.370	0.129	0.182	0.030	0.828	0.962	0.434
Education level									
Low	106	7.7 ± 2.7	20.0 ± 5.4	15.9 ± 3.5	20.4 ± 5.6	32.3 ± 8.8	18.7 ± 4.1	28.4 ± 8.3	20.0 ± 3.9



SSTB

www.sstbdergisi.com

International Refereed Academic Journal of Sports, Health and Medical Sciences

January - February - March Issue: 30 Winter Semester Year: 2019

Uluslararası Hakemli Akademik Spor Sağlık ve Tıp Bilimleri Dergisi

Ocak - Şubat - Mart Sayı: 30 Kış Dönemi Yıl: 2019

ID:432 K:508

ISSN Print: 2146-8508 Online 2147-1711

(ISO 18001-OH-0090-13001706 / ISO 14001-EM-0090-13001706 / ISO 9001-QM-0090-13001706 / ISO 10002-CM-0090-13001706)

(TRADEMARK)

(2015/04315- 2015-GE-18972)

High	203	7.9±2.7	20.5±5.4	15.8±3.1	18.5±5.5	33.3±7.8	18.6±3.7	27.2±7.4	20.7±4.0
p value		0.687	0.395	0.739	0.006	0.353	0.895	0.199	0.165
Work status									
Yes	125	7.5±2.8	20.4±5.0	15.7±3.0	18.0±5.5	34.4±8.0	18.6±3.7	26.6±7.5	20.8±3.9
No	183	8.0±2.6	20.3±5.6	15.9±3.4	20.0±5.5	32.0±8.1	18.6±4.0	28.3±8.0	20.2±4.0
p value		0.084	0.860	0.631	0.003	0.008	0.999	0.052	0.167
Breast self examination knowledge									
Very good	24	7.5±2.5	20.9±5.5	17.1±2.1	15.5±4.1	43.0±5.6	17.4±4.3	25.3±9.4	21.2±4.0
None	70	7.8±2.5	20.5±5.7	14.9±3.7	21.0±6.0	26.5±8.7	18.0±4.3	30.0±7.9	20.0±4.0
p value		0.704	0.779	0.008	0.000	0.000	0.577	0.022	0.180
Perform breast self examination									
No	142	7.9±2.7	20.1±5.4	15.3±3.5	20.7±6.0	28.9±8.0	18.4±4.0	29.1±7.5	20.1±4.0
Yes	167	7.7±2.7	20.5±5.4	16.3±3.0	17.8±5.0	36.4±6.5	18.8±3.9	26.3±7.7	20.7±4.0
p value		0.537	0.576	0.010	0.000	0.000	0.401	0.001	0.188
Family breast cancer history									
Yes	24	8.9±2.9	18.7±5.3	16.2±2.5	19.8±4.9	32.4±6.9	17.9±3.8	25.0±7.6	20.3±4.3
No	285	7.7±2.7	20.5±5.4	15.8±3.3	19.1±5.7	33.0±8.2	18.7±4.0	27.8±7.7	20.5±4.0
p value		0.037	0.113	0.625	0.571	0.730	0.343	0.080	0.881
Breast feeding									
Yes	209	7.7±2.8	20.0±5.4	15.9±3.5	19.2±5.8	33.3±8.3	18.7±4.1	27.0±7.7	20.5±4.0
No	12	7.8±1.7	19.7±5.4	15.4±2.7	19.2±4.1	36.1±5.3	19.8±3.7	34.3±4.9	18.2±2.6
p value		0.905	0.820	0.619	0.991	0.250	0.343	0.001	0.046

The mean subscore of self-efficacy and BSE barriers was higher in older age groups ($p=0.030$ and $p=0.045$) and mean subscore of BSE barrier was low in high education level ($p=0.018$) and work status ($p=0.003$). Age was weakly correlated with perceived seriousness ($r=-0.117$, $p=0.039$) subscore.

Self declared level of BSE knowledge as “very good” and “none” had statistically different subscale scores of BSE benefit ($p=0.008$), BSE barrier ($p<0.001$), self-efficacy ($p<0.001$), and mammography barriers ($p=0.022$). Performing BSE, positively altered the mean subscores of BSE benefits



SSTB

www.sstbdergisi.com

International Refereed Academic Journal of Sports, Health and Medical Sciences

January - February - March Issue: 30 Winter Semester Year: 2019

Uluslararası Hakemli Akademik Spor Sağlık ve Tıp Bilimleri Dergisi

Ocak - Şubat - Mart Sayı: 30 Kış Dönemi Yıl: 2019

ID:432 K:508

ISSN Print: 2146-8508 Online 2147-1711

(ISO 18001-OH-0090-13001706 / ISO 14001-EM-0090-13001706 / ISO 9001-QM-0090-13001706 / ISO 10002-CM-0090-13001706)

(TRADEMARK)

(2015/04315- 2015-GE-18972)

($p=0.01$), BSE barriers ($p<0.001$), self-efficacy ($p<0.001$), and mammography barriers ($p=0.001$). Having a first-degree female relative diagnosed with breast cancer had higher mean susceptibility subscore than not having such relative (8.9 ± 2.9 vs. 7.7 ± 2.7 , $p=0.037$). Women who breastfed their children had significantly low mammography barriers mean score (26.98 ± 7.67 vs. 34.33 ± 4.91 , $p=0.001$) and high health motivation score (20.5 ± 4.0 vs. 18.2 ± 2.6 , $p=0.046$) (Table 3).

DISCUSSION

According to the Health Belief Model (HBM), the likelihood of taking a recommended preventive health action is determined by the perceived benefits of the preventive action, the perceived barriers to the preventive action and the perceived threat of the disease. If individuals regard themselves as susceptible to a condition, believe that condition would have potentially serious consequences, believe that a course of action available to them would be beneficial in reducing either their susceptibility to or severity of the condition, and believe the anticipated benefits of taking action outweigh the barriers to (or costs of) action, they are likely to take action that they believe will reduce their risks. In this study a great majority of women (about 80%) declared that they know how to perform BSE and 24 (7.8%) were examining their breast monthly. In previous studies among Turkish women,

BSE knowledge reported between 29.2% and 68.3% (Guner et al., 2007: 55-60; Gocgeldi et al., 2008: 261-265; Gok Ozer et al., 2009: 15-19; Ozer et al., 2009: 14-19; Sevindik et al., 2010: 1-10; Sen and Basar, 2012: 185-190; Erbil and Bolukbas, 2012: 5823-5828). In their unpublished thesis on health professionals, Canbulat found BSE knowledge frequency as 96.1%, 68.8%, and 66.3% among physicians, midwives, and nurses, respectively (Canbulat, 2006: 60). Reported regular (monthly) BSE performance rate changed between 10.2% and 57.2% (Karayurt and Dramali, 2007: 69-77; Guner et al., 2007: 55-60; Gocgeldi et al., 2008: 261-265; Sevindik et al., 2010: 1-10; Sen and Basar 2012: 185-190; Dundar et al., 2006: 6-43; Akdag, 2014:98). In our study BSE and regular BSE was the lowest in the youngest age group; some studies have found that the majority of older women performed breast screening activities on a regular basis (Smiley et al., 2000: 975-984; Petro-Nustas, 2001: 177-194).

Our susceptibility score was significantly lower than Canbulat (8.4 ± 2.9) (Canbulat, 2006: 60), Gumus et al. (9.3 ± 3.12) (Gumus et al., 2010: 57-60), and Mermer et al. (10.29 ± 2.73) (Mermer and Turk, 2014: 10749-10755), significantly higher than Yilmaz et al. (7.18 ± 3.30) (Yilmaz et al., 2013: 3281-3288), there was no difference with the means of Erbil et al. (Erbil and Bolukbas, 2012: 5823-



SSTB

www.sstbdergisi.com

International Refereed Academic Journal of Sports, Health and Medical Sciences

January - February - March Issue: 30 Winter Semester Year: 2019

Uluslararası Hakemli Akademik Spor Sağlık ve Tıp Bilimleri Dergisi

Ocak - Şubat - Mart Sayı: 30 Kış Dönemi Yıl: 2019

ID:432 K:508

ISSN Print: 2146-8508 Online 2147-1711

(ISO 18001-OH-0090-13001706 / ISO 14001-EM-0090-13001706 / ISO 9001-QM-0090-13001706 / ISO 10002-CM-0090-13001706)

(TRADEMARK)

(2015/04315- 2015-GE-18972)

5828) and Yucel et al. (7.78±2.46) (Yucel et al., 2014: 1275-1280). Having a first-degree female relative diagnosed with breast cancer increased the susceptibility scores which is in concordance with other studies (Erbil and Bolukbas, 2012: 5823-5828; Yilmaz et al., 2013: 3281-3288). Despite this augmentation effect in the feeling of being prone to breast cancer neither BSE nor other subscores of CH-BMS were in association with having breast cancer history of family. Dundar et al. found that level of knowledge about breast cancer was the only variable significantly associated with BSE and mammography practice; women with no family/friends history of breast cancer were in 5.2 times higher risk of having insufficient knowledge about breast cancer. In our study susceptibility, seriousness and motivation were not associated with performing BSE; higher BSE benefits and self-efficacy, and lower BSE barriers were significantly associated with performing BSE. These findings were similar with Dundar et al. (Dundar et al., 2006: 43) Theories explaining health behavior by focusing on beliefs about benefits and barriers/costs of particular actions are relevant only to people who are sufficiently engaged by the health threat –in our case breast cancer- to have formed such beliefs. According to Precaution Adoption Process Model (PAPM) having a family history of breast cancer is “engaging” the problem. After engaging the problem, beliefs about

susceptibility with beliefs about precaution effectiveness and difficulty, recommendations of others, perceived social norms, and fear and worry determines the way of action: decide not to act or decide to act. (Weinstein, 1988: 355) In our example susceptibility did not lead to BSE, high scores of BSE benefits and mammography or low scores of barriers to BSE and mammography.

Self-efficacy is the belief in one’s own ability to do something (Bandura, 1977: 191-215). People usually do new things when they think they can do it. If there is perceived benefit, but does not think he or she is capable (perceived barrier), it is highly probable that I will not be tried. A significant factor in not performing BSE is of being unable to perform BSE correctly (Umeh and Rogan-Gibson, 2001: 361-372). When a woman believes she is capable of performing BSE has BSE self-efficacy-she overcomes the barrier and practices BSE. There is strong association between performing BSE and BSE benefits/barriers, and self-efficacy in our study.

Mammography is the only screening method for breast cancer shown to decrease mortality. For the general population annual mammography is recommended starting at 40 years of age. Supplemental screening is recommended for selected high-risk populations. According to ACR Appropriateness criteria for high, intermediate and average risk women annual



SSTB

www.sstbdergisi.com

International Refereed Academic Journal of Sports, Health and Medical Sciences

January - February - March Issue: 30 Winter Semester Year: 2019

Uluslararası Hakemli Akademik Spor Sağlık ve Tıp Bilimleri Dergisi

Ocak - Şubat - Mart Sayı: 30 Kış Dönemi Yıl: 2019

ID:432 K:508

ISSN Print: 2146-8508 Online 2147-1711

(ISO 18001-OH-0090-13001706 / ISO 14001-EM-0090-13001706 / ISO 9001-QM-0090-13001706 / ISO 10002-CM-0090-13001706)

(TRADEMARK)

(2015/04315- 2015-GE-18972)

screening mammography is indicated with contrast-enhanced MRI/ultrasound (Tabáretal., 2001: 1724-1731; Duffy et al. 2002: 458-469; Hackshaw, 2003: 1193-1195; Swedish Organised Service Screening Evaluation Group, 2006: 45-51; Mainiero et al., 2013: 11-14). Knowledge about breast cancer and high education found positively correlated in many studies. Positive effect of higher education on breast cancer prevention, diagnosis and treatment methods has been reported (Yavan et al., 2010:189-201; Nergiz Eroglu and Kilic, 2011: 1855-1860; Acikgoz and Ergor,2013: 1737-1742) but the present study showed no association between education level and mammography benefits and barriers. Knowing women's health beliefs (Baysal and Polat, 2012:1445-1450) and reminding women their mammography appointments (Baysal and Gozum, 2011: 1445-1450) may increase the rate of mammography uptake.

We can assume that media messages, recommendations, social norms, detailed "how to" information, reminders, time or assistance in carrying out action were not sufficient to built up self-efficacy in our study population.

Limitations of the Study

Our data lack the information about the level of knowledge on breast cancer and prevention of the study sample. Beside this as we don't asked about mammography participa-

tions we cannot comment on health belief and mammography uptake.

Acknowledgments

We kindly thank the primary care physicians who have allowed us to use their places during data collection.

Declaration of Interest

Authors declare no conflict of interest.

Funding/Support

We received no funding from any organization for this research.

Role of the Sponsor

We received no funding from any sponsor for this research.

REFERENCES

- ACIKGOZ, A., ERGOR, G. (2013).** Compliance with screening recommendations according to breast cancer risk levels in Izmir, Turkey. *Asian Pac J Cancer Prev APJCP*, 14: 1737–1742
- AKDAĞ, S. (2014).** Kadınların tarama veya tanısal amaçlı mamografi uygulaması ile ilgili bilgi, düşünce ve davranışlarının değerlendirilmesi. Yüksek Lisans Tezi
- BAINES, C.J., MCFARLANE, D.V., MILLER, A.B. (1988).** Sensitivity and specificity of first screen mammography in



SSTB

www.sstbdergisi.com

International Refereed Academic Journal of Sports, Health and Medical Sciences

January - February - March Issue: 30 Winter Semester Year: 2019

Uluslararası Hakemli Akademik Spor Sağlık ve Tıp Bilimleri Dergisi

Ocak – Şubat – Mart Sayı: 30 Kış Dönemi Yıl: 2019

ID:432 K:508

ISSN Print: 2146-8508 Online 2147-1711

(ISO 18001-OH-0090-13001706 / ISO 14001-EM-0090-13001706 / ISO 9001-QM-0090-13001706 / ISO 10002-CM-0090-13001706)

(TRADEMARK)

(2015/04315- 2015-GE-18972)

15 NBSS centres. Can AssocRadiol,39: 273–276

BAKER, L.H. (1982).Breast cancer detection demonstration project: Five-year summary report. CA Cancer J Clin., 32: 194–225 doi: 10.3322/canjclin.32.4.194

BANDURA, A. (1977).Self-efficacy: Toward a Unifying Theory of Behavioral Change. PsycholRewiev.84: 191–215

BARTON, M.B., HARRIS, R., FLETCHER, S.W. (1999).The rational clinical examination. Does this patient have breast cancer? The screening clinical breast examination: should it be done? How? JAMA, 282: 1270–1280

BAXTER, N. (2001).Canadian Task Force on Preventive Health Care (2001) Preventive health care, 2001 update: should women be routinely taught breast self-examination to screen for breast cancer? CMAJ Can Med Assoc J, 164: 1837–1846

BAYSAL, H.Y., GOZUM, S. (2011).Effects of health beliefs about mammography and breast cancer and telephone reminders on re-screening in Turkey. Asian Pac J Cancer Prev APJCP,12: 1445–1450

BAYSAL H.Y., POLAT, H. (2012).Determination of the breast cancer risk levels and health beliefs of women with and without

previous mammography in the eastern part of Turkey. Asian Pac J Cancer Prev APJCP,13: 5213–5217

CANBULAT, N. (2006). Sağlık Çalışanlarının Meme Kanseri, Kendi Kendine Meme Muayenesi ve Mamografiye İlişkin Sağlık İnançlarının İncelenmesi (The Examination of Health Workers' Health Beliefs on Breast Cancer, Breast Self Examination and Mammography). Atatürk University

CHAMPION, V. (1995).Development of a benefits and barriers scale for mammography utilization. Cancer Nurs, 18: 53–59

CHAMPION, V.L. (1984).Instrument development for health belief model constructs. ANS Adv Nurs Sci, 6: 73–85

COLEMAN, M.P., QUARESMA, M., BERRINO, F., LUTZ, J.M., DE ANGELIS, R., CAPOCACCIA, R., et al., (2008). Cancer survival in five continents: a worldwide population-based study (CONCORD). Lancet Oncol, 9: 730–756 doi: 10.1016/S1470-2045(08)70179-7

DUFFY, S.W., TABÁR, L., CHEN, H.H., HOLMQVIST, M., YEN, M.F., ABDSALAH, S., et al., (2002).The impact of organized mammography service screening on breast carcinoma mortality in seven Swedish counties. Cancer, 95: 458–469 doi: 10.1002/cncr.10765



SSTB

www.sstbdergisi.com

International Refereed Academic Journal of Sports, Health and Medical Sciences

January - February - March Issue: 30 Winter Semester Year: 2019

Uluslararası Hakemli Akademik Spor Sağlık ve Tıp Bilimleri Dergisi

Ocak - Şubat - Mart Sayı: 30 Kış Dönemi Yıl: 2019

ID:432 K:508

ISSN Print: 2146-8508 Online 2147-1711

(ISO 18001-OH-0090-13001706 / ISO 14001-EM-0090-13001706 / ISO 9001-QM-0090-13001706 / ISO 10002-CM-0090-13001706)

(TRADEMARK)

(2015/04315- 2015-GE-18972)

DUNDAR, P.E., OZMEN, D., OZTURK, B., HASPOLAT, G., AKYILDIZ, F., COBAN, S., 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 doi: 10.1186/1471-2407-6-43

ERBİL, N., BOLUKBAS, N. (2012). Beliefs, attitudes, and behavior of Turkish women about breast cancer and breast self-examination according to a Turkish version of the Champion Health Belief Model Scale. Asian Pac J Cancer Prev APJC.13: 5823–5828

GOCGELDI, E., ACIKEL, C.H., HASDE, M., AYGUT, G., CELİK, S., GUNDUZ, I. (2008). Investigation of Attitudes and Behaviors of a Group of Women who Reside at in Ankara Gölbaşı on Self-Breast Examination. Fırat Tıp Derg, 13: 261–265

GOK OZER, F., TASCIBEYDAG, K.D., OZBAY, C. (2009). Determination of students's knowledge about breast cancer and how they perform breast examination. Pamukkale Tıp Derg, 2: 15–19

GOZUM, S., AYDIN, I. (2004). Validation evidence for Turkish adaptation of Champion's Health Belief Model Scales. Cancer Nur, 27: 491–498

GROSSE FRIE, K., RAMADAS, K., ANJU, G.A., MATHEW, B.S., MUWONGE, R., SAUVAGET, C.S., et al., (2013). Determinants of participation in a breast cancer screening trial in trivandrum district, India. Asian Pac J Cancer Prev APJCP, 14: 7301–7307

GUMUS, A.B., CAM, O., MALAK, A.T. (2010). Socio-demographic factors and the practice of breast self examination and mammography by Turkish women. Asian Pac J Cancer Prev, 11: 57–60

GUNER, I.C., TETİK, A., GONENER, H.D. (2007). Determination of women's knowledge, attitude and behaviours about the self examination of breast. Gaziantep Tıp Derg, 13: 55–60

HACKSHAW, A. (2003). EUSOMA review of mammography screening. Ann Oncol Off J Eur Soc Med Oncol ESMO, 14: 1193–1195

HARVEY, J.A., MAHONEY, M.C., NEWELL, M.S., BAILEY, L., BARKE, L.D., D'ORSI, C., ET AL. (2013). ACR appropriateness criteria palpable breast masses. J Am Coll Radiol JACR, 10: 742–749. e1–e3 doi: 10.1016/j.jacr.2013.06.013

KARAYURT, O., DRAMALI, A. (2007). Adaptation of Champion's Health Belief Model Scale for Turkish women and



SSTB

www.sstbdergisi.com

International Refereed Academic Journal of Sports, Health and Medical Sciences

January - February - March Issue: 30 Winter Semester Year: 2019

Uluslararası Hakemli Akademik Spor Sağlık ve Tıp Bilimleri Dergisi

Ocak - Şubat - Mart Sayı: 30 Kış Dönemi Yıl: 2019

ID:432 K:508

ISSN Print: 2146-8508 Online 2147-1711

(ISO 18001-OH-0090-13001706 / ISO 14001-EM-0090-13001706 / ISO 9001-QM-0090-13001706 / ISO 10002-CM-0090-13001706)

(TRADEMARK)

(2015/04315- 2015-GE-18972)

evaluation of the selected variables associated with breast self-examination. Cancer Nurs, 30: 69–77

KERLIKOWSKE, K. (1997). Efficacy of screening mammography among women aged 40 to 49 years and 50 to 69 years: comparison of relative and absolute benefit. J Natl Cancer Inst Monogr, 79–86

MAINIERO, M.B., LOURENCO, A., MAHONEY, M.C., NEWELL, M.S., BAILLEY, L., BARKE, L.D., et al., (2013). ACR Appropriateness Criteria Breast Cancer Screening. J Am Coll Radiol, 10: 11–14 doi:10.1016/j.jacr.2012.09.036

MERMER, G., TURK, M. (2014). Assessment of the effects of breast cancer training on women between the ages of 50 and 70 in Kemalpaşa, Turkey. Asian Pac J Cancer Prev APJCP.15: 10749–10755

MILLER, A.B., BAINES, C.J., TO, T., WALL, C. (1992). Canadian National Breast Screening Study: 2. Breast cancer detection and death rates among women aged 50 to 59 years. CMAJ Can Med Assoc, 147: 1477–1488

MILLER, A.B., TO, T., BAINES, C.J., WALL, C. (2000). Canadian National Breast Screening Study-2: 13-year results of a randomized trial in women

aged 50–59 years. J Natl Cancer Inst, 92: 1490–1499

NELSON, H.D., TYNE, K., NAIK, A., BOUGATSOS, C., CHAN, B., NYGREN, P., et al., (2009). Screening for Breast Cancer: Systematic Evidence Review Update for the US Preventive Services Task Force (Rockville (MD): Agency for Healthcare Research and Quality (US)).

NERGİZ EROĞLU, U., KILIC, D. (2011). Knowledge, attitude and beliefs women attending mammography units have regarding breast cancer and early diagnosis. Asian Pac J Cancer Prev APJCP, 12: 1855–1860

NYSTROM, L., ANDERSSON, I., BJURSTAM, N., FRISSELL, J., NORDENSKJÖLD, B., RUTQVIST, L.E. (2002). Long-term effects of mammography screening: updated overview of the Swedish randomised trials. Lancet, 359: 909–919 doi: 10.1016/S0140-6736(02)08020-0

ÖZER, A., BANKAOĞLU, E., EKERBİCER, H.C., HUDAYIOĞLU, M.R., ÖZDEMİR, M. (2009). Kahramanmaraş'ta yaşayan bir grup kadının kendi kendine meme muayenesi yapma ve mamografi çektilme durumu ile bunları etkileyen faktörler. Toplum Hekim Bül., 28: 14–19



SSTB

www.sstbdergisi.com

International Refereed Academic Journal of Sports, Health and Medical Sciences

January - February - March Issue: 30 Winter Semester Year: 2019

Uluslararası Hakemli Akademik Spor Sağlık ve Tıp Bilimleri Dergisi

Ocak - Şubat - Mart Sayı: 30 Kış Dönemi Yıl: 2019

ID:432 K:508

ISSN Print: 2146-8508 Online 2147-1711

(ISO 18001-OH-0090-13001706 / ISO 14001-EM-0090-13001706 / ISO 9001-QM-0090-13001706 / ISO 10002-CM-0090-13001706)

(TRADEMARK)

(2015/04315- 2015-GE-18972)

PEETERS, P.H., VERBEEK, A.L., HENDRIKS, J.H., HOLLAND, R., MRAVUNAC, M. (1987). The predictive value of positive test results in screening for breast cancer by mammography in the Nijmegen programme. Br J Cancer, 56: 667-671

PETO, J. (2001).Cancer epidemiology in the last century and the next decade.Nature,411: 390-395 doi:10.1038/35077256

PETRO NUSTAS, W. (2001).Young Jordanian women's health beliefs about mammography. J Community Health Nurs, 18: 177-194. doi: 10.1207/S15327655JCHN1803_04

SANKARANARAYANAN, R., RAMADAS, K., THARA, S., MUWONGE, R., PRABHAKAR, J., AUGUSTINE. P., et al., (2011). Clinical breast examination: preliminary results from a cluster randomized controlled trial in India. J Natl Cancer Inst, 103: 1476-1480 doi: 10.1093/jnci/djr304

SEMIGLAZOV, V.F., MOISEYENKO, V.M., BAVLI, J.L., MIGMANOVA, N.S., SELEZNYOV, N.K., POPOVA, R.T., et al., (1992).The role of breast self-examination in early breast cancer detection (results of the 5-years USSR/WHO randomized study in Leningrad). Eur J Epidemiol, 8: 498-502

SEN, S., BASAR, F. (2012).Breast cancer and breast self examination knowledge of women who live in Kütahya Region. J Breast Health.8: 185-190

SEVINDIK, F., CELEBI, E., ONER, O.I., OGUZONCUL, F. (2010).Risk factors of breast cancer and knowledge and behaviours of nursing and midwifery students about breast self examination. E-J New World SciAcad Life Sci, 6: 1-10

SMILEY, M.R., MCMILLAN, S.C., JOHN-SON, S., OJEDA, M. (2000).Comparison of Florida Hispanic and non-Hispanic Caucasian women in their health beliefs related to breast cancer and health locus of control. OncolNurs Forum, 27: 975-984

SWEDISH ORGANISED SERVICE SCREENING EVALUATION GROUP. Reduction in breast cancer mortality from organized service screening with mammography: 1. Further confirmation with extended data 2006. Cancer Epidemiol Biomark Prev Publ Am Assoc Cancer Res Cosponsored Am Soc Prev Onco, 15: 45-51 doi:10.1158/1055-9965.EPI-05-0349

ŞENCAN, İ., KESKİNKILIÇ, B.(2017). Türkiye Kanseri İstatistikleri. T.C Sağlık Bakanlığı. Türkiye Halk Sağlığı Kurumu. Ankara: 19



SSTB

www.sstbdergisi.com

International Refereed Academic Journal of Sports, Health and Medical Sciences

January - February - March Issue: 30 Winter Semester Year: 2019

Uluslararası Hakemli Akademik Spor Sağlık ve Tıp Bilimleri Dergisi

Ocak - Şubat - Mart Sayı: 30 Kış Dönemi Yılı: 2019

ID:432 K:508

ISSN Print: 2146-8508 Online 2147-1711

(ISO 18001-OH-0090-13001706 / ISO 14001-EM-0090-13001706 / ISO 9001-QM-0090-13001706 / ISO 10002-CM-0090-13001706)

(TRADEMARK)

(2015/04315- 2015-GE-18972)

TABÁR, L., VITAK, B., CHEN, H.H., YEN, M.F., DUFFY, S.W., SMITH, R.A. (2001).

Beyond randomized controlled trials: organized mammographic screening substantially reduces breast carcinoma mortality. *Cancer*, 91: 1724–1731

THOMAS, D.B., GAO, D.L., RAY, R.M., WANG, W.W., ALLISON, C.J., CHEN, F.L., et al., (2002).

Randomized trial of breast self-examination in Shanghai: final results. *J Natl Cancer Inst*, 94: 1445–1457

UMEH, K., ROGAN GIBSON, J. (2001).

Perceptions of threat, benefits, and barriers in breast self-examination amongst young asymptomatic women. *Br J Health Psychol*, 6: 361–372 doi: 10.1348/135910701169269

WEINSTEIN, N.D. (1988).The precaution adoption process. *Health Psychol*, 7: 355

YAVAN, T., AKYUZ, A., TOSUN, N., IYIGUN, E. (2010).

Women's breast cancer risk perception and attitudes toward screening tests. *J Psychosoc Oncol*, 28: 189–201 doi: 10.1080/07347330903570453

YILMAZ, D., BEBIS, H., ORTABAG, T. (2013).

Determining the awareness of and compliance with breast cancer screening among Turkish residential women. *Asian Pac J Cancer Prev APJCP*, 14: 3281–3288

YIP, C.H., SMITH, R.A., ANDERSON, B.O.,

MILLER, A.B., THOMAS, D.B., ANG, E.S., et al., (2008).Breast Health Global Initiative Early Detection Panel, Guideline implementation for breast healthcare in low- and middle-income countries: early detection resource allocation. *Cancer*, 113: 2244–2256 doi: 10.1002/cncr.23842

YUCEL, S.C., ORGUN, F., TOKEM, Y., AVDAL, E.U., DEMIR, M. (2014).

Determining the factors that affect breast cancer and self breast examination beliefs of Turkish nurses in academia. *Asian Pac J Cancer Prev APJCP*, 15: 1275–1280

AUTHORS' NOTES: This article was presented as a verbal statement at the 3rd International, 4th National Midwifery Congress. (22-24 September 2017 in Ankara, Turkey)