RESEARCH ARTICLE

Knowledge, Attitudes and Behaviour of Women Working in Government Hospitals Regarding Breast Self Examination

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Abstract

Background: Breast self examination (BSE), performed regularly every month, is one of the most important methods in the early diagnosis of breast cancer. This study was performed with the aim of establishing the knowledge, attitudes, and behavior of women working in government hospitals within the province of Samsun regarding BSE. Materials and Methods: This cross-sectional study was conducted between January-March 2012, on a total of 550 women (500 health personnel, and 50 general administration services (GAS) workers) from 7 government hospitals and the Cancer Early Diagnosis, Screening, and Education Centre (CEDSEC). Percentages were used for the descriptive statistics, and the chi-square test for the evaluation of statistical importance. Values of p<0.05 were accepted as significant. Results: The mean age of the participants was 36.2± 15.3, and 42.5% were in the 30-39 year old age group, 78.0% being married. Seventy-eight point four percent (78.4%) of the health personnel and 76.0% of the GAS workers performed BSE. However, the rates of performing BSE regularly every month were only 25.6% and 5.0%. Within the health personnel, 1.4% stated that they did not perform BSE because they found it unnecessary as they had no history of breast cancer in their family, 3.6% did not do so due to fear and stress, 13.2% because they forgot, and 14.6% because they had no complaints. Some 22.2% of the health personnel and 52.0% of the GAS workers had undergone mammographic evaluation, the difference being significant (p<0.05), 84.1% of the health personnel and 61.9% of the GAS workers knowing symptoms of breast cancer. Conclusions: Women in society should be brought to a certain level of awareness and knowledge regarding BSE. It is of the utmost importance that health personnel, who carry the responsibility for counseling and enlightening society, should interiorize the necessary knowledge, attitudes and behavior.

Keywords: Breast cancer - health personnel - self breast examination - Turkey

Asian Pac J Cancer Prev, **14 (8)**, 4829-4834

Introduction

Cancer is a very important public health issue worldwide (Jemal et al., 2009). Every year, 11 million people in the world get cancer, and 7 million people die due to cancer (Tuncer, 2010). Breast cancer is the most common cancer seen in women, both in developed and also in developing countries, and ranks first in mortalities from cancer (Ozmen et al., 2009). Breast cancer is responsible for 33% of the cancers seen in women, and for 20% of the mortalities from cancer. It ranks second following lung cancer in total mortality rates from cancer (Jemal et al., 2009). The most effective way of decreasing mortality rates from breast cancer is early diagnosis and treatment. Early diagnosis is possible only by educating and informing women and by screening programmers (TR Ministry of Health, 2004). Although there has been an increase in the prevalence of breast cancer over the years, mortality rates have decreased (Tuncer, 2007). In Turkey 30,000 women are diagnosed with breast cancer every year (Alpteker and Avci, 2010). In spite of its being such an important and common health issue, successful results can be obtained from treatment, if diagnosed early. The main methods suggested for early diagnosis are breast self-examination (BSE), clinical breast examination (CBE), and mammography (Uncu and Bilgin, 2011). BSE is still the recommended method for early diagnosis, especially in young adult populations, in which mammography is not a routinely administered method (Kum et al., 2004). All of the screening tests, namely mammography, CBE and BSE, are performed with the aim of providing an early diagnosis, and a longer survival with effective/successful treatment (Akyolcu and Ugras, 2011). BSE is an easily learnt and applied method; it is harmless, economic, and when performed every month, it enables the woman to recognize her own breast tissue and thus realize any changes much earlier. It also protects the woman from the long-term complications of the disease (Franek et al., 2004). The American Cancer Society and The Association for Research and Control, suggest that all asymptomatic

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20-39 year old women should perform a BSE every month and a CBE every 3 years; in those above 40 years old, they recommend a BSE every month, and a CBE and mammography every year (American Cancer Society, 2011; 2012; Turkish Association for Cancer Research and Control, 2012).

This study was performed in the province of Samsun with the aim of investigating the knowledge, attitudes and behaviors of women working in government hospitals regarding BSE.

Materials and Methods

This cross-sectional study was carried out in the province of Samsun, between January-March 2012, on 223 doctors, 982 nurses, 330 midwives, 314 health technicians, and 186 GAS (general administration services) workers, making a total of 2035 women, from 7 government hospitals and 1 CEDSEC health centre. The sample size of our study was calculated as 550, our reference being the rate of performing regular BSE (23.2%) in health personnel according to the literature (Akpınar et al., 2011), with alpha=0.05, power=0.80 and an effect size (0.23*0.10=0.023). Out of the probability sampling methods available, stratified and random sampling methods were used in the study. The health institutions were stratified according to the stratified random sampling method, and were divided into layers and the number of members in each layer was divided one by one to the total number of doctors, nurses, midwives, health technicians and GAS workers, to find out the layer weight. The layer weight was multiplied by the total number of workers to be included in the sample, and the number of doctors, nurses, midwives, health technicians, and GAS workers to be included from each layer (health institute) was established. Thus the sample consisted of 61 doctors (11%), 265 nurses (48.3%), 89 midwives (16.2%), 85 health technicians (15.5%), and 50 (9.1%) GAS workers, making a total of 550 female workers.

As a data gathering tool, a questionnaire comprising 58 questions was used, which was prepared by the investigators according to a literature survey? The first part consisted of 32 questions inquiring about demographic characteristics and behaviors regarding breast cancer screening (knowledge about BSE, frequency of performing BSE, frequency of undergoing mammographic examination, and frequency of having a CBE); the second part consisted of 20 questions evaluating individuals' knowledge regarding breast cancer; and the third part consisted of 6 questions evaluating the risk of breast cancer.

Statistical analysis was conducted using IBM SPSS Statistics Version 20. Chi-square test was employed for the analysis of qualitative variables. Values of $p<0.05$ were accepted as significant.

Results

The mean age of the individuals in the study group was 36.22±15.33, 42.5% were within the 30-39 age group, 78.0% were married, 42.5% were associate degree graduates, 91% were health personnel, and 38.3% had spent 10-19 years in the profession (Table 1).

Seventy-four point nine percent (74.9%) of the study group had given birth; 57.9% had given birth twice; 11.6% had their first child at 24 years of age; 93.5% had breast fed; 13.0% had breast fed for 18 months (11.0±8.0/ months); 8.5% were in menopause; 24.4% had used oral contraceptives and/or hormone therapy for menopause, in 3.5% there was a history of breast cancer either in a mother or sister; and 12.9% had a history of breast cancer in one of their relatives. Seventeen point one percent (17.1%) of the participants stated that they had experienced problems with their breast tissue, and 56.7% stated that they had fibrocystic breast tissue.

Seventy-eight point four (78.4%) of the health personnel and 76.0% of the GAS workers performed BSE. There was statistically no significant difference in performing BSE when compared according to profession ($p>0.05$). The mean age in starting to perform BSE in the study group was 28.2±7.35. When the mean age to start performing BSE was compared according to profession, it was found that 55.0% of the health personnel started

Table 1. Distribution of the Study Group According to some Characteristics

Variables		n	%
Age	20-29	115	30.9
	30-39	234	42.5
	40-49	178	32.4
	≥50	23	4.2
Educational status	High school	82	14.9
	Associate degree	234	42.5
	Undergraduate	162	29.5
	Postgraduate	24	4.4
	Doctorate/Medical specialist	48	8.7
Marital status	Married	426	78
	Not married	120	22
Occupation	Health personnel	500	90.9
	GAS worker*	50	9.1
Years in profession	≤9	146	28.1
	10-19	199	38.3
	≥20	170	33.7

Table 2. Breast Cancer Screening Behaviors According to Profession

Screening behaviors		Health personnel n (%)	GAS Workers n (%)	p
BSE	Yes	388 (78.4)	38 (76)	
	No	107 (21.6)	12 (24`)	0.720
Age of starting BSE	<20	29 (7.7)	5 (13.2)	
	20-29	180 (47.7)	6 (15.8)	<0.001
	30-39	138 (36.6)	12 (31.6)	
	40-49	30 (8.9)	15 (39.5)	
Frequency of BSE				
Sometimes/When it occurs to them		267 (67.6)	32 (80)	
Regularly every month		101 (25.6)	2 (5)	0.005
Others		27 (6.8)	6 (15)	
Mammographic evaluation	Yes	110 (22.2)	26 (52)	<0.001
	No	385 (77.8)	24 (48)	
Breast ultrasonography	Yes	174 (36.5)	28 (63.6)	0.001
	No	303 (63.5)	16 (36.4)	
CBE	Yes	167 (34.1)	31 (62)	
	No	323 (65.9)	19 (38)	<0.001

Table 3. Knowledge Level Regarding Breast Cancer According to Professions

Knowledge level		Health personnel n (%)	GAS Workers n (%)	p
Knowledge about BSE	Yes	463 (94.9)	46 (95.8)	
	No	25 (5.1)	2 (4.2)	0.773
Purpose of BSE				
Find a cancer lump		16 (3.3)	4 (80)	
Get to know one's breast tissue better		66 (13.4)	4 (8)	
To notice a small or big lump in breast		21 (4.3)	4 (8)	0.127
To notice any lump in breast tissue		382 (77.6)	36 (72)	
Don't know		7 (1.4)	2 (4)	
Age to start BSE	15	31 (6.4)	1 (2)	
(years old)	20	145 (30)	12 (24.5)	
	30	140 (28.9)	21 (42.9)	<0.001
After the first menstruation		109 (22.5)	3 (6.1	
Don't know		59 (12.2)	12 (24.5)	
Timing of BSE				
Don't know		59 (12.2)	13 (27.1)	
It doesn't matter		34 (7)	11 (22.9)	
After menstruation		335 (69.2)	20 (41.7)	<0.001
Before menstruation		18 (3.7)	2 (4.2)	
When there is a problem with the breast		38 (7.9)	2 (4.2)	
Frequency of BSE	Every week	19 (3.9)	5 (10)	
	Every two weeks	17 (3.5)	3 (6)	
	Every month	370 (75.7)	25 (50)	0.001
	Every 6 months	53 (10.8)	8 (16)	
	Once a year	30 (6.1)	9 (18)	
Best technique for BSE				
Circular movement with the palm of the hand		35 (7.2)	5 (10)	
Circular movement with the inside of the middle 3 fingers		375 (77.5)	34 (68)	0.020
Horizontal movement with 2 fingers		42 (8.7)	2 (4)	
Don't know		32 (6.6)	9 (18)	
Time needed for one breast during BSE				
3 minutes		183 (37.7)	12 (25)	
5 minutes		173 (35.6)	12 (25)	
10 minutes		24 (4.6)	1 (2.1)	0.001
Don`t know		106 (21.8)	23 (47.9)	
Knowledge about breast cancer symptoms				
Yes		370 (84.1)	26 (61.9)	0.001
No		70 (15.9)	16 (38.1)	

at 20-29 years old, whereas 42.9% of the GAS workers started at 40-49 years old. There was a statistically significant difference between the groups in the age of starting to perform BSE when compared according to profession (p<0.001). It was established that 23.7% of the study group performed BSE regularly every month. When the frequency of performing BSE according to professions was evaluated, it was found that 25.6% of the health personnel, and 5% of the GAS workers performed BSE regularly every month. There was a statistically significant difference in the frequency of performing BSE when compared according to profession (p<0.05) (Table 2). Of the health personnel, 1.4% stated that they did not perform BSE regularly every month because they had no history of breast cancer in their family, 3.6% did not do so because of stress and fear, 13.2% because they forgot, and 14.6% because they had no complaints.

Twenty-two point two percent (22.2%) of the health personnel, and 52% of the GAS workers had undergone mammographic evaluation, and there was no statistically significant difference in mammographic evaluation when compared according to profession (p<0.05). Thirty-six point five percent (36.5%) of the

Table 4. Presence of Cancer Risk Factors for Breast Cancer According to Professional Groups

Risk Factors		Health personnel n (%)	GAS Workers n (%)	P
Age groups	<30	108 (22.4)	7 (14.9)	
	30-40	237 (49.2)	12 (25.5)	<0.001
	41-50	125 (25.9)	25 (53.2)	
	51-60	12 (2.5)	3 (6.4)	
Cancer in family history				
	No	404 (86)	37 (84.1)	0.657
	Yes	66 (14)	7 (15.9)	
Cancer in personal history				
	No	452 (94)	41 (87.2)	0.113
	Yes	29 (6)	6 (12.8)	
Age at first birth	≥30	320 (68.5)	30 (66.7)	
	≤30	38 (8.1)	5 (11.1)	0.789
	No children	109 (23.3)	10 (22.2)	
Age at first menstruation				
	≥15	122 (25.4)	9 (20.5)	
	12-14	339 (70.6)	35 (79.5)	0.274
	≤11	19 (4)	-	
Body type	Lean	173 (36.4)	16 (34.8)	
	Medium fat	245 (51.6)	25 (54.3)	0.933
	Fat	57 (12)	5 (10.5)	
Breast feeding	Yes	353 (93.4)	36 (94.7)	0.747
	No	25 (6.6)	2 (5.3)	
Hormone therapy	Yes	114 (25.2)	8 (17.4)	0.283
	No	339 (74.8)	38 (82.6)	
Menopause	Yes	29 (6.2)	15 (30.6)	
	No	442 (93.8)	34 (69.4)	<0.001

health personnel, and 63.6% of the GAS workers had had a breast ultrasonography, and there was a significant difference between the groups when compared according to profession (p<0.05). 34.1% of the health personnel and 62.0% of the GAS workers had had a CBE, and there was a significant difference when compared according to profession (p<0.05) (Table 2).

Ninety-five percent (95%) of the participants had knowledge regarding BSE, and their sources of knowledge were as follows: 32.4% during education at school, 25.4% from their doctors, 7.4% from the media, and 1.6% from friends (p>0.05) (Table 3).

Twelve point two (12.2%) of the health personnel and 24.5% of the GAS workers did not know the proper age to start BSE. Thirty percent (30%) of the health personnel stated the age to start BSE as 20, and 42.9% of the GAS workers stated it as 30. There was a statistically significant difference in the age of starting BSE when compared according to profession, (p<0.001). Twelve (12.2%) of the health personnel and 27.1% of the GAS workers did not know the right time to conduct BSE. 69.2% of the health personnel and 41.7% of the GAS workers stated that BSE should be performed after menstruation. There was a statistically significant difference in the timing of BSE when compared according to professions (p<0.001) (Table 3).

Seventy-five point seven percent (75.7%) of the health personnel and 50% of the GAS workers stated that BSE should be performed every month. There was a statistically significant difference in the frequency of performing BSE when compared according to profession (p<0.05).

Six point six percent (6.6%) of the health personnel and 18% of the GAS workers did not know the right hand technique for BSE. 77.5% of the health personnel, and 68% of the GAS workers stated that the best technique for BSE was to conduct a circular examination with the inside surface of the middle three fingers. There was a statistically significant difference in performing the appropriate technique when compared according to profession ($p<0.05$) (Table 3).

Twenty-one point eight percent (21.8%) of the health personnel and 47.9% of the GAS workers did not know how much time they should spare for each breast during BSE. There was a statistically significant difference in the time spared for each breast during BSE when compared according to groups ($p<0.05$) (Table 3). Eighty-four point one (84.1%) of the health personnel and 61.9% of the GAS workers knew the symptoms of breast cancer. The most frequently known breast cancer symptoms are discharge, pain, presence of a swelling, and/or a lump during examination. There was a statistically significant difference in the level of knowledge when compared between groups ($p=0.001$).

Seventy point six percent (70.6%) of the health personnel and 79.5% of the GAS workers started menstruation at ages 12-14. Four percent (4%) of the health personnel started menstruation at age 11 or below. Fifty-three point two percent (53.2%) of the GAS workers were in the 41-50 age group, and the difference between professional groups regarding the risk of breast cancer according to age was significant ($p<0.001$). Thirty point six percent (30.6%) of the GAS workers were in menopause, and this was also significant for the risk of cancer between professional groups ($p<0.001$) (Table 4).

Discussion

According to our study, 78.4% of the health personnel, and 76% of the GAS workers performed BSE. There was no significant difference in performing BSE according to professional groups. The BSE rates in studies performed in our country on health personnel were between 56.1-92% (Kilic et al., 2006; Aslan et al., 2007; Uncu and Bilgin, 2011); in studies abroad this rate was reported to be between 89-93% (Foxall et al., 1998; Odusanya and Tayo, 2001; Chong et al., 2002; Abu Salem and Hassan, 2007). The results from the population in general changed between 17-61.7% (Fung, 1998; Dundar et al., 2006; Secginli and Nahcivan, 2006; Sirin et al., 2006; Discigil, 2007). We found no difference in BSE performance rate between the health personnel and GAS workers, and it can be said that almost all of those working in the health services had a common awareness level on this topic. Different results have been reported from studies investigating BSE frequency, the factors affecting it and the technique, in the general population and health personnel worldwide (Foxall et al., 1998; Fung, 1998; Odusanya and Tayo, 2001; Chong et al., 2002; Abu Salem and Hassan, 2007; Uncu and Bilgin, 2011); in our opinion these differences can be explained by the differences in cultural, and socio-economic factors.

In our study, 25.6% of the health personnel and 5.0% of the GAS workers performed BSE regularly every month. The difference in the frequency of performing BSE was significant when compared according to profession. The rate of performing BSE regularly every month in health personnel in our country has been reported as 15.4-28% (Kabalcioglu et al., 2005; Secginli and Nahcivan, 2006; Uncu and Bilgin, 2011). Discigil et al. (2007) in a study they performed on women living in urban and semi-urban regions, reported a rate of 17.9% for performing regularly BSE every month, and Ekici et al. (2007) reported a rate of 13.4% in instructors. Fung, (1998) reported a rate of 16% for women who perform BSE regularly every month. Odusanya and Tayo, (2001) reported that 39% of nurses performed BSE regularly; Chong et al. (2002) reported a rate of 67.2% in public health nurses, Abu Salem et al. (2007) reported a 30% rate in nurses, and Mahmoodi et al. (2002) a 6% rate in paramedics and nurses. BSE should be performed regularly, and at certain intervals in order to for a woman to recognize the breast tissue, and be able to identify any changes. Although awareness regarding the importance of BSE was generally high in our study group, the fact that performing BSE was higher in the health personnel group may be due to their working environment, which enables a higher awareness.

Fourty-seven point seven percent (47.7%) of the health personnel started BSE between the ages of 20-29, whereas 39.5% of the GAS workers started between the ages of 40-49, and this difference was statistically significant. It is suggested that all asymptomatic women perform a BSE regularly every month between the ages of 20-30 (American Cancer Society, 2011-2012, Turkish Association for Cancer Research and Control, 2012). The fact that almost half of the health personnel had started BSE at the appropriate age can be explained by their higher awareness due to their education and occupational environment. On the other hand, the GAS workers usually start to be concerned when they encounter some health problems, when referred to a health center, when they are warned about breast cancer; also they start hearing different stories from those in environment, and thus start to perform BSE at a later stage.

Among the health personnel in our study 1.4% did not perform regular BSE because they did not have breast cancer in their family history, 3.6% did not do so due to fear and stress, 13.2% because they forgot, and 14.6% because they had no complaints. In a study performed in Singapore upon public health nurses, the reasons for not performing BSE regularly every month were; forgetting, not seeing it as necessary, and being very busy (Chong et al., 2002). In a study performed in Sanliurfa provincial capital on nurses and midwives, it was found that the reasons for performing BSE regularly every month were having breast problems, fear of getting cancer, being aware of the high prevalence of breast cancer (Kabalcıoglu et al., 2005). The reasons for not performing BSE and regularly in the study group were similar to those stated in other studies.

In our study the rate of mammographic evaluation was significantly higher in GAS workers compared to health personnel. The rates of mammography were reported as 33-81% in different studies (Ahmad and

Stewart, 2004; Franek et al., 2004; Juan et al., 2004; Pasket et al., 2004; Davis et al., 2005). The most effective screening method to decreases breast cancer mortality is mammography (Ozmen, 2008). Mammography has been the recommended method, combined with BSE and CBE, for the early diagnosis of breast cancer since a very long time, and there is no other screening method as sensitive and selective in breast cancer (Seckinli, 2011). Its combined use with ultrasonography increases its sensitivity and changes the follow-up protocol (Dogan et al., 2007). In our study the rates of breast ultrasonography were 36.5% in health personnel, and 63.6% in GAS workers. Franek et al. (2004) reported a rate of 41% for breast USG in nurses. In asymptomatic women above 40, a yearly mammographic evaluation is recommended. On the other hand, attention is also drawn to the risks of mammography, the method accepted as the most effective in diagnosing early breast cancer, and it is suggested that women should be informed regarding the benefits and risks of mammography (Seckinli, 2011).

In our study, 34.1% of the health personnel, and 48% of GAS workers had undergone a clinical breast examination, and the difference between groups was significant. One of the important diagnostic methods of breast cancer is CBE. CBE should be performed every 3 years in 20-39 year old women, and once a year in women above 40, as part of periodic health examinations (Foxall et al., 1998; Odusanya and Tayo, 2001). Aslan et al. (2007) reported that 5% of nursing students had undergone a clinical breast examination at least once. This rate was reported as 53.6% by Chong et al. (2002), as 28.9% by Odusanya and Tayo, (2001), and as 38% by Franek et al., (2004). Although the rate of having a clinical breast examination performed by a doctor was higher in GAS workers compared to health personnel, and is a positive behavior, it should not diminish the importance and necessity of BSE.

In our study, there was no difference in levels of knowledge regarding BSE between the health personnel (94.9%) and GAS workers (95.8%). In a study performed in women in Saudi Arabia, the rate of those who had knowledge regarding BSE was 82%, whereas the rate of those who performed BSE was 41.2% (Alam, 2006). In our study knowledge regarding BSE was high in both health personnel and GAS workers, but its actual practice was insufficient.

Sixty-nine point two percent (69.2%) of the health personnel and 41.7% of the GAS workers stated that BSE should be performed after menstruation. In their study Kum et al. (2004) reported that 48.5% of the health personnel and 16.3% of the general population performed breast examination after menstruation.

In our study 75.7% of health personnel, and 50% of GAS workers stated that BSE should be performed every month. Similar to our study, Kum et al. (2004), in their study, stated this rate as 51.2% in the general population, and 70% in health personnel.

In conclusion, in this study aiming to compare the knowledge, attitudes, and behaviors regarding BSE in health personnel and GAS workers there was no difference between groups regarding knowledge about BSE, and putting it into practice. On the other hand, knowledge and awareness about the time to start BSE the appropriate technique, to use frequency of performing BSE, and knowledge about the symptoms of breast cancer were higher in health personnel. The rates of mammography, breast ultrasonography and CBE were significantly higher in GAS workers.

Keeping in mind that most breast cancers are diagnosed by women themselves, the importance of regular self breast examination becomes obvious. Therefore, women should be encouraged to perform BSE, due to its importance in the early diagnosis of breast cancer. It is of the utmost importance to raise awareness and knowledge regarding the early diagnosis of breast cancer at an early age, and to teach the appropriate techniques. BSE is significant only when performed at regular intervals and conscientiously. The fact that even health personnel do not have the appropriate level of awareness regarding breast cancer, or that those are aware do not show appropriate behaviors, is an important indicator of the current situation. Health personnel are a group in a position to guide and inform women, so it is very important for them to attain the necessary knowledge, attitudes and behaviors.

Acknowledgements

The authors declare that they did not receive any funding or support for the present study and that there are no potential conflicts of interest related with it.

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