Effects of Education on Knowledge and Attitude of Breast Self Examination Among 25+ Years Old Women

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Objective: **To investigate effects of education on knowledge and attitude of breast self examination (BSE) among women.**
Method: **Knowledge and performance of BSE among women residents at Gülistan district of Isparta were both evaluated by a preliminary study. After that, an educational program about BSE was carried out. Six months later, final situation was evaluated by constructing two groups: Study group (n=62) that consisted of women and the control group (n=63) assigned by randomized sampling.**
Results: **The ratio of knowledge about BSE in the study group increased from 30.3% to 77.4% while it was 50.8% in the control group. Similary the ratio of subjects who regularly performed BSE in the study group was found to be increased from 19.0% to 61.3% while the same ratio was found 39.7% in the control group. The differences between two groups and in the same group before and after training were statistically significant. Knowledge of BSE was correlated with education and employment status among all respondents. Correct practice of BSE was found to be correlated with employment status among study group while it was found to be correlated with education, employment, age and prosperity in the control group.**
Conclusion: **The results from this study suggest that an educational program can significantly improve BSE practice in women.**

Key words: *Breast-self examination, breast cancer, health education*

Currently, cancer is the second most common cause of death (22%) in the developed countries following cardiovascular diseases (1,2). This rate is similar in Turkey increasing gradually since 1970s when it was only the fourth most common cause of death (3). By contrast, in developing countries, it is the third cause of death after infectious and parasitic diseases and cardiovascular diseases. It makes up 9% of the total death in developing world (1).

Breast cancer is the leading malignancy among women worldwide. For example, in the United States, it is estimated that one in every 8 women will develop breast cancer during their lives. This reflects dramatic increase in the disease during the last 30 years (4-6).

Breast cancer continues to have no known cause or primary prevention. Therefore, efforts to control the mortality rate from breast cancer must be directed towards early detection through the use of secondary preventive measures such as breast self examination (BSE) (4,7). Currently, American Cancer Society and The National Cancer Institute recommend periodical mammograms, clinical breast examination and monthly BSE to detect breast cancer at an early stage (8,9).

BSE is a self-care practice that is easy, convenient, private, safe, involving no cost and requiring no specific equipment. Women who practice BSE have a better chance of early detection, an increased survival rate and better treatment options (2-5, 9-14). Although recommended by authorities it is not possible to say that BSE practice is widespread. For example, the ratio of BSE practice was found to be only 15-40% among women in USA although much as 90% of them was found to be informed about the issue (4, 9).

Multiple interventions are described in the literature to increase BSE frequency and proficiency. Among these studies, approaches have varied widely, from merely handling out pamplets to prospective randomized trials incorporating both teaching and interventions (6-9, 15-17).

Material and Method

A preliminary survey was carried out in March-1997 to determine the knowledge and attitude of 657 women who were resident in Isparta-Gülistan district aged between 25 to 75 years old (18). Later in April 1997, in collaboration with Isparta Provincial Health Office, an education program was performed by a video-cassette demonstration (Video-cassette program: Early diagnosis of breast cancer, 31 minutes. Educational cassette series: 4, Health Ministry, General Directorate of Primary Health Care, Ankara 1992) and leaflets pertaining BSE (Brochure, Health Ministry, Department of Cancer Control: 516, Ankara 1991) were used. It was observed that approximately one third of (n=185) the previously investigated population (target group-TG, n=657) had agreed to participate. Six months later (November-1997), the last situation was evaluated by a questionnaire including items involving demographic features, knowledge and attitude about BSE. The evaluation was performed in two groups: The education group (EG) consisted of 62 women who participated in the education program. Other group (control group, CG) consisted of 63

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women who were included in the former study but did not take place in the education program. Knowledge about BSE was assessed using the leaflets distributed for education. Subjects practicing BSE at least monthly were considered to be "BSE performers". Subjects who were able to describe at least two of the three steps of BSE in the leaflet were considered to "know BSE". Ultimately, ratios of BSE performers and women that knew BSE were compared between EG, CG and TG. Data obtained was analysed by computer using SPSS Version 6.01. In order to compare EG and CG, independent t-test and chi-square tests were used. To compare either EG and CG with TG; hypotesis tests for population proportion (single group proportion, z test) and population mean (one sample, t test) were used (19). Besides, independent variables such as age, education, marital status, prosperity and employment that might influence the dependent variables (BSE knowledge and performance) were analysed by logistic regression model.

Results

Table I shows some demographical features of three groups. It was observed that EG and CG were different from TG in some features despite being assigned by randomized sampling. Education, marital status and prosperity were found similar in EG and CG while women in the EG were found to be older and more likely to be employed.

Table II shows ratios of knowledge and practice of BSE. Both EG and CG had higher ratios of knowledge and practice of BSE in comparison with TG. The differences between knowledge and practice ratios of EG and CG was found to be statistically significant.

Table III and IV show relations between some variables and management of BSE. It was observed that women who knew and practiced BSE were more likely to be younger than 40 years old, secondary school graduate and forth, employed, and more prosperous. Both of knowledge and practice ratios about education and working status were found significantly different in all groups.

Table V shows independent variables which were thought to have influence on knowledge and practice of BSE, as analyzed by logistic regression model. The variable which influences the knowledge of BSE most, was turned out to be education (OR=5.26, p=0.02), whereas the variable that influences the practice of BSE most was turned out to be employment status (OR=4.60, p=0.008). It was also observed that employment status was the major factor influencing both knowledge and practice among the CG. In that group, women who were working or retired were found to be 11 times more likely to know (OR=11.11, p=0.0008) and 15 times more likely to practice BSE than others (OR=15.11, p=0.0001).

Discussion

Ratios of BSE not only for EG, but also for CG were quite higher than the TG. Considering that some demographic features were differing in TG from the other groups might indicate a bias. But results obtained by controlling the variables such as age and employment were not equivocal. Thus, possibility of a bias can be ruled out.

In this study, knowledge and practice ratios of BSE were found significantly higher among EG. This might suggest that the education program had been useful as it is in the randomized trial by Mamon and Zapka to improve BSE performance among college-age women (9). In this study, the pre-intervention and six months after experimental-control comparisons showed that bi-monthly or more often BSE performance increased by 29%, and performance proficiency improved by 22%.

Aydemir and colleagues carried out two discrete studies in İzmir. In their first study, the ratio of women who knew and practiced BSE were found to be as little as 6.2% and 1.5% respectively (20). Two years later, in their second study, knowledge ratio was found to be increased to 53.7% while practicing rate was 39.0% (21). The stunning increase was probably due to İzmir's situation as being a research and education zone. In a recent study by Demirhan et al. to evaulate BSE knowledge and performance among college-age women, although nearly half of women (42.7%) who partipicated in this study said they knew BSE, only about one third of them (29.5%) were be able to describe it correctly (22).

The knowledge and practice ratios were increased in both groups, though more prominently among the actively educated one. The 'indirect education' that might have resulted from the initial study may account for this global increase, as it was the case in a survey which was made in the former Soviet Union (5). There, the ratios of monthly practice of BSE had been found to be 27.8% in the initial study. Then, it was found to be increased to 35% six months later, and to 55.0%, one year later. It was concluded that the former increase had been the result of the indirect education related to questionnaire and the latter had emerged from the educational activity.

Interventions with education are effective for improvement not only on the BSE frequency but also BSE proficiency. In a study by Agars et al. concerning nurses' personal BSE practice, it was found that each method of BSE instruction (booklet, film and group discussion and individual teaching) produced a significant improvement in the technique of BSE (7). In another study by Champion, a preliminary analysis of data from 301 randomly selected women who were followed up to one year after an initial teaching and/or attitudinal intervention was reported (8). Showing significant changes in proficiency and frequency occurred after intervention.

In conclusion, our findings consistent with others reports, indicate that education programs would be effective in promoting awareness and practicing of BSE. Necessary attention must be paid for the issue, especially at the primary health services. In order to render BSE widespreadly performed, mass media must be utilized. To achieve this among the younger, collaboration with the Education Ministry, universities, student dormitories and voluntary civil associations is advisable. As Maurer em-

Table I.Characteristic of women in the target, education and control groups

	Groups[a]			p[b,c]		
	EG	CG	TG			
Characteristics	(n=62)	(n=63)	(n=657)	1	2	3
Age, years (mean ± SD)	38.9±8.4	34.3±8.5	42.2±13.4	*	*	*
No of child, (mean ± SD)	2.2±1.0	1.8±1.0	2.5±1.5	*	*	*
Marital status, married (%)	88.7	92.1	87.4			
Education, secondary + (%)	50.0	42.9	22.8		*	*
Prosperity, good, (%)	46.8	36.5	17.8		*	*
Social security, present (%)	91.9	76.2	73.4	*	*	
Working, housewife (%)	53.2	68.3	88.9	*	*	*

[a]*Groups are: EG=Education Group, CG=Control Group and TG=Target Group*

[b]*Significancy colones are: 1=(EG-CG) and 2=(EG-TG) and 3=(CG-TG)*

[c]*Hypotesis tests used to compare: 1.EG with CG: independent t-test for the first two variables and chisquare tests for the other t test for the first two variables and population proportion (z test) for the other ones, *p<0.05.*

Table II . The ratios of knowledge and performance of BSE.

	Total	Know BSE		Perform BSE	
Groups[#]	n	n	%	n	%
TG	657	199	30.3	125	19.0
EG	62	48	77.4	38	61.3
CG	63	32	50.8	25	39.7
Significance		p		p	
TG-EG*		< 0.05		< 0.05	
HG-CG*		< 0.05		< 0.05	
EG-CG**		< 0.05		< 0.05	

Hypotesis tests for population proportion (z test),Chi-square test*

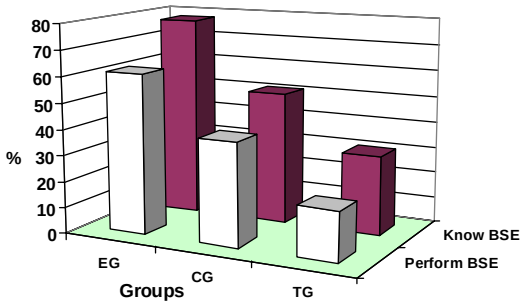

Figure 1. The ratios of knowledge of and performing BSE in the groups.

Table III. The percentage of knowledge on BSE according to some characteristic.

	Groups and the percentages of their BSE knowledge (BSE+)					
	TG (n=657)		EG (n=62)		CG (n=63)	
	Total	BSE+	Total	BSE+	Total	BSE+
Characteristics	n	%	n	%	n	%
Age						
<40	335	31.6	29	84.8	44	52.3
40 and+	322	28.9	33	69.0	19	47.4
Education						
Illiterate primary	507	23.3*	31	64.5*	36	36.1*
Secondary	150	54.0	31	90.3	27	70.4
Marital status						
Married	587	31.0	55	80.0	58	48.3
Single divorced	70	34.3	7	57.1	5	80.0
Working status						
Housewife	584	25.0*	33	66.7*	43	34.9*
Working retired	73	72.6	29	89.7	20	85.0
Prosperity						
Good	117	47.9*	29	79.3	23	65.2
Poor moderate	540	26.5	33	75.8	40	42.5
Total	657	30.3	62	77.4	63	50.8

[*]*Chi-square test, p<0.05*

Table IV. The percentage of performance on BSE according to some characteristics

	Groups# and the percentages of their BSE performance (BSE+)					
	TG (n=657)		EG (n=62)		CG (n=63)	
Characteristics	Total n	BSE+ %	Total n	BSE+ %	Total n	BSE+ %
Age						
<40	335	20.6	29	51.7	44	47.7*
40 and+	322	17.4	33	69.7	19	21.1
Education						
Illiterate primary	507	12.6*	31	51.6	36	22.2*
Secondary	150	48.8	31	71.0	27	63.0
Marital status						
Married	587	18.9	55	63.6	58	37.9
Single divorced	70	20.0	7	42.9	5	60.0
Working status						
Housewife	584	14.9*	33	45.5*	43	20.9*
Working retired	73	52.9	29	79.3	20	80.0
Prosperity						
Good	117	33.3*	29	62.1	23	56.5*
Poor moderate	540	15.9	33	60.6	40	30.0
Total	657	30.3	62	61.3	63	39.7

Table V. The independent variables influencing knowledge and performance of BSE ratio and their analysis according to logistic regression models*

Groups	Variable	B	SE (B)	p	R	OR
Education						
Know BSE	Education level	1.64	0.71	0.0220	0.22	5.26
	Constant	0.60	0.38	0.1112		
Performing BSE	Working status	1.53	0.58	0.0081	0.25	4.60
	Constant	-0.18	0.35	0.6020		
Control						
Know BSE	Working status	2.36	0.70	0.0008	0.33	11.11
	Constant	-0.62	0.32	0.0511		
Performing BSE	Working status	2.72	0.67	0.0001	0.41	15.11
	Constant	-1.33	0.37	0.0004		

**The independent variables influenced the ratios of being informed and performing BSE had been processed with this model by "Backward Stepwise" method. These variables are: 1. Age (categoric, 25-29= reference, 30-34, 35-39, 40-44, 45-49, 50+). 2. Education level (nominal, at least secondary school-graduated/ others). 3. Working status (nominal, housewife/ working+ retired). 4. Prosperity (nominal, good/ moderate+ poor). 5. Marital status (nominal, married / single+ divorced)*

phasized, since youngsters and/or young adults are heavily influenced by their peers, a BSE program that incorporates peer education and elements essential to positive identity formation may be an effective mean to establish BSE (4).

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