RESEARCH COMMUNICATION

Health Promotion Lifestyle and Cancer Screening Behaviors: A Survey among Academician Women

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Abstract

Breast self examination (BSE), screening mammography and Pap smear screening can significantly reduce mortality from breast and cervical cancer. In an effort to understand the factors that influence BSE, mammography, and Pap smear behavior of woman academicians, we here explored the relation between health promotion life-style and women's cancer screening practice. A total of 750 woman academicians working in a university were enrolled, 350 of them responding to the survey. The study instruments used were the Health Promotion Life-Style Profile (HPLP) scale and a questionnaire of demographic data. There was a significant relationship between age-group, marital status, presence of cancer in the family, history of cervical erosion and doing BSE, having mammography and a Pap smear. Additionally, both the general mean and nearly all domains of HPLP were significantly related to BSE, mammography, and Pap smear behavior. This study demonstrated strong relationships between breast and cervical cancer screening behavior and health promoting lifestyle in this subgroup of women, making an important contribution to understanding the factors influencing women's health behavior.

Key Words: Breast cancer - cervical cancer - mammography - Papanicalou test - screening - health promotion

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Introduction

Breast and gynecologic malignancies (including cervical cancer) occupy the top three ranks among cancer in women. Generally the mortality and morbidity from cancer can be reduced through early detection efforts such as cancer screening programs and techniques. Breast self-examination (BSE) is accepted as a traditional method for diagnosis of breast masses, although one study demonstrated no benefit for the early detection of breast cancer (Thomas et al., 2002). It has been shown that routine mammography screening can also significantly reduce mortality from breast cancer (Nyström et al., 2002). Pap smear is another well-known and widely accepted cancer screening test for cervical cancer (Ball and Madden, 2003). In our country as in the European Union, Pap smear screening has been recommended for the detection of cervical abnormalities, starting at 20-30 years of age, and mammography screening to detect breast cancer, starting at age 50 (Advisory committee on cancer prevention, 2000).

Studies considering factors that influence the practice of cancer screening for women have begun to determine the attitudes, beliefs, and demographic characteristics of women. Several researchers have also investigated various frameworks related to healthy behaviors such as Health Belief Model (HBM) and Health Locus of Control (HLC) to determine predictive values for cancer screening behaviors. The Health Promotion Lifestyle Profile (HPLP) is another instrument that has been used as an outcome variable of health promoting lifestyle (Walker et al., 1987).

Health promotion behaviors are any actions or behaviors taken by individuals to improve or promote well-being or health. Disease prevention behavior is defined as detecting and preventing specific diseases which may be done in collaboration with professional health care personnel. According to Breslow (1990), health promotion and disease prevention are "two sides of the same coin", and they are becoming important components of contemporary health care. The knowledge of association, between these two is important to the development of effective health promotion and disease prevention programs. No studies on the other hand focusing on the relationship between cancer screening as a disease prevention action and health promoting lifestyle of woman have been found in the literature. The purpose of this research was to discover how health promotion lifestyle is related to cancer screening practice in a specific group of women.

Materials and Methods

The study was implemented following the approval of the Institutional Review Board and Ethics Committee

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of Ege University Izmir Ataturk School of Health. All women received a detailed explanation about the study prior to agreeing to complete the study questionnaire and only those who agreed to voluntarily participate were included.

Study Design

A total of 750 survey documents were distributed to all women working as academicians (faculty members) in Ege University. Each survey packet consisted of a cover letter, a socioeconomic status questionnaire, the Health-Promoting Lifestyle Profile (HPLP) instrument, and a return envelope addressed to the researcher. The distribution and return of the survey was done by regular surface mail. No personal data appeared on the survey. The socioeconomic status questionnaire included items related to demographics, familial cancer history, breast self examination (BSE) and attitudes toward having mammography and Pap smear.

The Health-Promoting Lifestyle Profile – HPLP

This instrument was developed by Walker et al. (1987) to determine healthy lifestyle behaviors and adapted to the Turkish population by Esin (1997). HPLP assesses individual's health-promoting attitudes and behaviors related to healthy lifestyle. The scale has a total of 48 items and 6 subgroups. All the items of the healthy lifestyle behaviors scale are positive, there are no reversed items. Answers are marked on a Likert type of scale. Then it is scored as 1 point for the answer "Never", 2 points for "Sometimes", 3 points for "Frequently" and 4 points for "Regularly".

Statistical analyses were performed using statistical software program (SPSS for Windows, version 11.0). Data were analyzed using multiple regression analysis to determine the relative importance of independent variables in determining BSE, mammography, and Pap test behaviors. The HPLP scores were compared according to the Student's t test, ANOVA, and Scheffe test for Post-Hoc evaluation. Findings were accepted as statistically significant at a p value <0.05.

Results

A total of 350 academicians responded to the survey. The mean age of the participants was 34.82 ± 8.47 years. Most academicians were between the ages of 30 and 39 years, and 55.8% were married. The determined cancer incidence in families was 13.1% (n=46), 34.0% in mothers (breast cancer in 37.5% with the highest rate) and 53.2% in fathers (36.0% with gastrointestinal system cancers) (Table 1).

The percentage of women who knew how to do BSE was 67.1%, and 52.6% of them stated that they had did BSE monthly, 23.4% of the academicians had had mammography done within the last two years, and 27.1% had reported having a Pap smear done within the last three years.

While there was a significant relationship between age-group and marital status and doing BSE, having mammography and Pap smear (p<0.05), a statistically significant relationship was found only between BSE and the institute they were affiliated with (Institute of Health sciences) (p<0.05) (Table 2). Statistically significant relationships were also found between the presence of cancer in the family and having mammography and Pap smear (p<0.05), as well as between those who have

Table 1. Demographics of the Sample (N=350)

Characteristics		Number	(%)
Age groups	20-29	117	33.4
	30-39	143	40.9
	40-49	64	18.3
	≥50	26	7.4
Marital Status	Single	137	39.1
	Married	195	55.8
	Divorced/ Separate	18	5.1
Cancer in Family	Yes	46	13.1
	No	304	86.9
Persons Affected	Mother	16	34.0
	Father	25	53.2
	Other	6*	12.8
Types of Cancers in Mothers (n=16)			
	Breast	6	37.5
	Reproductive	3	18.8
	Other	7	43.7
Types of Cancers in Fathers (n=25)			
	Gastrointestinal	9	36.0
	Respiratory	8	32.0
	Urinary	6	24.0
	Other	2	8.0

*One academician had two family members with cancer

Table 2. BSE, Mammography, Pap Smear and their Relation to Independent Variables

Factor	BSE		Mammography		Pap Smear	
	Yes	No	Yes	No	Yes	No
Age groups						
20-29	44	73	5	112	6	111
30-39	73	70	19	124	29	114
40-49	45	19	38	26	42	22
≥50	22	4	20	6	18	8
p value	<0.001		<0.001		<0.001	
Marital status						
Single	51	86	7	130	6	131
Married	120	75	65	130	78	117
Divorced	13	5	10	8	11	7
p value	<0.001		<0.001		<0.001	
Occupation in						
Health Sciences	86	54	30	110	38	102
Natural/Applied Sciences	52	54	28	78	29	77
Social Sciences	31	38	19	50	19	50
Vocational Training	15	20	5	30	9	26
p value	0.049		0.374		0.998	
Cancer in Families						
Yes	26	20	23	23	21	25
No	158	146	59	245	74	230
p value	0.339		<0.001		0.003	
Cervical Erosion						
Yes	19	16	15	20	24	11
No	165	150	67	248	71	244
p value	0.487		0.006		<0.001	

Table 3. BSE, Mammography and Pap Smear Participation and its Relation to Average HPLP Scores

Factor	BSE	Mammography	Pap Smear
HPLP General mean			
Yes	2.83 ± 0.35	2.85 ± 0.36	2.87 ± 0.36
No	2.65 ± 0.34	2.71 ± 0.35	2.70 ± 0.35
p value	<0.001	<0.001	<0.001
HPLP Subgroups			
Adopting HPLP			
Yes	3.10 ± 0.39	3.11 ± 0.40	3.15 ± 0.49
No	2.95 ± 0.43	3.00 ± 0.42	2.98 ± 0.42
p value	0.001	0.044	0.001
Health responsibility			
Yes	2.60 ± 0.56	2.64 ± 0.51	2.62 ± 0.52
No	2.27 ± 0.43	2.38 ± 0.52	2.38 ± 0.52
p value	<0.001	<0.001	<0.001
Exercises			
Yes	2.07 ± 0.64	2.11 ± 0.73	2.12 ±.71
No	1.93 ± 0.63	1.97 ± 0.61	1.96 ±.61
p value	0.039	0.098	0.032
Nutrition			
Yes	3.12 ± 0.55	3.19 ± 0.51	3.22 ±.54
No	2.95 ± 0.50	2.99 ± 0.53	2.98 ±.51
p value	0.004	0.003	<0.001
Interpersonal relation			
Yes	3.21 ± 0.41	3.16 ± 0.46	3.21 ±.44
No	3.10 ± 0.47	3.16 ± 0.44	3.14 ±.44
p value	0.028	0.974	0.207
Stress management			
Yes	2.56 ± 0.48	2.57 ± 0.54	2.59 ±.53
No	2.43 ± 0.49	2.48 ± 0.47	2.47 ±.47
p value	0.011	0.154	0.042

cervical erosion and having both mammography and Pap smear ($p<0.05$) (Table 2). In the multi-regression analysis it was established that some demographic factors such as age (26%) and marital status (17%) had an effect on having the Pap test in our study population. The regression analysis also showed 30% and 13% effect on having the mammography for the same variables.

Mean HPLP scores according to BSE, mammography, and Pap smear of the academician woman are listed in Table 3. Higher scores in the HPLP general mean, and also adopting HPLP, health responsibility, exercise, nutrition, interpersonal relationships, and stress management domains were significantly related to BSE and Pap smear. There was also a significant relationship between mammography and scores in the HPLP general mean, and adopting HPLP, health responsibility, and nutrition domains.

Discussion

Studies dealing with woman's cancer screening behaviors have demonstrated that screening behavior is affected by age, health insurance, income status, employment status, marital status, education, ethnic factors, female physicians and cultural barriers such as spoken language (Holm et al., 1999; Kim et al., 1999; Ho et al., 2005). It is also well known that individual's health beliefs, lack of knowledge, negative attitudes of health workers, low motivation, and fear of tests are associated with cancer screening behaviors of women (McFarland, 2003). Despite their life-saving potential, these cancer screening methods remain underused. To decrease cancer mortality through early detection, we must broaden our understanding of the factors that influence women's cancer screening behavior. Then we can be more effective in developing interventions that will facilitate a women's choice to undergo cancer screening.

We found a significant relationship between academicians' age group and doing BSE, having mammography and Pap smear. The majority of the academicians who did BSE were in the 30-39 age-group, whereas those who had mammography and Pap smear were in the 40-49 age-group. This finding is consistent with the fact that screening mammography has been recommended after the age of 40 years. In addition, the majority of the academicians who had BSE, mammography and Pap smear were married.

It was observed, in our study, that academicians who stated that there was cancer history in their families were more like to have mammography and Pap smear test done. This relationship was found to be statistically significant (Table 2). Madanat and Merrill (2002) reported that women who had a family member with cancer were well-informed about cancer screening. Lewis et al (1999) emphasized that to be at risk for breast cancer, breast cancer experiences of the individual and family and social networks influenced women to have mammography done. When academicians' behaviors to do BSE and to have mammography and Pap smear, as well as incidence of cervical erosion were evaluated, it was observed that there was no relationship between cervical erosion and doing BSE, but there was a significant relationship between having mammography and Pap smear (Table 2). McFarland (2003) has stated that 44% of women due to gynecologic problems have a Pap smear done. This finding is in line with the findings of this study.

The constructs of the Health Belief Model (HBM) have shown some success in predicting cancer screening behaviors (Champion, 1991; Fischera and Frank, 1994; Burak and Meyer, 1997; Ho et al., 2005). Although the HBM appears to be related to cancer screening, further research is needed to use this model effectively as a framework to guide advanced nursing practice (Holm et al., 1999). Another framework, Health Locus of Control (HLC) has been the most frequently studied determinant of healthy lifestyle (Gillis, 1993). With respect to cancer screening behaviors, many studies have yielded inconsistent findings indicating a need for further studies to evaluate the concept of HLC and practice of cancer screening behaviors (Gillis, 1993; Holm et al., 1999). Today, it is generally accepted that there is a positive although weak association between HLC and cancer screening behaviors like BSE, mammography, and Pap smear.

In this study the target group was academician women to determine the factors influential in causing them to use three well known cancer screening methods (BSE, mammography and Pap smear) by utilizing HPLP. All three cancer screening methods and HPLP were compared and a significant relationship was detected between these methods and total HPLP scores received (Table 3). When

subgroups were evaluated, significant relationships were found among all subgroups except for mammography and Pap test with interpersonal relationships and mammography with exercise and stress management groups. Today the field of health promotion has shifted to embrace the socio-ecological perspective of health (which recognizes the role of environmental and contextual factors on health promotion practice and outcomes) and disease prevention activities (which cannot be separated in fact from the health promotion concept) (Breslow, 1990; Robinson et al., 2006). According to Walker et al. (1987), the HPLP differs from most lifestyle assessment measures, which focus mainly on health-protective behaviors springing from risk reduction models. Besides these contemporary facts, no convincing study focusing on the relationship between cancer prevention practice (i.e., cancer screening activities) and health promoting lifestyle of women was found in the literature. In a recent review, Bankhead et al. (2003) focused on examining the effects of cholesterol, breast and cervical cancer screening on actual or intended health-promoting behaviors and health-related beliefs. They concluded that women who attend breast and cervical screening once are likely to re-attend and attendance is associated with several positive health behaviors, although it cannot be confirmed whether the association observed is a result of screening or because these women already have a certain set of healthy behaviors and beliefs irrespective of their experience of screening.

Our study compared the health promoting lifestyle and cancer screening behaviors in women. We found a relationship between the healthy lifestyle and the cancer screening practice in a specific group of women. Female academicians who report frequent or regular practice of health-promotion activities: namely, interpersonal support, self-actualization, nutrition, health responsibility, stress management, and exercise, are more likely to perform cancer screening practices.

In conclusion, we discovered a strong relationship between cancer screening practice and health promoting lifestyle in this specific group of women. Although it is not possible to generalize our results to all women, it can be said that HPLP may provide reliable results in evaluating the cancer screening behavior of academician women. However, to support this, additional studies among different subgroups of women investigating the relationship between cancer screening behavior and HPLP are needed.

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