RESEARCH COMMUNICATION

Socioeconomic Factors Association with Knowledge and Practice of Breast Self-Examination among Iranian Women

Parvin Yavari[1], Mohamad Amin Pourhoseingholi[2]*

Abstract

Background: Breast cancer is the leading type of cancer in women and is one of the most frequent cancers among Iranian women. Delay in diagnosis and treatment of breast cancer diminishes a women's chance of survival. Breast self- examination (BSE) may be effective in early detection. The purpose of this study was to identify the relationship between Iranian women's socioeconomic status and their knowledge and practice of BSE. Methods: Data were from a hospital-based case–control study among women diagnosed with breast cancer. Control subjects were matched to patients on age. 303 breast cancer patients and 303 control women were interviewed. Socioeconomic status and information including knowledge and practices of breast self examination and clinical breast examination were recorded and compared. Results: The mean ± SD age of cases and controls was 48.2 ± 9.8 and 50.2 ± 11.1 (range 24-84 years), respectively. The study revealed that there were significant relationships between education level and knowledge and practices of breast self examination in both cases and controls, increase in usage being observed with the level of education (P<0.05). Conclusion: The findings suggest that the knowledge and practices of women toward breast cancer early detection are inadequate in women with a lower level of education. Mass media cancer education should promote widespread access to information about early detection behavior.

Key Words: Breast cancer - education - socioeconomic status - knowledge and practice

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Introduction

Breast cancer is a serious public health concern in females. It is the most common cancer and the leading cause of cancer among women in the world (Humpel et al, 2004). Its incidence will reach million patients annually by the year 2010. There is an overall increase in the incidence rate through out the world per year.

In Iran, breast cancer for women constitutes 21.4 % of all cancer cases reported in the country. The crude incidence rate of breast cancer in women is 22.4 per 100,000 population (Shamsa and Mohagheghi, 2002, national project for cancer registry). Informal data indicate that breast cancer has increased in Iran and since 1999, its incidence has ranked highest in the Iranian cancer registry data (Shamsa and Mohagheghi, 2002).The age-specific incidence distributions of breast cancer in Iran and western women are different (Harirchi et al., 2000). The literature indicates that the mean age of breast cancer patients is over 55 years (Miller et al., 1993), while Iranian breast cancer patients are about 10 years younger than their western counterparts (Harirchi et al., 2000). In Iran, it has been shown that, even after adjusting for age, young women are at relatively higher risk for developing breast cancer (Harirchi et al., 2000).

The research shows that survival in women who have their breast cancer detected at an early stage is 90% but if detection is not in early stage it decreases to 60% (Harris and Leininger, 1995). In inaccessible rural areas, where physicians are lack, breast self-examination (BSE) may be the most effective screening method to early detection of breast cancer (Jatio, 2003; Champion, 2003).

Breast awareness provides women with some acknowledgment of the part they can play in being empowered to fight against breast disease, not in terms of statistics used for mortality but on the qualitative effects of reductions in morbidity (McCready, Littlwood and Jenkinson, 2005). Every woman in western countries uses BSE or other procedure to detect cancer (Bostick and Sprafka et al, 1993), but in Iranian women, using BSE is low (Haji-Mahmoodi and Montazeri, 2002).

Previous studies addressing that Breat Self Exam, knowledge and practice are associated with socioeconomic status (SES) considers education, income, occupation and etc. For instance the literatures indicate that there is a relationship between women education levels and their knowledge and practice of BSE (Haji-mahmoodi and Montazeri et al, 2002).

The purpose of this study was to identify the relationship between Iranian women's socioeconomic

[1]*Department of Health and Community Medicine, Shaheed Beheshti Medical University, Tehran,* [2]*Research Center for Gastroenterology and Liver Disease, Shaheed Beheshti Medical University, Tehran *For Correspondence: E-mail: Amin_phg@yahoo.com*

status and their knowledge and practice of BSE.

Materials and Methods

A hospital based case-control study was carried out to elucidate the knowledge and practice of breast self-examination in two groups. Case 300 subjects were female patients having breast cancer and control 300 subjects were match to case on age. Data were collected through interview using structured questionnaire comprising several demographic variables such as educational level, family income, women jobs, their husband jobs, family size, the knowledge and the practice of BSE and regular visit to physician. Education level, family income, women's job, husband' job and family size were registered as socioeconomic variables. We asked any women in case and control do you have regular visit to physician for early diagnosis of breast cancer and categorized their answers in tow groups (yes or no). For knowledge of breast self exam we asked do you now how BSE is and for practice of BSE we asked do you have self exam of breast. We categorized their answers in tow groups too (yes or no). The data were analyzed using logistic regression with univariate, multivariate model. Cochran-Maentel-Hanszel test was used to compare significance odds ratios between case and control (Kleinbaum, 1994).

Results

The mean ± SD age of cases and controls was 48.2±9.8 and 50.2±11.1 (range 24-84 years), respectively.Table 1 shows the socioeconomic factors association with knowledge and practice of breast self-examination in univariate logistic regression analysis for both case and controls. According to the results, regular visit to physician for early detection increases with the increase in the level of education significantly and CMH-test indicates that except middle school level of education, visit to physician in case was more than control. Compared with housewife, regular visit to physician in women who were employed was 4.04 (95% CI 2.20-7.39) in case and 2.48 (95% CI 1.20-5.12) in control. Also regular visit to physician increases as increase in average monthly income and this increasing in case was more than control as CMH-test shows in the table1.

Knowledge of breast self exam increases with the increase in the level of education and according to CMH-test, except middle school level of education, knowledge of breast self exam in case was more than control. Knowledge of breast self exam in women who were employed was 4.31(95% CI 2.03-9.17) in case and 3.61 (95% CI 1.83-7.14) in control and the odds in case was more than control significantly. The odds ratio for knowledge of breast self exam in women who their husband's jobs were clerk was 5.37(95% CI 1.34-21.4) in control but it wasn't significant in case group. Knowledge of BSE increases with the increase in average monthly income and there is a significant difference between case and control.

Practice of breast self exam increases with the increase in the level of education and CMH-test shows that there's a significant difference between case and control. Practice of breast self exam in women who were employed was 2.91 (95% CI 1.60-5.25) in case, but it wasn't significance in control, and the odds in case was more than control significantly. Practice of breast self exam increases with the increase in average monthly income and there is a significant difference between case and control.

Table 2 shows the socioeconomic factors association with knowledge and practice of breast self-examination in multivariate logistic regression analysis for both case and controls. The multivariate models indicate that the odds ratio for regular visit to physician in women with middle school level of education was 4.22 (95% CI 1.65-10.83) in control and it wasn't significant in case. The odds in women with high school level of education was 3.78 (95% CI 1.49-9.52) in case and 2.84 (95% CI 1.04-7.76) in control and the odds in women with college and university level of education is 5.9 (95% CI 1.19-29.04) in control but it wasn't significance in case.

The odds ratio for regular visit to physician in women who their husband's jobs were clerk was 0.18 (95% CI 0.03-0.96) and the odds ratio in women who their husband's job were self employed was 0.18 (95% CI 0.04-0.84) in control. There was no significant odds ratio in case group.

The multivariate model for knowledge of breast self exam shows that only education was a significant factor and knowledge increases with the increase in the level of education. The multivariate model for practice of breast self exam indicates that in case group education was a significant factor and also the odds ratio for practice of breast self exam in women whit high average monthly income was 3.22 (95% CI 1.33-7.80) in control and it wasn't significance in case.

Discussion

In this hospital based case-control study, level of education, women's occupation and average monthly income have significant association with knowledge and practice of BSE and regular visit to physician for early detection in Iranian women. The findings in this study show that women with higher level of education have more knowledge and practice of BSE and regular visit to physician. These findings are similar to result from previous Iranian study (Haji-mahmoodi & Montazeri et al, 2002). And also education was reported as a significant factor in study on western women (Eileen, 2004). The women with high average monthly income and women who were employed have more knowledge and practice of BSE and regular visit to physician for early detection than women that have low average monthly income or were house wife. It seems that as similar as education, the higher level of socioeconomic status (with higher education, average monthly income and employed) leads to higher attention to BSE by BSE's knowledge and practice and regular visit to physician for early detection. In this study no association was found with family size and husband's job or the association was not important and in multivariate models only education was significant factor and other variables were not significant.

Table 1. Socioeconomic Factors in Association with Knowledge and Practice of BSE in Univariate Model

Characteristics	Cases		Controls	
	OR(95% CI)	P Value	OR(95% CI)	P Value
Socioeconomic factors association with regular visit to physician for early diagnosis of BSE				
Education level				
Primary or lower	(reference)		(reference)	
Middle schoo	2.52 (1.09-5.83)	0.031	l3.89 (1.79-8.24)*	0.001
High schoo	4.64 (2.36-9.26)	< 0.0001	l3.01 (1.44-6.29)*	0.003
College and university	9.32 (4.15-20.9)	< 0.0001	8.78 (2.69-28.6)*	< 0.0001
Employment status				
Housewife	(reference)		(reference)	
Employed	4.04 (2.20-7.39)	< 0.0001	2.48 (1.20-5.12)*	0.014
Husband's job				
Labor	0.12 (0.01-1.38)	0.09	0.44 (0.11-1.65)	0.22
Clerk	0.58 (0.15-2.28)	0.44	0.88 (0.25-3.07)	0.84
Self employed	0.65 (0.17-2.48)	0.53	0.62 (0.19-1.96)	0.42
Retired	0.42 (0.10-1.77)	0.24	0.82 (0.24-2.74)	0.75
Unemployed	(reference)		(reference)	
Family size				
<= 3	1.97 (0.78-5.01)	0.15	1.90 (0.62-6.08)	0.25
6-4	1.03 (0.42-2.57)	0.94	2.34 (0.77-7.07)	0.132
>=7	(reference)		(reference)	
Average monthly income				
low	(reference)		(reference)	
Intermediate	2.13 (1.12-4.05)	0.02	1.80 (0.89-3.65)**	0.1
High	4.19 (2.06-8.55)	< 0.0001	2.51 (1.14-5.52)*	0.02
Socioeconomic factors association with knowledge of breast self examination				
Education level				
Primary or lower	(reference)		(reference)	
Middle schoo	l5.2 (2.33-11.6)	< 0.0001	2.57 (1.23-5.34)**	0.012
High school	5.02 (2.60-9.68)	< 0.0001	7.30 (3.78-14.1)*	< 0.0001
College and university	24.9 (5.77-107)	< 0.0001	29.2 (6.15-136)*	< 0.0001
Employment status				
Housewife(reference)(reference)				
Employed	4.31 (2.03-9.17)	< 0.0001	3.61 (1.83-7.14)*	< 0.0001
Husband's job				
Labor	0.78 (0.14-4.38)	0.78	1.01 (0.23-4.35)	0.99
Clerk	3.01 (0.74-12.3)	0.12	5.37 (1.34-21.4)	0.017
Self employed	2.33 (0.58-9.21)	0.23	2.26 (0.61-8.42)	0.22
Retired	1.59 (0.38-6.64)	0.52	1.51 (0.38-6.07)	0.55
Unemployed	(reference)		(reference)	
Family size				
<= 3	1.63 (0.74-3.61)	0.22	1.42 (0.60-3.30)	0.42
6-4	1.89 (0.89-4.02)	0.09	1.29 (0.57-2.96)	0.54
>=7	(reference)		(reference)	
Average monthly income				
low	(reference)	(reference)		
Intermediate	2.74 (1.59-4.72)	< 0.0001	1.82 (0.97-3.42)*	0.06
High	3.36 (1.68-6.73)	0.001	4.35 (2.14-8.83)*	< 0.0001
Socioeconomic factors association with practice of breast self examination				
Education level				
Primary or lower	(reference)		(reference)	
Middle school	1.64 (0.80-3.36)	0.17	1.69 (0.84-3.39)**	0.14
High school	3.18 (1.75-5.76)	< 0.0001	2.96 (1.59-5.49)*	0.001
College and university	4.92 (2.29-10.6)	< 0.0001	2.62 (0.84-8.23)*	0.097
Employment status				
Housewife	(reference)		(reference)	
Employed	2.91 (1.60-5.25)	< 0.0001	1.76 (0.89-3.48)*	0.10
Husband's job				
Labor	0.18 (0.02-1.28)	0.09	1.69 (0.41-6.96)	0.46
Clerk	1.02 (0.27-3.84)	0.97	3.69 (0.92-14.75)	0.06
Self employed	0.54 (0.15-2.01)	0.36	2.40 (0.65-8.92)	0.19
Retired	0.61 (0.16-2.39)	0.48	2.33 (0.59-9.12)	0.22
Unemployed	(reference)		(reference)	
Family size				
<= 3	1.31 (0.58-2.96)	0.51	1.48 (0.63-3.46)	0.36
6-4	1.08 (0.50-2.35)	0.84	1.37 (0.59-3.14)	0.45
>=7	(reference)		(reference)	
Average monthly income				
low	(reference)		(reference)	
Intermediate	2.24 (1.31-3.85)	0.003	1.73 (0.95-3.14)*	0.073
High	2.96 (1.55-5.66)	0.001	3.46 (1.74-6.87)*	< 0.0001

*, ** significant difference between case and control's odds ratio P-value<0.0001, <0.05

Table 2. Socioeconomic Factors in Association with Knowledge and Practice of BSE in Multivariate Model

Characteristics	Cases		Controls	
	OR(95% CI)	P Value	OR(95% CI)	P Value
Socioeconomic factors association with regular visit to physician for early diagnosis of BSE				
Education level				
Primary or lower	(reference)		(reference)	
Middle school	2.35 (0.85-6.49)	0.1	4.22 (1.65-10.83)	0.003
High school	3.78 (1.49-9.52)	0.005	2.84 (1.04-7.76)	0.042
College and university	3.94 (0.94-16.5)	0.061	5.9 (1.19-29.04)	0.029
Employment status				
Housewife	(reference)		(reference)	
Employed	2.65 (0.97-7.27)	0.49	1.47 (0.55-3.95)	0.44
Husband's job				
Labor	0.88 (0.04-20.1)	0.93	0.33 (0.06-1.61)	0.17
Clerk	1.29 (0.12-14.3)	0.83	0.18 (0.03-0.96)	0.045
Self employed	2.42 (0.22-25.9)	0.47	0.18 (0.04-0.84)	0.029
Retired	1.44 (0.13-16.4)	0.77	0.26 (0.06-1.22)	0.088
Unemployed	(reference)		(reference)	
Family size				
<= 3	1.67 (0.45-6.17)	0.44	1.37 (0.37-5.10)	0.64
6-4	0.69 (0.20-4.45)	0.58	1.53 (0.44-5.28)	0.50
>=7	(reference)		(reference)	
Average monthly income				
low	(reference)		(reference)	
Intermediate	1.47 (0.63-3.46)	0.37	1.46 (0.64-3.30)	0.37
High	1.47 (0.53-4.11)	0.45	1.63 (0.59-4.49)	0.34
Socioeconomic factors association with knowledge of breast self exam				
Education level				
Primary or lower	(reference)		(reference)	
Middle school	8.93 (3.06-26.1)	< 0.0001	1.46 (0.59-3.63)	0.41
High school	5.29 (2.16-13.0)	< 0.0001	5.49 (2.24-13.5)	< 0.0001
College and university	12.6 (1.82-87.7)	0.010	40.9 (3.99-417)	0.002
Employment status				
Housewife	(reference)		(reference)	
Employed	2.47 (0.63-9.77)	0.19	0.86 (0.29-2.55)	0.79
Husband's job				
Labor	0.15 (0.01-2.26)	0.17	1.78 (0.18-17.1)	0.62
Clerk	0.19 (0.01-2.38)	0.20	2.65 (0.27-26.1)	0.40
Self employed	0.26 (0.02-3.06)	0.28	1.92 (0.21-17.3)	0.56
Retired	0.19 (0.02-2.35)	0.20	1.60 (0.17-14.7)	0.68
Unemployed	(reference)		(reference)	
Family size				
<= 3	0.83 (0.28-2.42)	0.73	1.29 (0.44-3.86)	0.64
6-4	1.01 (0.39-2.59)	0.97	0.75 (0.27-2.11)	0.59
>=7	(reference)		(reference)	
Average monthly income				
low	(reference)		(reference)	
Intermediate	1.72 (0.86-3.44)	0.12	1.33 (0.60-2.96)	0.48
High	0.61 (0.22-1.65)	0.33	1.85 (0.69-4.88)	0.21
Socioeconomic factors association with practice of breast self exam				
Education level				
Primary or lower	(reference)		(reference)	
Middle school	1.30 (0.56-3.03)	0.54	0.92 (0.39-2.16)	0.85
High school	2.57 (1.18-5.55)	0.016	1.42 (0.62-3.28)	0.40
College and university	3.52 (0.94-13.2)	0.062	0.99 (0.21-4.64)	0.99
Employment status				
Housewife	(reference)		(reference)	
Employed	1.41 (0.53-3.72)	0.49	1.19 (0.45-3.14)	0.72
Husband's job				
Labor	0.11 (0.01-1.09)	0.09	1.95 (0.33-11.3)	0.46
Clerk	0.29 (0.05-1.84)	0.97	1.73 (0.28-10.5)	0.55
Self employed	0.19 (0.03-1.19)	0.36	1.64 (0.29-8.98)	0.57
Retired	0.25 (0.04-1.63)	0.48	1.83 (0.33-10.1)	0.49
Unemployed	(reference)		(reference)	
Family size				
<= 3	0.58 (0.20-1.66)	0.31	2.17 (0.77-6.11)	0.14
6-4	0.64 (0.25-1.63)	0.35	1.70 (0.65-4.49)	0.28
>=7	(reference)		(reference)	
Average monthly income				
low	(reference)		(reference)	
Intermediate	1.58 (0.81-3.09)	0.18	1.68 (0.83-3.40)	0.15
High	1.48 (0.62-3.55)	0.37	3.22 (1.33-7.80)	0.01

CMH-test indicates that there is a significant difference among the odds ratios calculated for case and control groups. It means that women with breast cancer have more knowledge and practice of BSE than controls. However in some papers the knowledge and practice of BSE in women with breast cancer is less than others, in our study the findings show another facts and may be it is related to awareness of breast cancer in patients. On the other hand, women in case group had more attention to their body and breast disease after breast cancer diagnose and because of that they have more knowledge and practice of BSE than women without breast cancer in control group.

The knowledge and practice of BSE in women of developing countries is less than westernized countries (Fung, 1998) and in Middle Eastern Asian Islamic women too (Rashidi & Rajaram, 2000). Iranian women as like as Middle Eastern Asian Islamic women have no compatible knowledge and practice of BSE (Haji-mahmoodi & Montazeri et al, 2002) and this problem in low socioeconomic level of women is more than others.

This study provides evidence that we need improvement for women who are in low socioeconomic status level of society. Educational period can be a useful method promoting the practice of BSE (Mc Dermott & Marty, 1984) and we must focus on this level of women. Point to an urgent need for interventions that specifically target low educated women. Irregular visits to the physician, lack of referral for those who do visit, and lack or insufficient health insurance are some factors leading to late diagnosis in women. In addition, women, have various attitudinal barriers such as fear and embarrassment which contribute to under use of the mammograms and breast self examination in this population. Community intervention programs aimed towards understanding known risk factors of breast cancer prevention and healthy lifestyle, and the importance of early detection are thus necessary to help reduce the breast cancer mortality rate in women. In Iran there should be a public awareness regarding cancer problem. This requires projection through communication media and imposition of mass education program. There is a need for a concentrated program for breast cancers (screening program, regular breast examination and mammography) so that early lesions can be detected with a better survival and reduction of mortality which is a key measures. Continued research on the cause of the disease, prevention and improved methods of detection and treatment are essential if we are to make in roads into this, the leading cancer in the world.

References

Bostick RM, Sprafka JM, Virnig BA, et al (1993). Knowledge, Attitude and personal practices regarding prevention and early detection of cancer. *Prev Med*, **22**, 65-68.

Champion VL (2003). Breast-self examination: What now? *Oncol Nurse Forum*, **30**, 723-4.

Eileen CT (2004). African American women's breast memories, cancer beliefs and screening behaviors. *Cancer Nursing*, **27**, 295-302.

Fung SY (1998). Factors associated with breast self-examination behavior among Chinese women in Hong Kong. *Patient Educ Couns*, **33**, 233-43.

Haji-Mahmoodi M, Montazeri A, Jarvandi S, et al (2002). Breast self-examination: knowledge, attitudes and practices among female health care workers in Tehran, Iran. *Breast J*, **8**, 222-5.

Harirchi I, Ebrahimi M, Zamani N, et al (2000). Breast cancer in Iran: a review of 903 case records. *Public Health 2000*, **114**, 143-5.

Harris R, Leininger L (1995). Clinical strategies for breast cancer screening: weighing and using the evidence. *Ann Intern Med*, **122**, 539-47.

Humpel N, Jonnes SC (2004). "I don't really know, so it's a guess": women's reasons for breast cancer risk estimation. *Asian Pac J Cancer Prev*, **5**, 428-32.

Jatio I (2003). Screening clinical breast examination. *Surg Clin North AM*, **83**, 789-801.

Kleinbaum DG. (1994). Logistic Regression. Springer-Verlag, 73-101.

McCready T, Littlwood D, Jenkinson J (2005). Breast self-examination and breast awareness: a literature review. *J Clin Nurs*, **14**, 570-8.

Mc Dermott RJ, Marty PJ (1984). Seeking an effective strategy for promoting breast self-examination among women. *Patient Educ Couns*, **6**, 116-21.

Miller BA, Feuer EJ, Hankey BF (1993). Recent incidence trends of breast cancer in women and the relevance of early detection: an update. *CA Cancer J Clin*, **43**, 27-41.

Rashidi A, Rajaram SS (2000). Middle Eastern Asian Islamic women and breast self-examination. Needs Assessment. *Cancer Nurs*, **23**, 64-70.

Shamsa AZ, Mohagheghi MA (2002). Final report of the National project for cancer registry. Islamic Republic of Iran.