Original Article

Indian Journal of Preventive Medicine
Volume 5 Number 2, July - December 2017
DOI: http://dx.doi.org/10.21088/ijpm.2321.5917.5217.1

A Study of Breast Self Examination and Its Association with Selected Demographic Variables among Rural Women

Saba M. Mansoor
Assistant Professor, Department of Community Medicine, Kanachur Institute of Medical Sciences, Mangalore, Karnataka 575018, India.

Brig (Dr) Hemant Kumar
Professor & Head, Department of Community Medicine, A.J. Institute of Medical Sciences & Research Centre, Mangaluru, Karnataka 575004, India.

Abstract

Breast cancer is a leading cause of death among females worldwide and accounts for 25% of all cancer cases and 15% of all cancer deaths among them. Early diagnosis and timely treatment can save millions of lives. Present study is a community based cross sectional survey carried out among rural women in South India, with an aim to find out their awareness levels and knowledge on breast cancer and prevalence of practice of Breast Self Examination (BSE) among them and also examine the existing relationships between certain demographic variables i.e. age, education levels and marital status and practice of BSE. The study population comprised of 1370 rural women. Two research questions and three null hypotheses guided the study. The instruments used for data collection were validated structured questionnaire and a Health Educational Interventional Package (HEIP). Demographic information on the rural women was also obtained and analysed. The result of the study indicated dismal levels of awareness on breast cancer and low levels of practice of BSE among the participants. Further, the study revealed significant association between respondents educational level/age and practice of BSE. The study reinforces the need to develop interventional strategies to increase BSE practices, especially among the rural women and empower women with information about early detection methods of breast cancer which in turn will change the outcome of the disease .

Keywords: Demographic Variables; Breast Self-Examination; Rural-Women; Health Education; Educational Level.

Introduction

Cancer is a major global health problem and the second leading cause of death globally and was responsible for 8.8 million deaths in 2015 [1]. The most commonly diagnosed cancers during the year 2012 were, the lung cancers 13.0% (1.82 million), breast cancers 11.9% (1.67 million), and colorectal cancers 9.7% (1.36 million) [2]. However, the Breast cancer is perhaps the most feared cancer as it affects the perception of sexuality to a degree far greater than any other cancer as breast has been regarded as a symbol of beauty, sexuality and motherhood. Any potential loss or alteration of breast tissue shakes up the very personality of a woman [3]. According to GLOBOCAN 2012 (IARC) estimates; Breast cancer is also the leading cause of cancer deaths among females worldwide and accounts for 25% of all cancer cases and 15% of all cancer deaths among females with an estimated 1.7 million cases and 521,900 deaths in 2012. In India, it is estimated that during 2015; there were more than 1.5 lakh cases of breast cancer, with nearly 76,000 deaths [4] .

The high mortality reported on breast cancer in low and middle income countries is perhaps due to its late presentation and poor diagnostic as well as treatment facilities [5]. In India, 70-80% of the breast cancer patients present in stage III or IV, while in west, majority of breast cancers (more than 75%) present in stages 1 and 2, resulting in good survival rates [6]. According to American Cancer Society, early detection of breast cancer can save thousands of lives

Corresponding Author: Brig (Dr) Hemant Kumar, Professor & Head of Department, A.J. Institute of Medical Sciences &Research Centre, Mangaluru, Karnataka 575004, India.
E-mail: doctorhemantkumar@gmail.com

Received on: July 22, 2017
Accepted on: August 17, 2017

each year [7]. Although there are many screening methods available to detect breast cancer at an early stage i.e. Breast self-examination (BSE), Clinical breast self-examination (CBE), Mammography, Ultrasonography (USG) , Computerised Tomography (CT Scan) and magnetic resonance imaging (MRI) but, BSE is perhaps an easy, safe, simple, and cost free screening method, with no adverse effects; which any woman can practice during her leisure time with little training.

Research Questions

I. To assess the existing levels of knowledge about breast cancer and prevalence of practice of Breast Self Examination among rural women under study.

II. To find out the impact of health education among participants on knowledge gained on breast cancer and self breast examination and its association with selected demographic variables .

Materials and Methods

Present study was a community based descriptive interventional study carried out among 1530 rural women who were in the age group of 20-55years; at Rural Health Training Centre Pane; which is the field practice area of A.J. Institute of Medical Sciences & Research Centre Mangalore, Karnataka . Women who were staying for a minimum period of one year in Pane, were included in the study. However, confirmed cases of Breast Cancer were excluded from the study. The period of study was one year i.e. from 01 August 2015 to 31 July 2015.

The Research questionnaire comprised of 44 questions related to awareness on cancer and Self breast Examination. Pre and post test (after intervention of health education package) knowledge scores were calculated and were subsequently analysed to find out its association with certain demographic variables i.e. age, education level and marital status. Chi-square, was adopted for testing the null hypotheses at 0.05 level of significance.

Results

Demographic Profile

The majority of study population i.e. 73.43% were Hindus, 18.32% were Muslims while remaining rural women belonged to other religions. A significant percentage of women i.e. 39.48% were found to be in the age group of 20-29 years followed by just higher age group i.e. 30-39 years which comprised 34.45% women, while the lowest percentage i.e. 08.17% belonged to the age group 50 years and above. Majority of the women i.e. 34.01% had received education only up to primary level while 09.34% were graduates. The percentage of women with Post graduate qualification was very small i.e. 01.89%, while 30.14% women were senior secondary. The percentage of illiterate women was 07.00%, 14.45% women were High school while 03.13% participants had diploma qualification. Most (85.18%) of the women were married while a small percentage i.e. 13.35% were unmarried. Twenty two (1.60%) of the participants also had history of breast cancer among their family members. Most (85.18%) of the participants were married while a small percentage (13.35%) of women were unmarried. A very small percentage of participants i.e. 0.21% were divorcee, 0.80% were widow, while 0.43% were found to be separated (Table 1).

Impact of Health Education

Data in Table 2 /Figure 1 shows that post-test knowledge scores of rural women on breast cancer was found to be much higher than the pre-test (0-33) knowledge scores, as some women acquired "very good" knowledge after intervention of health education. The data also depicts that the mean post-test knowledge score (33.79 ±5.69) among participants was much higher than their mean pre-test Knowledge score.(17.69 ±7.98). The study also reveals that during pre-test majority (39.92%) of the rural women had only "average knowledge" of SBE; while a fairly large percentage of women (32.55%) had "poor knowledge" and only (27.51%) of them had "good knowledge". After intervention of health education 46.56% women were found to be having "good knowledge", 27.08% acquired "average knowledge", and 17.81% reached a level of " very good knowledge" while only a very small percentage i.e. 08.54% of participants were found to be in the category of " poor knowledge ".

Frequency of BSE and its Timings

Findings on practice of SBE among rural women showed that only 13.72% of participants had been practicing SBE while remaining 86.27% had never practiced SBE ever in their life time. Out of the 188 respondents that had performed BSE, 30.85% said they performed it once a month, 25% performed it once in two months, 11.17% performed it once in three months while 32. 97% performed BSE anytime that was convenient to them . Concerning the timing of BSE, 31.38% respondents said they performed BSE

Table 1: Distribution of rural women according to their demographic variables (N=1370)

S. No.	Demographic Variables	Frequency (F)	Percentage (%)
1.	**Age (in Years)**		
	20-29	541	39.48
	30-39	472	34.45
	40-49	245	17.88
	50 and above	112	08.17
	Total	1370	100
2.	**Religion**		
	Hindu	1006	73.43
	Muslim	251	18.32
	Christian	109	07.95
	Others	04	0.29
	Total	1370	100
3.	**Marital Status**		
	Married	1167	85.18
	Unmarried	183	13.35
	Divorcee	03	0.21
	Widow	11	0.80
	Separated	06	0.43
	Total	1370	100
4.	**Literacy Status**		
	Illiterate	96	07.00
	Primary Education	466	34.01
	High School	198	14.45
	Senior Secondary	413	30.14
	Diploma	43	03.13
	Graduate	128	09.34
	Post Graduate	26	01.89
	Total	1370	100
5.	**Family History of Breast Cancer**		
	Yes	22	01.60
	No	1348	98.39
	Total	1370	100
	Have you ever performed SBE		
	Yes	188	13.72
	No	1182	86.27
	Total	1370	100

Table 2: Distribution of knowledge scores of rural women on self breast examination (n=1370)

Grade of Knowledge	Scores	Pre-Test		Post-Test	
		Frequency	Percentage	Frequency	%
Poor	0-11	446	32.55	117	08.54
Average	12-22	547	39.92	371	27.08
Good	23-33	377	27.51	638	46.56
Very Good	34-44	-	-	244	17.81
Total		1370	100	1370	100

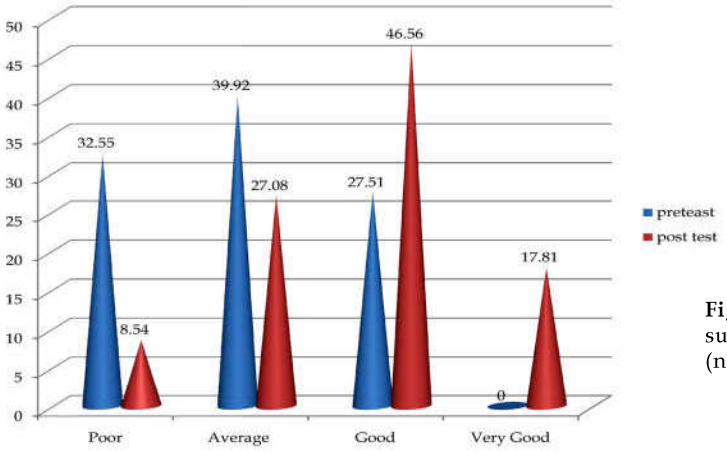

Fig. 1: Distribution of knowledge scores of subject women on breast self-examination (n=1370)

Table 3: Practice of self breast examination (n= 1370)

1. Have you ever performed breast examination?	**Yes**	**Frequency**	**Percentage (%)**
	No	**188**	**13.72**
		1182	**86.27**
2. If yes, how often do you perform ?			
	Once a month	58	30.85
	Once in two months	47	25.00
	Once in three months	21	11.17
	No fixed frequency	62	32.97
3. At what time do you perform breast self examination?			
	Before menses	59	31.38
	After menses	96	51.06
	During menses	0	0.00
	No fixed time frame	33	17.55
4.If you don't, perform SBE , what are your reasons			
	Lack of awareness	877	74.19
	Did not know the technique	89	7.52
	Find it difficult to remember when to do	44	3.72
	Find it embarrassing	17	1.43
	Has no time	33	2.79
	Has no family history of breast cancer and do not see the need for it	122	10.32

before the menstruation while the remaining 17.55 % did not have any specific time for performing BSE. Reasons for not performing BSE were also enquired. Out of the 188 respondents who had never performed BSE, 74.19% respondents cited "lack of awareness" as the main reason for not practicing SBE, 7.52% respondents quoted "lack of knowledge of correct technique" for its non- performance .while 1.43% women (3.0%) found it embarrassing to perform (Table 3).

Association of Post-Test Knowledge Scores with Selected Demographic Variables i.e. Age, Education and Marital Status

• *Association with Age:* During pre-test i.e. before intervention of health education, the maximum mean percentage of knowledge score on breast cancer and SBE among participants was found in the age group of 30-39 years and it was 56.90% , while least mean percentage score was seen in the age group of 20-29 years and it was 50.57% .

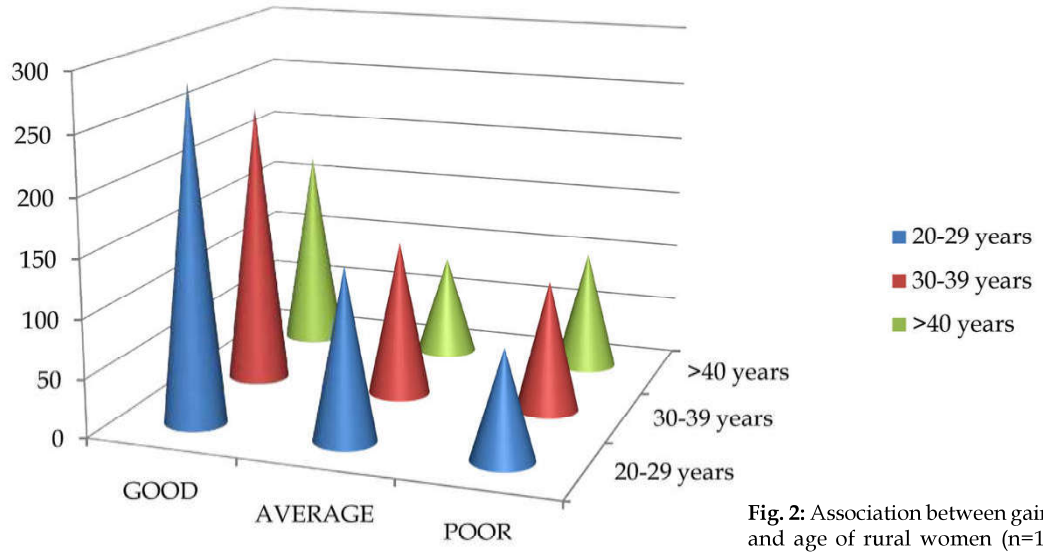

Fig. 2: Association between gain in knowledge score and age of rural women (n=1370)

Table 4: Association between gain in knowledge score and age of rural women (n=1370)

S. No.	Age	Gain In Knowledge			Total
		Good/Very Good	Average	Poor	
1.	20-29 years	285	146	93	524
2.	30-39 years	242	133	112	487
3.	>40 years	171	86	102	359
Total		698	365	307	1370

Table 5: Association between gain in knowledge score and education level of rural women (n=1370)

S. No.	Educational	Gain In Knowledge			Total
		Good/Very Good	Average	Poor	
1.	High School and below	373	233	154	760
2.	Senior Secondary and Diploma	224	140	92	456
3.	Graduates and post graduates	96	47	11	154
	Total	693	420	257	1370

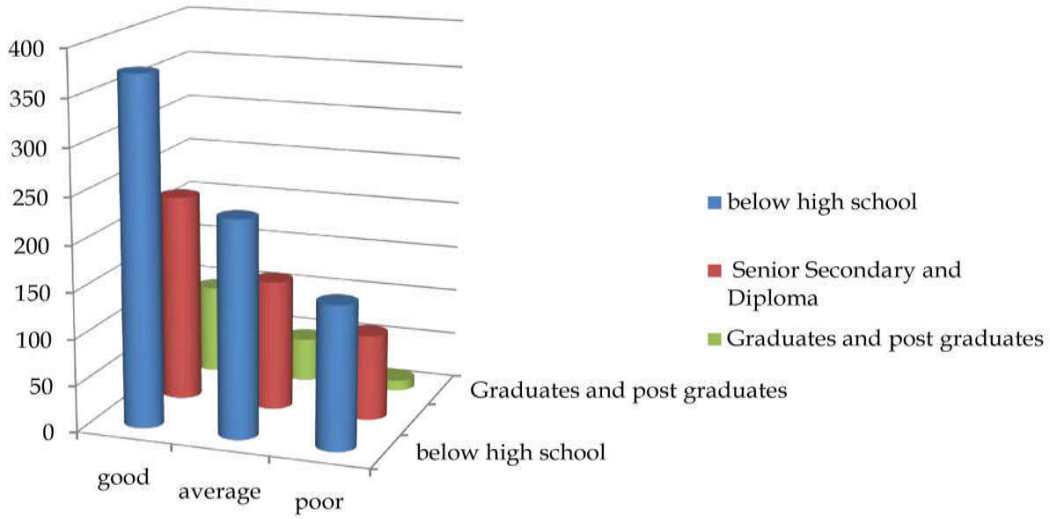

Fig. 3: Association between gain in knowledge score and education level of rural women (n=1370)

However, post-test, the mean percentage of knowledge score improved to 81.15% and it was seen in the age group of 20-29 years; while lowest mean percentage of knowledge score was found to be 71.18% and it was in the age group of 40 years and above. Computing on two different hypothesis i.e. (i) Gain in knowledge and age are independent. and (ii) Gain in knowledge score and (younger) age of women are dependent; the results (Table 4/Figure 2: $\chi 2 = 14.4$, df=4, probability = 0.006. with $p < 0.05$,) clearly indicate that there was a significant association between gain in knowledge and age of women, hence the first hypothesis was rejected and the second (the research) hypothesis was accepted.

• *Association with Education:* During pre-test, the maximum mean percentage of knowledge score on breast cancer and SBE among participants was found to be 60.30% and the category was graduate/ post-graduates , while it was found to be lowest i.e. 43.12% in "high school and below" category. However, during post-test, the knowledge scores improved to 85.93% and expectedly the category was graduates /post graduate while lowest mean scores was 65.97% and it was found again in high school and below category. Computing on two different hypothesis i.e.

(i) Gain in knowledge will be independent of education level and (ii) Gain in knowledge will be dependent on higher levels of education ; the results (Table 5/ Figure 3 : $\chi 2 = 17.2$, df=4, $p = 0.002$.), clearly indicate that there was a significant association between gain in knowledge score and education level of women under study, hence the second(research) hypothesis was accepted.

Table 6: Association between gain in knowledge score and marital status of rural women (n=1350)*

S. No.	Marital Status	Gain In Knowledge			Total
		Good/Very Good	Average	Poor	
1.	Married	652	314	201	1167
2.	Unmarried	92	59	32	183
	Total	744	373	233	1350

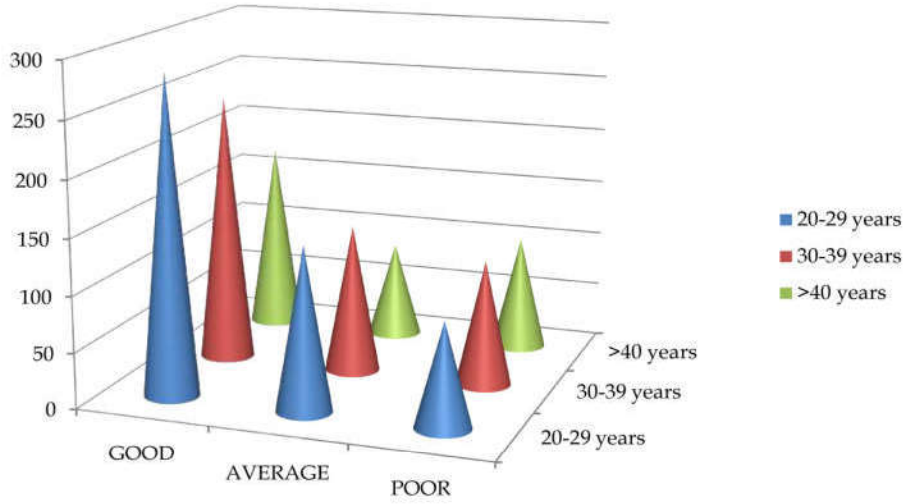

Fig. 4: Association between gain in knowledge score and marital status of rural women. (n=1350)

• *Association with Marital Status:* During pre-test, the mean percentage score on knowledge on breast cancer and SBE among participants was found to be 66.21% among married category while, the mean percentage score was found to be 41.36% in the unmarried category. However, post-test, the mean percentage of knowledge score in the married category improved to 87.31% while mean the knowledge score improved to 65.95% in the unmarried category. Working on two different hypothesis i.e. (i) gain in knowledge will be independent of marital status of participants and (ii) gain in knowledge will be dependent on marital status of participants ; the results (Table 6/Figure 4: $\chi 2 = 2.53$, d f=4, p = 0.282.), clearly indicate that there was no significant association between gain in knowledge score and marital status of women under study, hence null (first) hypothesis was accepted and second (research) hypothesis was rejected.

Discussion

The findings of this study showed that the rural women under study had poor knowledge on breast cancer and breast self-examination as only 39.92% of them had average knowledge while 27.51% had good knowledge. However, no woman had "very good" knowledge. The study findings were found comparable to a study conducted by Funke and Krause BB (2008) [8] on the impact of a health education intervention programme among women in Saudi Arabia that showed, only 11.6% of the samples had good knowledge on breast self-examination. These findings could also be compared with a study conducted among rural women in Udupi by Rao R S et al (2005) [9] where they found only 56/342 (16.4%), to be familiar with BSE while none of them had ever practiced it.

However, the intervention of health education posted a significant increase in overall awareness on breast cancer and its various aspects among the participants. In another study by Abd El Aziz HM et al (2009) [10], on "Impact of A Health Education Intervention Program about Breast Cancer among Women in a Semi-urban Area in Alexandria, Egypt" it was observed that there was a highly significant improvement in all knowledge items of the intervention group from pre to post-test and 75.0% practiced breast self examination (BSE) in post-test compared to 70.0% who did not practiced it in pre-test.

The findings of present study also brought out that there was a significant association of knowledge on breast cancer and SBE among participants with

selected demographic variables i.e. age and education level, while no significant association was found between marital status and knowledge scores. Findings of this study were further supported by a study in Iran by Ali Montazeri et al (2008) [11] who found out that performing breast self-examination was significantly related to: age, marital status, education, knowledge of breast cancer and knowledge about breast cancer .

In another study by Iraj Harirchi et al (2012) [12] in Iran, it was revealed that the risk of not performing breast self examination for illiterate women was 4.56 times more than literate women (P value <0.0001) and the risk of not having clinical breast examination and mammography for illiterate women was 2.51 and 3.14 times more than literate women, respectively. In another study by Abd El Aziz HM et al (2009) [10] in Egypt, it was observed that women's education and knowledge scores were significantly associated with the practice of BSE.

Conclusion

Breast cancer is the most common and lethal malignancy among women across the world . Early diagnosis (and treatment before metastasis) is the corner stone for better outcomes.

Unfortunately the findings of the present study reveal that the rural women were not possessing good knowledge on breast cancer and prevalence of Self Breast Examination was also very poor though; it is such a simple and convenient screening tool for early detection of breast cancer. This is primarily because health personnel, the media, news paper and common magazines do not give desired emphasis on breast cancer and the technical aspect of BSE. Needless to say that the doctors in primary health centres can play a pivotal role in providing useful information to the community regarding breast self-examination for early detection of breast diseases especially breast cancer.

Limitations

As the study was conducted only in a limited rural population; the findings of the study cannot be generalized.

Further, the use of structured questionnaire restricts the amount of information that can be collected from the respondents. Lastly, no follow up was done after the post-test period.

References

1. W.H.O. CANCER, Fact sheet, February 2017. http://www.who.int/mediacentre /fact sheets/fs297/en/ Accessed on 06 June 2017.
2. Cancer statistics, 2016. http://onlinelibrary.wiley.com/doi/10.3322/caac.21332 /full. Accessed on 06 June 2017.
3. Leila M, Nada C, Kais C, Jawaher M. Sexuality after breast cancer: cultural specificities of Tunisian population. The Pan African Medical Journal. 2016;25:17.
4. Globocan 2012. http://globocan.iarc.fr/Default.aspx. Accessed on 07 June 2017.
5. Catia C. Confortini, Brianna Krong; Breast cancer in the global south and the limitations of a biomedical framing: a critical review of the literature. Health Policy Plan 2015;30(10):1350-1361.
6. Call for Action: Expanding cancer care in India. July-2015. http://www.ey.com/Publication/ vwLUAssets/EY-Call-for-action-expanding-cancer-care-in-india/$FILE/EY-Call-for-action-expanding-cancer-care-in-india.pdf. accessed on 08 June 2017.
7. American Cancer Society Recommendations for the Early Detection of Breast Cancer. https://www.cancer.org/cancer/breast-cancer/screening-tests-and-early-detection/american-cancer-society-recommendations-for-the-early-detection-of-breast-cancer.html. Accessed on 08 June 2017.
8. Funke L, Krause BB. Prospective analysis of the long-term effect of teaching breast self-examination and breast awareness. European Journal of Cancer Care 2008:17(5):477-82.
9. Rao RS, Nair S, Kamath VG. Acceptability and effectiveness of a breast health awareness programme for rural women. J Med Sci. 2005;59:398–402.
10. Obaji N, Elom H, Agwu U, Nwigwe C, Ezeonu P, Umeora O. Awareness and Practice of Breast Self-Examination among Market Women in Abakaliki, South East Nigeria. Annals of Medical and Health Sciences Research. 2013;3(1):7-12.
11. Alimotezari Mriam Vahda ninia, Iraj Harirchi, Amir M ahmood Harirchi, A kram Sajadian, Fatemeh Khaleghi, Mand ana Ebrahimi,S hahpar Haghighat and Soghra JarvandiBreast cancer in Iran: need for greater women awareness of warning signs and effective screening methods. Asia Pacific Family Medicine 2008;7:6
12. Iraj Harirchi, Saeedeh Azary, Ali Montazeri, Seyed Mohsen Mousavi, Zahra Sedighi, Gelavizh Keshtmand, Zahra Zarinkolah, S M Amin Khalifeh, Soltani. Literacy and Breast Cancer Prevention: a Population-Based Study from Iran. Asian Pacific J Cancer Prev, 2012;13:3927-3930.