

Full Length Research Paper

Participation in breast cancer prevention: Assessing women's knowledge and their participation in mammography in Tehran, Iran

Maryam Ahmadian*, Asnarulkhadi Abu Samah, Ma'rof Redzuan and Zahid Emby

Faculty of Human Ecology, Universiti Putra Malaysia, 43400, UPM Serdang, Selangor, Malaysia.

Accepted 16 February, 2012

A survey was carried out from July through October, 2009 to study the knowledge and women's participation in mammography. A total of 400 women in urban areas of Tehran, Iran were randomly selected in this study. Although, the general knowledge of women was fairly good, they did not participate in mammography in the last 2 years. However, the mean score of the knowledge of women who were adherent to mammography was higher than the non-adherent group. These responses provide evidence that health education on breast cancer screening knowledge is necessary for future participation in breast cancer prevention programs in Iran.

Key words: Community health, breast cancer, knowledge, mammography.

INTRODUCTION

Breast cancer is the most frequent type of cancer suffered by women, which has accounted for 548,000 deaths in 2007 (WHO, 2008). In Iran, breast cancer is one of the most important growing issues (Montazeri, 2003); though this terminal disease cancer affects Iranian women at least one decade later than their counterparts in developed countries (Harirchi, 2000). The incidence of breast cancer among Iranian women is around 22 per 100,000 (Mousavi et al., 2007), and less than one out of five women suffering from this disease, are early diagnosed (Mousavi et al., 2007) compared with three out of five among the American women (American Cancer Society, 2008). It is learned that the death rate from breast cancer could be reduced if more women are engaged in breast cancer early detection activities such as breast self exam, clinical breast exam and mammography. Randomized trials comparing mammography with no mammography screening found that women might benefit a 15% relative risk reduction in mortality from mammography (Gotzsche, 2006).

Promoting women participation in breast cancer prevention is crucial in enhancing women's health status. Thus, women have a role to play in the prevention of breast cancer through change in their health behaviours. Nowadays, the community-based cancer screening programs has brought about a new path to emphasize cancer prevention needs by the community members. However, for a successful intervention, the community members especially the women should be fully knowledgeable and willing to participate. In other words, a women's community should have a good knowledge to participate in community-based programs in health matters and at the same time, they also cooperate with health professionals.

Women do not participate in breast cancer prevention programs because they do not have access to free mammogram or suffer from a lack of awareness and knowledge. So, community participation in breast cancer prevention programs such as giving awareness to women on early detection can be very essential in health care. The emphasis on community participation in health since the Alma-Ata Conference in 1978 as the heart of primary health care has increased the need for planners in health programs and in funding agencies to

*Corresponding author. E-mail: marydian50@yahoo.com.

understand the way in which community participation develops (Rifkin, 1986). In order to promote community participation in breast cancer prevention, factors that influence women participation in community-based program need to be understood to provide a guiding framework for the planning, implementation and evaluation at higher levels of community participation in health (Ahmadian et al., 2010).

The logic of public participation in health emphasized two major purposes. The first one is related to the notion that health as a total well-being not only an individual business, but also of communities. The second point is that health care is the responsibility of the people themselves, not only by trained professionals (Raeburn and Rootman, 1998), hence community participation is crucial. However, participation is sometimes influenced by the political, social, economic and cultural environment. One should bear in mind that the community does not have power to control health or decision-making in some developing countries (Zakus, 1998), and this influences participation.

Research on early breast cancer screening behaviours among women in the Middle Eastern countries is scanty, and there are only a few published studies on the breast cancer screening behaviours of Iranian women, particularly mammography use. In addition, available information about the health status and health practices within diverse cultural groups is limited, and there is poor understanding about the factors affecting health education (Hoare et al., 1994). According to Reddy and Alagna (1986), the relationship between knowledge and participation in mammography as a trial exam is not simple. Women may not know that they should receive a regular breast cancer screening and may assume that screening repetition would not be unnecessary if they have had it once (Im et al., 2004).

Previous researches on American and Mexican American women discovered that women with more knowledge were more likely to have had mammograms and they were younger (ages 40 to 49 years) (Danigelis et al., 1996). Several studies examining factors affecting screening practices among women from Asian descent have demonstrated that the lower screening rate is associated with their knowledge and perceptions of preventive health measures (Chua, 2005; Juon et al., 2004; Petro-Nustus and Mikhail, 2002; Nissan, 2004; Benner et al., 2001). Studies in Korea (Joun et al., 2004) and Turkey (Secginli et al., 2006) have shown that knowledge of breast cancer screening guidelines was a major predictor of regular screening. Women who had knowledge of mammography guidelines were 10 times more likely of having regular mammograms (Secginli et al., 2006). This finding supported the positive effects of knowledge of mammography guidelines on getting regular mammograms (Parsa et al., 2006).

Many studies also concurred that knowledge is one

important influencing factor in mammography (Jarvandi et al., 2002; Secginli et al., 2006; Han et al., 2000). Nevertheless, some studies have found no correlation between breast cancer knowledge and screening behaviour (Schulter, 1982). Likewise, a study on undergraduate and graduate students found that knowledge about the risk factors was associated with frequency of breast self exams in graduate students and with proficiency and frequency of breast self exams among both undergraduate and graduate students (Mammon and Zapka, 1986). Champion (1987) also reported knowledge to be the second highest predictor of frequency of breast self exams. Therefore, it is necessary to improve women's knowledge and practice towards mammography, because it facilitates the early diagnosis of breast cancers among women.

The purpose of this study is to collect information about early breast cancer detection behaviours among Iranian women with the emphasis on their knowledge in breast cancer prevention. This enquiry attempts to assess the knowledge and participation with respect to mammography which is regarded as a fundamental step to initiate community participation in breast cancer prevention.

MATERIALS AND METHODS

Study sample

A total of 400 women aged 35 to 69 years were selected using a multistage cluster sampling procedure for this study. They were from hospitals affiliated to Tehran University of Medical Sciences in Tehran, Iran. A face-to-face interviewing method was used for data collection, which was conducted in the waiting area of gynecology clinics.

The women were classified into two groups. The first group is those who participated in mammography in the past 2 years and the second are those who did not attend mammography in the past 2 years. The former is known as participant group (n=314 respondents), and the latter is the non-participant group (n=86 respondents). To ensure the principle of randomness, each client was given a number in the sampling process. Then, a list of the respondents was made ready for a sampling plan in the waiting room before data collection. Respondents were selected by calling their numbers randomly. Women which were identified through a pre-interview having breast cancer or disease in any kind were excluded from the study. Approval to carry out the survey was provided by Cancer Institute, Tehran University of Medical Sciences in Tehran, Iran and the participating hospitals prior to the implementation. The simple random sampling and face-to-face data collection by female trained interviewers enhanced the response rate with no main problems of understanding on the question asked.

Instrumentation and measurement

The instrument was developed based on previous literatures. The questionnaire was translated by three health care professionals fluent in both English and Persian. There were five items to assess the knowledge about mammography, and was measured using an

Table 1. Demographic characteristics of the respondents (n = 400).

Variable	Respondents						
	Non-participant n = 314 (78.5%)		Participant n = 86 (21.5%)		χ^2	P	
	n	%	n	%			
Age	-40	76	24.2	20	23.3	26.809	.001
	41-45	69	22.0	35	40.7		
	46-50	58	18.4	23	26.7		
	>51	111	35.4	8	9.3		
Education	Primary school	124	39.5	4	4.7	67.26	.001
	Diploma	69	22.0	11	12.8		
	Graduate	81	25.8	61	70.9		
	Postgraduate	40	12.7	10	11.6		
Marital	Married	215	68.5	59	68.6	9.65	.008
	Widow	69	22.0	10	11.6		
	Single	30	9.5	17	19.8		
Occupation	Full time employee	89	28.3	58	67.4	48.58	.001
	Part time employee	58	18.5	14	16.3		
	Unemployed or housewife	167	53.2	14	16.3		
Income	Low	111	35.4	3	3.5	33.67	.001
	Middle	173	55.1	70	81.4		
	High	30	9.5	13	15.1		
Insurance	Public	229	72.9	77	89.5	25.24	.001
	Private	15	4.8	9	10.5		
	Uninsured	70	22.3	-	-		

ordinal scale ("yes"=1 "no and I don't know"=0). The instrument examined disparities in relation to age, marital status, education, occupation, income and participation in mammography. The instrument also included items related to the reasons for participation in mammography. The unidimensionality of the scale was confirmed by factor analysis. The Cronbach's alpha value was 0.96. The instrument for the study has been revised for content and face validity by an expert panel. More information of the scale and the instrument has been published elsewhere (Ahmadian et al., 2010).

Data analysis

Data was analyzed using Statistical Package for Social Sciences (SPSS 13). Descriptive and inferential statistics were used to describe the socio-demographics and knowledge of the respondents. Statistical significance was determined at the level 0.05. The assessment of frequency distribution for each variable confirmed that the data set had no problems with skewness and kurtosis. Bivariate analyses were conducted using analysis of variance (ANOVA), Chi-square, and independent t-tests. The Chi-square test was used to identify a significant association between participation in mammography and demographic factors. The t-test

was used to determine significant differences in the mean score of knowledge between the participant and the non-participant groups. In this study, a series of one-way ANOVAs were used to compare the differences in knowledge, based on socio-demographic variables. Then, Post Hoc tests (Tukey HSD test) were conducted. Preliminary exploratory data analysis was carried out to appraise for missing values, detect outliers and check for normality.

RESULTS

Socio-demographic background of the respondents and participation in mammography

Table 1 shows the socio-demographic background of the respondents (participant group and non-participant group). Basically, about 21.5% of respondents have participated in mammography in the last 2 years. Selected demographic variables between these two groups were compared by means of Chi-square test.

The Chi-square (χ^2) test shows there is a significant

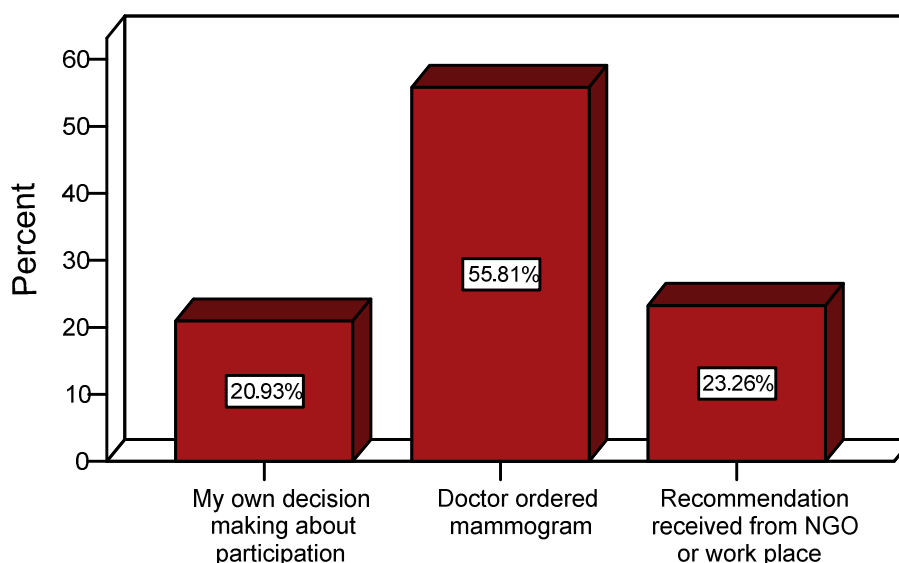


Figure 1. The main reason for participation in mammography.

relationship between age, education, marital status, occupation, income, insurance status and participation in mammography (all $P < 0.01$) for both groups.

In addition, a comparison between participating and non-participating respondents, the study demonstrates that there are some differences. It reveals that the educated, married, full time working women with middle income ranging around 41 to 45 years old are able to improve their health behavior in mammography. The findings also revealed that most of non-participating women are unemployed or housewives (53.2%) and their level of education is limited to primary and secondary school with age over 50 years old.

This study has shown that socio-demographic factors play an important role in women's health and well-being in terms of breast cancer prevention. Nevertheless, there is no cost-effective program to provide a quicker way for mammography in Iran. Further, the emphasis on women's socio-demographic factors in Iran does not mean ignorance of the reason for participation in mammography. These are doctors who diagnose mainly the mammography need for the women in Iran. Figure 1 shows the most common reasons for participation in mammography among Iranian women.

Knowledge and participation in mammography

Five items were asked to assess the respondent's knowledge about mammography (Table 2). Most of the women gave a positive reply to all statements. However, item four has the lowest score (70.5%) for knowledge. Likewise, the women with answers "no and I don't know"

to this statement showed the highest score. It means women have general knowledge about this medical examination, but they would not consider mammography as a tool for early detection if there is no symptom.

Independent-sample t-test was used to determine whether there is any significant difference in the knowledge between the two groups of respondents (Table 3). The results revealed that there was a significant difference in knowledge between participant and non-participant groups [$t(347.91) = 8.41, P = .000$]. To sum up, the mean knowledge score was higher for the participant group ($M = 4.75, SD = .866$) compared to non-participant group ($M = 3.46, SD = 2.165$).

DISCUSSION

The Chi-square (χ^2) test revealed that there is a significant relationship between age, education, marital status, occupation, income, insurance status and participation in mammography (all $P < 0.01$) among 400 respondents.

The rate of participation is high comparing previous studies in Iran. In previous studies, women's participation rate in mammography was about 12.4% in Hamadan (north-west of Iran) (Parsa and Kandiah, 2005) and 3% in Zahedan (south-east of Iran). These studies showed that a low-level of education, low-income and insufficient health insurance coverage resulted in a low rate of these practices in comparison with women who live in Tehran, Iran. This could also be due to the fact that women who live in Tehran have more access to hospitals and breast cancer prevention programs or

Table 2. Distribution of respondents on knowledge about mammography (n=400).

Item	Knowledge	
	No and I don't know N (%)	Yes N (%)
Breast cancer can be cured, if it is detected early by screening such as mammography.	76 (19.0%)	324 (81.0%)
Women aged 40 and older should have a yearly mammogram.	93 (23.3%)	307 (76.8%)
Mammogram can find lumps that cannot necessarily be felt by doctor or by yourself when doing breast self exam.	103 (25.8%)	297 (74.3%)
Although no symptoms exist, mammogram is necessary.	118 (29.5%)	282 (70.5%)
Women younger than 40 years should have a mammogram if they have family a history of breast cancer.	114 (28.5%)	286 (71.5%)

activities comparing to those who live far from the capital city such as Zahedan. With respect to Iranian women, who are residents of the USA and their participation in mammography, Shirazi (2006) noted that the mammography screening rate was higher than in the year 2010. It shows Iranian women who are living in the USA, like Asian dwellers have improved their knowledge and participation in mammography screening more than Iranian women who live in Iran.

This phenomenon proved that the variability of community participation in health is impacted by geographical location, community type, social network and community capacity to take a role in defined health programs. The above mentioned literatures verify that the social demographic situation of individuals highly affects their health seeking behavior, with respect to mammography. On another accounts, it is worthwhile to say that primary health care systems in developed countries, like America, have an impact on health and well-being of Asian women, because mammography in developed countries is an obligatory task but in less developed countries, like Iran, it is mostly a diagnostic event.

Independent-sample t-test showed that there is a significant difference in knowledge between the two groups of respondents. In this study, the group of participant women with more knowledge has participated in mammography more than non-participant ones with lower knowledge. This showed that knowledge can increase the degree of participating women's acceptance, which is the key to participation in mammography among Iranian women. Although most of the respondents gave positive answer to all items on

knowledge, participation in mammography showed a low rate among the 400 respondents. It seems participation in mammography in Iran does not have a strict relationship to knowledge among whole respondents.

One way to raise the participant's knowledge is through involvement in the test processes. As mentioned earlier, social-demographic factors, such as education and occupation, had an impact on women's participation in mammography. In this study, the participant group is within the aged range between 41 to 45 years old, who can be considered as sexual actively individuals. They are the potential group that has a frequent visit to the gynecologist which can be further informed about matter related to breast cancer. It is also believed that occupation help significantly in increasing personal desire of Iranian women for participation in mammography, as in this study revealed that women who have participated in mammography screening were full time employees. A major reason for their participation is related to breast cancer prevention programs in work places run by some community-based organizations such as breast cancer advocates and non-governmental organizations (NGOs). With regards to that, it seems those programs have played a critical role among Iranian women who are employees. It can increase their knowledge and awareness, and help in forming their attitude towards participation in mammography. In future, this can be a mechanism or strategy to encourage Iranian women, especially those who are working, to develop a new health behavior change.

Based on bivariate analysis, this study showed that participation in mammography was significantly related to more knowledge for participant group (all $p < 0.001$). It

Table 3. Comparing participant and non- participant knowledge scores by using independent –sample t-test (n = 400).

Knowledge	N	Mean	SD	t	df	P
participant	86	4.75	0.866	8.410	347.91	0.000
Non - participant	314	3.46	2.165			

is obvious that knowledgeable women can easily change their health seeking behaviors. Knowledge can reduce women's fear of breast cancer and mammography. This may encourage them to visit their physician on a regular basis. Women who participated in mammography are well-informed and well-educated on its utilization. Thus, knowledge is an important element in increasing women's awareness towards participation in mammography. However, in less developed countries such as Iran, many variables should be identified for participation in mammography. Iran has a huge number of younger populace and the breast cancer prevalence triggers in earlier ages than in their counterparts from western countries. As proven by empirical research elsewhere that breast cancer occurs in the younger age group among Asian women, 40 to 49 years old compared to the west, where the peak prevalence is seen between 50 to 59 years. Literatures documented this in Singapore (Yip and Ng, 1996), Malaysia (Hisham and Yip, 2004), Iran (Harirchi et al., 2004), Thailand (Thongsuksai, 2000), Pakistan (Usmani et al., 1996) and Arab women in Palestine (Nissan et al., 2004). It is clear that this critical rate of breast cancer incidences among younger women in Asia demands a continuous movement toward increasing individual knowledge about getting mammography as a proper tool for breast cancer detection. Likewise, in Iran this demands a strategic way to disseminate knowledge about breast cancer to this young generation.

To participate in community-based programs on breast cancer prevention, women must have knowledge of participating in mammography. Thus, it is indispensable to educate the public about the importance of getting mammography (Okobia, 2006; Taleghani, 2006; KoCM, 2003; Sadler, 2001). However, at present time, routine mammography cannot be recommended in countries such as Iran due to financial restrictions.

Additional emphasis in this study has been placed on doing mammography as a first step for community participation in breast cancer prevention. It is believed that various approaches of community participation in breast cancer prevention can be achieved through informing women about the priority of their health over other personal issues. Before Iranian women can be actively engaged in controlling programs for breast cancer prevention, it is important that their knowledge

about breast cancer such as screening methods is upgraded. This is important to note because as this study has shown that the general knowledge of women is high, but it cannot affect women in taking mammography. The study also showed that the main reason for mammography participation among participating women was the physician's preference (Figure 1). It means that the top down approach is one of the main reasons for doing mammography among Iranian women.

The results revealed that there is a significant relationship between age, education, marital status, occupation, income, insurance status and participation in mammography (all $P < 0.01$) among the 400 respondents. Selected socio-demographic variables have shown a remarkable difference between the participant and the non-participant group. It can be concluded that women from the lower socio-demographic level have poor social empowerment and cannot make their own decisions on doing mammography. Even for issues relating to their own health, they have to rely on others advice such as doctors or health care professionals' advice. In addition, results in this study indicated that 21.5% (n=86) of 400 women used mammography in the past 2 years and 58.81% of this number referred by doctor's advice which was a diagnostic mammography. This shows that mostly women rely on doctor's advice for individual participation in mammography. It gives us a good insight into the problem of non-participation of women which might be rooted in their fear about cancer and death or lack of doctor's advice. The study highlights the need for public health planners to design strategies of preventive health promotion in general and breast cancer screening in particular for women who are most reluctant to perform mammography. These strategies should be applied to all categories of women such as older, widow, divorced, low-income, non-educated, uninsured, unemployed women, and housewives in order to achieve high mammography utilization.

As with any study, there are several limitations to this study that should be accepted. The first of these limitations is the cross-sectional nature of this study which prevents the possibility of drawing conclusions about causal relationships between women's mammography knowledge and their participation in mammography. In this study, women's participation in

mammography was related in the past two years as a behavior change or health practice. Thus, current study did not focus whether they have regular or occasional basis forms, as well as maintenance of mammography adherence in women life. Specific research is needed to study medical problems related to annual mammography and women's adherence and its regularity in the broader construct of medical study.

The results of the study are limited to the ability of the subjects to remember past behavior or participation. Furthermore, choosing respondents from hospital clients may impact on the study results, because community-dwelling women may have different knowledge towards mammography. These data may be overestimated due to social desirability response bias. Moreover, the present study intends to carry out on a small sample of women and thus our findings may not be generalized for all Iranian women. But, the results can be completed by additional studies.

Conclusion

In Iran, breast cancer is a new emerging health issues though the problem has been there long time ago. Although, it is a life threatening disease, not many people, especially the women are aware about it. Many have limited knowledge about the disease and its prevention. This phenomenon has shaped the health behavior seeking pattern among women dealing with this disease, which is always labeled as the participation in breast cancer prevention program. This study has highlighted some of the pertinent issue regarding knowledge among Iranian women towards mammography. Emphasizing on women's knowledge and their practice with respect to mammography should be a great concern among the health professionals. This study suggests that most of the housewives and unemployed women with lower knowledge should be concerned more in an intervention or breast cancer prevention program. In order to improve the women ownership in breast cancer prevention programs, starting from 'where the women are' in terms of their needs should be taken into account in those programs. It is important to see factors enable women in decision makings process relevant to the breast cancer control as a fundamental facet of community participation in breast cancer prevention. Since they do not have power to control extensive health programs in Iran, thus, the effect of individual-level changes (for example, doing mammography) among women is a cornerstone of breast cancer prevention at a community level. Other than that, public health awareness campaigns, especially using the media, booklets and pamphlets before initiating the screening services, is a pragmatic strategy to be implemented by relevant authorities to support early initiative to combat

breast cancer in Iran.

ACKNOWLEDGEMENTS

We would like to say our thanks to members of ACECR, Cancer Institute, Tehran University of Medical Sciences, Tehran, Iran and Iranian Centre for Breast Cancer (ICBC), Tehran, Iran.

REFERENCES

- Ahmadian M, Samah AA, Emby Z, Redzuan M (2010). Instrument development for understanding factors influencing mammography compliance among Iranian women in metropolitan Tehran, Iran. *Asian Soc. Sci.*, 6(10): 88.
- Ahmadian M, Redzuan M, Emby Z, Samah AA (2010). Women's community participation levels in community-based health programs regarding breast cancer prevention in metropolitan Tehran, Iran. *Asian Soc. Sci.*, 6(9): 12.
- American Cancer Society (2008). *Cancer facts and figures*, Atlanta.
- Bener A, Honein G, Carter A, Da'ar Z (2002). The determinants of breast cancer screening behavior: A focus group study of women in the United Arab Emirates. *Oncol. Nurs. Forum.*, 29: 91-98.
- Champion V (1987). The relationship of breast self-examination to health belief model variables. *Research in Nursing and Health*, 10, 375-379. *Res. Nurs. Health*, 11: 283-291.
- Chua MST, Mok TS, Kwan WH, Yeo W, Zee B. (2005). Knowledge, perceptions, and attitudes of Hong Kong Chinese women on screening mammography and early breast cancer management. *Breast J.*, 11(1): 52-6
- Danigelis NL, Worden JK, Mickey RM (1996). The importance of age as a context for understanding African-American women's mammography screening behavior. *Am. J. Prev. Med.*, 12: 358-366.
- Gotzsche PC, Nielsen M (2006). Screening for breast cancer with mammography. *Cochrane Database System Review Art No.:* CD001877.
- Han Y, Williams, RD, Harrison RA (2000). Breast cancer screening knowledge, attitudes, and practices among Korean American women. *Oncol. Nurs. Forum*, 27: 1585-1589.
- Harirchi I, Ebrahimi M, Zamani N, Jarvandi, Montazeri A (2000). breast cancer in Iran :a review of 903 case records .*Pub. Health J.*, 114: 143-145.
- Harirchi I, Karbakhsh M, Kashefi A, Momtahan AJ (2004). Breast cancer in Iran: results of multi-center study. *Asia Pac. J. Can. Pre.*, 5: 24-27.
- Hisham AN, Yip CH (2004). Overview of breast cancer in Malaysian women: a problem with late diagnosis. *Asian J. Surg.*, 27: 130-133.
- Hoare T, Thomas C, Biggs A, Booth M, Bradley S, Friedman E (1994). Can the uptake of screening behavior by Asian women be increased? A randomized controlled trial of link worker intervention. *J. Pub. Health Med.*, 16(2): 179-185.
- Im EO, Park YS, Lee EO (2004). Korean women's attitudes toward breast cancer screening tests. *Int. J. Nurs. Stud.*, 41, 583-589.
- Jarvandi S, Montazeri A, Harirchi I, Kazemnejad A (2002). Beliefs and behaviors of Iranian teachers toward early detection of breast cancer and breast self-examination. *Pub. Health*, 116: 245-249.
- Juon HS, Kim M, Shankar S (2004). Predictors of adherence to screening mammography among Korean American women. *Prev. Med.*, 39: 474-481.
- Ko CM, Sadler GR, Ryujin L, Dong A. (2003). Filipina American women's breast cancer knowledge, attitudes, and screening behaviors. *BMC Pub. Health*, 15(3): 27.
- Mammon JA, Zapka JG (1986). Breast self-examination by young women Characteristics associated with frequency. *Am. J. Prev. Med.*, 2(2): 61-69.
- Montazeri A, Haji-Mahmoodi M, Jarvandi S (2003). Breast self-

- examination: do religious beliefs matter? A descriptive study. *J. Pub. Health Med.*, 25(2): 154-155.
- Mousavi SM, Montazeri A, Mohagheghi MA, Jarrahi AM, Harirchi I, Najafi M (2007). Breast cancer in Iran: An epidemiological review. *The Breast J.*, 13(4): 383-391.
- Nissan A, Spira M, Hamburger T (2004). Clinical profile of breast cancer in Arab and Jewish women in the Jerusalem area. *Am. J. Surg.*, 188: 62-67.
- Okobia MN, Bunker CH, Okonofua FE, Osime U. (2006) Knowledge, attitude and practice of Nigerian women towards breast cancer: a cross-sectional study. *World J. Surg. Oncol.*, 21(4): 11.
- Parsa P, Kandiah M (2005). Breast cancer knowledge, perception and breast self-examination practices among Iranian women. *Int. Med. J.*, 4: 17-24.
- Parsa P, Kandiah M, Abdul Rahman H, Zulkefli N (2006). Barriers for breast cancer screening among asian women: A mini literature review. *Asia Pac J. Can. Pre.*, 7(4): 509.
- Petro-Nustus W, Mikhail B (2002). Factors associated with breast self examination among Jordanian women. *Pub. Health Nurs.*, 19: 263-71.
- Raeburn J, Rootman I (1998). *People centered health promotion*. Chichester: John Wiley & Sons.
- Reddy D, Alagna SA (1986). Psychological aspects of cancer prevention and early detection among women. In: B.L. Andersen, Editor, *Women with cancer: Psychological perspectives*, Springer-Verlag, New York (1986), pp. 93-137.
- Rifkin SB (1986). Lessons from community participation in health programmes. *Health Policy and Planning*, 1(3), 240.
- Sadler GR, Ryujin LT, Ko CM, Nguyen E (2001) Korean women: breast cancer knowledge, attitudes and behaviors. *BMC Pub. Health*, 1: 7.
- Schulter LA (1982). Knowledge and beliefs about breast cancer and breast self-examination among athletic and non-athletic women. *Nurs. Res.*, 31: 348-353.
- Secginli S, Nahcivan NO (2006). Factors associated with breast cancer screening behaviors in a sample of Turkish women: A questionnaire survey. *Int. J. Nurs. Stud.*, 43 : 161-171.
- Shirazi M, Champeau D, Talebi A (2006). Predictors of breast cancer screening among immigrant Iranian women in California. *J. Womens Health*, 15(5): 485-506.
- Taleghani F, Yekta ZP, Nasrabadi AN (2006). Coping with breast cancer in newly diagnosed Iranian women. *J. Adv. Nur.*, 54(3): 265-272
- Thongsuksai P, Sripung H (2000). Delay in breast cancer care: a study in Thai women. *Med. Care*, 38: 108-114.
- Usmani K, Khanum A, Afzal H, Ahmad N (1996). Breast cancer in Pakistani women. *J. Environ. Pa, Toxic Oncol.*, 15: 251-253.
- WHO (1978). *The Alma Ata Declaration on Primary Health Care*, Geneva,
- World Health Organization (WHO) (2008, July). *CANCER Fact sheet N? 297*. Retrieved November, 20, 2009, from <http://www.who.int/mediacentre/factsheets/fs297/en/index.html>
- Yip CH, Ng EH (1996). Breast cancer- a comparative study between Malaysian and Singaporean women. *Singapore Med. J.*, 37: 264-267.
- Zakus JDL (1998,). Resource dependency and community participation in primary health care. *Soc. Sci. Med.*, 46(4-5), 475-494.