

RESEARCH ARTICLE

Perception of Breast Cancer Screening among Iranian Women without Experience of Mammography: A Qualitative Study

Maryam Khazae-pool¹, Fereshteh Majlessi¹, Abbass Rahimi Foroushani^{2*}, Ali Montazeri³, Saharnaz Nedjat⁴, Davoud Shojaeizadeh¹, Azare Tol¹, Hamideh Salimzadeh¹

Abstract

Background: In Iran, there are high rates of breast cancer. It is among the five most common cancers, the first among cancers diagnosed, and is the leading cause of cancer deaths among Iranian women. **Objectives:** The purpose of this qualitative study was to explore perception of breast cancer screening among Iranian women who have never had a mammograph. **Materials and Methods:** The current study was part of a qualitative research conducted by means of content analysis method and purposive sampling of 16 women over the age of 30 years who had not undergone mammography using individual semi-structured interviews. Interviews were recorded and transcribed verbatim. The data were under continuous consideration and comparative analysis in order to achieve data saturation. **Results:** After codification of data, three concept categories were achieved including: i) low awareness, ii) worries, and iii) lack of motivation. **Conclusions:** Although there is a tendency among Iranian women to participate in breast cancer screening, there is a powerful cultural belief that breasts are sexual organs that should not be discussed publicly. Due to the incidence of breast cancer in Iranian women, it is critical that breast awareness education be performed by health care experts to explore the concepts of breast cancer and breast cancer screening.

Keywords: Breast cancer screening perceptions - Iranian women - qualitative study

Asian Pac J Cancer Prev, 15 (9), 3965-3971

Introduction

Breast cancer is the most frequently happening cancer and the second main cause of cancer deaths in women around the world. It remains to be a major public health difficulty in developed as well as developing countries. Due to the multiple factors such as healthy lifestyles, socioeconomic status, and accessibility of health care services, there are variations in incidence, mortality and survival rates of breast cancer between developed and developing countries. In 2012, an estimated 39,510 breast cancer deaths in women happened. In women under age 40 occurred five percent of new breast cancer cases (American Cancer Society, 2012).

The mortality rate of breast cancer in developed countries is lower than developing countries in the 50-64 years of age (Kim and Kim, 2008; Brewster, 2009). In England breast cancer occurs from 50-64 years in the US their range is 60 years and older (NCI). In contrast studies show that breast cancer influences Iranian women at least one decade younger than women in developed countries,

and the most prevalent age is 47 years (Montazeri, 2008; Jafari-Koshki, 2014), and it is the five most common cancers and the first among cancers diagnosed in women. Even though the prevalence of breast cancer in Iran is still partly low (about 23 per 100,000), the number of patients with recently diagnosed breast cancer is rising (Khazae-Pool, 2014).

In worldwide, the base of fight against breast cancer is prevention. Even though some prevention ways have been suggested, in developing countries has limitation to access diagnostic services, and women need prevention the most (Andreeva, 2013). Breast cancer screenings are critical for prevention and early detection in women. National breast cancer screening plan is presented in many developed countries; in compare developing countries may suggest opportunistic programs which are available by persons who can pay the costs of screening (Freimanis, 2014; Pace, 2014).

The American Cancer Society suggests screening such as a clinical breast examination and optional breast self-examination for women ages 20-29 years group, and

¹Department of Health Education and Promotion, ²Department of Epidemiology and Biostatistics, School of Public Health, ⁴Knowledge Utilization Research Center, Tehran University of Medical Sciences, ³Mental Health Research Group, Health Metrics Research Center, Institute for Health Sciences Research, ACECR, Tehran, Iran *For correspondence: rahimifo@tums.ac.ir

it is performed by providers at least once every 3 years as part of the health exam for this age group. It is suggested annual mammograms initial at age 40 and continuing for until a woman is healthy. Breast self-examination is still suggested as a common approach to rising breast awareness and therefore potentially allow for early detection for women in 20s although it has not been shown to be effective in reducing mortality (Ginsberg 2012; Andreeva, 2013). It is good women know how to check their breasts and report any breast problems quickly to their doctor. Screening by pursuing healthy lifestyles may help prevent breast cancer. (American Cancer Society, 2012).

Although many Asian women may have heard about breast screening, they may have inadequate knowledge about screening or how to perform it (Banning and Hafeez, 2009), and it is not identified whether these results are also consistent for Iranian women. In Iran, lack of knowledge is one important reason for delay in treatment (Rastad et al., 2012). So, it would be useful design of interventions proposed at breast cancer prevention through improved women's awareness on breast cancer and screening and or enhanced screening, especially in those without any experience of mammography (Baysal and Polat, 2012).. We thus conducted this study to describe Iranian women's perception of breast cancer and screening.

Materials and Methods

Participants and data collection

16 individual semi-structured were held in February and June 2013 from a health care center affiliated to Tehran University of Medical Sciences who had never been screened for breast cancer was recruited to obtain rich data. A purposive sampling method with maximum variation was used. Participants were selected in varying levels of socioeconomic status, education, age, occupation and marital status. Sampling was continued until data saturation was achieved that is, no new codes were present in the data which happened at the 14th interview, and after 14 interviews the 15th and 16th had not any extra information. Interviews ranged from 60 to 120 minutes in length. Women provided written consent after they received full information about the study. The significance of privacy and the reasons for discussions to be audio-recorded were also clarified.

Semi-structured with open-ended questions were designed for this study. Interview questions were organized based on the research question and data from earlier studies. At the beginning of each interview, the women were asked about demographic characteristics. After that, participants were asked about social, cultural and environmental factors that may have affected their screening behavior. Then, participants were asked to say their outlook about knowledge and perception of breast cancer and screening, in replies to the following open-ended questions: "What do you know about breast cancer and screening?" "What is your idea of doctor visits?" "Do you think women of your age need to be screened of breast cancer?" What factors are associated with breast cancer screening? For instance they were asked to explain more

Table 1. Steps of Analysis Based on Graneheim and Lundman's Approach

Steps	Activity
1	The transcripts were read through several times
2	Make meaning units from the text
3	Creating codes from meaning units
4	Read through the list of codes, compared against each other, and created sub-categories
5	Compare and contrast the various sub categories to create exclusive categories
6	Return to the original transcripts and ensure that all the information that needs to be categorized has been so
7	An independent analysis of all the texts was performed by authors. All authors discussed the categorization and the content of the categories and consensus about the categorization was reached

about what they have said. The interviews were carried out at participants' home or at a public place convenient for the respondent.

All interviews were audiotape and transcribed with women permission. The ethical committee of Tehran University of Medical Sciences accepted the study procedure.

Data analysis

A content analysis with a conventional approach was utilized to make use of the rich information gained from semi-structured interviews, and analyzed to identify women perception towards breast cancer screening. Data collection and analysis were done simultaneously (Graneheim and Lundman, 2004; Zhang and Wildemuth, 2009) (Table 1). Transcription, analysis and coding of each interview was done before beginning of the next interview, in a way that each interviews direction was determined by the prior interviews information.

We used the following steps for qualitative data analysis. First the researchers read and re-read the transcripts, highlighted important quotes that showed women experiences regarding breast cancer and screening. Comparative analysis was performed in order to extract primary codes that they could include abstraction of the content. In the next stage, themes were classified and organized based on separate categories. The primary codes were classified based on their differences and similarities (Graneheim and Lundman, 2004). During the period of analysis, researcher continually checked similarities and differences in the data and manuscripts, constantly compared with each other, and selected main concepts until the end of data collection.

All of the authors participated in data coding process. Also, the copies again were studied, and compared with initial results a few days after codifying. It was then possible to identify a set of themes that the researchers agreed could classify all the statements into the categories and subcategories reported. Finally, themes and categories of each interview were combined and effect of the related causes on the mammography behavior in women was obtained. We imported the transcripts into the MAXQDA software version 10.

Validation

For validation in this study, interview transcripts and the derived codes from each of the interviews were

presented to the participants and their views about the meaning of the codes were asked; if they expressed opposing views, their corrective comment were applied. In addition to the study team, the text of the interviews was presented to some of the researchers who were not involved in the study as external observers and they were asked to check the accuracy of the coding process.

Ethics of study

This study was approved by the ethics committee of Tehran University of Medical Sciences and informed written consent was obtained. Effort was made to observe the ethics of study, offering the participants the choice to give up whenever they wish, and by keeping their information private. The participants were assured about unanimity of their identities. For this purpose each participant was given a code.

Results

We obtained data richness and saturation from 16 individual interviews including women over 30 years old. The characteristics of the participants are reported in Table 2. Four main themes describing perceptions towards breast cancer screening emerged from thematic analysis: i) low awareness, ii) worries, iii) a lack of motivation (Table 3).

Low awareness

Participants consistently described a lack of medical information and health literacy about breast cancer or screening. Some of them had never been heard anything about breast cancer. Those participants, who had some knowledge about breast cancer, got their information

Table 2. Socio Demographic Characteristics of Participants (n=16)

		No.	%
Age group	30-34	2	12.5
	35-39	6	37.5
	40 and above	8	50
Education	Primary	4	25
	Secondary	7	43.75
	Higher	5	31.25
Marital status	Single/divorced/widowed	8	50
	Married	8	50
Occupation	Housewife	8	50
	Employed	8	50

Table 3. Classification of Main Categories and Sub Categories

Main Categories	Sub categories
Low awareness	Lack of medical information
	Low perception of risk
	Fatalism
Worries	Doubts
	Fears
	Embarrassments
Lack of motivation	Lack of social support
	Busy life style
	Lack of priority
	Environmental constraints

from their relatives and media such as TV, magazines, and pamphlet, and one woman had got from her friend who had breast cancer.

"I have only heard about breast cancer, but I think, this is not sufficient..." (Participant.11)

Some of those participants who knew about cancer were afraid of losing their breasts, although these women had little to no scientific knowledge of the disease and its risks. One of the women said that she understands that people infected to digestive, bowel, and uterus cancers due to smoking and poor dietary habits, but she could not imagine how organs like breasts could develop cancer.

"Well... I don't know. I really have no information about breast cancer." (Participant.4)

Participants had mixed ideas about risk of breast cancer. Many women mentioned that this disease is related to "unhealthy lifestyle" and "a family history of breast cancer".

"Any woman can get breast cancer when it is her turn, but people with a history of breast cancer in their family may get more, or those with an unhealthy diet." (Participant.6)

"In my family has no history of breast cancer, so I don't have any risk of breast cancer". (Participant.14)

"Unfortunately, I have an unhealthy lifestyle and two women in my family have infected by breast cancer." (Participant.1)

When asked which group of women have most risk about breast cancer, they responded "people over 60," "anybody," and "people who have too stress." Participants did not know that breast cancer may occur for any woman even in young age. They believe that breast cancer may happen only for old women or those with a family history of breast cancer, as they were also sure themselves overall healthy, and felt that they had little risk of developing breast cancer, but others did note that "anybody can get cancer" and "even young people are at risk breast cancer". Almost all answers were based on unclear, unscientific and misinformation about breast cancer. They believed that only femininity diseases such as uterine infections were common.

'It seems to me that breast cancer may happen for old women. I don't think I am likely to get breast cancer.' (Participant.15)

'I have not found of breast cancer among my family and friends in young age; it happens for old women. So I feel it must be terrifying and frightening'. (Participant. 11)

The medical information of participants regarding mammography was not enough or was incomplete. Some of women were not familiar with the word "mammography". Most of the participants give up screening due to cost of it because government do not support this service for Iranian women. In other word the lack of knowledge about the mammography and its necessity were not completely clear for most of the women.

"I have heard about women who getting breast cancer, but I have never women under the mammography on TV which help me to know how the test is". (Participant. 7)

Believing fate was one of the points accentuated

recurrently by participants as a factor that affected their consent to do mammography. Some of them believe that incidence of the disease is upon God's will and is part of the destiny that God has determined for them.

"If I get breast cancer, I try not to be very grief-stricken. Tell myself it is divine fate. Actually I'm a religious person and think by being extremely sad, will commit a sin". (Participant. 4)

"I believe that breast cancer is a divine test. That is a factor for cleansing of the sins, and I thought doing mammography doesn't have necessity". (Participant. 7)

Worries

Most of women expressed that they had fears about performing mammography and BSE, and were afraid to visit doctor; they worried about outcomes and side effects of mammography. Due to these fears and doubts, they were reluctant to visit doctor for breast checkup and screening.

"I'm willing to do regularly the breast self-examination, but I don't know how to do. I embarrass to do it." (Participant.2)

"I think mammography may damage my body. I have not done mammography. I'm afraid of doing mammography because I think it is carcinogenic..." (Participant.15)

"I don't like to do mammography due to fear of catching breast cancer and losing my femininity. This is a stigma for any woman". (Participant 9)

"I think touch and breast self examination cause me to get breast cancer. Due to this reason, I don't want to do it. When I have no problem and I am fine, why I make problem for myself". (Participant.5)

The majority of women admitted embarrassment regarding visiting of doctors. Because of the shameful nature of the breast cancer screening, women resisted against mammography, or even postponed it. Also, all women did not tend to visit male physicians and to show their breasts to them.

"I prefer to visit female doctors instead of male physicians. I feel ashamed when I have to show my breasts to physicians, especially male doctors". (Participant.10)

"Well, I am afraid of going mammography clinic alone, but going other clinics is not problem for me..." (Participant 13)

In most of the interviews, women linked mammography to breast cancer. They perceived mammography as painful, harmful, with fear of a distorted body image and loss of femininity because it inflicts a body organ that symbolizes femininity and motherhood.

"A woman who perform mammography, might get breast cancer will be demolished; since losing her breasts funds that she is ended as a woman and as a mother" (Participant 5)

"For any women, breast is part of a woman's beauty and charisma especially for marriage life. It is the symbol of femininity. Mammography may cause breast cancer and loss of breasts..." (Participant 1)

Lack of motivation

Most of the women said that they did not get mammography because it is not necessary. Participants stated that they refer to a clinic if they detect any symptoms

of breast cancer, but were unwilling to visit a doctor otherwise. Furthermore, some of them reported that they may get mammography if they explored breast cancer among their family or their relatives. Almost all women argued having or not having health insurance and the high cost of mammography. Those who had not received financial and emotional supports from family and friends mentioned that existing an incentive may force them to do mammography. Also, some of the women stated that they might do mammography if they had signs of breast cancer, but they were reluctant to visit a doctor.

"I might do mammography only if something stimulates me to do". (Participant. 5)

"If insurance service covered the cost of mammography, I might be tried to do it." (Participant. 1)

"Although I need to do the breast check-up, but I cannot do it because mammography is out of insurance services. I think the charge of mammography is very expensive to me, nevertheless the importance of it for my health." (Participant.11)

Although the women interested to do breast cancer screening, but they were reluctant and delay it due to their busy lifestyle. It was not the first priority of them. Participants who had low sense of necessity for screening,

Many women reported that children and family had priority more than their own health. It seems that they were only interested performing breast cancer screening if they were obliged to do it. For example, one participant stated that

"I'm willing to do regularly mammography, but I don't have enough time. I am going to do it as soon as possible..." (Participant.6)

"I don't want to go for mammography alone. So I asked my husband if he could go with me, but he was unable to accompany me. He was very busy..." (Participant.13)

"I really would like to do mammography, but I feel that it is not my main priority". (Participant.15)

Environmental constraints such as limit access to mammography centers, the lack of any organized program for periodic mammography and high cost of mammography are important reasons which most of the participants were reported for their reluctant to do screening. They stated that the government can organize rules for free services through cooperation with insurance agencies. One of them said that

"As far as I know, unfortunately, there is no national screening program of mammography for breast cancer in Iran." (Participant.1)

"In my opinion, the government and health ministry of Iran should cooperate with the insurance company to facilitate". (Participant.4)

Discussion

We investigated Iranian women's perception towards breast cancer and screening. Most of the participants said that they did not trend to be screened because they did not know anyone who had breast cancer in their family and in young women, and just they might do it by forcing. Actually, women's risk perception was based on prevalence of breast cancer in their family. Evidence

shows that having a family history has strong role in practice of breast cancer screening behaviors (Al-Naggar, 2011). Many women felt they were out of breast cancer risk. Judging regarding to these statements, if breast screening is increased in women, just as health check-ups and mammography are included in the Iranian health system. On the other hand, they are rarely given the chance for screening behavior, looking for preventive cares only when they have some signs. These health centers need to organize health services and health education programs unified into the educational system for informing women about breast cancer and motivate them to get preventive check-ups and screening.

Also, study findings demonstrate the necessity of increasing awareness to breast cancer and its risk factors in women, as well as informing them about the advantages of breast cancer screening. It is clear that knowledge and perception of breast cancer risk could influence and motivate women to perform a breast cancer screening behavior (Amin, 2009; Taha, 2012). It is assumed from the study's findings, until the stigma, shame, and prohibitions about breast cancer are addressed, factual education programs are likely to fail at getting Iranian women to appreciably modify their views about participating in breast cancer screening.

The interviews showed fear of screening results, embarrassment, doubts, worry, and possible pain that this was consistent with previous quantitative studies that shown lack of knowledge, fear, and misconceptions about breast cancer screening among women (Gürsoy, 2009; Kawar, 2013; khazae-pool, 2014). Women scared that they might get a breast cancer if they go screening associated with the consequences of screening, risk of losing femininity, husband's separation, and social stigma. Similarly, fear of social stigma, losing femininity and sexuality by those who go for screening was also reported (Engelman, 2012; Filippi, 2013; khazae-pool, 2014). As reported in another study, our findings also highlighted decision about performing breast cancer screening was influenced by perception of women about their breasts (Al Dasoqi, 2013). For instance, modesty, embarrassment and the need to show breasts to doctors especially male doctors for screening are negative effects on a woman's decision making to participate in breast cancer screening. This is consistent with previous study; reported that physicians' gender can affect whether women decide performing screening behavior, such as Pap tests, mammography and clinical breast examination or not (Banning, 2009; Kwok, 2011; Taha, 2012; Kwon, 2013).

Women also believed breasts are sexualized for male satisfaction. Thus, almost all women did not visit the male doctors due to the modesty. Also, other study shown that women had a greater tendency for female doctors at a screening clinic than male doctors (Yanikkerem, 2009). It shows that cultural information is essential in order to avoid shame for women whose culture contains the meaning of modesty and privacy (Watts, 2004). The negative impact of this finding may be more intense among Iranian women due to the fact that Islamic practice requires women to completely cover their bodies and wear a veil. Unwilling to go screening shown by women in this study

might be influenced both by these women's age and by their religious and cultural attitudes towards femininity and modesty. Preparing environmental conditions that is less embarrassing for women to get breast screening is the best way to overcome this propensity in women. These safeguards and facilities might include informing women about which mammography is performed by female physicians, and collaborating insurance services with mammography centers to provide free mammograms.

Another main finding in this study is that women felt that they were not motivated to perform mammography due to many reasons including not essential, the lack of financial and emotional support from family and friends, having no enough time, high cost of mammography, and lack of mammography center. Women perceived that their main function is to attend of the family and children. Our findings consist with previous findings in which social support from family and husband could positively encourage women to improve their breast cancer screening (Gamarra, 2009; Kawar, 2013; khazae-pool, 2014). Also Trigoni found that family commitments and busy life were main reasons for their delayed mammography screening (Trigoni, 2008). Additionally, Lamyian (2007) found that taking time to care family was a barrier to Iranian women's consideration for breast cancer screening (Lamyian, 2007).

Many women in this study did not know screening as a health priority. It can be this reason that they did not feel at risk of breast cancer. Also, due to life's problems and high responsibilities, they did not have enough time to address breast health. Thus, in order to make breast cancer screening a health priority, culturally significant education and interventions are needed in Iran. Also, Author suggests that high levels of motivation for health concerns will lead to an improvement in screening behaviors (khazae-pool, 2014). Due to the financial problems of a breast cancer screening among women, a combination of high cost and a lack of entire insurance coverage combined to become a negative influence among Iranian women specially seeking mammography screening.

Strengths and weaknesses of the study, this study had some limitations. Because the women came from Tehran one city of Iran, our findings might not be generalizable to the Iranian women population as a whole. Content analysis in this study explained the findings, which might not explore the main concepts of the phenomena. Care about interpreting the findings about women is essential since this was a small sample designed for a qualitative study and might not be representative of the larger target population. However, the low awareness of breast cancer among these women could demonstrate an even lower awareness among larger public populations. Nonetheless, this study offers new insights into Iranian women' perception toward breast cancer screening. We recommend that future research perform cross-sectional surveys of randomly selected women to confirm and to emphasize the generalizability of these factors.

In conclusion, this study provides valuable visions into women's perception and screening in Iranian women. Various negative influences were recognized in this study such as low awareness, lack of motivation and fear, doubts and misconceptions regarding breast cancer and

screening. Women had low awareness of breast cancer and breast cancer screening. Women mentioned the need for awareness on different levels of the Iranian society. Community based awareness plans for women based on socio-cultural contexts targeting these negative influences and stressing the importance of early detection benefits need to be developed in Iranian to promote women in breast cancer screening. Guaranteeing an adequate number of affordable and available mammography centers, which include educated female healthcare workers, and creating support groups may also play an important role in increasing Iranian women's participation in breast cancer screening. Cultural barriers need to be attended and culturally suitable education developed and published to increase Iranian women's participation about breast cancer screening. Despite the country's enormous efforts, there is little Iranian women's knowledge about breast cancer. Health care providers have a key function to play in educating and informing women and their families about the importance of breast cancer screening. Educational programs must be planned that will combine the socio-cultural beliefs of these women about breast cancer and screening.

Acknowledgements

The authors would like to thank all study women for their valuable time and coming. Funding for this study was provided by Tehran University of medical sciences, Iran [Grant number 22847]. MK was involved in the study design, data collection, analysis and drafting of the manuscript. AM was involved in the study design, data analysis, and drafting of the manuscript. FM contributed to the idea, study design, data analysis and, drafting of the manuscript. AR was involved in the study design, and data analysis. AT, SN, DS, and HS participated in the data analysis and, drafting of the manuscript. All the authors read and approved the final manuscript.

References

Al Dasoqi K, Zeilani R, Abdalrahim M, Evans C (2013). Screening for breast cancer among young Jordanian women: ambiguity and apprehension. *Int Nurs Rev*, **60**, 351-7.

Redhwan A, Al-Naggar DH, Bobryshev YV, Chen R, Assabri A (2011). Practice and barriers toward breast self-examination among young Malaysian women. *Asian Pac J Cancer Prev*, **12**, 1173-8.

American Cancer Society (2012) Cancer Facts & Figures for Hispanics/Latinos 2012-2014. Atlanta: American Cancer Society.

Amin TT, Al Mulhim ARS, Al Meqihwi A (2009). Breast cancer knowledge, risk factors and screening among adult Saudi women in a primary health care setting. *Asian Pac J Cancer Prev*, **10**, 133-8.

Andreeva VA, Pokhrel P (2013). Breast cancer screening utilization among Eastern European immigrant women worldwide: a systematic literature review and a focus on psychosocial barriers. *Psychooncology*, **22**, 2664-75.

Banning M, Hafeez H (2009). Perceptions of breast health practices in Pakistani muslim women. *Asian Pac J Cancer Prev*, **10**, 841-7.

Baysal HY, Polat H (2012). Determination of the breast cancer

risk levels and health beliefs of women with and without previous mammography in the eastern part of Turkey. *Asian Pac J Cancer Prev*, **13**, 5213-7.

Brewster DH, Sharpe KH, Clark DI, Collins J (2009). Declining breast cancer incidence and decreased HRT use. *Lancet*, **373**, 459-60.

Engelman KK, Cizik AM, Ellerbeck EF, Rempusheski VF (2012). Perceptions of the screening mammography experience by Hispanic and non-Hispanic white women. *Womens Health Issues*, **22**, 395-401.

Filippi MK, Ndikum-Moffor F, Braiuca SL, et al (2013). Breast cancer screening perceptions among American Indian women under age 40. *J Cancer Educ*, **28**, 535-40.

Freimanis RI, Yacobozzi M (2014). Breast cancer screening. *N C Med J*, **75**, 117-20.

Gamarra CJ, Paz EP, Griep RH (2009). Social support and cervical and breast cancer screening in Argentinean women from a rural population. *Public Health Nurs*, **26**, 269-76.

Ginsberg GM, Lauer JA, Zelle S, Baeten S, Baltussen R (2012). Cost effectiveness of strategies to combat breast, cervical, and colorectal cancer in sub-Saharan Africa and South East Asia: mathematical modeling study. *BMJ*, **344**, 614.

Graneheim UH, Lundman B (2004). Qualitative content analysis in nursing research: concepts, procedures and measures to achieve trustworthiness. *Nurse Educ Today*, **24**, 105-12.

Gürsoy AA, Hindistan S, Nural N, et al (2009). A comparison of three educational interventions on breast self examination knowledge and health belief. *Asian Pac J Cancer Prev*, **10**, 765-72.

Jafari-Koshki T, Schmid VJ, Mahaki B (2014). Trends of breast cancer incidence in Iran during 2004-2008: a bayesian space-time model. *Asian Pac J Cancer Prev*, **15**, 1557-61.

Kawar LN (2013). Barriers to breast cancer screening participation among Jordanian and Palestinian American women. *Eur J Oncol Nurs*, **17**, 88-94.

Khazae-pool M, Montazeri A, Majlessi F, et al (2014). Breast cancer-preventive behaviors: exploring Iranian women's experiences. *BMC Womens Health*, **14**, 41.

Kim JH, Kim O (2008). Predictors of perceived barriers to mammography in Korean women. *Asian Nursing Research*, **2**, 74-81.

Kwok C, White K, Roydhouse JK (2011). Chinese-Australian women's knowledge, facilitators and barriers related to cervical cancer screening: a qualitative study. *J Immigr Minor Health*, **13**, 1076-83.

Kwon HT, Ma GX, Gold RS, Atkinson NL, Wang MQ (2013). Primary care physicians' cancer screening recommendation practices and perceptions of cancer risk of Asian Americans. *Asian Pac J Cancer Prev*, **14**, 1999-2004.

Lamyian M, Hydarnia A, Ahmadi F, Faghilzadeh S, Aguilar-Vafaie ME (2007). Barriers to and factors facilitating breast cancer screening among Iranian women: a qualitative study. *East Mediterr Health J*, **13**, 1160-9.

Montazeri A, Vahdaninia M, Harirchi I, et al (2008). Breast cancer in Iran: need for greater women awareness of warning signs and effective screening methods. *Asia Pac Fam Med*, **7**, 6.

Pace LE, Keating NL (2014). A systematic assessment of benefits and risks to guide breast cancer screening decisions. *JAMA*, **311**, 1327-35.

Rastad H, Khanjani N, Khandani BK (2012). Causes of delay in seeking treatment in patients with breast cancer in Iran: a qualitative content analysis study. *Asian Pac J Cancer Prev*, **13**, 4511-5.

Taha H, Al-Qutob R, Nyström L, Wahlström R, Berggren V (2012). Voices of fear and safety women's ambivalence towards breast cancer and breast health: a qualitative study

from Jordan. *BMC Women's Health*, **12**, 21.

Trigoni M, Griffiths F, Tsiftsis D, et al (2008). Mammography screening: views from women and primary care physicians in Crete. *BMC Women's Health*, **8**, 20.

Watts T, Merrell J, Murphy F, Williams A (2004). Breast health information needs of women from minority ethnic groups. *J Adv Nursing*, **47**, 526-35.

Yanikkerem E, Ozdemir M, Bingol H, Tatar A, Karadeniz G (2009). Women's attitudes and expectations regarding gynaecological examination. *Midwifery*, **25**, 500-8.

Zhang Y, Wildemuth BM. Qualitative analysis of content (2009). In: Wildemuth, B. editor. *Applications Of Social Research Methods To Questions In Information And Library Science*. Westport, CT: Libraries Unlimited, 308-19.