

# Identifying the Social Determinants of Breast Health Behavior: a Qualitative Content Analysis

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## Abstract

**Background:** Prevention, early diagnosis and reduction of mortality caused by breast cancer are the priorities of the world health systems. The aim of this study was to identify the social factors that affect the women's breast health behavior based on the social determinants model of the World Health Organization (WHO). **Materials and Method:** This qualitative study was conducted and analyzed using content analysis approach. The data were collected from 32 participants by semi-structured interviews and focused group discussion. The participants comprised of breast surgeons, radiologists, health care providers and women over 35 years of age in Tehran who were selected through purposeful sampling. The interviews continued until data saturation was reached. **Results:** Based on the experiences of the participants, three themes were obtained from the data that shaped the women's breast health behavior, including 1) the context of health policy, 2) socioeconomic status, and 3) cultural, psychological, and behavioral factors. **Conclusion:** A better understanding of social determinants related to breast health behavior can be effective in designing and applying of appropriate theories and models of education and intervention, so that, by early diagnosis of breast cancer and timely treatment of patients, the disease complications and mortality would be reduced.

**Keywords:** Social determinants of health- breast cancer- health behavior- breast health behavior

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## Introduction

Today, breast cancer is rising due to the lifestyle changes and longer lifespan (Joshi, Doshi, Patel, 2014. Universal cancer research center, 2013). Breast cancer with the prevalence of 1.7 million is the second most common cancer in the world (Ferlay, 2015), accounting for 10% of all new cancer cases and 23% of all cancer cases in women (Hosseini et al., 2016). Breast cancer is the greatest cause of cancer deaths in women (Ferlay, 2010) and one of the most important public health problems (American Cancer Society, 2000, Hosseiniet al., 2016).

According to the report of Iran's Ministry of Health and Medical Education, breast cancer accounts for 16% of all cancer cases, and ranks the first in women's cancer with 7600 cases and an incidence of 33.28 per 100,000 (Mohagheghi et al., 2009; Hosseiniet al., 2016).

About half of the world's population is made up of women and their health and health behaviors guarantee the health of society. Since, the Iranian women's population is moving from middle age to old age (Hosseiniet al., 2016), what is more dangerous is that, their onset age of the breast cancer has reduced by a decade compared to the overall women's age in the world (about 30-40 years old). Therefore, we expect the cancer to be one of the main causes of health disorders in Iranian women in near future

(Hosseini et al., 2016; Mohagheghi et al., 2009). On the other hand, research results have shown that, despite the lower incidence of disease in developing countries compared to developed countries, the mortality rate of breast cancer is higher in them due to the insufficient access to early detection and diagnosis services (Ferlay, 2015), which is about 25-30% (Entezar et al., 2012). According to the latest report of the Cancer Research Center in Iran, about 1,400 people (15-20%) die from this type of cancer annually (Akbari and Mirzaei, 2014).

Cancer is considered as a disabling and incurable disease in the society and after diagnosis, people usually experience anxiety, depression and unrealistic fear of instant death (Pamukçu and Meydan, 2010), which itself causes many physical, psychological, economic and family problems (Wells and Kelly, 2008).

Previous studies have shown that, primary prevention of cancer is very difficult (Shapiro et al., 1982; Tabar et al., 1985; White et al., 2004; Barth et al., 2005; NHS cancer screening program, 2009). However, early diagnosis is an important tool for secondary prevention. Breast health behaviors such as self-examination, clinical examination, and regular breast mammography in women of high risk age can help the timely diagnose and reduction of mortality (Shapiro et al., 1982; Tabar et al., 1985). There are various ways to diagnose breast cancer, including

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self-examination, clinical examination and diagnostic tests, and also various diagnostic tools can be cost effective, including diagnostic mammography, which can also help to reduce mortality (American Cancer Society, 2000, White et al., 2004; Barth et al., 2005; NHS cancer screening program, 2009). About 35-50% of breast cancer cases can be diagnosed in early stages with mammography, about 50% with a clinical examination and 20% by self-examination (Hosseiniet al., 2016).

Mammography and clinical examination are recommended for those who are at higher risk, and self-examination is one of the early detection and alternative methods. Breast self-examination is a simple, effortless, confidential, and cost-free screening method for early diagnosis, which does not require specialized tool and equipment (Kashfi et al., 2012). Encouraging women to do examination and screening requires the understanding of reasons for breast health behavior and consequences of not doing so, and eventually, creating a positive change in women's behavior. To change the behavior of people, it is essential to understand the factors affecting their behavior, their beliefs and their motivation, as continuous screening of 40 years old and older women results in the reduced cost of treatment and 24%-33% reduction in mortality rate of breast cancer (Hoskinset al., 2000).

Studies indicate that, approximately 7-14% of Iranian women undertake mammography (Tavafian, 2009; Noroozi et al., 2011), or do it at least once in their lifetime and do not repeat it in following years. Even with the availability of diagnostic centers in large cities, women's attendance to these centers is not desirable and they do not have a good attitude toward breast cancer screening (Keshavarz et al., 2011). Less than one Iranian woman (Mousavi et al., 2007) is diagnosed in the early stages of breast cancer compared to three American women (American Cancer Society, 2000).

Review of the available literature indicated that, screening and breast health behaviors are affected by various demographic and socio-cultural factors. Higher level of education, adequate income, health insurance, and marital status, and also physician's advice increases the likelihood of breast cancer screening (Fayaziet al., 2013; Memiset al., 2009; Baysal and Gozum, 2011; Domenighettiet al., 2003). On the other hand, the inability to access diagnostic and treatment centers, lack of time, poverty, high cost of screening, inadequate knowledge of cancer and breast screening, being among ethnic minority, and false cultural beliefs are correlated with lower level of clinical examination and mammograms (Fernandez et al., 2005; Rahman et al., 2003; Asadzadehet al., 2011; Tarlov et al., 2009). Furthermore, the fear of detecting tumor, spouse's opposition towards screening, fear of exclusion, forgetting the screening appointment time, and the costs of screening have been identified as factors that are associated with the breast cancer screening (Centers for Disease Control and Prevention, 2010; Rosenberg et al., 2005; Dailey et al., 2007).

From the social epidemiology point of view, the question is that, why the early diagnosis of breast cancer in women is low? What are the social determinants

affecting self-examination, clinical examination, and mammography, which are considered breast health behaviors?

Among the influential factors that affect health and its outcomes, the social determinants have the greatest impact (World Health Organization, 2010). Social factors are the conditions in which people are born, live, and work (World Health Organization, 2010). In today's world, social determinants, in comparison with biological factors, cause more illness, which if neglected, negatively affect the achievement of health objectives. The purpose of this study was to identify the social determinants of breast health behavior based on the social determinants model provided by the WHO Social Determinants Commission.

## Materials and Methods

This was a qualitative study with content analysis approach. The data were collected by semi-structured interviews and focus group discussion. The directional content analysis was selected in order to provide better understanding and richer data from the participants' experiences and viewpoints (Kondracki et al., 2002; Finlay, 2009 ), as the interviewer, may at some point, ask follow-up and facilitating questions to understand the experiences of participants in more depth (Karimi, et al, 2015). In the focus group discussion, the participants place themselves in each other's position, and outline the factors influencing their behavior from the perspective of others, and share their experiences when they see others are doing so (Sharifian Sani et al., 2012). This approach can also be used to compare the interviews' findings (Rafieet al., 2008).

In order to obtain more accurate results, a matrix was made for sampling according to which, the women were classified as employed and housewives, single and married, and literate and illiterate in three socio-economic areas. Then, 35 years old and older women in Tehran were selected through purposive sampling method. The permission was obtained from the Ethics Committee of University of Social Welfare and Rehabilitation with the code; IR.USWR.AC.IR.1396.274. Interview permission was obtained during the visit of local counseling centers, research centers and across the city. The interview questions were initially made by literature review and a primary draft of the questions was prepared by the assistance of research team, advice of 2 health experts, and 2 breast cancer surgeons. Two pre-tests were done by the interview questions to identify and resolve possible problems. The pilot interviews were not added to the final analysis. In total, 32 participants entered into the study, and face-to-face interviews were conducted with 2 participants from the Cancer Department of the Ministry of Health, 3 breast cancer surgeons, 3 breast cancer researchers, 19 non-screened women, and 5 women who had done the screening (18 in-depth interviews and a one focused group discussion with 6 women, and 8 interviews with experts).

In this study, the screening considered as breast health behavior were and defined as self-examination, clinical examination and mammography, which were asked with

Open questions. After explaining the purpose of study, the participants signed the consent form, if they agreed to be interviewed. The interviews were conducted in Persian and, when it was necessary, a female assistant was used to continue the interview (especially in a focused group discussion). To compare the data and its validity, interview was conducted with 4 women who had been diagnosed with cancer and were undergoing radiotherapy or chemotherapy. The individual interviews lasted between 30 and 70 minutes, and the group discussion was continued for 120 minutes. The research assistant was always recording and taking note of the interactions that took place during the interviews. Interviews lasted from March to September 2017, and data saturation was reached when no new data was obtained from the interviews.

The main interview questions included:

1. Why do you think some women do not undertake self-examination, clinical examination and mammography?

2. What causes women to do self-examination, clinical examination and mammography too late?

This way, participants' experiences about breast health behavior were obtained, and later on by analyzing the points mentioned by the participants, supplementary questions were asked to reach the in-depth experiences of breast health behavior. Most of the interviews were recorded with the permission of the participants, and the contents of interviews were converted to text and entered into the MAXQDATA-8 software. The texts were analyzed to extract the main themes and patterns that existed between the data.

In order to get acquainted with the content of the data, the researcher repeatedly reviewed the interviews and, with the collaboration of the research team, coding, categorizing and analyzing of the data were done using the WHO social determinants model (World Health Organization, 2010).

The data analysis carried out in eight steps which included; data preparation, determining semantic units, coding of the text, controlling and synchronizing the codes with the text, classifying and expanding the classes and comparing them with data to ensure the accuracy of codes, accurate classification of main classes, comparison of the subclasses with each other, and reporting of the findings.

To ensure the validity and reliability of the findings (Anderson, 2010), group meetings were held with team members and participants, and also the Lincoln and Guba's criteria (Lincoln et al., 2011) Including field notes, emersion in data, sharing information and research findings with the participants, using expert opinions and research team were met. During the study, ethical considerations such as the explanation of confidentiality of the information and principle of anonymity were preserved and the participants were reminded of their right to withdraw from interviews and investigations at any time with any reason. At the end, to thank the participants for doing the interview, they were trained and educated about the proper methods of breast cancer screening.

## Results

The results obtained included; 3 main categories, 15 subcategories and 420 semantic units. The social factors affecting the breast health behavior in women are complex and inter-related. The main health policies, media advertisements, healthcare system, education and health literacy, employment, income and payment ability, social support, lifestyle and fatalism, cultural attitudes and beliefs, and fear of disease discovery, loss of femininity and its consequences formed the preventive behaviors of the breast health.

### 1) Health policy context

Looking at the research findings, we can see various forms of social determinants that affect breast health behavior. This theme includes major health-related policies, limited health message in the media, and the characteristics of health system. The social factors in this theme that affect early referrals and early diagnosis of breast cancer include; the prioritization of women's breast health by community health care providers (such as health systems and media), and training of physicians and health care providers and guidelines for diagnosis and treatment. Along with these factors, the acceptability and satisfaction of services as well as access to them were among the most important determinants of breast health at the macro level.

### Main health policies

An interview with several experts in the field of breast cancer found that, breast cancer is not considered a social concern in Iran and is still not a priority for the Ministry of Health. Some surgeons also did not have a consensus on what age should the mammography be prescribed for everyone, or at least for high risk individuals. Moreover, people who were involved in the health care system did not have a specific plan for care, treatment and referral and they were working based on their personal knowledge.

The data showed that in Iran, despite numerous clinical guidelines, there is no comprehensive agreement on the precise and early diagnosis of breast cancer to implement intervention it even initiate it. Some physicians believed that, the screening of all women of puberty age in Iran, especially with mammography, is not cost effective because it only adds to the statistics of unnecessary surgeries. They also stated that, the diagnosis of some physicians is not accurate and they may misinterpret the results of mammography, thus harm more people. A number of researchers in this area also acknowledged that, all is needed in Iran is to familiarize women with the normal look and shape of their own breasts, and so if a woman felt a change in the shape of her breasts, she should visit breast cancer specialists for clinical examination and follow-up diagnostic tests.

*"They physicians should call women, send an invitation or visit them rather than wait for them to come to the clinic, wait in the que and pay for it; in such cases, it is obvious that nobody will come" (Surgeon No: 1). "Screening is a governmental process that takes a long time from diagnosis to treatment, and must be free and defined as population*

Table 1. The Demographic Characteristics of Participating Women in the Study.

Characteristic	Frequency	Characteristic	Frequency		
Participants	Number of women who had not been screened (in-depth interview and focused group discussion)	19	Marital status	Single	6
	Number of women's specialist breast surgeons	4		Married	14
	Breast cancer researchers	3		Widow	2
	Breast cancer screening policy makers	2		Divorced	2
Level of Education	Illiterate	2	Employment status	Housewife	10
	Diploma	7		Employed	11
	Bachelor's degree	3		Retired	3
Income level (\$)	No income	10	Age group	35-40 years old	6
	Between 285 to 570	9		40-50 years old	9
	More than 875	2		Over 50 years old	9

based. Screening as a governmental decision means that, the government has provided the infrastructure, public has been informed, and the health system has prepared all facilities, such as physicians, equipment and diagnostic tests" (Researcher No: 3). "Since the mammogram has about 20% false positive results annually, it does not have the required efficiency in poor countries or some physicians are not able to interpret its results properly, but it is recommended to be repeated every two years (Surgeon No: 3)."

#### Limited health information in the media

Most women had received information by the media on the importance of breast cancer and its preventive factors. Some of them also believed that, the media do not fully explain breast cancer and its causes, and various methods of diagnosis and treatment, and they rather create the fear of the disease. Some of the participants believed that, the overall media information of the disease has declined and appears to have failed to encourage women to adopt preventive behaviors. Most participants considered the internet, TV, family, books, newspapers and ultimately, available resources in the health care centers as the ways of accessing the information.

"If TV instead of advertising chips or cheese crisps was giving information about breast cancer, people would have liked it more" (Participant No: 1, in focus group discussion). Media would concern people more than help them (Participant No: 3)."

#### Characteristics of the health system

One of the most important factors affecting the attendance of the participants was the health system and its components, such as having health insurance or not, gender of physician, the level of trust that people have on physicians, the distance from cancer and treatment clinics, long waiting times, and high cost of services.

#### Dissatisfaction with access to services

Some participants were unhappy with the access to services because of the long distances between the diagnostic centers and their home, and stated that, they would have to

go for the results multiple times in the traffic congestion. It seems that, people living in lower social classes are less likely to screen for various reasons, including living long distance away from treatment and breast cancer prevention centers, transportation problems and inappropriate access to services. For other participants, the one- two months waiting list for the physician and radiologist's visits in the public sector were the main issues.

"If the screening centers were close to me, I would go" (Participant No: 3 in the focus group discussion). "To find a female doctor to do the mammography, we sometimes go from one side of the city to another, which cost a lot ..." (Participant No: 6). They give a doctor visit for a long time, for example once a month, and you have to make appointment by phone or in person, and over there, you have to wait for two or three hours" (PARTICIPANT: 3).

#### Acceptability of the service

Some of the participants stated that, there are a few female physicians in small towns and we have to go to male physicians for breast cancer examination. Some participants said that, there are still very few radiologists, and finding them is a barrier to screening. Two of them stated that, they would never go to a male doctor; however, one of them said her husband does not give her permission to visit a male doctor. (Participant No: 6)

"That's true that, we now have gynecologists, but we do not have ultrasound and mammograms at all places ... My doctor says, she does not prescribe mammography under the age of 40 years" (Participant No: 4).

#### Health care responsibilities

Some of the participants were unhappy about the health care responsibility, which mainly include; the inappropriate treatment of clients by staff and insufficient explanation about the diagnostic examination, impatience of medical personnel, the use of physician's assistants for examination and false diagnosis, and multiple diagnostic tests at public centers. Number of participants stated that, some physicians do not accept

the public insurance cover and ask for the full cost with a free tariff.

“... As if we do not pay, the way they treat us ... The radiologist held my breasts and squeezed them so hard that it hurt, and then she put them on a cold plate and said; do not move until I tell you” (Participant No: 2 in the focus group discussion). “They prescribe so many ultrasounds, CT scan and a mammogram that make you not want to visit the doctor” (Participant No: 8). “Some centers are not covered by insurance and have free tariff. Even at the doctor’s clinic, they say, their insurance quotas are finished ...” (Participant No: 1).

## 2) Socioeconomic status

Among the social determinants of breast health as the shapers of the socioeconomic status, we can refer to the education and knowledge of health breast, income and ability to make payment, employment, and ethnicity. The findings showed that higher education and literacy, income, and ability to pay the diagnostic costs are the social determinants of breast screening and breast health behaviors.

### Education and breast health literacy

Interview findings indicated that, lack of knowledge about the causes of breast cancer, prevention, and diagnosis was one of the main obstacles to the breast cancer health behavior. Most participants did not know about the different screening methods, and the fact that, breast cancer can be detected by self-examination. They also did not know about they should visit a specialist if they found anything unusual, at what age they should go for mammography examinations and how often they should repeated it. Women who had more education were more aware of the importance of screening and were reading more about breast cancer. They also had more positive beliefs about post-diagnostic cancer care, and most of them knew that, early detection of cancer would increase the chance of survival, treatment and recovery.

“... I do not know what the self-examination and screening mean, and do not know anything about mammography” (Participant No: 5). “I do not know what are the signs of breast cancer or whether the doctor should recognize it. Some people say breasts get painful and bleed, well I wasn’t like that” (Participant No: 6). “I have no pain, nor family history of cancer. Now I’m breastfeeding and my breasts are small so I’m healthy. So why should I go for checkup?” (Participant No: 7).

### Income and ability to make payment

Having income and financial affordability was one of the factors that seemed to affect breast health behaviors. Women, who were independent and were earning a living, were more likely to go to doctor for breast examinations, and could afford the screening cost easier. It seems that women, who do not have their own income or income of their husbands is not adequate, have addicted husbands or were living alone. More importantly women, who were the head of household and were responsible for the expenses of family members, were less willing to do the screening. Women who had not done the screening (visiting doctor or mammography) considered the financial burden and the high cost of doctor’s examination, diagnostic tests and follow up as the reasons for not doing the screening.

“... Due to the severe financial problems, the high cost of living, unemployment and addiction of my husband, I cannot go for the screening” (Participant No: 12). Many do not follow their test due to financial problems and inadequate income, I did not go for screening because of the same problem and I did not even have money for the ultrasound” (Participant No: 6) “... Women are mostly not interested in visiting doctor because of economic problems” (Participants No: 1 and 2, in the focus group discussion). “The main problem is financial poverty that limits the conditions for follow-ups ...” (Participant No: 13). “I initially did not go for the screening because of its cost” (Participant No: 2).

Table 2. Sub- Categories and Categories of Content Analysis of Participants Experiences

Theme	Subtheme
Health policy context	Main health policies
	Limited health information in the media
	Characteristics of the health system
Socioeconomic status	Education and breast health literacy
	Income and ability to make payment
	Being employed
	Ethnicity
Cultural, psychological, and behavioral factors	Social interactions and social support
	Work pressures and stress
	Unrealistic optimism
	Cultural attitudes and beliefs
	Fear of detecting disease, and the loss of femininity and its consequences
	Fatalism

### *Being employed*

It seems that, having a job affects breast health behaviors in several ways. Employed women, due to their income and social connection, are more knowledgeable and motivated, have greater autonomy in decision making, and better understand the importance of breast health behaviors, so they do such behaviors more often. The type of occupation also affects the self-examination and medical examination as those working in the health sector, as they are more sensitive towards breast diseases. Descriptive results showed that, housewives do less preventive activities than employed women.

“...I am so busy that, I do not have the opportunity to watch the media or listen to the radio, never mind going for preventive tests” (Participant No: 6). “Screening is not my priority, although it is in back of my mind, but I have no time for it” (Participant No: 11).

### *Ethnicity*

Despite of the interview findings, it was indicated that, the ethnic minorities who had participated in the interview had more screening experiences, but what was worrying was that, the screenings were mainly routine tests for controlling blood cholesterol and diabetes, not screening for breast cancer as breast cancer screening was clearly less pronounced in these individuals. However, the findings did not show the lack of screening due to specific ethnicity or culture. What emerged from the findings was that, people in higher socioeconomic groups undertake more screening and periodic prevention checkups than people in lower socioeconomic groups.

### *3) Cultural, psychological, and behavioral factors*

The Other factors affecting breast health behaviors included social interaction, social support, and stress such as occupational stress, unrealistic optimism, cultural attitudes and beliefs, fear of discovering a disease, fear of losing femininity and its consequences, and fatalism.

#### *Social interaction and social support*

Iranian women do not receive support and preventive advice from family, friends and relatives before the disease diagnosis. According to the majority of the participants, no one advised them to take any measures to prevent breast cancer, but after the diagnosis, all family members, friends and relatives began to offer them advice, help and support. In the friendly meetings and parties, nobody give medical advice, but the participants stated that, such gathering events and communication helped them to obtain more health-related information and knowledge.

“One of our relative who had been diagnosed with cancer told us many times that we should go for the examination, but we did not listen” (Participant No: 3). “I talked to anyone about breast cancer and none gave me any advice. In the family gathering, we are usually talking more about children and cooking than breast cancer” (Participant No: 10).

#### *Work pressures and stress*

A number of participants expressed that, the long working time, job stress and work pressure were some of

the reasons for not going for breast cancer screening. They stated, work pressure and stressful occupation occupy their mind and cause many them to forget important issues, such as breast cancer screening.

“Due to the high domestic workload, shopping and looking after my grandchildren, etc ... I have not been able to go for the screening” (Participant No: 16). “... If you don't finish your work, you won't have time for the diseases. I have depression and most of the times I sit in a corner and tell myself; don't worry about cancer and no matter what life brings, let it happen” (Participant No: 8).

#### *Unrealistic optimism*

A number of participants considered some foods as the risk factors for cancer. Some participants stated that, they will never get cancer as they have good lifestyle and take care about their eating habits, they take good food, and do exercise and walking.

“Due to my healthy lifestyle and attention that I pay to my food and physical activity ... I think this illness will never come to me” (Participant No: 1).

#### *Cultural attitudes and beliefs*

Contrary to the cultures of advanced countries that avoid risks by taking preventive measures, it seems that, Iranian women are in danger. A number of respondents had a false belief of instant death after cancer diagnosis. By increasing age, women felt more embarrassed and wondered why they should show their private parts and organs to male doctors and put themselves under their surgical knife. it seems that, there is less shame in the new generation, and they would even let male doctor to examine them if there is no female physician or if they have to.

“A group of people who believe the breast is a private part and a stranger should not touch it, it is hard for them to visit doctor” (Participant No: 2).

#### *Fear of detecting disease, and the loss of femininity and its consequences*

Among personal factors that affect breast health behaviors as mentioned by almost all participants include; fear of losing sexual appeal, fear of losing husband, fear of losing breasts, fear of hair loss and chemotherapy, and fear of breast deficiency, radiotherapy and its complications such as weight loss and nausea. For most women, breast cancer was considered to be a defect in the body, and they felt it has a great impact on their beauty, femininity and sexual relations.

“... Do you know what the consequences of cancer are for you? You lose your hair due to chemotherapy and maybe amputate your breast” (Participant No: 15). “It is better not to think about cancer, as it will concern you and you will get it” (Participant No: 10)” “... I know some women who after being diagnosed with cancer have been divorced and their husbands have easily remarried another woman, because they had lost their femininity” (participant No: 3 in the focus group discussion). “... Many of women do not visit the doctor due to the fear of losing their breasts; if my doctor tell me I should remove my breast, I will go crazy” (Participant No: 6). “... ”

*I have an obscure feeling about the removing of my breasts. It makes me sad as a woman who is going to be a mother..." (Participant No: 7 and 6).*

### Fatalism

Five respondents stated that, getting cancer is due to the fate and destiny, but all of them agreed that, if diagnosed with cancer, they will seek treatment and will not wait for miracle.

*"God gives the disease" (Participant No: 9). "Our actions and deeds shape our destiny to a great extent, but we must know that, there is a solution for every problem. Perhaps the disease is in our destiny, but it does not mean that, we cannot do something about it" (Participant No: 7). "On one hand, I trust in God and relay on him. I say to myself that, if I become sick, nothing will happen" (Participant No: 8). "fate does not cause cancer, and too much sensitivity is not good either" (Participant No: 11).*

## Discussion

The overall policies of each country can have a different impact on breast health behaviors. In the interview with experts, it was found that, when reviewing the general policies of a country, it is not enough to focus on the Ministry of Health as the only custodian of society's health. One of the policies that have not been adequately highlighted in Iran's health care system is the prevention and early diagnosis of breast cancer. The findings showed that, the Ministry of Health has not been working very well as the health trustee and has not developed appropriate policies for prevention, referral and treatment of breast cancer. It seems that, it is necessary to have free of charge screening services and provide extensive information for women on issues related to breast cancer. In the macro-level, the policies such as education and the labor market should also be considered, as these policies can form social classes in terms of income, employment and education, and ultimately affect the breast health behaviors of women directly or indirectly. This qualitative study was conducted with the aim of exploring the experiences of women to determine the social determinant of health, which negatively affects the breast health behaviors in women. Screening for breast cancer is one of the important ways to diagnose and help treat early stages of breast cancer.

The findings of this study showed that TV, cyberspace, radios, and health centers are the most important sources of information about breast cancer and screening methods, although participants acknowledged that, Iran's media have been less active in educating and sensitizing women about breast cancer. Results of other studies have also shown that, lack of proper information on breast cancer for women and not prioritizing the breast health behaviors can result in low screening, and also, the use of educational pamphlets and provision of information can help to increase women's participation in breast cancer screening (Abedian Kasghary and Shahhosseini, 2006; Moodley et al., 2006).

The health systems have been much discussed

as factors that affect breast cancer health behavior. The preventive health system is also considered as a provider of clinical services. Although cancer is not caused by the health system, preventive services and continues education provided by the health system can affect the early diagnosis of breast cancer. Furthermore, insurance coverage, quality of care, easy access to services, and early detection of cancer can help to control the disease and reduce mortality.

It seems that, factors such as lack of access to diagnostic facilities, long waiting time for diagnostic tests, cultural factors, women's lack of knowledge about the symptoms, disease progress, and diagnostic and treatment methods are effective in the delay of the health system in early detection of breast cancer, which is consistent with the studies of Montella et al., (2001) and Nosrati (2006).

Health care providers play an important role in educating their clients. However, according to the results of this study and previous studies, not trusting the physician and the health system can inhibit breast health behaviors (Ashing-Giwa et al., 2004; Schueler et al., 2008). In the meta-analysis study of Sabado et al, (2014), the doctor's advice helped to increase screening more than socioeconomic issues.

Consistent with the study of Sabado et al., (2014), the results of this study showed that, the distance from diagnostic clinics, long waiting time, bilingualism, lack of transportation, and embarrassment were barriers to breast cancer screening.

According to the results of this study, increasing the level of education tends to increase breast health behaviors, and raising awareness can work as an incentive to increase breast health behaviors. Low Breast- health literacy is considered as a negative factor in the care processes, especially the breast cancer screening. Low literacy in obtaining information and ignorance prevent breast health behaviors, which is consistent with the results of studies by (Akin and Demirel, 2003; Sec-ginli and Nahc-ivan, 2006; O'Malley et al., 2002; Ahmed et al., 2005).

Moreover, Patista (1998) and Champaign and Menon (1997) showed that, women who had a higher awareness showed a more positive behavior in relation to breast self-examination and were doing it more often. Study of Erel et al., (1996) also showed that, undertaking breast self-examination is directly related to the person's education.

The results of this study showed that, low income of women and their families were associated with lower breast health behaviors, while, reducing screening costs or making the screening free of charge, and also increasing access to screening facilities will increase the motivation in women. In countries like Iran where there is no free screening service, medical and health care assistance can help women's decision on doctor visit and paying for medical treatment. This finding is in line with the results of studies by by Marmara et al.,2017; Powell 2012 and Kerry and Taylor, 2003; which were examining the role of financial issues as a barrier to early detection of breast cancer (Valdinia and Cargill, 1997).

The results of this study, consistent with the study of Nekhlyudov et al., (2003) and Gullatte et al., (2006) in the United States, showed that job and socio-economic level are related to breast self-examination and low socio-economic status is related to the delayed screening.

The interviews' analysis found that, social support of women at screening age before illness is low and the women who are the head of household try to look healthy for their family members.

Based on the findings of this study, for some, the family history of cancer has prevented breast health behavior and for some others, facilitated the breast health behavior. Some did not want to check themselves as they had seen the suffering of their family members with cancer, and some feared of having cancer because of family history, so they were not seeking the screening. Studies by Lee et al., (2007) and Heidari (2014) reported that, family history of cancer was the strongest factor affecting mammogram and self-examination. Women, who did not have a family history of cancer or did not consider themselves to be at risk of cancer, were screening less. Thus it seems that, the closer the family member with cancer is to women, the more negative effect he/she has on the screening visit of women. Those who had closely witnessed the pain, suffering, nausea and loss of hair of a family member, had less tendency towards breast health behavior. This finding is not consistent with the findings of Othman et al., (2012), which showed that, having a family member with cancer leads to increased screening. These findings greatly emphasize on the importance of education, as they show women still do not have a comprehensive understanding of the benefits of preventive care. Previous literature also suggests that, high motivation for being healthy leads to an increase in health promoting behaviors (Sadler et al., 2007).

Our study, consistent with the Lamyian et al., (2007), showed that spending too much time for the family such as caring for family members and doing domestic works prevent Iranian women from screening. Furthermore, Iranian women are not interested to talk about and discuss specific issues, such as cancer and breast health behaviors. They believe breast cancer affects their body and their sexual appeals. Previous studies in Asian countries have found that, women's individual characteristics, psychosocial factors, and knowledge are effective in their breast cancer screening (Ahmadian et al., 2012).

Most participants in this study described cancer as "awful" and some believed that, removal of breast completely changes the life, which is consistent with the study of Tessaro et al., (1994). Some were worried about being disabled, and those, who were shy and considered breast as a private body part that should not be seen by strangers, were less likely to go to a doctor for early diagnosis. A number of participants did not believe in screening, but most participants were focused on the fear of illness, death or side effects such as hair loss, job loss, surgery, and breast removal, which can have an impact on their beauty. Most of the participants were concerned about the removal of their breasts and were stressed about the financial burden after diagnosis, but majority of them knew that, screening could detect cancer

before its progression.

Consistent with our study, Jones et al., (2014) and Conway-Phillips (2011) study indicated that, fear of pain and painful examination prevented women from participating in screening programs. In addition to these findings, our study showed that, married people do more screening, which is contrary to the findings of Jones et al., (2014); Petro-Nustus and Mikhail, (2002) and Sec -ginli and Nahc -ivan, (2006).

The findings also showed that, women preferred to visit a female doctor for examination. Various studies on Muslim women have shown that, it is important for Muslim women to undergo sensitive examinations such as Pap smear and physical breast examination by a female doctor, because they feel more secure. Therefore, they are more willing to go for screening (Ahmed et al., 2004. Todd et al., 2011).

Believing that, cancer is in their fate and destiny, and cannot be prevented is a false belief that can negatively affect early diagnostic interventions and participation in breast health behaviors. Previous studies have shown that, improving knowledge and attitudes can change behavior toward breast cancer and ultimately increase quality of life and reduce mortality (Nafissiet al., 2012). Iranian women as Muslim women consider breast cancer as the will of God, but many of them acknowledge that, the reason for not going for screening is not because they have surrendered to the will of God, yet they believed that, if God gives pain, he will give the cure as well, and this is contrary to the studies of Azaiza and Cohen, (2006) and Rashidi and Rajaram, (2000).

According to our knowledge, no studies had directly addressed the social determinants of breast health behaviors. The low breast screening rate caused us to study the social factors of breast cancer health behavior as the factors such as persuasion, education, and an increase in the number of physicians and health centers have not been able to adequately increase the level of screening, and early detection, and also have not been able to reduce mortality. Therefore, we looked for causes beyond individual factors.

The findings of this study showed that, breast cancer health behavior is influenced by social factors, and interventions such as lowering of the costs or free of charge mammography, targeting women without health care insurance, increasing access, educating and retraining of physicians on the importance of early detection of breast cancer and referral of patients, training and encouraging women to visit a breast cancer specialist periodically, and the use of multimedia resources for education, pre-clinical consultation, and mammography to minimize the fear and improve the informed use of preventive tests are recommended. The interventions should be able to reduce the fears of cancer detection to some extent and give people the hope of treatment. Moreover, based on the existing knowledge of the society, the belief of women should be modified to make them participate in screening consciously.

A comprehensive and widespread understanding of social interventions can encourage women to undertake breast health behaviors. One of the limitations of this

study was the design of qualitative study, which can affect the recalling of past events, and due to the lack of recording of screening information and social utility, the responses could have been over realistic. The strengths of this study could be its different types of sampling and study of self-examination, clinical examination, and mammograms as breast health behaviors based on the WHO model.

#### Contribution of authors

S A K drafted the article, H R, H S, AND FNN commented on and suggested revision to the protocol. All author approved the final revision of the article.

#### Declaration of interest

The authors report no conflicts of interest. The authors alone are responsible for the content and writing of the article.

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