

## RESEARCH ARTICLE

# Relationships of Fear of Breast Cancer and Fatalism with Screening Behavior in Women Referred to Health Centers of Tabriz in Iran

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## Abstract

**Background:** Fear and fatalism have been proposed as factors affecting breast cancer screening, but the evidence is not strong. This study aimed to determine relationships of fear and fatalism with breast cancer screening behavior among Tabriz women in Iran. **Materials and Methods:** In a cross-sectional study, 370 women referred to 12 health centers in Tabriz were selected with two-stage cluster sampling and data regarding breast cancer screening, fatalism and fear of breast cancer were collected respectively with a checklist for screening performance, Champions Fear and Pow Fatalism Questionnaires. Data were analyzed by logistic regression with SPSS software version 16. **Results:** Only 43% and 23% of participants had undergone breast self-examination and clinical breast examination. Among women older than 40 years, 38.2% had mammography history and only 2.7% of them had done it annually. Although fatalism and fear had a stimulating effects on breast cancer screening performance th relationships were not significant ( $P > 0.05$ ). There was a negative significant correlation between fear and fatalism ( $r = -0.24, p = 0.000$ ). On logistic regression analysis, age ( $OR = 1.037, p < 0.01$ ) and income status ( $OR = 0.411, p < 0.05$ ) significantly explained BSE and age ( $OR = 1.051, p < 0.01$ ) and body mass index ( $OR = 0.879, p < 0.01$ ) explained CBE. Also BMI ( $OR = 0.074, p < 0.05$ ) and income status ( $OR = 0.155, p < 0.01$ ) was significantly effective for mammography following. **Conclusions:** Breast cancer screening behavior is inappropriate and affected by family livelihood status and lifestyle leads to weight gain, so that for promoting of screening behaviors, economic support to families, lifestyle modification and public education are suggested.

**Keywords:** Breast cancer - fatalism - fear - screening - Tabriz, Iran

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## Introduction

Breast cancer is a major public health concern among women worldwide (Banning and Shia, 2014). That is the second most common cancer in the world and among the women. It is estimated that 1670000 new breast cancers, equivalent to 25% of all cancers worldwide in 2012 (Jemal et al., 2005). Although the incidence of breast cancer varies in four regions and its incidence has increased in many parts of the world, but there are disparities between rich and poor countries. The incidence of breast cancer in more developed countries is high, but the mortality rate in the less developed countries due to diagnosis in high stages, lack of accessibility to the care facilities, is relatively high (Ferlay et al., 2015).

In accordance with the present statistics almost 10000 people are affected by the breast cancer in the country and 3500 people suffer from this disease every year. Currently its total prevalence is almost 40000 to 50000 people

(Zendehdel, 2015). Mortality rate estimation of breast cancer in the country was 1137 in 1383 (among them 1099 cases were women). Despite the effectiveness of breast cancer screening behaviors in reducing mortality, research findings indicate that screening rates remain low in Iranian women yet (Noroozi et al., 2011). In Iran breast cancer in comparison with western countries has a different pattern and it is observed nearly one decade earlier than developed countries (Sadjadi et al., 2009).

According to the American cancer society guidelines for the early detection of breast cancer, published in October of 2015, women ages 40 to 44 should be have the choice to start annual breast cancer screening with mammography if they wish to do so. Women 55 and older should done mammography once every 2 years, or can continue annually (ACS, 2015).

Beyond poor knowledge, or ignorance, several other factors influence on the breast cancer screening in different countries. Screening behaviors are influenced by many

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factors such as knowledge, attitude, cultural values, fear, fatalism and self-efficacy and psychosocial factors (Akhigbe and Akhigbe, 2012). In many cultures fatalism focused on the belief that human life is controlled by an external power, death is inevitable and therefore it is unlikely that women can prevent breast cancer (Tang et al., 2000; Banning and Shia, 2014). Peek study in low-income African-American women shows many barriers such as negative health care experiences, fear of the health care system, psychosocial issues, delays in seeking health care, poor health outcomes, and fatalism for adherence to breast cancer screening recommendations (Peek et al., 2008). Talbert study explored fear and fatalism as obstacles that African American middle class seeking breast cancer screening (Talbert, 2008).

Kawar study showed that barriers such as embarrassment, family relationships, fatalism, and consultation with traditional healers, breast cancer fear and lack of awareness from screening programs prevent breast cancer screening (Kawar, 2013). Also study of Shang et al. in Chinese women with breast cancer showed that fear, taboo and fatalism have important influences on women's views on breast cancer (Shang et al., 2015).

Charkazi et al. (2013) in a cross-sectional study aimed to assess adherence to screening recommendations among Iranian Turkmen women showed that along with other obstacles, excessive fatalism, effects adherence to screening (Charkazi et al., 2013).

Also Phillips et al. identified fear as a barrier to breast cancer screening. When individuals have fear of breast cancer detection, they may decide not to seek screening. Psychosocial fear impairs one's cognitive behavior and through creating dissonance and confusion lead to reducing the logical decision-making capacity (Phillips et al., 1999)

According to growth of breast cancer in worldwide, its diagnosis at advanced stages in Iran and lack of systematic screening programs for early detection, study on the factors influencing screening program is essential. By considering that Islam as religion of majority of Iranian women, has been distinguished between fatalism and predestination and emphasis that in predestination, the human has no will and control over his life; whereas in the holy Quran and hadith narrated from the Mohammad prophet and Holy Imams have been stated clearly the human role's in destiny and his responsibility for his actions (Motahari, 1988), on the other hand by considering the lack of research about fatalism role in breast cancer screening in Iran, as a Muslim country with religious and spiritual belief different from western countries, this study was performed for determining breast cancer screening behaviors among Tabriz women and their relationship with fear and fatalism.

## Materials and Methods

This cross-sectional study on 370 women older than 20 referring to 12 health centers of Tabriz that have been selected in two-stage cluster sampling has been done. The data were collected through interviews and questionnaires. The questionnaire included 3 parts: demographic form

included 15 questions, Champion fear questionnaire including eight items with 5-degree Likert response. Fatalism belief was assessed with the Pow cancer fatalism questionnaire that is a 15-item questionnaire based on the philosophic origins and attributes of cancer fatalism (fear, predetermination, pessimism, inevitable death), with a Yes or No responses. Each "Yes" response was scored as one point and a "No" response as zero, giving the possible range of scores from 0 to 15. Higher scores on the Pow Questionnaire reflect higher degrees of fatalism. A score of zero to five indicates a low degree of fatalism, scores from six to ten indicate a moderate degree of fatalism, and scores between eleven and fifteen reflect a high degree of fatalism (Akhigbe and Akhigbe, 2012).

Fatalism and fear questionnaires were translated to Persian language with back-translation method and their content validity were evaluated by 6 experts in nursing, midwifery and breast cancer field and after receiving their viewpoints, necessary reformation was performed then their reliability were calculated in a pilot study (sample size was 20) by test-retest respectively %91 and %86 in two weeks interval. Inclusion criteria were reading and writing ability, having Iranian nationals, 20-year-old and more, Tabriz resident, and exclusion criterion was suffering from any type of breast disease.

During data collection, eligible women referring to health centers were selected based on inclusion and exclusion criteria, then explanations about the purpose of study, the questionnaire and confidentiality of the information was given to them and after giving informed consent the questionnaires were completed by interview. Data were analyzed using SPSS software version 16 at the significant level of 0.05.

## Results

The present study aimed to determine the fatalism and fear of breast cancer and their relationship with breast cancer screening behaviors, showed that breast cancer screening function among women was not appropriate generally; so that among all the women participated in the study just 43% and 23.8% respectively did BSE and CBE; and among those doing BSE just 12.2% did it monthly.

By age group separation 35.9% of women younger than 40 and 53.3% of women older than 40 years old did BSE and also 17.1% and 33.6% of women younger than 40 and older than that did CBE. In women older than 40, just 38.2% of women mentioned mammography previous history (Table 1) and among them only 2/7% had yearly mammography. The most important barriers were expressed by women including lack of time (10.5%), costly (6%), unfamiliarity with mammography centers (5.7%), fear of mass detection (4.5%) and being painful (3%).

Only 10.8% of women mostly believed in fatalism so majority of women (70.6%) believed in fatalism very less. According to normal distribution of fatalism and fear scores based on Kolmogorov-Smirnov ( $p > 0.05$ ), independent t-test results showed although fatalism scores mean in women with positive screening function (mammography, BSE and CBE) were more than women

**Table 1. Breast cancer screening function in women and comparison of fatalism and fear from breast cancer based on screening function**

SBE(total sample)			Difference mean(SD)		CI of %95		P-value	
Function	Frequency	Percent	Fatalism	Fear	Fatalism	Fear	Fatalism	Fear
NO	211	57	1.69(0.28)	3.32(1.08)	-0.1014	-0.2824	0.108	0.55
YES	159	43	1.74(0.24)	3.38(0.99)	0.01	0.1505		
Total	370	100						
CBE(total sample)			Difference mean(SD)		CI of %95		P-value	
NO	281	76.2	1.71(0.27)	3.31(1.06)	-0.08	-0.435	0.649	0.147
YES	88	23.8	1.72(0.24)	3.49(0.95)	0.049	0.0653		
Total	369	100						
Mammography(Age>40)			Difference mean(SD)		CI of %95		P-value	
NO	97	61	1.62(0.33)	3.37(1.19)	-0.182	-0.437	0.077	0.635
YES	62	39	1.70(0.26)	3.46(0.98)	0.009	0.268		

**Table 2. The frequency of women responses to the breast cancer fear questionnaire**

Fear items	Frequency of response					Mean	Std. Deviation
	Quite disagree	Disagree	No idea	Agree	Quite agree		
1. I get scared.	21	57	53	135	103	3.65	1.19
2. I feel nervous.	33	111	90	82	53	3.02	1.20
3. I get upset.	23	76	59	132	79	3.45	1.21
4. I get depressed.	29	80	81	108	71	3.3	1.22
5. my heart beats faster.	28	107	90	87	57	3.1	1.20
6. I feel uneasy.	28	85	77	113	66	3.28	1.21
7. I get edgy.	22	60	51	152	84	3.58	1.17
8. I feel anxious.	29	80	58	119	83	3.39	1.26

**Table 3. The frequency of women responses to the fatalism questionnaire**

Fatalism items	Frequency of response			Mean	Std. Deviation
	Agree	Disagree	No view		
I believe, ...					
1. if someone is meant to have cancer, it doesn't matter what they eat, they will get cancer anyway.	106	260	4	1.71	0.46
2. if someone has cancer, it is already too late to do anything about it.	68	300	2	1.81	0.38
3. someone can smoke all their life, and if they are not meant to get cancer, they won't get it.	56	312	2	1.84	0.35
4. if someone is meant to get cancer, they will get it no matter what they do.	92	274	4	1.74	0.43
5. if someone gets cancer, it was meant to be.	140	226	4	1.61	0.48
6. if someone gets cancer, their time to die is near.	102	265	3	1.72	0.44
7. if someone gets cancer, that's the way they were meant to die.	109	257	4	1.7	0.45
8. getting checked for cancer makes people think about dying.	154	212	4	1.57	0.49
9. if someone is meant to have cancer, they will have cancer.	108	257	5	1.7	0.45
10. some people don't want to know if they have cancer because they don't want to know they may be dying from it.	196	171	3	1.46	0.49
11. if someone gets cancer, it doesn't matter when they find out about it, they will still die from it.	70	297	3	1.8	0.39
12. if someone gets cancer a lot of different treatments won't make any difference.	66	300	4	1.81	0.38
13. if someone was meant to have cancer, it doesn't matter what the doctor tells them to do, they will get cancer anyway.	81	285	4	1.77	0.41
14. if someone is meant to have cancer, it doesn't matter if they eat healthy foods, they will still get cancer.	60	307	3	1.83	0.37
15. cancer will kill most people who get it.	148	219	3	1.59	0.49

without this function but difference among them wasn't significant ( $p>0.05$ ); also women with positive function feared from breast cancer more than the group without screening function, but difference between two groups was not significant ( $p>0.05$ ) (Table 1).

The results of present study showed that there is a significant negative correlation between fatalism and fear from breast cancer ( $r=-0.24$ ,  $p<0.01$ ); So that with increasing fatalism, fear from breast cancer is reduced. Women less than 40 years, had more fatalism belief than women older than 40 and difference between them was

significant ( $p<0.05$ ), also women younger than 40 feared from breast cancer more than women older than 40, but difference between them was not significant ( $p>0.05$ ).

In relation to the fear of breast cancer in women, the highest mean scores of fear (3.65, 3.58 and 3.45 respectively) were related to these items: "When I think about cancer, I get scared", "When I think about cancer, I get edgy" and "When I think about cancer, I get upset" and the least mean scores of fear (3.02, 3.10 and 3.28 respectively) were related to these items "When I think about cancer, I feel nervous", "When I think about cancer,

**Table 4. Predictors of breast cancer screening behaviors in women**

Dependent variable	Independent variables	OR	CI of %95		P-value
			Upper bound	Lower bound	
SBE	Age	1.037	1.066	1.009	0.01*
	Low income status	0.411	0.929	0.182	0.033*
	Fatalism	1.979	5.847	0.67	0.217
	Fear	1.158	1.497	0.896	0.261
CBE	Age	1.051	1.084	0.019	0.002*
	BMI	0.879	0.952	0.812	0.001*
	Low income status	0.406	1.048	0.157	0.062
	Fatalism	1.537	5.47	0.432	0.507
Mammography	Fear	1.335	1.812	0.984	0.064
	Age	1.023	1.09	0.959	0.491
	BMI	0.074	0.914	0.006	0.042*
	Low income status	0.155	0.596	0.04	0.007*
	Fatalism	1.226	7.152	0.21	0.821
	Fear	1.13	1.658	0.771	0.53

my heart beats faster” and “When I think about cancer, I feel uneasy” (table2).

Study results showed that the highest mean scores of fatalism (1.84, 1.83 and 1.81 respectively) were related to these items: “I believe someone can smoke all their life, and if they are not meant to get cancer, they won’t get it”, “I believe if someone is meant to have cancer, it doesn’t matter if they eat healthy foods, they will still get cancer” and “I believe if someone gets cancer a lot of different treatments won’t make any difference“. Also at least mean scores of fatalism (1.46, 1.57 and 1.59 respectively) were related to these items “I believe some people don’t want to know if they have cancer because they don’t want to know they may be dying from it”, “I believe getting checked for cancer makes people think about dying” and “I believe cancer will kill most people who get it” (Table 3).

To investigate the variables anticipating breast cancer screening behaviors (BSE, CBE and mammography), logistic regression was used with enter method. Independent variables included age, BMI, income status, education level, fatalism, fear of breast cancer and dependent variable was breast cancer screening behaviors. Logistic regression analysis showed that, age and income status explain significantly BSE behavior; So that with age growing promote BSE behavior (OR=1.037, CI=1.009-1.066, P<0.01) and low income status has decreasing effect on it (OR=0.4111, CI=1.82-0.929, P<0.05); Although fatalism and the fear of breast cancer has a stimulating effect on BSE behavior (OR>1), but their effects were not significant (P>0.05) (Table 4).

Logistic regression analysis showed that age significantly increases CBE behavior, (OR=1.051, CI=1.019-1.084, P<0.01), BMI has significant decreasing effect (OR=0.879, CI=0.812-0.952, P<0.01) and low income status also has non-significant decreasing affect (OR=0.406, CI=0.157-1.048, P>0.05) on women participation in CBE. Fatalism (OR= 1.537, P>0.05) and the fear of breast cancer (OR= 1.335, P>0.05) also has a non-significant stimulating effect on it (Table 4). Also in women older 40 years, BMI (OR= 0.074, CI=0.06- 0.914, P< 0.05) and low income status (OR= 0.155, CI=0.040-0.596, P<0.01), significantly have decreasing effect on mammography following. Fatalism and fear also have non-significant stimulating effect on it (OR>1, P>0.05)

(Table 4).

## Discussion

The findings of current study revealed that breast cancer screening function in Tabriz women is not suitable. Mokhtary (Mokhtari L. et al., 2011), and Bakhtariaghdam (Bakhtariagdam et al., 2012) studies in Tabriz are consistent with our study. In Asgharnia et al. study in Tehran, BSE and mammography following was reported low (Asgharnia et al., 2013).

In our study, the mean scores of fatalism in the Tabriz women was much lower than the average and the fear of breast cancer was above than the average. But fatalism and fear of breast cancer had non-significant stimulating effect on BSE, CBE and mammography. According to Akhigbe et al. in Nigerian women, fatalism scores mean was more than ours but there was no significant correlation between fatalism and breast cancer screening (Akhigbe and Akhigbe, 2012).

In our study, fear and fatalism in women who have had a positive function in the BSE behaviors were more likely than women without screening function; contrary to finding this study, Talbert research in middle class American-African women indicated that fear and fatalism belief scores were significantly related to compliance with breast cancer screening recommendations (Talbert, 2008). In a study by Abu- Helaleh in Jordan also, the most commonly reported barriers for women who never underwent screening were: fear of results, cost of the test and fatalism (Abu-Helalah et al., 2014). None of the two studies resembled our findings.

In a study that was done by Ferrat in France, fear from cancer was the important reason for not attending mammography screening (Ferrat et al., 2013). In Charkazi et al. study in Iranian Turkmen women, breast cancer screening function was lower than ours; as in ours, no significant differences revealed between BSE function with fatalism; but in general, Iranian Turkmen women had high fatalistic belief and low adherence to breast cancer screening (Charkazi et al., 2013).

The results of Ghaderi et al. study in rural settings in Iran, that examined religious, cultural, and social beliefs of healthy women about breast cancer, showed that although



few had fatalistic views toward cancer, but the majority believed patients could try to change their destiny (Ghaderi et al., 2014). In the present study also the fatalism belief had no impact on breast cancer screening and follow-up programs.

Our study showed that age growing causes increasing BSE and CBE behaviors and poor income status has a decreasing effect on BSE behavior and non-significant decreasing effect on CBE. Body mass index has a significant decreasing effect on women participating in CBE. Also in women older than 40 years, BMI and low income status significantly reduce the follow-up mammography. In Farshbaf Khalili study in Tabriz, there was a significant relationship between BSE with education level and income status (Farshbaf Khalili et al., 2009) that resembled our research. In confirmation of our findings, Gucuk study in Turkey showed that growing older and higher education level increased BSE and CBE behaviors (Gucuk and Uyeturk, 2013). The present study showed that the action for mammography increases with age growing. This finding is consistent with Canbulat study (Canbulat and Uzun, 2008). Parsa et al. study on Malaysian teachers, doesn't resemble with present study in terms of correlation age with promotion of breast cancer screening behavior (Parsa et al., 2008).

In conclusion, due to the low percentage of breast cancer screening in Tabriz women, being ineffective of fatalism and fear of breast cancer in this regard and considering the effect of social- individual factors, it seems breast cancer screening behaviors in the women can be improved by promoting healthy lifestyle programs such as healthy nutrition, healthy lifestyle education and exercise and their effects on women BMI and on the other hand by country plans of increasing the families income level and financial support of them. Surely, as regards complexity causes of low breast cancer screening, the more studies with larger sample size and in other parts of Iran were proposed.

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## References

- Abu-Helalah M, Alshraideh H, Al-Serhan A, et al (2014). Knowledge, barriers and attitudes towards breast cancer mammography screening in Jordan. *Asian Pac J Cancer Prev*, **16**, 3981-90.
- ACS (2015). American Cancer Society Guidelines for the early detection of cancer [Online]. www.cancer.org: American Cancer Society. [Accessed oct 20 2015].
- Akhigbe A, Akhigbe K (2012). Effects of health belief and cancer fatalism on the practice of breast cancer screening among Nigerian women, INTECH Open Access Publisher.
- Asgharnia M, Faraji R, Zahiri Z, et al (2013). A study of knowledge and practice of woman about breast cancer and its screening, in the case of women who referred to alzahra hospital in rasht during 2010-2011. *Iran J Sur*, **9**.
- Bakhtariadgam F, Nourizadeh R, Sahebi L (2012). The role of health belief model in promotion of beliefs and behaviors of breast cancer screening in women referring to health care centers of tabriz in 2010. *Med J Tabriz University Med Sci Health Services*, **33**.
- Banning M, Shia N (2014). Perceptions of breast cancer screening in older Chinese women: a meta-ethnography. *Global J Breast Cancer Res*, **2**, 8-18.
- Canbulat N, Uzun Ö (2008). Health beliefs and breast cancer screening behaviors among female health workers in Turkey. *European J Oncol Nurs*, **12**, 148-56.
- Charkazi A, Samimi A, Razzaghi K, et al (2013). Adherence to recommended breast cancer screening in Iranian Turkmen women: the role of knowledge and beliefs. ISRN preventive medicine, 2013.
- Farshbaf Khalili A, Shahnazi M, Ghahvehchi A, et al (2009). Performance conditions of breast cancer screening methods and its efficient factors among women referring to health centers of Tabriz. **12**, 27-38.
- Ferlay J, Soerjomataram I, Dikshit R, et al (2015). Cancer incidence and mortality worldwide: sources, methods and major patterns in GLOBOCAN 2012. *Int J Cancer*, **136**, 359-86.
- Ferrat E, Le Breton J, Djassibel M, et al (2013). Understanding barriers to organized breast cancer screening in France: women's perceptions, attitudes, and knowledge. Family practice, cmt004.
- Ghaderi I, Kaviani A, Fakhrejehani E, et al (2014). Religious, cultural, and social beliefs of Iranian rural women about breast cancer: a qualitative study. *Archives Breast Cancer*, **1**, 25-31.
- Gucuk S, Uyeturk U (2013). Effects of direct education on breast self-examination awareness and practice among women in Bolu, Turkey. *Asian Pac J Cancer Prev*, **14**, 7707-11.
- Jemal A, Murray T, Ward E, et al (2005). Cancer statistics, 2005. *CA Cancer J Clin*, **55**, 10-30.
- Kawar LN (2013). Barriers to breast cancer screening participation among Jordanian and Palestinian American women. *European J Oncol Nurs*, **17**, 88-94.
- Mokhtari L., Baradaran Rezaee M., Mohammadpour Asl A., et al (2011). Health beliefs about mammography and clinical breast examination among female health providers in Tabriz health centers. *Iran J Nurs*, **24**, 63-73.
- Motahari M 1988. the human and fate, Tehran, Sadra.
- Noroozi A, Jomand T, Tahmasebi R (2011). Determinants of breast self-examination performance among Iranian women: an application of the health belief model. *J Cancer Educat*, **26**, 365-74.
- Parsa P, Kandiah M, Mohd Zulkefli N, et al (2008). Knowledge and behavior regarding breast cancer screening among female teachers in Selangor, Malaysia. *Asian Pac J Cancer Prev*, **9**, 221-7.
- Peek ME, Sayad JV, Markwardt R (2008). Fear, fatalism and breast cancer screening in low-income African-American women: the role of clinicians and the health care system. *J General Internal Med*, **23**, 1847-53.
- Phillips JM, Cohen MZ, Moses G (1999). Breast cancer screening and African American women: fear, fatalism, and silence. *Oncology Nursing Forum*, 561-71.
- Sadjadi A, Nouraie M, Ghorbani A, et al (2009). Epidemiology of breast cancer in the Islamic Republic of Iran: first results from a population-based cancer registry.
- Shang C, Beaver K, Campbell M (2015). Social cultural influences on breast cancer views and breast health practices among Chinese women in the United Kingdom. *Cancer Nursing*, **38**, 343-50.
- Talbert PY (2008). The relationship of fear and fatalism with breast cancer screening among a selected target population of

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African American middle class women. *J Social Behavioral Health Sci*, **2**, 7.

Tang TS, Solomon LJ, McCracken LM (2000). Cultural barriers to mammography, clinical breast exam, and breast self-exam among Chinese-American women 60 and older. *Prev Med*, **31**, 575-83.

Zendehdel K. 2015. The incidence of breast cancer in Iran [Online]. [www.entekhab.ir](http://www.entekhab.ir).