

The influence of social support and physician recommendation on breast cancer screening practices of immigrant Iranian women in the United States

Abstract

The purpose of this study was to examine the influence of women's reported social support and physician recommendation on breast cancer screening practices of immigrant Iranian women in the United States.

Methods: Logistic regression was used to identify predictors of women's breast cancer screening. The logistic regression results appear as odds ratios (ORs) and 95% confidence intervals. Backward stepwise multivariate logistic regression using the method of likelihood estimation was conducted to identify the most important predictors after adjusting for other variables ($P > .05$ for removal from model).

Results: Women who received support from their friends to perform breast self-exams (BSE) were 2.13 times more likely to have ever had a BSE. Women who received support from their husbands/partners were 3.5 times more likely to have ever had a clinical breast exam (CBE) and 2.15 times more likely to get a mammogram.

Conclusion: Findings suggest perceived social support is associated with ever having had BSE and CBE and mammogram. In addition, socioeconomic status, having a usual source of care, and having a physician's recommendation all predict *screening* practices of immigrant Iranian women.

Keywords: breast cancer screening, social support, immigrant women

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Introduction

Breast cancer is the second most common newly diagnosed cancer and second leading cause of cancer death among women in the US.¹ In 2013, an estimated 232,340 new cases of invasive breast cancer were expected to be diagnosed among US women, as well as an estimated 64,640 additional cases of in situ breast cancer and approximately 39,620 US women were expected to die from breast cancer. Only lung cancer accounts for more cancer deaths in women. Breast cancer incidence rates are highest in non-Hispanic white women, followed by African American women and are lowest among Asian/Pacific Islander women. In contrast, breast cancer death rates are highest for African American women, followed by non-Hispanic white women. Breast cancer death rates are lowest for Asian/Pacific Islander women. Breast cancer incidence and death rates also vary by state.¹

It has been well established that there are strong links between social support and positive health outcomes. Many studies have reported the positive influence of social support on women's psychological well being and coping abilities through every stage of breast cancer.²

However, very few studies have specifically explored the influence of social support on breast cancer screening. McCance and colleagues (1996) examined the importance of influence of other people in getting women to obtain breast cancer screening. Results revealed that the influence of others was highly significant to the practice of breast self-examination and less so for mammography and clinical breast examination. A study by³ investigated the relationship between social support and the frequency and accuracy of BSE practice. Social

support was found to be significantly related to the frequency of BSE, but not to the accuracy of BSE. The results also indicated that older women had lower social support scores compared with younger women.³ Another study examined the influence of social support and adherence to recommended breast cancer screening guidelines among a multicultural community.² The study participants from three racial or ethnic groups (Latina, Caucasian, and African American) who were not breast cancer survivors. The results showed higher levels of social support were related to higher income and higher education. Lower levels of social support were associated with being Latina, completing the survey in Spanish, and being born abroad. Women who did not adhere to screening guidelines (for BSE or CBE) reported less social support.² Patriarchal marital beliefs and gender roles also dictate the support women have for early detection behavior. Studies show that women concealed their participation in breast cancer screening from their male partners or did not seek help for symptoms because their husband did not want a male doctor to perform their breast examination.⁴

Numerous studies have documented the role of *physicians* in influencing their patients' participation in *screening*.⁵ Studies in a variety of populations demonstrate that physician recommendation is one of the most important predictors of breast cancer screening behaviors. A study by Slenker et al.⁶ showed that 89.6% of the women who had been asked by a doctor to get a mammogram had complied with the request, and only 10.4% of the women who had not been asked to get a mammogram had done so.

A study of largely latinas found that *physician recommendation* and discussion with a doctor or nurse was associated with ever having a mammogram.⁷ Studies that included minority women documented a dramatic improvement in the proportion of these women who obtained a mammogram after their doctors recommended this *screening* procedure.⁸ Strong patient-provider relationships, with high levels of trust, have also led to better health through adherence to recommended preventive services for low income African-American women.⁹ Physician communication problems may exist due to religious, cultural and linguistic differences between women and their physicians. Furthermore, research also indicates that physicians are less likely to share information with individuals whom they perceive to be different from themselves in terms of social class, ethnicity, gender, and age. Considering that physician recommendation is one of the most determinants of mammography, the lack of communication between physician and the patient is especially detrimental to breast cancer screening rate in this group. Studies also indicate that along with health-professional interventions and SES, and legal status of immigrant women also determine their level of *cancer screening*.^{10,11} For example in regards to mammography women with no usual source of health care, no health insurance and women who had migrated to the United States within the last 10 years were least likely to have had a mammogram within the last 2years.¹²

In general the literature suggests a direct link between an individual's interaction with social networks and the use of breast cancer screening. Recognizing the importance of early detection in saving lives and increasing treatment options, understanding the underlying factors that influence women's breast cancer screening practices is essential.

Conceptual framework

The Theory of Planned Behavior (TPB)¹³ provided the conceptual frame for the present study. TPB states that the most proximate and strongest predictor of whether an individual will perform a certain behavior is their intention to perform that behavior. The theory focuses on the determinants of behavioral intention and asserts that behavioral intention is informed by: one's overall attitude toward the action, including expectations of the outcomes associated with the action; one's belief that people important to them believe that should or should not perform the action (known as subjective norm) and beliefs about those norms; and one's perceived control, one's perceived ease or difficulty, regarding performance of the action.

Methods

The study design was a cross-sectional survey. The participants in this study consisted of self-identified first generation immigrant Iranian women who were born and/or lived in Iran before they migrated to the United States (N=341). A snow -ball method of recruitment was used. Study participants included: a) Iranian born women between the ages of 30-80 years who lived in California, b) Iranian women able to read and speak English and /or Farsi.

Instrument

Social support on breast cancer screening was assessed using three subscales measuring the perceived support from 1) husband/partner; 2) family/relatives; and 3) friends as it relates to compliance with breast cancer screening guidelines. Health professional recommendation was assessed by asking: 1) if a health professional (for example doctor, nurse) has taught them how to perform breast self-examination; 2)

if a doctor has recommended that they get a mammogram. History of Breast problems was assessed by asking whether the woman has ever experienced; 1) unusual pain, swelling or a lump; 2) an abnormal mammogram that resulted in further testing; 3) both or ; 4) none. Family history of breast cancer was assessed by asking the woman if anyone close to her had ever been diagnosed as having breast cancer (yes/no). Personal history of breast cancer was assessed by asking the woman if she had ever been diagnosed with breast cancer (yes/no).

The demographic questionnaire gathered information about age, education level, income, marital status, length of stay in the United States, regular physician, provider's gender and language and health insurance coverage.

Previously developed mammography, CBE, BSE behavior indices developed by the ACS guidelines was adapted to measure compliance/frequency of early detection behaviors. Breast cancer screening was measured by obtaining information on frequency/compliance with BSE, CBE, and mammography screening. Women were asked whether they ever had that procedure and were coded accordingly (yes/no/Not Applicable). The women were also asked if they had been recently screened. Regarding mammography in addition to compliance/frequency items were developed to assess purpose and total number of mammograms.

Internal consistency reliability assessment using cronbach's alpha was conducted for the pre-test survey. Item analysis of each subscale was performed. The social support scale had three sub-scales to assess support from husband/partner, families and friends for BSE, CBE and mammogram. The internal consistency reliabilities for each sub-scale ranged from .82 to .96 and the Cronbach's alpha for the combination of the three sub-scales was .90.

Procedure

Participants were recruited through community meetings, special events, and informal gatherings .Several special events such as the Iranian Women's day, Mother's day and religious celebrations were held during the data collection period where participants were and recruited .By surveying a variety of groups and multiple settings the diversity of the women participants in terms of age, education, and income was expanded. Upon recruitment each participant received a questionnaire package in the language of their choice (English or Farsi) containing a cover letter with information pertaining to the study, an informed consent document, and the questionnaire and an informational booklet on breast cancer screening. Participants completed the questionnaire on site.

Statistical analysis

Statistical analysis was performed using SPSS version 23 software. Descriptive statistics was used to understand women's breast cancer screening practices, demographic characteristics, socioeconomic status, and social support for breast cancer screening. Logistic regression was used to identify predictors of women's breast cancer screening. First bivariate analysis was performed to determine which independent variables would distinguish women who ever had/ never had breast cancer screening and those who had regular breast cancer screening. The logistic regression results appear as odds ratios (ORs) and 95% confidence intervals. Backward stepwise multivariate logistic regression using the method of likelihood estimation was conducted to identify the most important predictors after adjusting for other variables (P>.05 for removal from model).

Results

Socio-demographic characteristics

Table 1 summarizes the socio-demographic characteristics. Participants in this study consisted of Iranian immigrant women ages 30 and older living in California. The mean age of study participants was 44years (SD=2.01) with a range in age of 30 to 75years. With 27.6% of the women in the 40-45 age category. About 31.1% of the women were under 40 and 24.1% were 50 years of age or older. All participants were immigrants, with a mean length of residence in the United States of 16 years. Over 68 percent (68.3%) of the respondents were married. Many of the respondents had completed college education (65.7%). Sixty four percent of the women were currently employed and 13.8% were full time home-makers. The Median income was \$69,000, but 8.8% also reported earning less than \$10,000.

Table 1 Demographic characteristics

N= 341	n	% of sample
Age (years)		
30-35	71	20.8
36-39	35	10.3
40-45	95	27.9
46-49	58	17
50-55	30	8.8
56+	52	15.3
Marital status		
Married	233	68.3
Widowed	16	4.7
Divorced/Separated	50	14.7
Never Married	42	12.3
Education level		
Less than High School	12	3.6
Completed High School	37	10.9
Some College	68	19.9
College and Above	224	65.7
Employment status		
Currently Unemployed	61	17.9
Currently Employed	219	64.2
Homemaker	47	13.8
Retired	14	4.1
Yearly household income		
LESS THAN \$10,000	30	8.8
\$ 10,000 TO \$ 19,999	12	3.5
\$ 20,000 TO \$ 29,999	34	10
\$ 30,000 TO \$ 39,999	37	10.9
\$ 40,000 TO \$ 49,999	47	13.8
\$ 50,000 TO \$ 74,999	38	11.1
\$ 75,000 TO \$ 99,999	47	13.8
\$100,000 and Over	64	18.8
Health insurance		
Yes	295	86.5
No	46	13.5

Table Continued...

N= 341	n	% of sample
Regular primary health care provider		
Yes	293	85.9
No	48	14.1
Gender of primary health care provider		
Male	164	48.1
Female	158	46.3
NA	19	5.6
Prior experience of breast abnormality		
Unusual breast condition	40	11.7
Abnormal mammogram	21	6.2
Both	75	22
No	205	60.1
History of breast cancer		
Yes	25	7.3
No	316	92.7
Family/friend with breast cancer		
Yes	128	37.5
No	213	62.5

The majority of the women were insured (86.5%) and 85.9% reported that they had a regular primary health care provider. Among the participants 11.7% had a prior experience with unusual breast symptoms, and 6.2% had received an abnormal mammogram. Twenty two percent reported experiencing both. More than half of the women (60.1%) had no prior experience with any unusual symptoms and/or an abnormal mammogram. Approximately 7.3% of the women had been diagnosed with breast cancer. Among the respondents 30.7% reported knowing a relative or a close friend who had been diagnosed with breast cancer.

Social support

Results of the social support scale are shown in Table 2. Women had strong to moderate support from their husbands/partners, family members and friends to practice breast cancer screening practices. More than 50% of the women reported strong support from family members to engage in mammography. BSE was the least discussed among all three social support scales followed by CBE. More than nineteen percent reported never discussing BSE with their husband / partner, and more than 24 % never discussed BSE with either friends or family members. Twelve percent of the women never discussed CBE with husbands/partners, 18.8% never discussed CBE with family members and 20.8% never discussed CBE with friends.

Breast cancer screening profile

A total of 86.2% of the women had practiced BSE at least once, Only 38.1% participants practiced BSE once a month and 18.5% reported not practice at all. The comparatively lower BSE rates are in contrast with the higher annual CBE and mammography rates. The majority (93%) of the women indicated having had at least one CBE. Seventy three percent (73%) of the participants ages 40 and up reported having had a CBE every year. Among women below the age of 40, 65.4% reported having a CBE every year and 10.3% having a CBE every two to three years. In this study nearly all participants had heard of mammography (94.1%), among women ages 40 and up, 7.7% of the had never had a mammogram. For women ages 40 and up 55.5% had a mammogram less than a year ago and 25.6% of the women had a mammogram one year ago. Therefore, 81.1%

of the women age 40 and up reported having a mammogram within the last year, and 9.4% of the women reported having undergone mammography more than two years ago. Routine screening was the reason for obtaining a recent mammogram for 59.5% of the women.

Multivariate analysis for breast cancer screening practices

Table 3 summarizes the results of the multiple logistic regression analysis including the odds ratios and their corresponding confidence intervals for breast cancer screening practice. The multivariate analysis indicated women with an AA college degree or higher and those who were taught by a physician how to perform breast self-examination (OR=19.97, P=.000) were more likely to have ever had a BSE. Women who received support from their friends to perform BSE were 2.13 times more likely to have ever had a BSE.

Those who lived in the United States for more than 10 years (OR=6.76, P=.000) with prior experience of breast abnormality (OR=7.1, P<.003) were more likely to have ever had a CBE. Having a regular source of health care was not a very significant factor in the final model (OR=2.45, P<.084).

Women who received support from their husbands/partners were 3.5 times more likely to have ever had a CBE. Women who lived in the United States for more than 10 years (OR= 6.97, P<.007), were recommended by their physician to get a mammogram (OR=22.6, P=.000), communicated with their physician in English (OR=5.11, P<.015) and had prior experience with breast abnormalities (OR= 22.6, P<.009) and received support from their husband s/partners were more likely to have ever had a mammogram OR=2.51, p<.004).

Table 2 Perceived social support for breast cancer screening (N=341)

Source of support	Level of support (%)				
	High	Moderate	Low	Never discuss	Not applicable
Husband/Partner					
BSE	35.2	15	5	19.6	25.2
CBE	38.4	19.1	5.3	12.6	24.6
Mammogram	39.6	19.1	5.9	10.9	24.6
Family					
BSE	44	18.5	6.5	25.8	5.3
CBE	47.8	23.5	5	18.8	5
Mammogram	50.4	22	5.9	17	4.7
Friends					
BSE	38.4	24.9	7.6	24.6	4.4
CBE	41.3	26.1	8.2	20.8	3.5
Mammogram	44.6	26.4	7.9	17.6	3.5

Table 3 Multiple logistic regression model of association between significant variables and BSE, CBE and mammography practice

Variables	BSE			CBE			Mammography (I)		
	OR	P	CI	OR	P	CI	OR	P	CI
Education	2.03	0.07	.958-4.32	ns	ns	ns	ns	ns	ns
Years in US	ns	ns	ns	6.76	0	2.63-17.42	6.97	0.007	1.69-28.6
Regular Physician	ns	ns	ns	2.45	0.084	.888-6.78	ns	ns	ns
Physician Recommended (2)							22.6	0	5.16-98.75
Physician Taught breast Self-Exam (3)	19.97	0	9.39-42.47						
Physician Language	ns	ns	ns	ns	ns	ns	5.11	0.015	1.37-19.02
Experience of breast Abnormality	ns	ns	ns	7.1	0.003	1.92-26.12	22.6	0.009	2.19-232.1
Social Support									
Husband/Partner				3.52	0.012	1.32-9.39	2.51	0.004	.170-1.44
Family/Relatives Friends	2.13	0.05	1.01-4.49						

1-Mammography for women 40 and up

2- Has a physician ever advised you to get a mammogram?

3-Has a doctor or health care provider taught you how to perform breast self-examination?

Ns, Not significant

Discussion

This study looked at the influence of social support and physician recommendation on breast cancer screening practices of immigrant Iranian women in the United States.

In non- Western cultures such as Iran, the family ,group or community often assumes major responsibility for its members' well-

being.¹⁴ A study of immigrant Iranian women's adaptation to life in the United states points out that a key factor influencing the quality of life and well -being of all the women in the study was their relationship with their families. Relationships with spouses, children, grandchildren, and friends were a major source of life satisfaction. The study concludes that the nature of ones social and emotional support greatly influences adjustment to the new cultural environment.¹⁴ In this study

women had strong to moderate support from their husbands/partners, family members and friends to practice breast cancer screening. More than 50% of the women reported strong support from family members to engage in mammography. A study by Wagle et al.³ investigated the relationship between social support and the frequency and BSE practice. Social support was found to be significantly related to the frequency of BSE. The results of this study also showed social support from friends was a significant predictor of ever having had a BSE and husband/partner support was a significant predictor of ever having had a CBE and a mamogram. BSE was the least discussed among all three social support scales followed by CBE. Among the participants only 38.1% practiced BSE once a month and 18.5% reported not practice at all. More than nineteen percent reported never discussing BSE with their husband /partner, and more than 24 % never discussed BSE with either friends or family members. One explanation for low rates of BSE discussion could be cultural barriers in regards to conversations about intimate body parts which have been shown to be a barrier to screening for Asian and Latina and Muslim women. In case of Muslim immigrant women, Rashidi et al.,¹⁵ argues that the unique complexities in the socio-cultural backgrounds of these women could also hinder access to healthcare services. Among the socio-cultural barriers are patient-physician communication difficulties and beliefs about cancer and cancer prevention. Health care professionals may also have stereotypical ideas about Muslim women as being powerless, uneducated and subservient.¹⁶ Several qualitative studies suggest that modesty concerns and the preference for female providers among Muslim women pose barriers to their obtaining mammograms.^{15,17-19} These studies also of breast cancer suggest that religious beliefs and cultural values of Muslim women have significant impact on whether they are enabled and supported to participate in screening exams.

Numerous studies have documented the role of *physicians* in influencing their patients' participation in *screening*.^{5,17} and many studies have linked women's SES to lower screening behavior. For example, physicians perceptions about the cost of mammography, women's inability to pay combined with Physician communication and racial prejudices due to race/ethnicity ,religious, cultural and linguistic differences between women and their physicians may reduce the likelihood of recommendation.²⁰⁻²³ A study by O'Malley et al.²⁴ investigated the association between physician recommendation and women's race/ethnicity, socioeconomic status (SES), found physician recommendation was lower among racially marginalized women who were vulnerable--older, with lower income, and lower educational attainment. Another study have shown a significant association between perceived racial or ethnic-based medical discrimination and cancer screening behaviors²⁵ Of particular concern when studying immigrant populations, is failure to consider the specific nature of the host or "mainstream" society. In its health research application, the existence of a particular "mainstream" culture to which people are adapting is implicitly speculated. This presumption seems misguided, given the complex nature of Western society. A more appropriate representation might be one that assumes an intricate pattern, wherein a variety of cultures contribute to the overall fabric of the larger society.²⁶ In order to better understand life transitions of these women, Anderson argues, that the direction of future research "should make space to understand cultural meanings not as neutral scripts for people's lives tied to their ethnic roots, but as dynamic socially, socially constructed, produced within historical, gendered, raced, and political contexts" and the need to explore the interactions between racialization, gender and SES (2000).

Certain study limitations when interpreting the results of this study needs to be considered. The most important was the use of a

convenience sample of immigrant Iranian women. Therefore findings may not be generalizable to the broader population of immigrant Iranian women in the US.

Second, the data came from self-reports and were subject to recall and desirability response bias. Because of the tendency of the subjects to answer questions the way they think is preferred frequency of breast cancer screening practices may have been overestimated. Despite these limitations by using the Theory of Planned Behavior (TPB), the findings from this study adds to the body of literature suggesting that breast cancer screening programs will be more effective if they include enabling, and social support factors associated with breast cancer screening.

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Conflicts of interest

The authors declare there is no conflict of interests.

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