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An Examination of Sociocultural Factors Associated with Mammography Screening among Latina Immigrants

John S. Luque, PhD, MPH^{1,2,*}, Yelena N. Tarasenko, Dr.PH, MPH, MPA³ [Associate Professor], Debbie Chatman Bryant, DNP, RN, FAAN^{2,4} [Associate Professor and Associate Dean for Practice], Caroline Davila, MHA¹ [Program Coordinator], Grace Soulen¹ [Graduate Research Assistant]

¹Department of Public Health Sciences, Medical University of South Carolina, Cannon Building, 135 Cannon St., Ste., 303, MSC835, Charleston, SC, 29425, USA

²Hollings Cancer Center, Medical University of South Carolina, 68 President St., Charleston, SC, 29425, USA

³Department of Epidemiology, Georgia Southern University, Hendricks Hall, P.O. Box 8015, Statesboro, GA, 30460, USA

⁴College of Nursing, Medical University of South Carolina, 99 Lucas St., Charleston, SC, 29425, USA

Abstract

Purpose.—The study hypothesized that sociocultural factors would be associated with breast cancer screening within the last two years among Latina immigrant women.

Methods.—This study employed a survey design and included 82 Latina immigrant female participants 40 to 64 years of age for the analysis. Two multivariable binary logistic regression models were estimated, one for the sociocultural deterrents (SCD) and the other for the symptomatic deterrents (SD) from the Cultural Cancer Screening Scale (CCSS) (Betancourt et al. 2010).

Results.—The results indicated two constructs of the CCSS, SCD (OR = 2.00; 95% CI = 1.04 – 3.86) and SD (OR = 1.65; 95% CI = 1.08 – 2.54), were associated with screening in the last two years, when adjusting for sociodemographic and health-related characteristics.

Conclusion.—These findings provide evidence for the importance of sociocultural factors in Latina immigrant women's timely mammography screening.

Keywords

Breast Cancer; Health disparities; Immigrant Health; Screening behaviors; Women's health

*Correspondence: John S. Luque, PhD, MPH, Associate Professor, Department of Public Health Sciences, Medical University of South Carolina, Charleston, South Carolina, 135 Cannon St., Ste., 303, MSC835, Charleston, SC, 29425, USA, Tel: (843) 876-2248, FAX: (843) 876-2248, luquej@musc.edu.

Introduction

Hispanic and Latina women in the United States (U.S.) – hereafter referred to as Latino/a – experience cancer health disparities for breast and cervical cancer screening (Siegel et al., 2015). Compared to Americans of other racial/ethnic backgrounds, Latinos have higher rates of poverty and lower rates of health insurance coverage that negatively impact their access to healthcare. Thus, Latinos represent a priority population for cancer health disparities research (Hirth, Laz, Rahman, & Berenson, 2016). Breast cancer ranks as the leading cause of cancer death among Latina women with an age-adjusted incidence rate in 2013 of 92.5 per 100,000 and a mortality rate of 14.5 per 100,000 (U.S. Cancer Statistics Working Group, 2016). While in comparison to European Americans, the mortality rates among Latina women are almost 30% lower, Latina women have lower utilization of mammography (62% vs. 66%) and lower rates of follow-up exams following abnormal screening results, and consequently, more late-stage diagnosis (American Cancer Society, 2015; Miranda, Tarraf, Gonzalez, Johnson-Jennings, & Gonzalez, 2012; Press, Carrasquillo, Sciacca, & Giardina, 2008). According to the U.S. Preventive Services Task Force (USPSTF), women considered to be at average risk should make an individual decision - weighing the harms and benefits - about having a biennial mammogram at age 40, but will receive the most benefits of receiving a biennial mammogram between the ages of 50 and 74 years old (Siu & U. S. Preventive Services Task Force, 2016).

There has been extensive research to understand breast cancer screening disparities in the U.S. between Latina and European American women. Multiple factors to explain this disparity include access to health insurance (Shoemaker & White, 2016), income inequality and ability to pay for rising healthcare costs (Mejia de Grubb, Kilbourne, Kihlberg, & Levine, 2013), documentation status (Chavez, 2012), language barriers (Jacobs, Karavolos, Rathouz, Ferris, & Powell, 2005), transportation barriers (Hubbell, 2006), cultural factors such as faith in God, family responsibilities and cancer fatalism (McMullin, De Alba, Chavez, & Hubbell, 2005; Tejeda, Gallardo, Ferrans, & Rauscher, 2016), discrimination in healthcare encounters (Crawley, Ahn, & Winkleby, 2008; Jacobs et al., 2014), health literacy (Simon et al., 2015), and knowledge of cancer screening recommendations (Sunil et al., 2014). Cultural beliefs, or normative beliefs held by a group of people with a shared culture, can serve as barriers to preventive services for patients, especially when patients and providers are from different cultural backgrounds (Betancourt, Flynn, Riggs, & Garberoglio, 2010). The difference in cultural backgrounds may help to explain why cancer health disparities persist, independent of structural factors, such as access to health insurance and affordable healthcare services (Kagawa Singer, Dressler, George, & Panel, 2016). Obtaining cultural data on cancer screening beliefs and behaviors using valid instruments can provide valuable information for designing culturally appropriate intervention strategies (Betancourt et al., 2010). There are some examples of effective cancer screening intervention programs for ethnic minority groups which have incorporated cultural considerations into their training and materials or employed culturally competent outreach workers such as lay health advisors or *promotoras*, the Spanish language term (Jandorf et al., 2012; Yu et al., 2007). However, among researchers evaluating such interventions, the question remains about the extent to which barriers to mammography screening are more cultural in terms of how

Latina women receive cancer education, or structural, in terms of access to affordable healthcare services (Buki, Jamison, Anderson, & Cuadra, 2007; Corcoran, Dattalo, & Crowley, 2010).

Purpose

This study specifically explored the effect of sociocultural factors on breast cancer screening practices among Latina immigrant women using the Cultural Cancer Screening Scale (Betancourt et al., 2010). The Cultural Cancer Screening Scale (CCSS) was developed and validated for Latina women of Mexican origin in Southern California, but the instrument has not been tested with more ethnically diverse Latina populations or in the eastern U.S. The study hypothesized that sociocultural factors would be associated with timely breast cancer screening.

Methods

Using a survey research design, the research team collected data on Latina immigrant women's breast cancer screening practices and other health characteristics in the tri-county area of Charleston, South Carolina. Two Spanish-speaking, female research assistants administered the Spanish-language survey to participants from January to June in 2016.

Study Sample

The study sample that met the inclusion criteria were comprised of a total of 82 Latina women. Inclusion criteria were Latina women who were foreign-born, Spanish-speaking, and 40–64 years of age. Women were excluded from study participation if they reported a history of cancer. The decision to include only women 40–64 years old was to align with the age recommendations for when to begin mammogram screening (U.S. Preventive Services Task Force, 2013). Potential study participants were recruited from flea markets, free medical clinics, and churches.

Participants completing the survey received a \$10 gift card, as well as an educational brochure on women's cancer screenings and locations of health services. The Medical University of South Carolina (MUSC) Institutional Review Board and the MUSC Hollings Cancer Center Protocol Review Committee approved the study.

Survey Measures

Demographic data were collected and included age, height, weight, marital status, education, employment status, English speaking ability, country of origin, and time spent in the U.S. Health information was also collected, such as health insurance coverage, frequency of provider visits, smoking history, self-reported health status, having a regular provider, having one of five possible chronic health conditions (diabetes, high blood pressure, heart conditions, lung disease, or arthritis), having anxiety or depression, and having a family history of cancer. Participants also responded to questions about what they believed would be their chances of getting cancer, what was their level of worry about getting cancer, whether they had confidence in taking care of their own health, whether they looked for cancer information, and whether a doctor had ever discussed if they could choose to have a

mammogram. These questions were drawn from the Spanish language version of the NCI Health Information National Trends Survey (HINTS) (National Cancer Institute, 2016). These questions were individual items and were not combined into scales. The scale items were Spanish language versions of previously validated scales which included four subscales from the Cultural Cancer Screening Scale (CCSS) (Betancourt et al., 2010) [Catastrophic Disease Expectations (CDE), Cancer Screening Fatalism (CSF), Sociocultural Deterrents (SCD), and Symptomatic Deterrents (SD)], and the Trust in Physicians scale (Balkrishnan, Dugan, Camacho, & Hall, 2003). The specific questions which comprise these scales are reported in the Results section.

Data Analysis

The survey data were analyzed using Stata Version 14. Descriptive statistics were calculated for sociodemographic, health-related, and hypothesized variables which would be associated with breast cancer screening as informed by prior research (Jerome-D'Emilia, 2015). The χ^2 test and independent samples t-test were used to examine bivariate associations between each of the independent variables and the behavioral outcome, adherence to mammography screening (≤ 2 years or > 2 years), respectively. Given the sample size, only socio-demographic and health-related characteristics that had been associated with screening in bivariate analyses were included in the multivariable logistic regression models.

Results

For the analysis of mammography screening data, only 82 women out of the original survey sample of 197 women satisfied the age inclusion criteria of 40–64 years of age. Out of this sample of 82 women, 45% of participants had received a screening mammogram within the last two years. Survey participants had a mean age of 47.5 years ($SD = 6.5$), 76% were married or living with a partner, and 45% had less than the equivalent of a high school education. Only 32% of participants had health insurance, 65% of participants were unemployed, 70% did not speak English well or at all, 59% were originally from Mexico, and 49% reported a family history of cancer. Table 1 provides additional details of participants' sociodemographic characteristics by mammography status, and Table 2 provides mammography screening practices by country of origin.

Table 3 reports responses to Likert-type questions on cancer-related beliefs and attitudes and results from bivariate statistics calculated for timely mammography screening. All of the CCSS subscales exhibited good to excellent internal consistency with the exception of catastrophic disease expectations [CDE ($\alpha=0.55$), CSF ($\alpha=0.81$), SCD ($\alpha=0.76$), and SD ($\alpha=0.94$)]. There were statistically significant differences from the bivariate analysis for SCD and SD (p 's < 0.01), but not CDE, CSF, or trust in physicians. Item analysis of the SCD subscale revealed the driving factors included problems making an appointment, not knowing where to go, transportation difficulties, and lack of health insurance or not having enough money. All items within the subscale for SD were statistically significant. Apart from the scale items, the only significant variable was concern for the quality of cancer information, suggesting that those who were more concerned about the quality were more likely to be associated with the group not adherent with screening guidelines.

Two logistic regression models were estimated, one for sociocultural deterrents and the other for symptomatic deterrents. Only these two sociocultural factors were significantly associated with mammography screening in bivariate analyses. Table 4 reports the results of the final logistic regression models ($p < 0.001$). The results indicated two constructs of the CCSS, SCD (OR = 2.00; 95% CI = 1.04 – 3.86) and SD (OR = 1.65; 95% CI = 1.08 – 2.54), were associated with screening in the last two years, when adjusting for sociodemographic and health-related characteristics.

Discussion

As the USPSTF (2009) screening guidelines do not recommend regular mammogram screening for women between 40 and 49 years old, the decision to practice mammography screening is an individual one. However, it is also recommended that the provider informs the woman of the benefits and harms of screening. The USPSTF recommends biennial mammogram screening for women between 50 and 74 years old. The findings of this study will be discussed with the USPSTF guidelines in mind.

In this study, only 45% of participants had received timely mammography screening, 33% of participants had never received a mammogram, and 22% had not received one in over two years. The study showed a much lower rate of screening than described in a large population-based study conducted in Washington State, which reported that out of a sample of 125 screening eligible Latina women, 83% had a mammogram in the last two years (Coronado, Thompson, & Chen, 2009). However, a more recent study which surveyed 278 low-aculturated Latina women in Wisconsin reported only 39% had received a mammogram in the last year (Martínez-Donate et al., 2013). A possible explanation for the lower timely mammography screening rate (45%) in this study compared to others could be explained by the USPSTF (2009) screening guideline change.

Based on these USPSTF guidelines, study participants were asked whether they had discussed with their provider about having a mammogram. Significantly, more than half of the women who spoke with their doctor (57%) about having a mammogram, had received one in the last two years. In our study, a larger proportion of women (59%) between 40 and 49 years old had received a mammogram in the last two years compared to the proportion of women (46%) between 50 and 64 years old. These findings suggest that even with the 2009 USPSTF guidelines, Latina women 40–49 years of age have not changed their beliefs about the importance of initiating screening. These findings are also supported by a focus group study conducted among ethnically diverse women, in which they believed in beginning mammogram screenings at 40 instead of 50 years old (Allen et al., 2013).

Studies have also reported variation in screening by Latina ethnicity (Borrayo et al., 2009; Shelton, Jandorf, Thelemaque, King, & Erwin, 2012). For example, in one study of 247 women from New York and Arkansas, Dominican women exhibited higher rates of mammography screening (92%) compared with women of other Latina ethnicities (Lawsin, Erwin, Bursac, & Jandorf, 2011). In our study, participants from Mexico had a lower prevalence of recent screening than women from other Latin American countries (35.4% vs. 58.8%). However, country of origin might be confounded with educational attainment since

50% of the Mexican participants had less than a high school education compared with only 38% of participants from other Latin American countries.

According to an integrative review of the literature on barriers and facilitators of mammography screening for Latina women, socioeconomic barriers were consistent across studies, but other barriers varied by study (Jerome-D'Emilia, 2015). The findings of the study support the literature review, in that the individual characteristics, such as education and English speaking ability were found to be facilitators to screening; 70% of those with more than a high school education and 60% of those who spoke English "very well or well" were adherent to screening recommendations. Barriers to screening included lack of health insurance in 67% of Latina women. However, despite this barrier, 35% of uninsured Latina women had received a mammogram in the last two years, indicating that there are some affordable local options for screening. For example, the Centers for Disease Control and Prevention (CDC) National Breast and Cervical Cancer Early Detection Program (NBCCEDP) provides funding for the South Carolina Best Chance Network (BCN). BCN provides access to free breast and cervical cancer screening through more than 400 active providers to uninsured and underinsured women with the goal of reducing mortality (South Carolina DHEC, 2017). One of the free clinics in the area partners with BCN at MUSC Hollings Cancer Center to provide free or low-cost mammography screening and diagnosis.

Relating to sociocultural barriers affecting screening, similar to a study conducted in the Midwest, results from the regression analysis indicated concerns with costs affecting screening, but contrary to their results, fatalism was not associated with the screening outcome (Martínez-Donate et al., 2013). The construct of cancer screening fatalism works to indirectly negatively affect timely screening because of the negative emotions evoked by such fatalistic beliefs (Betancourt et al., 2010). A qualitative study with Latina women in Washington D.C. reported that women attributed a breast cancer diagnosis to not living a healthy life or not getting screened, but destiny or God's will was not a factor in their decision to be screened (De Jesus & Miller, 2015). Unlike in these studies, our study findings showed participants did not ascribe to a fatalistic view of a cancer diagnosis, and instead, they exhibited positive attitudes toward screening and prevention. As the constructs of CCSS were explored for reliability and validity with a Latina immigrant population in the southeastern U.S., it was concluded that two of the CCSS subscales, sociocultural and symptomatic deterrents, were the most important sociocultural factors associated with adherence to breast cancer screening recommendations.

There were several limitations to this survey study, mainly related to self-report and sample size. Confirmation of mammography screening was beyond the scope of this study. However, a meta-analysis reported high concordance between self-reported receipt of mammography screening and medical record verification of receipt, but noted that Latina women were more likely to underreport mammogram screening (Rauscher, Johnson, Cho, & Walk, 2008). The sample size in this study was too small to conduct a higher level regression analysis testing multiple predictors, but was sufficient to test the constructs of the CCSS to predict screening outcomes.

This study has allowed the constructs of CCSS to be tested as predictors for screening in in a Latina immigrant population in the southeastern U.S.. As an indirect study outcome, the study team developed Spanish language informational resources about affordable breast and cervical cancer screening options to distribute to study participants. Subsequent study activities are employing qualitative methods to explore health care seeking strategies among low-income, uninsured, Latina immigrant women to further understand barriers and facilitators to screening and treatment for this priority population to provide additional insight prior to delivering culturally appropriate intervention and outreach strategies.

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Table 1.

Sociodemographic Characteristics and Perceptions of Latina Immigrant Women Reporting Most Recent Mammogram by Time Interval, 2016

Characteristics	Total (n) ^a	Mammogram % 2 yrs.,	Mammogram 2 yrs. or never, %	P-values
Overall^a	82	45.1	54.9	-
Age group (years)				
40–49	58	41.4	58.6	0.290
50–64	24	54.2	45.8	
Marital status				
Single/Other	20	45.0	55.0	0.990
Married/living with a partner	62	45.2	54.8	
Education				
< 11 years	37	37.8	62.2	0.019
12 years or HS	22	31.8	68.2	
Some college, tech, or higher	23	69.6	30.4	
Employed				
Yes	29	44.8	55.2	0.968
No	53	45.3	54.7	
Speak English				
Very well or well	25	60.0	40.0	0.073
Not well or not at all	57	38.6	61.4	
Country of origin				
Mexico	48	35.4	64.6	0.036
Other Latin American country	34	58.8	41.2	
Proportion of Life Spent in U.S.				
< 25%	19	47.4	52.6	0.812
25%	61	44.3	55.7	
BMI				
Normal weight, 18.5–24.9	19	52.6	47.4	0.280
Overweight, 25.0–29.9	26	53.8	46.2	
Obese, ≥ 30.0	34	35.3	64.7	
Health insurance coverage				
Yes	26	69.2	30.8	0.003
No	55	34.5	65.5	
Have a regular provider				
Yes	54	48.1	51.9	0.528
No	27	40.7	59.3	
Frequency of provider visits				
None	20	35.0	65.0	0.650
1 time	20	55.0	45.0	
2 times	19	47.4	52.6	

Characteristics	Total (n) ^a	Mammogram % 2 yrs.,	Mammogram 2 yrs. or never, %	P-values
3 times	22	45.5	54.5	
History of smoking cigarettes				
Yes	15	60.0	40.0	0.200
No	67	41.8	58.2	
Self-reported health status				
Excellent/very good	15	73.3	26.7	0.042
Good	30	43.3	56.7	
Fair/poor	37	35.1	64.9	
Current chronic health condition ^b				
Yes	36	58.3	41.7	0.041
No	45	35.6	64.4	
Depression or anxiety disorder				
Yes	29	37.9	62.1	0.333
No	53	49.1	50.9	
Family history of cancer				
Yes	40	50.0	50.0	0.386
No	42	40.5	59.5	
Looked for cancer information				
Yes	39	66.7	33.3	0.001
No	32	28.1	71.9	
Chances of getting cancer				
Very unlikely/unlikely	39	51.3	48.7	0.565
Neither unlikely nor likely	10	40.0	60.0	
Very likely/likely	33	39.4	60.6	
Confidence in taking good care of own health				
Completely/very confident	49	53.1	46.9	0.212
Somewhat confident	18	33.3	66.7	
Little/not confident	15	33.3	66.7	
Worry about getting cancer				
Slightly/not at all	52	42.3	57.7	0.741
Somewhat	19	47.4	52.6	
Moderately/extremely	11	54.5	45.5	
Has a doctor ever told you that you could choose to have a mammogram?				
Yes	56	57.1	42.9	0.001
No	26	19.2	80.8	

Note. BMI = body mass index.

^aTotal may not sum to 82 for some questions because of missing data.

^bDerived variable from 5 different types of chronic conditions including: diabetes, high blood pressure, heart conditions, chronic lung disease (or asthma, emphysema, chronic bronchitis), and arthritis or rheumatism.

Table 2.

Latina Immigrant Women Reporting Most Recent Mammogram and Doctor Discussion by Time Interval and Country of Origin, 2016

Characteristics	Total (n)	Mammogram 2 yrs., %	Mammogram 2 yrs. or never, %	Doctor discussion about whether or not to have a mammogram	
				Yes	No
Country of origin					
Bolivia	1	100	0	100	0
Colombia	7	71.4	28.6	71.4	28.6
Cuba	1	100	0	100	0
Dominican Republic	1	100	0	100	0
El Salvador	3	66.7	33.3	100	0
Guatemala	5	40.0	60.0	80	20
Honduras	6	16.7	83.3	66.7	33.3
Mexico	48	35.4	64.6	64.6	35.4
Peru	1	0	100	0	100
Puerto Rico	7	71.4	28.6	71.4	28.6
Venezuela	2	100	0	50	50
Total (n, %)	82	45.1	54.9	68.3	31.7

Table 3.

Responses for Cancer-related Beliefs and Attitudes with Mammography Screening Practices, 2016

Characteristics	Mammogram 2 yrs Mean $\pm$ SD	Mammogram 2 yrs. or never Mean $\pm$ SD	P-values
<i>Catastrophic Disease Expectations^a</i>	2.5 $\pm$ 1.1	2.9 $\pm$ 1.3	0.136
Breast cancer is the worst thing that can happen to a woman			
Breast cancer is a deadly disease			
<i>Cancer Screening Fatalism^a</i>	4.5 $\pm$ 0.9	4.7 $\pm$ 0.8	0.408
It is not important to screen regularly for breast cancer because everyone will eventually die of something anyway			
It is not necessary to screen for breast cancer regularly because it is in God's hands anyway			
Screening regularly is not very important because if you are meant to get cancer you will get it no matter what you do			
<i>Sociocultural Deterrents^a</i>	3.6 $\pm$ 0.9	4.3 $\pm$ 0.8	<0.001 *
Having problems making an appointment			
Not knowing where I can get a screening exam			
Not being able to get time off work			
Not having transportation to get to my appointment			
Not receiving a reminder call or text for the screening exam			
Having to take care of my child(ren) of family			
Not having health insurance or the money to pay for the exam			
<i>Symptomatic Deterrents^a</i>	3.5 $\pm$ 1.5	4.4 $\pm$ 1.0	0.002 *
Feeling healthy			
Having several normal screening results			
Not feeling anything abnormal			
<i>Trust in Physicians Scale^b</i>	2.1 $\pm$ 1.0	2.0 $\pm$ 1.0	0.753
Sometimes your doctor cares more about what is convenient for him/her than about your medical needs			
Your doctor is extremely thorough and careful			
You completely trust your doctor's decisions about which medical treatments are best for you			
Your doctor is totally honest in telling you about all of the different treatment options available for your condition			
All in all, you have complete trust in your doctor			
<i>Cancer Beliefs^a</i>			
It seems like everything causes cancer	2.8 $\pm$ 1.1	2.7 $\pm$ 0.9	0.735
There's not much you can do to lower your chances of getting cancer	3.0 $\pm$ 1.0	3.2 $\pm$ 0.8	0.325
There are so many different recommendations about preventing cancer, it's hard to know which ones to follow	2.4 $\pm$ 1.0	2.3 $\pm$ 1.0	0.610
In adults, cancer is more common than heart disease	2.4 $\pm$ 0.9	2.3 $\pm$ 0.9	0.591
I'd rather not know my chance of getting cancer	3.5 $\pm$ 1.0	3.7 $\pm$ 0.8	0.453
<i>Cancer Fatalism and Worry</i>			

Characteristics	Mammogram yrs Mean $\pm$ SD	Mammogram 2 yrs. or never Mean $\pm$ SD	P-values
How likely are you to get cancer in your lifetime? ^c	2.8 $\pm$ 1.3	2.9 $\pm$ 1.3	0.535
How worried are you about getting cancer? ^d	2.3 $\pm$ 1.1	2.2 $\pm$ 0.9	0.762
<i>Cancer Information Seeking^a</i>			
It took a lot of effort to get the information you needed	3.2 $\pm$ 1.0	2.8 $\pm$ 1.3	0.281
You felt frustrated during your search for information	3.3 $\pm$ 1.0	3.1 $\pm$ 1.0	0.644
You were concerned about the quality of the information	3.0 $\pm$ 1.2	2.3 $\pm$ 1.1	0.028 *
The information you found was hard to understand	3.1 $\pm$ 1.1	2.8 $\pm$ 1.3	0.374
<i>Communication with Healthcare Professionals^e</i>			
How often did they give you the chance to ask all the health-related questions you had?	1.4 $\pm$ 0.7	1.7 $\pm$ 1.0	0.297
How often did they give you the attention you needed to your feelings and emotions?	1.7 $\pm$ 0.9	1.6 $\pm$ 0.8	0.434
How often did they involve you in decisions about your healthcare as much as you wanted?	1.7 $\pm$ 0.7	1.7 $\pm$ 0.9	0.968
How often did they make sure you understood the things you needed to do to take care of your health?	1.4 $\pm$ 0.6	1.3 $\pm$ 0.7	0.478
How often did they explain things in a way you could understand?	1.3 $\pm$ 0.7	1.3 $\pm$ 0.7	0.583
How often did they spend enough time with you?	1.6 $\pm$ 0.8	1.4 $\pm$ 0.8	0.419
How often did they help you deal with feelings of uncertainty about your health or healthcare?	1.6 $\pm$ 0.9	1.6 $\pm$ 1.0	0.869
In the past 12 months, how often did you feel you could rely on your doctors, nurses, or other healthcare professionals?	1.6 $\pm$ 0.8	1.7 $\pm$ 0.8	0.543
<i>Quality of Healthcare^f</i>			
Overall, how would you rate the quality of healthcare you received in the past 12 months?	2.2 $\pm$ 0.9	2.1 $\pm$ 1.0	0.573

Notes.

* $p < 0.05$. Values in **bold** represent summary scale scores for validated measures.

^a Response categories for these items are: 1 = "strongly agree"; 2 = "somewhat agree"; 3 = "somewhat disagree"; 4 = "strongly disagree"

^b Response categories for these items are: 1 = "strongly agree"; 2 = "somewhat agree"; 3 = "neutral"; 4 = "somewhat disagree"; 5 = "strongly disagree". For the first item in the Trust in Physicians Scale, the values are reverse coded to compute the summary score.

^c Response categories for this item are: 1 = "very unlikely"; 2 = "unlikely"; 3 = "neither unlikely or likely"; 4 = "likely"; 5 = "very likely"

^d Response categories for this item are: 1 = "not at all"; 2 = "slightly"; 3 = "somewhat"; 4 = "moderately"; 5 = "extremely"

^e Response categories for these items are: 1 = "always"; 2 = "usually"; 3 = "sometimes"; 4 = "never"

^f Response categories for this item are: 1 = "excellent"; 2 = "very good"; 3 = "good"; 4 = "fair"; 5 = "poor"

Table 4.

Adjusted Associations of Sociocultural and Symptomatic Deterrents with Mammography Screening Practices (N=79).

	OR	95% CI	P-value
Sociocultural deterrents	2.00	1.04 – 3.86	0.037
Symptomatic deterrents	1.65	1.08 – 2.54	0.022

Notes: Two binary logistic regression models were estimated each adjusting for statistically significant socio-demographic (education, origin, and health insurance) and health-related (general health status and chronic conditions) variables in Table 1. None of these control variables had statistically significant association with mammography screening practices.