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Breast cancer delay in Latinas: the role of cultural beliefs and acculturation

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Abstract

Cultural beliefs about breast cancer may act as a barrier to Latina women seeking preventive services or timely follow-up for breast symptoms regardless of access. This study examines the association between factors and breast cancer cultural beliefs and the extent to which cultural beliefs are associated with delays in breast cancer care. Participants who were Latina, ages 30–79, and had been diagnosed with a primary breast cancer were examined ($n = 181$). Interviews included a 15-item cultural beliefs scale spanning beliefs inconsistent with motivation to seek timely healthcare. Self-reported date of symptom discovery, date of first medical presentation, and date of first treatment were used to construct measures of prolonged patient, clinical, and total delay. Logistic regression with model-based standardization was used to estimate crude and confounder-adjusted prevalence differences for prolonged delay by number of cultural beliefs held. Women held a mean score of three cultural beliefs. The belief most commonly held was, “Faith in God can protect you from breast cancer” (48 %). Holding three or more cultural beliefs was associated with lower acculturation, lower socioeconomic status and less access to care ($p < 0.01$). After adjusting for age, education, income, acculturation, trust, and insurance, likelihood of prolonged total delay remained 21 percentage points higher in women who held a higher number cultural beliefs ($p = 0.02$). Cultural beliefs may predispose Latina women to prolong delays in seeking diagnosis and treatment for breast symptoms. Cultural beliefs represent a potential point of intervention to decrease delays among Latina breast cancer patients.

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Compliance with ethical standards

Conflict of interest Silvia Tejeda, Rani I. Gallardo, Carol Estwing Ferrans, and Garth H. Rauscher declares that they do not have any conflict of interest.

Human and animal rights and Informed consent All procedures involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards. Informed consent was obtained from all individual participants included in the study.

Keywords

Breast cancer; Patient and clinical delay; Cultural beliefs; Acculturation; Hispanic

Introduction

Latina women face both structural (e.g., insurance, cost, accessibility, quality of care) and personal barriers (e.g., cultural factors, beliefs, language, lack of knowledge about screening recommendations, fear) to cancer screening and health-seeking behaviors (Chavez et al., 2001; Garbers et al., 2003; Koval et al., 2006). Women who do not speak English (Garcia et al., 2012; Jacobs et al., 2005; Ramirez et al., 2000), are less acculturated (Garcia et al., 2012; Mack et al., 2009), lack knowledge about symptoms and have a low perceived risk of breast cancer (Tejeda et al., 2009) are less likely to comply with recommended mammography screening practices and more likely to self-detect breast cancer (Garcia et al., 2012). Low levels of knowledge and high levels of misconceptions about the risk factors, symptoms, diagnosis, and treatment of breast cancer are prevalent among Latina women (Carpenter and Colwell, 1995; Fernandez et al., 1998; Hubbell et al., 1996; Koval et al., 2006; Morgan et al., 1995; Perez-Stable et al., 1992; Schettino et al., 2006; Shankar and Figueroa-Valles, 1999). Prior research shows that Latina women are significantly more likely to hold misconceptions about breast lumps than both non-Latina Whites (NLW) and African American (AA) women (Rauscher et al., 2010). Studies on cancer and other chronic illnesses have found an association between lower levels of acculturation and higher levels of beliefs inconsistent with seeking care (Edelman et al., 2009; Hubbell et al., 1996; O'Malley et al., 1999; Siatkowski, 2007). Similarly, lower acculturation has been associated with decreased use of screening services and decreased adherence to medical advice and treatments (O'Malley et al., 1999; Siatkowski, 2007).

Factors associated with cancer screening and health-seeking behaviors are also related to breast cancer treatment delays. These contributing factors include patient (e.g., demographics, cultural, and experience), healthcare provider and system (delivery, access, and policy), and disease factors (e.g., site and size) (Scott et al., 2013). Specifically, several risk factors for patient delay, include: socioeconomic status, lack of knowledge about symptoms, and having a symptom other than a breast lump (Burgess et al., 1998; Facione, 1993; Friedman et al., 2006; Garcia et al., 2012; Gullatte et al., 2006; Nosarti et al., 2000; Richardson et al., 1992; Unger-Saldana and Infante-Castaneda, 2009). Additional factors such as older age, low levels of trust in healthcare providers, fear, and being less acculturated have also been linked to patient delays in seeking care for breast symptoms (Blanchard and Lurie, 2004; Gullatte et al., 2006; Nosarti et al., 2000; Ramirez et al., 1999). The few studies that have focused on provider delays typically highlight variables related to the patient (i.e., failing to schedule follow-up appointments in a timely manner or missing appointments) (Unger-Saldana and Infante-Castaneda, 2009).

On average, 20–35 % of breast cancer patients delay seeking care for a breast symptom three or more months (Facione, 1993; Lauver et al., 1995; Richards et al., 1999a). Two main types of delay that influence cancer treatment are defined in the literature: patient delay (a delay of

3 months or more from symptom discovery by the patient to first medical visit) and provider delay (a delay exceeding 1 month from first medical visit to the initiation of cancer treatment) (Pack and Gallo, 1938). Processes related to patient delay include a woman detecting a bodily change (i.e., appraisal); perceiving a reason to discuss an abnormal symptom with a health care provider; and having the first consultation (Scott et al., 2013). Provider delay, sometimes referred to as clinical delay in the literature, has been understudied in comparison to patient delay and there is a gap in the literature regarding clinical and system factors that impact provider delay (Facione, 1993; Unger-Saldana and Infante-Castaneda, 2009). Processes related to clinical delay include diagnosis and start of treatment. Both can include the patient having additional tests and referrals; patient arrangements to attend them; availability within the health care system; etc. (Scott et al., 2013). Importantly, these processes can be influenced by the health care system and the patient (e.g., beliefs, attitudes). A third type of delay, total delay, is defined as a delay greater than 3 months from symptom detection and the initiation of treatment (Unger-Saldana and Infante-Castaneda, 2009).

The most important reason for studying delay is its impact on breast cancer stage at diagnosis and survival. Patient delays, treatment delays, and total delays exceeding 3 months are associated with significantly decreased survival and increased mortality (Bish et al., 2005; Gullatte et al., 2006; Richards et al., 1999b). A prior study found that 32 % of patients who delayed 12 weeks or more to seek care for a breast symptom had locally advanced or metastatic disease compared to only 10 % of women who delayed less than 12 weeks (Richards et al., 1999a). Furthermore, previous studies have linked a woman’s beliefs to delays in seeking care for a self-detected breast symptom and later stage at diagnosis (Lannin et al., 1998; Rauscher et al., 2010); however, there is a gap in the literature on the association between Latina women’s cultural beliefs and their delay in seeking and receiving timely breast cancer care. The goals of this study were to examine the prevalence of breast cancer-related beliefs among Latinas and the factors associated with holding these beliefs, and to determine the extent to which these beliefs might influence timeliness of seeking care for a breast symptom (patient delay) and delay in receiving treatment for breast cancer (clinical delay and total delay).

Methods

Data source

Data for these analyses came from the Breast Cancer Care in Chicago study (BCCC). Study protocol and recruitment details have been previously published (Kaiser et al., 2011; Rauscher et al., 2010, 2013). Briefly, the BCCC was a population-based sample of 989, NLW, AA, and Latina women residing in Chicago who had recently been diagnosed with a first primary in situ or invasive breast cancer. In order to be eligible, women had to be diagnosed between the ages of 30–79 from 2005 to 2008, and speak either English or Spanish. Certified tumor registrars employed by the Illinois State Cancer Registry identified newly diagnosed breast cancer cases in hospitals and invited eligible women to participate 1–3 months post diagnosis. Women provided written informed consent prior to the interview and all patients who completed the survey received a $100 incentive. Surveys included questions pertaining to the process of discovery, diagnosis, and treatment that each woman experienced relating to her breast cancer. Study procedures received prior approval from the UIC Institutional Review Board. The overall study response rate was 56 % (Rauscher et al., 2010). The analyses presented here used the subset of 181 Latina participants.

Breast cancer cultural beliefs scale

The Scale consists of 15 items (Table 1) that could discourage a woman from seeking screening and healthcare for breast cancer-related issues (Ferrans et al., 2007a, b). The items were generated through in-depth focus groups with African American and Latina women. Additional research confirmed that these beliefs are endorsed much less frequently by white women, supporting the idea that these beliefs are culturally-based. The scale demonstrated reliability in this sample with a Cronbach's alpha of 0.87. The total number of cultural beliefs endorsed as "true" was summed and dichotomized at the sample mean (3.38). Women holding three or more beliefs (out of 15) were compared to the referent group of women holding two or fewer cultural beliefs.

Dependent variables

Patients self-reported the date of their initial awareness of the problem later diagnosed as breast cancer (if symptomatic) or the date of the imaging test that detected the breast cancer (if asymptomatic), as well as dates of diagnostic visits, surgery, and initiation of radiation, chemotherapy and hormone therapy when applicable. Three main outcome variables were analyzed: patient delay, clinical delay, and total delay. Prolonged patient delay was defined as a delay from self-detection, or symptom awareness, to first medical presentation exceeding 30 days. Prolonged clinical delay was defined as a delay from first medical presentation (e.g., an abnormal mammogram or clinical breast exam) to first therapeutic intervention for breast cancer (surgery, radiation, chemotherapy, or hormone therapy) exceeding 60 days. Prolonged total delay was defined as a delay from initial discovery (self-detection, abnormal screening mammogram, or clinical breast exam) to first treatment exceeding 90 days. The cut-points for these prolonged delay variables corresponded roughly to the respective sample medians.

Covariates

Demographics and socio-economic status—

Patient's age was used as an ordinal variable and categorized as <50, 50–59, and ≥60 years. Women identifying with Hispanic/Latino origin were then asked whether they considered themselves to be Cuban, Mexican, or Mexican–American, Puerto Rican, or other. Women were categorized as Mexican or other due to sample size considerations. Education was treated as an ordinal variable and categorized as <12, 12, or ≥13 years. In addition, women were asked to report their total household income, defined as an ordinal variable and categorized as ≤$20,000, $20,000–$50,000, and >$50,000. Participants self-reported their family history of breast cancer as none (no first-degree family history), moderate (one first degree relative diagnosed at age 50 or above), and strong (multiple affected first degree relatives or at least one diagnosed before age 50).

Acculturation—A woman’s acculturation level was measured by the following: primary language spoken by the patient (English = 1 or other = 0); patient’s country of origin (United States (US) = 1 or other = 0); mother’s and father’s country of origin (US = 1 or other = 0); mother’s and father’s level of education (high school and greater = 1 or less than high school = 0). Women received one point for each response that indicated a higher acculturation level and the scores for all six variables were summed (Cronbach’s alpha = 0.79). All women were given an acculturation score ranging from zero to six, six being the highest level. A dichotomous acculturation variable was defined as a score of one or more (higher acculturation) versus zero (lower acculturation, sample mean). In addition, as a proxy measure of neighborhood cultural isolation, a standardized measure was defined from the 2000 US Census using census tract measures of (Cronbach’s alpha = 0.91): the percent of Hispanic/Latino persons living in the same census tract as the patient; the percent of people in that census tract who were born outside the US; and the percent of households that were linguistically isolated (households whose members 14 years and older spoke a language other than English and no members spoke English “very well”) (Siegel et al., 2000).

Health care access and utilization—Participants self-reported their health insurance status, and the timing of their most recent routine physical exam, clinical breast exam, and mammogram, prior to becoming aware of the problem that was later diagnosed as breast cancer. The 11-item Trust in Physician Scale was used to measure patient’s trust in their primary care providers (Cronbach’s alpha = 0.88) (Anderson and Dedrick, 1990). Items were summed and ranged from 11 (greatest amount of trust) to 55 (least amount of trust). Scores were divided into thirds (high, moderate and low).

Statistics

Univariable analyses were conducted to examine the crude relation of patient characteristics with both cultural beliefs with delay variables, and to examine the relation of cultural beliefs with delay variables. p values were derived from Chi square tests of association. Multivariable logistic regression models were developed to determine if an association between cultural beliefs and increased prevalence of delay remained after controlling for covariates that might confound the relation of interest. Preliminary logistic regression models of delay used both forward and backward selection procedures with a liberal alpha of 0.25 to enter or stay in the models. Variables that were retained in these models were initially entered in subsequent models. Conceptually important covariates (i.e., age, education, and income) were also retained in the models. Model-based standardization (predictive margins) was then applied to the logistic regression models to estimate both crude and confounder-adjusted prevalence differences for prolonged delay by number of cultural beliefs held (Ahern et al., 2009). We use the term marginally associated if the p value is between 0.05 and <0.20. Analyses were conducted using SAS 9.3 and STATA 13.

Results

The mean score for the breast cancer cultural beliefs scale was 3.38 (SD = 3.7), with 44 % of the women holding three or more breast cancer cultural beliefs. The cultural beliefs most commonly held were (Table 1): (1) Faith in God can protect you from breast cancer (48 %),

(2) If a breast lump is touched or pressed often, the lump will turn out to be breast cancer (30 %), and (3) If breast cancer is cut open in surgery, it will grow faster (28 %).

The mean age at diagnosis in the sample was 53.5 years and age ranged from 25 to 78. Most of the women were of Mexican origin (60 %), and reported no family history of breast cancer (84 %). A large proportion of women in the sample had less than a high school education (44 %), and an annual income of less than $20,000 (38 %). A little over half (55 %) of women had an acculturation score of 0 (lowest acculturation score possible) and 55 % lived in census tracts characterized by high levels of cultural isolation. Approximately 25 % of the women were uninsured prior to their breast cancer diagnosis, and 80 % of the women said they had access to a provider regularly. Only 61 % of women reported receiving a mammogram in the 2 years prior to their diagnosis and 24 % reported never receiving a mammogram. Over a third of the women (36 %) reported low trust in regular providers (Table 2).

Several factors were associated with endorsement of a higher number of cultural beliefs ($p < 0.01$) including older age, lower education, lower income, lower acculturation, and having no health insurance. In addition, lacking a family history of breast cancer, and having low trust in regular providers were marginally associated with more cultural beliefs ($p < 0.20$). Cultural isolation was not associated with cultural beliefs (Table 2).

Mean patient delay (N = 98), clinical delay (N = 172), and total delay (N = 172) in the sample was 76 days (median = 30 days), 89 days (median = 59 days), and 113 days (median = 84 days), respectively. Older age was associated with prolonged patient delay but not with clinical or total delay. Lower education and income were each associated with one or more variables representing prolonged delay. While cultural isolation had no association with delay, lower acculturation score was associated with increased in prolonged delay across the three delay measures. Greater health care access and utilization was sporadically associated with decreased prevalence of prolonged delay (Table 2).

Holding three or more cultural beliefs was qualitatively associated with a 10-percentage point greater prevalence of prolonged patient delay, but not statistically significant ($p = 0.34$), and was associated with a 14 and 27-percentage point greater prevalence of prolonged clinical delay and total delay ($p = 0.07$ and 0.001, respectively, Table 3). After adjusting for age, education, income, acculturation, provider trust, and insurance status, likelihood of prolonged total delay remained 21 percentage points higher in women who held a higher number of cultural beliefs ($p = 0.02$).

In adjusted models, health insurance status and provider trust remained associated with prolonged delay, while significant associations for other variables diminished (results not tabulated). Compared to women with private insurance, women with public insurance were 19, 27 and 14 percentage points more likely to experience prolonged patient, clinical and total delay, respectively ($p = 0.03$, 0.02 and <0.01), while patients with no insurance were 22, 38 and 25 percentage points more likely to experience prolonged patient, clinical and total delay, respectively ($p = 0.02$, 0.06 and <0.01). Greater trust in regular providers remained associated with reduced patient, clinical and total delay, respectively ($p \leq 0.1$ for all). On the other hand, the association of acculturation diminished in the adjusted models: patients who were less acculturated were 23, 11 and 1 percentage points more likely to experience prolonged patient, clinical and total delay, respectively ($p = 0.11$, 0.30 and 0.89). Education and income were not associated with delay in the adjusted models.

Discussion

In our population-based sample of urban Latina breast cancer patients, we found that women who held a greater number of cultural beliefs were considerably more likely to experience a total delay than women who held two or fewer beliefs, even after adjusting for sociodemographic (age), socioeconomic (education and income), acculturation, and healthcare access (insurance and trust in regular providers) related factors. Cultural beliefs appear to be an especially important issue for Latina women. In the parent study, Latina breast cancer patients held a greater number of cultural beliefs compared to AA and NLW (mean = 3.3, 1.8 and 0.5, respectively, $p = 0.0001$) (Rauscher et al., 2010).

As expected this study showed women lacking private insurance were substantially more likely to experience delays even in fully adjusted models, suggesting that insurance and access to care are also important factors influencing delay. Yet, even in countries with free access to health care, women are still diagnosed via breast symptoms instead of screen detected and there is variance in time to diagnosis. Authors attributed differences to variation in care coordination particularly in areas with lack of medical resources and rural areas (Yuan et al., 2016). In contrast, this study showed the reasons for delays may be related to interpersonal factors between patient and provider. The majority of the women in the sample (80 %) reported having access to a regular provider; however, decreased trust in regular providers was prevalent in this population. This is potentially problematic as research suggests that a woman’s level of trust in her regular providers is strongly associated with subsequent trust in her cancer diagnosing and treating doctors (Kaiser et al., 2011). In our study, provider mistrust was associated with both prolonged clinical and total delay; mistrust may lead to lack of willingness to accept medical recommendations and make timely follow-up appointments for care.

Acculturation may contribute to prolonged delays by influencing the likelihood of holding unfavorable attitudes and beliefs related to breast cancer (Hubbell et al., 1996). Acculturation was associated with prolonged delay in crude analyses but these associations disappeared after adjusting for socioeconomic status and access to care. These variables likely mediate the potential influence of lower acculturation on prolonged delay. Future studies using mediation analysis can verify this prediction. Unlike acculturation, cultural beliefs continued to be associated with delay in fully adjusted models. From a clinical perspective, these findings are important because cultural beliefs represent a potential point of intervention that could help decrease presentation, diagnosis and treatment delays among Latina breast cancer patients.

Our study has several limitations. There were only 181 women in the sample, and 98 of these self-identified their initial suspicious symptom. To maximize samples size within groups, patient, clinical, and total delay variables were divided roughly at the median and defined as a delay exceeding 30, 60 and 90 days respectively. Additionally, patient delay may have captured two different issues: the amount of time a woman delays in seeking an appointment for a breast symptom and the amount of time a woman must wait for an appointment once it is requested. Measures of patient delay, clinical delay, and total delay, were based on self-reported dates of symptom detection, first medical presentation, and first treatment. Some dates were only reported to the nearest month and were approximated. Some women might not have been able to accurately recall these dates or might have underreported their delay in seeking help for a breast symptom due to perceived social desirability, either of which would have likely attenuated observed associations between cultural beliefs and prolonged delay. Furthermore, we did not collect data on time from initial help seeking behavior (e.g., from date of first attempt to schedule an appointment) to treatment initiation, and so our measure does not differentiate between patient and “system” delay in that respect. It is possible that part of the association of cultural beliefs with delay is due to an association of lower socioeconomic status with greater “system” delays in obtaining a medical appointment. However, cultural beliefs retained their association with delay in multivariable models where income and education did not, consistent with the notion that cultural beliefs make an important contribution to clinical delay regardless of whether defined as patient or system. Finally, studies with larger sample sizes are needed to replicate our findings related to breast cancer cultural beliefs and patient, clinical, and total delay.

Cultural beliefs were measured after women had already been diagnosed with breast cancer and initiated treatment, events which could alter a woman’s beliefs and knowledge related to breast cancer (Gullatte et al., 2010). The pre-breast cancer level of cultural beliefs was likely even *higher* than those reported in this study, since patients are exposed to information about breast cancer during diagnosis and treatment. In addition, some of the faith-based beliefs measured by our scale would have been falsified simply by the finding of breast cancer (e.g., that faith in God can protect you from breast cancer). Finally, the number of women in the sample who were of non-Mexican Latino origin was very small and did not allow for ethnic subgroup analysis. Studies have found that breast cancer beliefs, use of screening services, and breast cancer outcomes vary by Latino subgroup (Ooi et al., 2011). Though Mexicans often experience poorer breast cancer outcomes compared to other Latino subgroups, it is important for studies focusing on Latinos to differentiate between ethnic subgroups.

Conclusion

This is the first study we are aware of to quantify cultural beliefs in a population based sample of Latina breast cancer patients using a comprehensive, validated and reliable scale and to analyze the relationship between cultural beliefs and delays in both seeking care for a breast symptom and receiving treatment. Furthermore, this study is one of the few to assess the influence of patient-level factors (i.e., cultural beliefs and acculturation) on delays that occur after the first medical visit. Cultural beliefs may predispose certain Latina women who are less acculturated and of lower SES to prolong seeking care for breast symptoms and may influence delays in receiving treatment for breast cancer. These results have implications for identifying Latina women at risk of such delays and designing effective interventions. Interventions should focus not only on improving access to care and screening services for

Latina women, but on targeting these potentially detrimental cultural beliefs through proactive engagement and education. Such culturally sensitive educational interventions may be an effective strategy to reduce delays in breast cancer care and ultimately improve outcomes among Latina women.

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Table 1

Prevalence of cultural beliefs among Latina breast cancer patients

Cultural beliefs	Percent of women who hold each belief (N = 181) %
Faith in God can protect you from breast cancer	48
If a breast lump is touched or pressed often, the lump will turn out to be breast cancer	30
If breast cancer is cut open in surgery, it will grow faster	28
The more you worry about breast cancer, the more likely you will get it	26
If you pray enough, sometimes breast lumps will disappear by themselves, without medical treatment	26
It doesn’t really matter if you get treated for breast cancer, because if you get it, breast cancer will kill you sooner or later	25
You only need to get a breast lump checked for cancer if it gets bigger	24
If you take good care of yourself, you won’t get breast cancer	21
You only need to get a mammogram if you find a problem in your breast	19
You only need to get a breast lump checked for cancer if it is painful	18
Women with large breasts are more likely to get breast cancer than women with small breasts	18
If a woman has enough faith in God, she won’t need treatment for breast cancer	16
Mammograms can cause breast cancer	13
If you don’t have breast cancer in your family, you don’t need to get mammograms	9
If you have a breast lump, a “natural remedy” can help to get rid of it	9
Three or more beliefs held (mean = 3.38; SD = 3.7; range 0–12 beliefs)	44

Table 2

Association of beliefs and delay with sociodemographic, socioeconomic, acculturation, and access factors

	Sample		≥3 beliefs	Patient delay	Clinical delay	Total delay
	n = 181^{a}		n = 181^{a}	n = 98^{a}	n = 172^{a}	n = 172^{a}
	n	%	%	%	%	%
Sociodemographics						
Age						
<50	67	37	31^{d}	38^{b}	44	41
50–59	54	30	39	56	59	51
≥60	60	33	63	58	47	40
Ethnicity						
Mexican	105	60	47	54	50	47
Puerto Rican	38	22	42	45	51	43
Other	32	18	41	40	38	31
Family history of BC						
None	152	84	43^{b}	50	47	43
Moderate	23	13	61	45	70	48
High	5	3	20	33	40	40
Socioeconomics						
Education						
<HS	79	44	71^{d}	59^{b}	50	47^{b}
HS	39	21	31	44	58	55
>HS	63	35	19	38	43	31
Income						
≤20,000	68	38	62^{d}	58	56^{c}	46
>20,000–50,000	66	37	47	44	54	49
>50,000	44	25	14	43	35	33
Acculturation						
Cultural isolation						
High	97	55	44	49	49	45

	Sample		≥3 beliefs	Patient delay	Clinical delay	Total delay
	n = 181[a]		n = 181[a]	n = 98[a]	n = 172[a]	n = 172[a]
	n	%	%	%	%	%
Low	84	45	44	49	49	42
Acculturation						
Lower	97	55	61[d]	63[d]	60[d]	53[c]
Higher	84	45	27	33	39	34
Healthcare access						
Insurance						
None	45	25	60[d]	66[b]	66[b]	68[d]
Public	40	22	53	45	45	34
Private	96	53	33	41	44	37
Regular provider						
No	36	20	47	65[b]	53	50
Yes	145	80	43	44	49	42
Last clinical breast exam						
≤2 years	127	70	43	42[b]	50	42[c]
>2 years	18	10	50	44	50	22
Never	36	20	47	67	47	58
Last mammogram						
≤2 years	110	61	41	46	55[b]	45
>2 years	28	16	43	57	44	44
Never	43	24	53	50	39	39
Trust in regular providers						
High	53	32	32[b]	41	40[c]	30[d]
Moderate	54	32	50	55	40	38
Low	59	36	49	44	64	57

[a] This number is the total sample size for each respective column (i.e., denominator for percentages)

[b] $p < 0.20$

[c] $p < 0.05$

[d] $p < 0.01$

Table 3

Association of cultural beliefs with delay in seeking and receiving care for breast cancer among Latina breast cancer patients

	n	Delay (%)	Crude			Adjusted		
			PD[a]	95 % CI[b]	p[c]	PD[a]	95 % CI[b]	p[c]
Patient delay								
3 or more beliefs	44	55	0.10	(−0.10, 0.30)		−0.04	(−0.26, 0.17)	
≤2 beliefs	54	44						
Clinical delay								
3 or more beliefs	75	57	0.14	(−0.01, 0.29)	0.07	0.06	(−0.13, 0.24)	
≤2 beliefs	97	43						
Total delay								
3 or more beliefs	75	59	0.27	(0.12, 0.41)	0.001	0.21	(0.03, 0.39)	0.02
≤2 beliefs	97	32						

[a] PD, prevalence difference in delay estimated from logistic regression with model-based standardization (predictive margins)

[b] Bias-corrected bootstrapped confidence intervals based on 1000 replications

[c] p values are from the Wald test of the logistic regression coefficient for delay, $p > 0.20$ are suppressed