Articles

Differing Beliefs About Breast Cancer Among Latinas and Anglo Women

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To improve breast cancer control among Latinas, it is important to understand culturally based beliefs that may influence the way women view this disease. We did a telephone survey of randomly selected Latinas and non-Hispanic white (Anglo) women in Orange County, California, to explore such beliefs using questions from previous national surveys and an ethnographic study of breast cancer. Respondents included 803 Latinas and 422 Anglo women. Latinas were more likely than Anglo women to believe that factors such as breast trauma (71% versus 39%) and breast fondling (27% versus 6%) increased the risk of breast cancer, less likely to know that symptoms such as breast lumps (89% versus 98%) and bloody breast discharge (69% versus 88%) could indicate breast cancer, and more likely to believe that mammograms were necessary only to evaluate breast lumps (35% versus 11%) ($P <$ .01 for each). After adjusting for age, education, employment status, insurance status, and income, logistic regression analysis confirmed that Latino ethnicity and acculturation levels were significant predictors of these beliefs. We conclude that Latinas' beliefs about breast cancer differ in important ways from those of Anglo women and that these beliefs may reflect the moral framework within which Latinas interpret diseases. These findings are important for the development of culturally sensitive breast cancer control programs and for practicing physicians.

(Hubbell FA, Chavez LR, Mishra SI, Valdez RB: Differing beliefs about breast cancer among Latinas and Anglo women. West J Med 1996; 164:405-409)

Despite advances in screening and treatment during the past several decades, breast cancer remains a major health problem for women of all ethnic groups in the United States. An estimated 12% of all women will receive a diagnosis of breast cancer, and 3.5% will die of the disease.[1] Although Latinas (Hispanic women) have somewhat lower incidence rates of breast cancer than Anglo (non-Hispanic white) women, they are more likely to have larger tumors or metastatic disease (or both) at the time of diagnosis.[2,3] Moreover, they are less likely to receive appropriate breast cancer screening.[4,5] Although the socioeconomic reasons for the lower screening rates, such as high rates of poverty and lack of health insurance, have been well defined,[6-8] much less information exists about culturally based beliefs that may influence the way Latinas view breast cancer. The purpose of this study was to explore such beliefs among Latinas and Anglo women in Orange County, California, through a large telephone survey.

Subjects and Methods

Orange County is a community of about 2.5 million residents located in southern California.[9] About 23% of the county's population is Latino, and 45% is Anglo. Most Latinos are of Mexican heritage; however, an estimated 25,000 immigrants from Central America, particularly from El Salvador, also live in the county.

To obtain information about breast cancer-related knowledge and attitudes, trained bilingual women interviewers from the Field Research Corporation in San Francisco, California, conducted a telephone survey of randomly selected Latinas and Anglo women during September 1992 to March 1993. We designed the survey instrument using questions from the National Health Interview Survey and its Cancer Control Supplement,[10] the Behavioral Risk Factor Surveillance Survey,[11] and a previously validated acculturation scale.[12] In addition, we included questions from a previous ethnographic survey that revealed that Latinas, particularly immigrants, frequently believed that factors such as trauma to the breast and having many sexual partners increased the risk of breast cancer.[13] They also expressed misconceptions about breast cancer screening, such as that mammograms were necessary only if there was a breast lump. Therefore, we included questions to explore the frequency of such beliefs among respondents in the telephone survey. Bilingual investigators translated the questions

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from English to Spanish and then back-translated them using well-established procedures.[14] They revised the questionnaire after pretesting it in a random sample of Latinas and Anglo women not involved with the study. The response categories for the questions regarding knowledge about risk factors and symptoms were "yes," "no," "don't know," and "refused to answer." Response categories for the attitudinal questions were "agree," "disagree," "don't know," and "refused to answer." The final questionnaire took an average of 35 minutes to complete.

The survey used the computer-assisted telephone interview system and a cross-sectional sample of random-digit telephone listings that included all numbers, avoiding possible bias due to exclusion of households with unlisted numbers.[15] Eligible participants were English- or Spanish-speaking women 18 years of age or older who were not institutionalized and who identified themselves as Latina (Hispanic or more specific ethnic identifiers such as Mexican or Mexican American) or Anglo (non-Hispanic white). We designed the sampling strategy to oversample Latino households, with the goal of obtaining about twice as many Latino respondents as Anglo respondents. The survey randomly selected both households and respondents within households—the woman 18 years or older who had the most recent birthday. Latina respondents could choose to answer the questions in Spanish or English. The University of California, Irvine, Human Subjects Review Committee approved the research protocol. All participants provided oral informed consent.

We categorized risk factors and symptoms as reasonable or less reasonable and attitudes as favorable and less favorable based on the medical literature.[1] The analysis combined "no" and "don't know" categories for the knowledge questions and treated the "don't know" category as missing data for the attitudinal questions. We used the two-tailed χ^2 test to analyze the categorical data and logistic regression analysis to evaluate the relative contribution of ethnicity in predicting knowledge and attitudes about breast cancer. Predictor variables included ethnicity (Anglo = 0, Latina = 1), age (≤40 = 0, >40 = 1), marital status (married = 0, not married = 1), household income (≤$25,000 = 0, >$25,000 = 1), insurance status (insured = 0, not insured = 1), education (≤high school = 0, >high school = 1), employment status (employed = 0, not employed and not in the work force = 1), and acculturation level for the Latina sample only (high = 0, low = 1). The results appear as odds ratios, calculated by computing the exponential of the β value and 95% confidence intervals.[16] The confidence intervals provided a basis for evaluating the magnitude of the differences between Latinas and Anglo women even if these differences were not statistically significant.[17]

Results

Respondents

Interviewers made 21,171 calls, of which 1,561 (7.4%) were to eligible women. They completed interviews with 1,225 of the 1,561 eligible women for an overall cooperation rate of 78.5%—defined as the number of completed interviews divided by the sum of the completed interviews and refusals by eligible women (1,225/[1,225 + 336]). The response rate for Latinas (75%) was lower than that for Anglo women (87%). Of the remaining calls, 9,850 (46.5%) were to business or disconnected numbers, 8,002 (37.8%) were to ineligible households, 1,315 (6.2%) were to women who refused to participate before eligibility screening, and 443 (2.1%) were to households that did not answer.

TABLE 1.—*Demographic Characteristics of Latinas and Anglo Women**

Characteristic	*Latinas, % (n = 803)*	*Anglo Women, % (n = 422)*
Age, years		
<40	74	47
40-49	15	23
>49	11	31
Education, years		
0-6	22	<1
7-12	43	25
>12	35	75
Annual household income, $		
<10,000	18	7
10,000-29,999	44	23
>29,999	39	70
Health insurance		
Insured	67	92
Not insured	33	8
Employment status		
Full-time	43	50
Part-time	12	12
Not employed	45	38
Country of birth		
United States	34	100
Mexico	53	0
Other	13	0
Acculturation		
More	38	NA
Less	62	NA

NA = not applicable

*The sum of the proportions does not always equal 100% because of rounding error.

Of the 1,225 women interviewed, 803 were Latinas and 422 were Anglo women. Their demographic characteristics appear in Table 1. Compared with the Anglo women, the Latinas were younger (mean age, 33.9 versus 43.8 years), had less education (mean, 10.9 versus 14.5 years), had lower household income levels (median yearly income, $17,000 versus $48,000), and were less likely to have health insurance (67% versus 92%). Most of the Latinas were born outside the United States (66%) and had low acculturation levels (62%).

Bivariate Analysis

Table 2 displays bivariate analysis of knowledge and attitudes about breast cancer among Latinas and Anglo women. Latinas were less likely than Anglo women to embrace medically accepted risk factors such as family history and more likely to believe that other factors such

TABLE 2.—*Knowledge and Attitudes About Breast Cancer Among Latinas and Anglo Women*

Knowledge and Attitude	*Latinas (n = 803), % Yes/Agree**	*Anglo Women (n = 422), % Yes/Agree**
Knowledge about risk factors		
Reasonable		
Family history	84†	98
Age	58†	73
Birth control pills	65	65
Radiation	52	57
First child after age 30	30	27
Early menses	12	16
Less reasonable		
Breast trauma	71†	39
Breast implants	84†	66
Chemicals in food	65	67
Worrying	37†	28
Fate	35†	22
Multiple sexual partners	36†	9
Antibiotics	26†	7
Breast fondling	27†	6
Knowledge about symptoms		
Reasonable		
Breast lump	89†	98
Bloody breast discharge	69†	88
Puckered breast skin	44†	63
Less reasonable		
Painful breast	70	69
Differing breast size	51	47
Attitudes		
Favorable		
If breast cancer is found early, it can be cured	98	98
I would undergo breast cancer treatment that is unpleasant or painful if it would improve my chances of living longer	94	93
Less favorable		
I am likely to get breast cancer in my lifetime	57†	32
There is not much I can do to prevent breast cancer	30†	22
I only need a mammogram when I have a breast lump	35†	11
I would be afraid to tell my husband or partner if I had breast cancer because it would affect our relationship	15†	3
I would rather not know if I had breast cancer	17†	3

*We asked participants to respond "yes" or "no" to the knowledge questions and to "agree" or "disagree" with the attitudinal questions.

†$P < .01$ between Latinas and Anglo women.

as breast trauma increased the risk of contracting breast cancer. A smaller proportion of Latinas than Anglo women believed that a breast lump, bloody breast discharge, and puckering of the skin over the breast were symptoms of breast cancer. In addition, Latinas more often had less favorable attitudes such as the belief that they needed a mammogram only when they had a breast lump, feared telling their husbands if they had breast cancer, and were reluctant to know if they had the disease.

Multivariate Analysis

Findings from the multivariate analysis supported those from the bivariate analysis (Table 3). After controlling for age, marital status, household income, insurance status, education, and employment status, the Latinas were still more likely to have misconceptions about risk factors and symptoms of breast cancer and to have less favorable attitudes about the disease. Years of formal education and income levels also significantly predicted knowledge about some risk factors and symptoms and some unfavorable attitudes (data not shown). For example, women with a high school or more education were more likely to know that breast lumps could be a symptom of breast cancer (odds ratio [OR] = 2.4, $P < .001$) and were less likely to believe that a woman needed a mammogram only when she had a breast lump (OR = 0.5, $P = .002$). Likewise, women with income levels

TABLE 3.—*Adjusted Odds Ratios of Latino Ethnicity as a Predictor of Knowledge and Attitudes about Breast Cancer**

Knowledge and Attitude	*Odds Ratio*	*95% CI*	*P*
Knowledge about risk factors			
Reasonable			
Family history	0.3	0.1–0.7	.01
Age	0.7	0.5–1.0	.03
Birth control pills	1.0	0.7–1.4	NS
Radiation	1.0	0.7–1.3	NS
First child after age 30	1.0	0.8–1.4	NS
Early menses	0.7	0.4–1.1	NS
Less reasonable			
Breast trauma	3.0	2.1–4.1	<.001
Breast implants	2.0	1.4–2.9	<.001
Chemicals in food	0.7	0.5–1.0	NS
Worrying	0.8	0.6–1.2	NS
Fate	0.9	0.6–1.3	NS
Multiple sexual partners	4.3	2.4–7.7	<.001
Antibiotics	1.6	1.0–2.8	NS
Breast fondling	3.2	1.8–5.8	<.001
Knowledge about symptoms			
Reasonable			
Breast lump	0.4	0.2–0.9	.05
Bloody breast discharge	0.6	0.4–0.9	.05
Puckered breast skin	0.6	0.4–0.9	.01
Less reasonable			
Painful breast	1.0	0.7–1.5	NS
Differing breast size	1.2	0.9–1.7	NS
Attitudes			
Favorable			
Can be cured	1.7	0.6–5.0	NS
Would undergo treatment	1.8	0.9–3.6	NS
Less favorable			
Likely to get	1.6	1.1–2.3	.01
Can't prevent	1.0	0.7–1.6	NS
Rather not know	2.7	1.1–6.8	.03
Afraid to tell husband	3.0	1.3–7.0	.01
Mammogram only for lump	1.8	1.2–2.9	.01

CI = confidence interval, NS = not significant

*Adjusted for age (≤40 = 0, >40 = 1), marital status (married = 0, not married = 1), household income (≤$25,000 = 0, >$25,000 = 1), insurance status (insured = 0, not insured = 1), education (≤high school = 0, >high school = 1), and employment status (employed = 0, not employed and not in the work force = 1).

TABLE 4.—*Adjusted Odds Ratios of Acculturation Level as a Predictor of Knowledge and Attitudes About Breast Cancer, Latinas Only**

Knowledge and Attitude	*Odds Ratio*	*95% CI*	*P*
Knowledge about risk factors			
Reasonable			
Family history	0.1	0.1–0.4	<.001
Age	0.5	0.3–0.8	<.001
Birth control pills	0.9	0.6–1.3	NS
Radiation	1.1	0.7–1.7	NS
First child after age 30	1.8	1.1–2.9	.01
Early menses	1.0	0.5–1.9	NS
Less reasonable			
Breast trauma	4.2	2.6–6.8	<.001
Breast implants	3.0	1.7–5.3	<.001
Chemicals in food	1.7	1.1–2.6	.01
Worrying	2.2	1.4–3.6	<.001
Fate	1.6	1.0–2.6	.04
Multiple sexual partners	6.7	3.9–11.4	<.001
Antibiotics	3.2	1.8–5.7	NS
Breast fondling	3.9	2.2–6.7	<.001
Knowledge about symptoms			
Reasonable			
Breast lump	0.4	0.2–0.9	.02
Bloody breast discharge	0.4	0.2–0.6	<.001
Puckered breast skin	0.8	0.5–1.1	NS
Less reasonable			
Painful breast	0.7	0.4–1.1	NS
Differing breast size	1.5	1.0–2.3	.04
Attitudes			
Favorable			
Can be cured	1.4	0.3–6.5	NS
Would undergo treatment	1.0	0.4–2.5	NS
Less favorable			
Likely to get	2.1	1.4–3.2	<.001
Can't prevent	1.0	0.6–1.7	NS
Rather not know	5.1	2.1–12.2	<.001
Afraid to tell husband	1.7	0.8–6.7	NS
Mammogram only for lump	1.4	0.9–2.3	NS

CI = confidence interval, NS = not significant

*Adjusted for age (≤40 = 0, >40 = 1), marital status (married = 0, not married = 1), household income (≤$25,000 = 0, >$25,000 = 1), insurance status (insured = 0, not insured = 1), education (≤high school = 0, >high school = 1), and employment status (employed = 0, not employed and not in the work force = 1).

greater than $25,000 per year were more likely to know that breast lumps could be a symptom of breast cancer (OR = 3.0, $P = .003$) and were less likely to believe that a woman needed a mammogram only when she had a breast lump (OR = 0.5, $P < .001$). When we evaluated Latinas alone, we found that a lower acculturation level was also a significant predictor of lower levels of knowledge and unfavorable attitudes about breast cancer (Table 4).

Discussion

The results indicated that Latinas, particularly those with lower acculturation levels, had less knowledge than Anglo women about risk factors and symptoms of breast cancer and had less desirable attitudes about the disease. For instance, Latinas were more likely to believe that medically unaccepted factors such as breast trauma, breast fondling, and multiple sexual partners increased the risk of breast cancer and were less likely to know that breast lumps and bloody breast discharge were symptoms. Moreover, they more often preferred not to know if they had breast cancer and would be afraid to tell their husbands. Of particular concern, Latinas were nearly twice as likely as Anglo women to believe that they only needed a mammogram when they had a breast lump.

This is the most extensive study to date on breast cancer-related knowledge and attitudes among Latinas. The results are consistent with those of previous investigations that reported lower levels of knowledge about cancer in general among Latinos.[18,19] Latinas' specific beliefs about breast cancer may reflect, in part, the moral framework within which they may interpret diseases. Indeed, Latinos often believe that cancer is God's punishment for improper or immoral behavior.[19] If sexual practices such as breast fondling or having multiple sexual partners increase the risk of breast cancer, then acquiring this disease may imply immoral behavior. Women may, therefore, be reluctant to learn that they have breast cancer and to inform their husbands about it.

The study had several limitations. First, although the cooperation rate of 78.5% was relatively high, we do not know if the women who declined to participate differed from respondents in their knowledge and attitudes about breast cancer. Second, the data come from self-reports and are subject to recall bias. Because the study primarily concerned knowledge and attitudes, however, this bias was of minor importance. Finally, the survey findings may not apply to families without telephones. Although households in Orange County have high telephone subscription rates (approximately 94% for Latinos and 99% for Anglos),[20] families without telephones have less access to medical care[21] and, therefore, may have less access to cancer-related information and less knowledge about breast cancer.

We conclude that Latinas' beliefs about breast cancer differ in important ways from those of Anglo women and that these beliefs may reflect the moral framework within which Latinas interpret diseases. The findings imply that breast cancer control programs should address these differences to provide more culturally sensitive interventions. The results may also help practicing physicians understand how patients with dissimilar cultural backgrounds respond to their medical recommendations. A better understanding of their patients' cultures is important in patient education and disease detection.

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