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BRIEF REPORT

The Influence of Knowledge and Attitudes About Breast Cancer on Mammography Use Among Latinas and Anglo Women

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We conducted a telephone survey of randomly selected Latinas (n = 208) and Anglo women (n = 222) to determine predictors of mammography use. The cooperation rate was 78.5%. Relatively high proportions of Latinas (61%) and Anglo women (79%) reported mammography use within the past 2 years. A logistic regression analysis revealed that knowledge and attitudes did not independently predict use. On the other hand, having health insurance, being married, and being Latino were consistent independent predictors. We conclude that mammography use among Latinas and Anglo women is increasing. However, further gains in use must address difficult barriers such as lack of health insurance.

KEY WORDS: Latinos/Hispanics; mammography; breast cancer.
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Breast cancer is the most commonly diagnosed cancer among Latinas (Hispanic women) and Anglo (non-Hispanic white) women in the United States.[1] However, Latinas are less likely than Anglo women to receive screening for this disease.[2] To reduce the number of breast cancer deaths by the year 2000, the U.S. Public Health Service has set the goal of increasing the rates of mammography use within the past 2 years for women over the age of 50 years from 18% for Latinas and 25% for Anglo women to at least 60% for both groups.[3,4] To reach these objectives, it is important to understand the factors that influence mammographic screening.

National surveys have found that the predictors of use include health insurance, income levels, education, and age.[2] Some studies have also reported that being Latino is a predictor of lower mammography use.[2,5] The reasons for this finding are not entirely clear; however, Latinas' beliefs about breast cancer may be partially responsible.[6,7] We previously described the predictors of breast cancer–related knowledge and attitudes among Latinas and Anglo women.[6] This report analyzes mammography use among women from that same data set who were 40 years of age and older.

METHODS

The setting was Orange County, a southern California community of 2.5 million residents of which approximately 23% are Latino.[3] Trained bilingual women interviewers conducted a telephone survey among women from randomly selected households from September 1992 to March 1993. Eligible participants were English-speaking or Spanish-speaking women aged 18 years or older who identified themselves as Latino or Anglo. The survey included questions about breast cancer–related knowledge, attitudes, and preventive practices taken from previous national and local survey instruments.[3–11] The project received approval from the Human Subjects Review Committee at the University of California, Irvine.

Self-reported mammography use within the past 2 years was the dependent variable. We used the χ^2 test and logistic regression analysis to determine the impact of knowledge and attitudes about breast cancer on mammography use. Because of multiple comparisons, we set the significance level at .01 for the χ^2 analysis. We constructed a logistic regression model in which we tested each knowledge and attitude variable separately while controlling for the following demographic variables: age, marital status, household income, insurance status, education, employment status, ethnicity, and country of birth. The regression results appear as adjusted odds ratios (ORs) with 95% confidence interval (CIs).

Table 1. Characteristics of Mammography Use by Frequencies*

Characteristics	Respondents, n	Reported Use in Past 2 Years, %
Demographics		
Age		
40–49	214	66†
>50	216	74
Marital status		
Married	294	73
Not married	134	64
Education		
≤12 years	198	64
>12 years	230	76
Employment status		
Employed	204	71
Not employed	225	69
Insurance status		
Insured	364	78†
Uninsured	66	26
Income		
≤$25,000	120	57†
>$25,000	170	79
Ethnicity		
Latinas	208	61†
U.S.-born	97	75
Immigrant	111	48
Anglo	222	79
Knowledge about risk factors		
Family history		
Agree	395	73‡
Disagree	28	39
Breast trauma		
Agree	248	65†
Disagree	154	78
Multiple sex partners		
Agree	95	57†
Disagree	295	76
Antibiotics		
Agree	61	49†
Disagree	324	75
Breast fondling		
Agree	72	54†
Disagree	329	75
Knowledge about symptoms		
Bloody breast discharge		
Agree	348	75†
Disagree	45	51
Attitudes		
I would rather not know if I had breast cancer.		
Agree	43	42†
Disagree	381	73
I would be afraid to tell my husband if I had breast cancer.		
Agree	43	47†
Disagree	379	73
I need a mammogram only when I have a breast lump.		
Agree	77	47†
Disagree	348	76
There is not much I can do to prevent breast cancer.		
Agree	128	61†
Disagree	288	74

*Only knowledge and attitude variables for which significant differences (p < .01) in mammography use existed between those who agreed and disagreed with the questions appear in this table.
†p < .001 by the χ^2 test.
‡p < .01 by the χ^2 test.

RESULTS

We completed interviews with 1,225 of 1,561 eligible women contacted (803 Latinas and 422 Anglo women) for a cooperation rate of 78.5% (75% for Latinas and 87% for Anglo women). Of these respondents, 208 Latinas and 222 Anglo women were aged 40 years or older. A detailed analysis of the demographic characteristics and of knowledge and attitudes about breast cancer in this population appears elsewhere.[6]

Bivariate analysis revealed that women were more likely to report having a mammogram in the previous 2 years if they were aged 50 years or older, had household incomes greater than $25,000 per year, had health insurance, had a high school education or more, were Anglo, were more knowledgeable about breast cancer, and had more favorable attitudes about its prevention and treatment (Table 1). Anglo women more frequently reported mammography use than Latinas (79% vs 61%). For women over age 50, the proportions were 79% and 67%, respectively (data not shown). Among Latinas, immigrants were less likely to report mammography use than U.S.-born Latinas (48% vs 75%).

None of the knowledge and attitude variables predicted mammography use after we controlled for the demographic characteristics. The demographic variables that consistently predicted mammography use were insurance status, marital status, and ethnicity. Table 2 provides typical findings, using as the knowledge variable the belief that family history is a risk factor for breast cancer. The findings did not change substantially when we included only women aged 50 years and older.

Table 2. Adjusted Odds Ratios for Predictors of Mammography Use Within the Past 2 Years*

Predictor	β	SE	OR	95% CI
Age 50 and older	−0.13	.31	0.9	0.5, 1.6
Married	0.70	.33	2.0†	1.0, 3.8
High school education	−0.51	.35	0.6	0.3, 1.2
Employed	0.01	.05	1.0	0.9, 1.1
Insured	2.1	.42	8.5‡	3.5, 18.6
Income >$25,000/year	0.22	.37	1.2	0.6, 2.6
Latina	−0.61	.27	0.5†	0.3, 0.9
Immigrant	−0.05	.47	0.9	0.4, 2.3
Family history is risk factor	0.84	.71	2.3	0.6, 9.3

*This table represents an example of the logistic regression analyses performed with all knowledge and attitude variables listed in Table 1. Adjusted for age (<50 = 0, ≥50 = 1), marital status (not married = 0, married = 1), education (≤high school = 0, >high school = 1), employment status (unemployed or not in the work force = 0, employed = 1), insurance status (not insured = 0, insured = 1), household income (≤$25,000 = 0, >$25,000 = 1), ethnicity (Latina = 0, Anglo = 1), country of birth (immigrant = 0, U.S.-born = 1), and knowledge (disagree that family history is a risk factor = 0, agree = 1).
†p < .5.
‡p < .001.

DISCUSSION

Self-reported mammography use among women in Orange County, California, was higher than the 1987 national figures used by the Public Health Service as the baseline for its year 2000 goals. Overall, 67% of Latinas and 79% of Anglo women aged 50 years or older reported receiving the test within the past 2 years. These data are consistent with accounts from other investigators that indicate an upward trend in mammography use among Latinas.[12]

A multivariate analysis demonstrated that individual knowledge and attitudes about breast cancer were not significant predictors of mammography use after adjusting for demographic variables. These findings are compatible with previous studies that pointed out the relatively weak independent influence of health beliefs on mammography screening.[13,14] Indeed, conceptual frameworks, such as the Health Belief Model,[15] stress the importance of enabling and other factors that influence health-related behaviors as well as knowledge and attitudes.

Health insurance, marital status, and ethnicity were the significant demographic predictors of mammography use. The importance of health insurance in screening behavior has been well documented.[2,5] However, the explanations are less clear for the other two variables. It is possible that married women, particularly Latinas, were more concerned about their health because of their responsibilities to the family and were more likely to obtain recommended screening for this reason.[16] The negative influence of Latino ethnicity on mammography use may reflect a lower priority placed on screening when compared with Anglo women.[17]

Before discussing the study's implications, we wish to point out several limitations. First, these data come from self-reports and are subject to recall and desirability response bias; therefore, the respondents may have overestimated mammography use.[18] Second, we did not evaluate all beliefs about breast cancer, and it is possible that unmeasured beliefs could have altered the results. Third, the results may not be generalizable to women without telephones; however, in Orange County, telephone subscription rates are relatively high (approximately 94% for Latinos and 99% for Anglos).[19]

The study findings have important implications for health policy makers and for practicing physicians. The increasing rates of mammography utilization among both Latinas and Anglo women are encouraging and suggest that the emphasis on breast cancer prevention at the national and local levels is producing positive results. Unfortunately, the most effective means of further increasing breast cancer screening rates, that is, providing health insurance to all women, remains an elusive goal.

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