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Factors Associated with Annual-Interval Mammography for Women in Their 40s

Jennifer M. Gierisch, PhD, MPH¹, Suzanne C. O'Neill, PhD², Barbara K. Rimer, DrPH³, Jessica T. DeFrank, MPH³, J. Michael Bowling, PhD³, and Celette Sugg Skinner, PhD⁴

¹ General Internal Medicine, Duke University Medical Center

² Lombardi Comprehensive Cancer Center, Georgetown University

³ UNC Gillings School of Global Public Health, The University of North Carolina at Chapel Hill

⁴ Division of Behavioral and Communication Sciences, Department of Clinical Sciences, University of Texas Southwestern Medical Center

Abstract

Background—Evidence is mounting that annual mammography for women in their 40s may be the optimal schedule to reduce morbidity and mortality from breast cancer. Few studies have assessed predictors of repeat mammography on an annual interval among these women.

Methods—We assessed mammography screening status among 596 insured Black and Non-Hispanic white women ages 43 to 49. Adherence was defined as having a second mammogram 10 to 14 months after a previous mammogram. We examined socio-demographic, medical and healthcare-related variables on receipt of annual-interval repeat mammograms. We also assessed barriers associated with screening.

Results—44.8% of the sample were adherent to annual-interval mammography. A history of self-reported abnormal mammograms, family history of breast cancer and never having smoked were associated with adherence. Saying they had not received mammography reminders and reporting barriers to mammography were associated with non-adherence. Four barrier categories were associated with women's non-adherence: lack of knowledge/not thinking mammograms are needed, cost, being too busy, and forgetting to make/keep appointments.

Conclusions—Barriers we identified are similar to those found in other studies. Health professionals may need to take extra care in discussing mammography screening risk and benefits due to ambiguity about screening guidelines for women in their 40s, especially for women without family histories of breast cancer or histories of abnormal mammograms. Reminders are important in promoting mammography and should be coupled with other strategies to help women maintain adherence to regular mammography.

Address correspondence and requests for reprints to: Jennifer M. Gierisch, PhD, MPH, Department of General Internal Medicine, Duke University Medical Center, 2424 Erwin Rd Suite 1105, Box 2720, Durham, NC 27707, Phone: (919) 668-2297 Fax: (919) 668-1300 Email: j.gierisch@duke.edu.

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Author's key words

breast neoplasms; guideline adherence; health behavior; middle aged; attitude to health; patient compliance; mass screening; female; risk factor; health knowledge

Introduction

Although rates of ever [1] and recent mammography screening (within past two years) [2] have increased dramatically over the last two decades, fewer than half of age-eligible women report obtaining repeat mammograms (two consecutive screening mammograms) on recommended schedules [3,4]. Although there have been debates about how the recommended schedule should be defined, [5-10] evidence is mounting that annual screening for women in their 40s, [8,11-15] as well as for women 50 and older, [13,16] may be the optimal schedule to reduce morbidity and mortality from breast cancer. However, controversy remains around the efficacy and frequency of screening for women in their 40s and annual mammography has not been recommended universally for women in their 40s in the United States and abroad. Few studies have addressed repeat mammography on an annual interval among these younger women. Yet, this is the screening interval recommended by one of the U.S.' most influential cancer organization, the American Cancer Society [8]. Irrespective of how the interval is defined, most medical organizations in the U.S. now recommend screening for women aged 40 and older.

Women in their 40s are an important population for several reasons. First, mammography use varies across age groups [17-20]. Some studies have reported that younger women are less likely to adhere to repeat screening compared to older women [16,20-23]. Barriers to regular mammograms may vary among women of different age groups. Additionally, understanding mammography use among women in their 40s should take into account the shifting medical recommendations in the U.S. and abroad that have contributed to confusion about screening guidelines for this age group [9,24-27].

Most of what we know about repeat mammography use comes from studies that either did not include women under age 50 or used a biennial schedule to assess adherence. Only a few studies have examined annual-interval mammography in samples that included women in their 40s [16,20-22,27,28]. While useful, these studies have limitations, such as only including women from one ethnic group [21], use of administrative dataset reviews that did not include other important variables, such as beliefs, attitudes, and perceptions about mammography [16,22], or samples limited to women with elevated breast cancer risk [22]. Other studies that were fielded before or shortly after annual screening recommendations for women in their 40s were publicized [27,28] have not yielded a consistent picture of factors associated with annual-interval mammography for women in their 40s.

Our study is one of the first after a period in which most major medical organizations in the U.S. agreed upon the potential benefit of mammography for women in their 40s [8,11,13,29-31]. We assessed the prevalence of annual-interval mammography for insured women in their 40s. We examined socio-demographic, medical history and systems-related characteristics, theory-informed attitude/belief variables and barriers to annual-interval mammography. We focused specifically on variables that may have implications for intervention development (e.g., barriers, ambivalence) and targeting to subgroups (e.g., history of abnormal mammograms, breast cancer family history). We analyzed not only the total number of barriers but also the specific types of barriers (e.g., logistics, cost, physician-related). This knowledge could enhance future intervention efforts to promote repeat mammography for women in their 40s irrespective of the interval recommended.

Methods

Data are from pre-intervention baseline interviews conducted as part of Personally Relevant Information about Screening Mammography (PRISM), a National Cancer Institute funded intervention study to enhance mammography maintenance. The eligible sample frame included North Carolina women residents enrolled with the North Carolina State Health Plan for Teachers and State Employees (State Health Plan) for two or more years prior to sampling, had their last screening mammograms between September 2003 and September 2004 (to ensure all were adherent to recent mammograms upon study entry), had only one mammogram within the designated time frame (to exclude those with diagnostic mammograms), no personal history of breast cancer, and were between the ages of 40 and 75. Institutional Review Boards for the UNC Gillings School of Global Public Health and Duke University Medical Center approved the research study.

PRISM study recruitment occurred from October 2004 to April 2005. Researchers mailed invitation letters to a random sample of 9087 women who met initial eligibility criteria. Letters included required HIPAA information and provided instructions for opting out of the study if women wished to do so. Trained telephone interviewers from Battelle Centers for Public Health Research and Evaluation contacted potential participants to obtain their consent. The consent process and survey took an average of 31 minutes. Interviewers made up to 12 contact attempts to obtain consent.

Of those invited, 3547 women completed baseline telephone interviews, 2051 refused participation, and 747 were ineligible. The remaining 2742 were classified as unknown eligibility once calls were initiated, because their call windows expired (n=2570), or their enrollment was no longer needed (n=172) to reach target sample size. Range in response rates based on the American Association for Public Opinion Research Standard Definitions was 47.1% to 63.7% [32]. The lower rate excludes a portion of women with unknown eligibility from response rate computation; the higher rate excludes all women with unknown eligibility. These rates are consistent with trends toward declining national participation in surveys [33], and we requested a level of engagement greater than that required for most surveys because we asked women to participate in a four-year intervention study. Of 3547 women who completed baseline interviews, 2219 respondents confirmed their two previous mammography dates as indicated by insurance records. Of these 2219 women, 596 were between ages 43 and 49 and were included in analyses. Analyses were restricted to women aged at least 43 to permit women time to have had one or more mammograms since age 40.

Measures

Dependent Variable

Mammography use: While organizations differ on recommended intervals, we focus on the American Cancer Society guidelines that recommend annual mammograms for women aged 40 to 49 [8]. Annual-interval mammography use was defined as having a second mammogram no sooner than 10 months and no later than 14 months after a previous mammogram. The ten-month boundary excludes likely diagnostic mammograms; the 14-month boundary provides a two-month window for scheduling. Many mammography facilities have waiting queues for appointments. We assessed mammography screening status by confirming claims data with self-report of the last two mammography dates during baseline telephone interviews. When discrepancies between claims and self-report dates occurred, self-report dates were used to compute mammography screening status. We had found claims data often incomplete due to delayed reporting or because patients had

multiple insurance carriers. Previous research has shown that self-reports are a valid measure of recent mammography use for insured populations [34,35].

Independent Variables

Socio-demographic variables: We assessed several socio-demographic variables: ethnicity (Non-Hispanic white, Non-Hispanic Black); marital status (married/living as married, not married); years of education (12 or fewer years, some college, college degree or more); number living in household (no others, one, two, three or more people); employment status (yes, no); and perceived financial situation. Ethnicity was dichotomized, because there were too few women in other ethnic groups to permit meaningful analysis. Perceived financial situation was assessed using a single validated item [20,36]. Respondents were asked whether, after paying bills, they: have enough money for special things; little spare money to buy extra or special things; they only have enough money to pay the bills because they have cut back on things; or they have difficulty paying the bills, no matter what they do. Responses were dichotomized as enough for special things vs. little spare money.

Medical history and healthcare-related variables: We assessed three medical history variables: history of abnormal mammograms (yes, no); smoking history (never, current, former); and family history of breast cancer (yes, no). We assessed history of abnormal mammograms via one item, *Have you ever had a mammogram when the results were not normal, but no cancer was found?* Positive family history was responding yes to having a biological sister, mother or both with a history of breast cancer. We also assessed two healthcare-related variables: receipt of mammography reminders (yes, no) and usual source of care (yes, no).

Attitude and belief variables: We assessed attitudes and beliefs about mammography, including satisfaction with previous mammography experience, comfort during previous mammogram [37] and perceived behavioral control (i.e., control over performing the behavior). We also assessed ambivalence toward mammography measured with two items: 1) *You have mixed feelings about whether you should get another mammogram when you are due*; and 2) *You are torn about whether you should get a mammogram when you are due* [38,39]. Responses to the items were summed to form a measure of ambivalence (range 2 to 8). Higher scores reflected more ambivalence.

The construct of decisional balance from the Transtheoretical Model [40] assesses positive and negative attitudes toward mammography, expressed as pros and cons. Examples of items include, *Having mammograms every year gives you a feeling of control over your health*, and *Once you have a couple of mammograms that are normal, you don't need any more for a few years* [41]. Six items were used to compute pros score and nine items for cons score. Decisional balance was calculated by computing pros and cons scores, converting raw scores to standardized T scores, and subtracting cons from pros.

Barriers to mammography were assessed through open- and closed-ended questions adapted from previous studies [42-44]. First, participants were asked up to three times if anything had delayed their getting a mammogram in the past and, if so, what had delayed them. They then were asked 10 closed-ended questions about what could delay their next mammograms. Responses used four-point scales, *strongly agree/disagree* and *somewhat agree/disagree*. Barriers were considered present if respondents endorsed somewhat or strongly agree to any of the items. After accounting for duplication in barriers, responses to open- and closed-ended questions were summed to determine the total number of barriers. Barriers were categorized according to 10 major themes classified by two independent coders. Dichotomous variables were created to indicate whether a respondent endorsed a barrier category.

Statistical Analysis

Analyses were conducted using SAS version 9.1 (SAS Institute, Cary, NC). Independent variables were categorized as described above. Unadjusted analyses examined individual associations between annual-interval mammography and each socio-demographic, attitude/belief, medical history and healthcare-related variable. Subsequently, associations between annual-interval screening and variables of interest were examined using a multivariable model to determine adjusted associations. Logistic regression was used to generate odds ratios (OR) with 95% confidence intervals (95% CI) and two-sided p-values. Variables in these analyses were considered significant at $p < 0.05$.

Results

Sample description

Most participants were white (88.6%), college educated (64.2%), married or living as married (82.9%), and perceived their financial status as having enough to buy special things (53.3%) (Table 1). A plurality reported living with three or more people (44.1%), 39% had previous histories of abnormal mammograms, and 16.6% had family histories of breast cancer. Over half (52.6%) reported receiving mammography reminders in the past year. The large majority reported a regular source of care (94.3%), having received a doctor's recommendation for a mammogram in the last year (80.4%), and said they were very satisfied with their last mammography experience (84.6%).

Most participants reported at least two barriers to getting mammograms (58.5%); 21.8% identified one and 19.7% reported no barriers. The most common barrier type was forgetting to make or keep mammography appointments (43.4%), followed by being too busy (40.7%; e.g., procrastination, not enough time), cost (26.6%; e.g., cost of mammograms, plan will not pay) and being afraid or nervous about mammography results or breast cancer (26.1%).

Logistic Regression Analysis

Table 2 reports unadjusted and adjusted odds of adherence to annual-interval mammography use. Overall, 44.8% of the sample were adherent to mammography. In unadjusted analyses, women who had a family history of breast cancer, no smoking history, and more positive attitudes towards mammography (as measured by decisional balance scores) were more likely to be adherent. Those who said they did not receive reminders in the past year, were less than very satisfied with their previous mammography experiences, reported one or two or more barriers, and were more ambivalent about getting their next mammograms were less likely to be adherent.

Reporting a history of abnormal mammograms was associated with adherence in the adjusted but not the unadjusted model. Similar to the unadjusted model, having a family history of breast cancer and never having smoked were positively associated with adherence. Reporting not having received mammography reminders and reporting one or two or more barriers were associated significantly with poorer adherence for the adjusted model.

Because a report of one or more barriers was associated significantly with poorer mammography adherence, we conducted additional analyses to identify which types of barriers accounted for these findings (Table 3). Four barrier categories were associated with non-adherence in unadjusted models: lack of knowledge/not thinking mammograms are needed, cost issues, being too busy, and forgetting to make or keep mammography appointments.

Discussion

This report extends previous research on mammography through examination of socio-demographic characteristics, theoretically informed attitudinal variables, and barrier types associated with annual-interval mammography use for women in their 40s. Few studies have focused on women in their 40s; far fewer have examined annual-interval mammography for this population.

Overall, 44.8% of women in this sample were adherent to annual-interval mammography – slightly lower than other studies of reported rates of repeat mammography [3,4,23]. Our lower rate may be attributed to several factors. Most prior studies used longer screening intervals to define repeat use (e.g., every two years), compared with our use of an approximately annual interval (10 to 14 months). Widening the length of time between repeat screenings increases the proportion of women categorized as screened and, thus, classified as adherent [4,45]. In addition, many previous studies assessed repeat use only for women aged 50 and over. Our lower-than-expected rate of repeat screening may also have resulted from the precision with which we measured repeat use. We assessed specific intervals between past two mammograms through claims data confirmed via telephone interviews. In contrast, methods in prior research, such as averaging the number of self-reported mammograms over a number of years, may inflate proportions categorized as adherent. Accurate assessment of repeat mammography use is a growing concern for applied researchers as study findings have been shown to differ according to how this outcome is operationalized [4,46].

Demographic variables previously associated with repeat mammography, such as race, marital status, education and income [4,16,19,47] were not significant in our study. This could be a consequence of eligibility criteria. At baseline, all participants were insured with the State Health Plan and had recent mammograms prior to study enrollment, resulting in a sample that may be more homogeneous than some other studies.

We found several medical and healthcare-related factors associated with mammography use. About 40% of our sample reported histories of abnormal mammograms, consistent with other reports of cumulative assessment. Elmore and colleagues estimated the risk of an abnormal mammogram was 49% across 10 screening mammograms [48]. Having a history of abnormal mammograms was associated with screening here and in other research [38,49]. Women with histories of abnormal mammograms may have higher distress and anxiety about breast cancer [50], which may explain better adherence to routine screening. Also, they are more likely to be advised by their physicians to be screened [51]. Also consistent with prior research, we found that family history of breast cancer increased the likelihood that women would be adherent to mammography [52-54]. The benefits of annual-interval screening may be more salient for women who have had family members with breast cancer [55]. Of our healthcare-related variables, only reminders were associated significantly with the outcome. Women who said they had not received mammography reminders were less likely to be adherent to mammography. This is consistent with previous studies demonstrating the efficacy of reminders to increase mammography use [20,56-59].

Finally, women with more self-reported barriers to mammography were less likely to obtain annual-interval mammograms [17,19,28,60]. Our analyses support and extend these results in that some barriers may be more influential than others. Being too busy and forgetting to make or keep mammography appointments were commonly reported and associated with annual-interval use. These barriers have been among the most commonly-mentioned barriers since they were first assessed [60,61]. They underscore the importance of reminders in promoting regular screening. Reporting being too busy and forgetting to make or keep

mammography appointments may reflect competing priorities in women's lives. Given the demands of work, family and other activities, early detection health services, such as mammography, may compete with other priorities for women in their 40s. Although some mammography facilities attempt to accommodate busy women by providing extended weekday hours and/or Saturday appointments, these practices are uncommon [62]. Health professionals should emphasize making regular mammograms a priority and work with women to identify how they can build mammograms into their lives [63,64].

Our finding that cost was a commonly-reported and influential factor is consistent with previous literature [28,65]. At the time of data collection, mammography screening was covered by the State Health Plan every two years for women in their 40s in contrast to every year coverage for women aged 50 and older. Annual coverage was since extended to women in their 40s. In the future, we will assess whether this policy change decreases women's reports of cost as a burden. It is not clear when women identify cost as a barrier whether they understand what their out-of-pocket expenditures would be and whether they are considering other costs as well (e.g., childcare, time lost from work, travel-related expenses).

Barriers associated with lack of knowledge about mammography or not thinking mammograms are needed were frequently cited in our sample and associated with non-adherence. This may be a result of well-publicized controversy over the interval and effectiveness of screening for women in their 40s [8,9,25]. Health professionals may need to take extra care in discussing the risks and benefits of mammography screening for women in their 40s, as ambiguity about the need for regular mammograms may be an issue for this group.

Our study has some limitations. First, these are cross-sectional data which preclude determination of causality. Also, ours was a study of repeat mammography for insured women in their 40s who reported recent mammograms. Factors associated with repeat mammography use for this population might not be generalized to women who are uninsured, never had mammograms or differ demographically from our sample. Our findings cannot be generalized to minority women other than Black women, because there were too few ethnic and racial minority women in the sample to analyze their data. Study participation of Black women and other ethnic groups was lower than predicted. Previous published analyses on rates of non-response found only slight differential non-response by race [66]. Lower participation of Black women in our study may be a consequence of eligibility criteria that required adherence to a recent mammogram eight to nine months before study entry. Also, while our outcome was annual mammography use, it is unknown if findings would differ had we examined other screening intervals (i.e. biennial screening). We measured history of abnormal mammograms with one item and family history with two items. While not ideal, we were constrained by limitations of telephone interviews.

With these limitations in mind, the results contribute to understanding annual-interval mammography use for women in their 40s, a group that has had substantially less research attention to date. Persistent confusion about the need for mammograms for women in their 40s should be addressed, along with strategies to help women who report they are too busy or forget to make mammograms a priority. Systems-level interventions, such as regular reminders, have been shown definitively to improve adherence to screening [64]. Special attention should be paid to women who may perceive themselves at lower risk due to not having a family history of breast cancer or not having experienced an abnormal result. Insurance coverage is necessary but not sufficient to assure regular mammography use. Although mammography use has been an accepted medical screening tool for many years, utilization is still sub-optimal, and mammography is still not a habit of most U.S. women.

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Table 1

Selected characteristics of participants (n=576)

Variable	N (% of sample)	M	SD
Socio-demographic variables:			
Age		46.3	2.0
Race/ethnicity			
Non-Hispanic White	512 (88.6)		
Non-Hispanic Black	66 (11.4)		
Marital status			
Married/living as married	479 (82.9)		
Not married/living as married	99 (17.1)		
Education			
Grade 12 or less	87 (15.1)		
Some college	119 (20.7)		
College degree or more	370 (64.2)		
Additional members living in the household			
0	30 (5.2)		
1	134 (23.2)		
2	159 (27.5)		
3+	255 (44.1)		
Perceived financial situation			
Enough for special things	307 (53.3)		
Little spare money	269 (46.7)		
Work for pay			
Yes	550 (95.2)		
No	28 (4.8)		
Self-reported medical history and healthcare-related variables:			
Family history of breast cancer			
Yes	95 (16.6)		
No	477 (83.4)		
History of abnormal mammograms			
Yes	226 (39.4)		
No	347 (60.6)		
Received a mammography reminder in the past year			
Yes	300 (52.6)		
No	270 (47.4)		
Regular source of routine health care			
Yes	545 (94.3)		
No	33 (5.7)		
Doctor recommendation for a mammogram in past year			
Yes	463 (80.4)		

Variable	N (% of sample)	M	SD
No	113 (19.6)		
Smoking history			
Never smoked	398 (69.2)		
Former smoker	119 (20.7)		
Current smoker	58 (10.1)		
Attitude and belief variables:			
Satisfaction with previous mammography experience			
Very satisfied	488 (84.6)		
Somewhat satisfied/somewhat dissatisfied/very dissatisfied	89 (15.4)		
Comfort during previous mammogram			
Very comfortable/comfortable	212 (36.7)		
Mildly uncomfortable but tolerable	225 (39.0)		
Uncomfortable but tolerable/very uncomfortable/ painful and intolerable	140 (24.3)		
Perceived control over getting a mammogram when due			
Complete control	425 (73.7)		
Some/no control	152 (26.3)		
Number of barriers			
No barriers	114 (19.7)		
1 barrier	126 (21.8)		
2+ barriers	338 (58.5)		
Ambivalence towards mammography	----	2.3	0.9
Decisional balance score	----	0.0	15.8
Barrier type:			
Not at risk for breast cancer/no symptoms	6 (1.0)		
Competing problems/priorities	44 (7.6)		
Negative experience with mammograms	70 (12.1)		
Lack of knowledge/not thinking mammograms are needed	73 (12.6)		
Physician-related barriers	102 (17.7)		
Logistical issues	146 (25.3)		
Afraid/nervous about mammogram results or breast cancer	151 (26.1)		
Cost issues	154 (26.6)		
Too busy	235 (40.7)		
Forgot	251 (43.4)		

Table 2

Results of multivariable logistic regression analyses of annual-interval mammography

	% of group adherent	Unadjusted OR	95% CI	Adjusted OR	95% CI
Overall sample:	44.8%				
Socio-demographic variables:					
Race/ethnicity					
Non-Hispanic white	44.8	Reference		Reference	
Non-Hispanic Black	44.3	0.98	0.57-1.67	0.84	0.45-1.54
Marital status					
Married/living as married	43.6	Reference		Reference	
Not married/living as married	50.6	1.32	0.84-2.07	1.33	0.79-2.24
Education					
Grade 12 or less	40.5	0.77	0.44-1.38	0.92	0.48-1.74
Some college	46.8	Reference		Reference	
College degree or more	45.4	0.95	0.62-1.46	1.03	0.63-1.69
Perceived financial situation					
Enough for special things	47.1	Reference		Reference	
Little spare money	41.5	0.80	0.57-1.12	0.84	0.57-1.24
Self-reported medical history and healthcare-related variables:					
Family history of breast cancer					
Yes	59.6	2.06	1.31-3.24**	1.98	1.20-3.25**
No	41.7	Reference		Reference	
History of abnormal mammograms					
Yes	49.5	1.39	0.99-1.97	1.47	1.00-2.16*
No	41.4	Reference		Reference	
Received a mammography reminder					
Yes	51.9	Reference		Reference	
No	36.8	0.54	0.38-0.76**	0.56	0.39-0.82**
Regular source of routine health care					
Yes	44.4	Reference		Reference	
No	51.6	1.34	0.65-2.76	1.23	0.56-2.69

	% of group adherent	Unadjusted OR	95% CI	Adjusted OR	95% CI
Smoking history					
Never smoked	48.4	1.85	1.19-2.87*	1.79	1.10-2.92*
Former smoker	33.6			Reference	
Current smoker	43.4	1.51	0.78-2.95	1.44	0.69-3.00
Attitude and belief variables:					
Satisfaction with previous mammography experience					
Very satisfied	47.2			Reference	
Somewhat satisfied/ somewhat dissatisfied/very dissatisfied	31.7	0.52	0.32-0.86*	0.566	0.32-1.01
Comfort during previous mammogram					
Very comfortable/comfortable	47.0	1.18	0.80-1.73	1.03	0.67-1.59
Mildly uncomfortable but tolerable	43.0			Reference	
Uncomfortable but tolerable/ very uncomfortable/ painful and intolerable	44.7	1.07	0.69-1.66	1.04	0.64-1.69
Perceived control over getting a mammogram when due					
Complete control	45.5			Reference	
Some/no control	42.9	0.90	0.61-1.32	1.26	0.80-1.97
Number of barriers					
No barriers	65.5			Reference	
1 barrier	50.8	0.55	0.32-0.93*	0.52	0.30-0.92*
2+ barriers	35.1	0.29	0.18-0.45***	0.31	0.19-0.51***
Ambivalence toward mammography	----	0.64	0.50-0.83**	0.83	0.62-1.11
Decisional balance score	----	1.02	1.00-1.03**	1.00	0.98-1.01

* $p < .05$.** $p < .01$.*** $p < .001$.

Table 3

Results of unadjusted logistic regression analyses of barriers to annual-interval mammography.

	% of group adherent	OR	95% CI
Barrier reported:			
Not at risk for breast cancer/no symptoms			
Yes	40.0	0.82	0.14-4.95
No	44.8	Reference	
Competing problems/priorities			
Yes	36.8	0.70	0.36-1.39
No	45.4	Reference	
Experience with the healthcare system and mammograms			
Yes	39.7	0.79	0.46-1.35
No	45.4	Reference	
Lack of knowledge/not thinking mammograms are needed			
Yes	27.0	0.42	0.23-0.75**
No	47.1	Reference	
Physician-related barriers			
Yes	23.1	0.64	0.40-1.01
No	39.3	Reference	
Logistical issues			
Yes	41.6	0.84	0.57-1.23
No	45.9	Reference	
Afraid/nervous about mammogram results or breast cancer			
Yes	42.2	0.87	0.59-1.29
No	45.6	Reference	
Cost issues			
Yes	35.9	0.61	0.41-0.90*
No	48.0	Reference	
Too busy			
Yes	34.7	0.50	0.35-0.72**
No	51.4	Reference	
Forgot			
Yes	33.5	0.44	0.31-0.63**
No	53.2	Reference	

* $p < .05$.** $p < .01$.*** $p < .001$.