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Examining Breast Cancer Screening Behavior Among Southern Black Women After the 2009 US Preventive Services Task Force Mammography Guideline Revisions

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Abstract

Background—Updated United States Preventive Services Task Force (USPSTF) and American Cancer Society mammography screening recommendations push for increased age of initiation and lengthened breast cancer screening intervals. These changes have implications for the reduction of breast cancer mortality in Black women. The purpose of this study was to examine breast cancer screening behavior in a cohort of Southern Black women after the release of the 2009 USPSTF recommendations.

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Disclosure statement

No potential conflict of interest was reported by the authors.

Data availability statement

The data that support the findings of this study are available from the corresponding author, DEF upon reasonable request.

Methods—Surveys assessing cancer screening information were collected from members of Black churches between 2006–2013. The sample was restricted to women aged 40 to 74 years, who did not report a breast cancer diagnosis, or a recent diagnostic mammogram (n=789). Percentages of women ever completing a mammogram (age 40–49) and annual mammography (age 50–74) in 2006–2009 and 2010–2013 were compared using chi-square statistics. Logistic regression models were fit to determine the predictors of adherence to pre-2010 screening guidelines.

Results—No significant changes in mammography rates were found for women in the 40–49 age group (X^2 = 0.42, p=0.52) nor for those in the 50–74 age group (X^2 = 0.67, p=0.41). Completing an annual clinical breast exam was a significant predictor of adherence to pre-2010 screening guidelines for both age groups (OR 19.86 and OR 33.27 respectively) and participation in education sessions (OR 4.26).

Discussion—Stability in mammography behavior may be a result of PCP's advice, or community activities grounded pre-2010 screening recommendations. More research is needed to understand how clinical interactions and community-based efforts shape Black women's screening knowledge and practices.

Introduction

Appropriate cancer screening plays an integral role in reducing the burden of cancer in the United States (US). The goal of breast cancer screening is early detection leading to the reduced incidence of late-stage disease and disease-specific mortality rates. According to one estimate, 15% of the reduction in American women's breast cancer mortality can be attributed to screening mammography.[1] Screening may have an increased impact on breast cancer mortality for specific populations, such as Black women, given the historically elevated incidence rates in Black women under 50 years of age and the more recent trend of increasing incidence for those over the age of 50.[2–4] Given this context, an investigation of the extent to which changes in breast cancer screening guidelines shape Black women's mammography behavior may shed light on the ways that health policy and communication shape Black women's health and subsequently racial inequities in cancer burden.

In January 2016, the United States Preventive Services Task Force (USPSTF) published the final version of its updated mammography screening recommendations.[5] Currently, the USPSTF recommends that women 40–49 years of age do not need to have mammograms, but can exercise the option to complete the procedure based on their personal beliefs and preferences.[5] Women 50–74 years of age are advised to complete mammography on a biennial basis, whereas mammography is not recommended for women >75 years, as evidence of the benefit to this group is inconclusive.[5] The 2016 USPSTF recommendations are the same as those published in 2009, but the 2016 document provides additional information about the interpretation of the "C" grade for mammography screening in women 40–49 years old (See Table 1).[5]

These clarifications are likely a response to the widespread controversy generated in response to the 2009 recommendations.[6,7] After the release of the 2009 USPSTF guidelines, many non-profit and professional organizations began to promote adherence to the

USPSTF's previous set of guidelines published in 2002[8], which also correspond to the American Cancer Society's (ACS) recommendations during that time period.[9,10] Before 2009, both organizations recommended annual mammograms for all women 40 years.[8,10] In 2015, the ACS published new guidelines, thus reigniting the screening debate.[11,12] The ACS's 2015 guidelines recommend that women aged 40 to 44 years should have the opportunity for mammography screening and that women should begin routine screening at age 45. Additionally, women aged 45 to 54 should screen annually and women ≥55 years should screen biennially, with the option to screen annually.[3] Women ≥75 years are advised to continue screening as long as they have a life expectancy of ≥10 years.[3]

Given widespread disagreement regarding the age of initiation, discontinuation, and interval of mammography screening, it is unclear how (or if) mammography screening recommendations impact women's actual screening behavior. This is especially true for populations with increased breast cancer burden, such as Black women. Knowledge of mammography screening guidelines is an important contributor to mammography completion, but not all women are equally aware of changes in mammography screening guidelines.[13] In 1995, women aged 40 to 49 years old were surveyed to determine their awareness of changes to mammography screening guidelines in 1993, which discouraged women in this age range to complete mammograms.[14] Morton et al. found that White women were almost three times more likely than Black women and other women of color to know about the new guidelines, and women with more education were more likely to know about changes to the guidelines. Research conducted after the release of the 2009 USPSTF guidelines reveals comparable trends, with many women unable to correctly describe the new screening intervals and ages.[15]

Research on changes in mammography rates after revised guidelines tells a similar story. Several studies have compared mammography screening rates before and after changes to the 2009 recommendations, and the majority of those studies have detected no significant difference in screening rates.[16–21] One nationally representative study[22], along with studies of women in Vermont and Minnesota, showed a decrease in screening rates across all age groups from 2009 to 2011.[18,23] With few exceptions, none of these studies examined whether mammography screening behaviors varied by racial group.[20,24–26]

Variations in screening recommendations may adversely impact Black women's breast cancer mortality if the biological, socioeconomic, and cultural factors impacting Black women's breast cancer burden are not considered. Reproductive factors, such as age at menarche and age at first pregnancy, may increase the risk of different breast cancer subtypes in Black women.[27–29] Obesity and diabetes also increase breast cancer risk and are suspected to be driving forces responsible for increasing breast cancer incidence among Black women over 50 years of age.[30,31] Current evidence indicates that Black women's breast cancer incidence rates are rising in all age groups and incidence rates in Black women > 60 years have recently converged with those of White women.[30,32–34] Racial inequities in breast cancer mortality are likely to widen as a result of these biological trends.[2,35] Consequently, the lack of Black women in the studies forming the basis of the 2009 USPSTF mammography guidelines may further exacerbate these inequities, as these

guidelines do not account for racial trends in incidence, healthcare access, nor patient-provider interactions.[36]

Suggestions have been made to create race-specific screening guidelines for breast cancer, a strategy that has been implemented with other cancer sites for which Blacks are diagnosed at younger ages (e.g., for colorectal cancer).[37,38] Such a strategy must be informed by research describing influences on mammography screening behavior and outcomes, including if, and how, expert guidelines are disseminated in and their impact on Black communities.

The purpose of this study was to examine mammography screening behavior in a statewide sample of Black women between 2006 and 2013. Given the contours of many Black women's healthcare experiences which include inadequate provider communication due to bias, patient mistrust, and lower levels of access to quality care, we believe that Black women were less aware of the new guidelines or less likely to trust the new information they receive from their healthcare providers.[39–41] We hypothesize that Black women continued to follow the pre-2009 USPSTF guidelines and a higher percentage of Black women in both age groups would complete annual mammograms between 2006–2009 compared to post-2010.

Materials and Methods

Setting and Population.

Data for this study are from a statewide cancer needs assessment that was conducted as part of a larger NCI-funded community-based participatory research project.[42] Members of Southern Black churches participated in a cancer needs assessment by completing a baseline survey prior to the initiation of educational activities at their church.[42] Baseline surveys were completed by members of 47 churches. All churches were not active participants throughout the project, as a consequence follow-up surveys were administered to 26 of the original 47 churches three to four years after baseline data collection. Baseline and follow-up surveys were administered from 2006 to 2010. Survey administration resumed in 2012 with a revised survey tool and concluded in 2013. Regional coordinators of a statewide faith-based organization worked with designated church leaders to distribute surveys to church members and return surveys to the university. This study was approved by the University of South Carolina Institutional Review Board as exempt research. As part of the approval process, a waiver of consent was granted for this study. Participants received information letters about the study along with the paper survey.

Measures.

The survey tool consisted of questions assessing sociodemographic factors, cancer screening behaviors, participation in educational activities, and cancer information seeking behaviors. Surveys were reviewed by the regional coordinators and pretested before administration.

Demographics.—Demographic items were adapted from the previous versions of the Behavioral Risk Factor Surveillance Survey (BRFSS) and included sex, age, employment, education level, and health insurance coverage status.[43] Additional details about demographic items were reported previously.[42] Sex was listed as male or female. Age was

assessed using two items: date of birth and age category (18–39 years old, 40–49 years old, 50–59 years old, 60–69 years old, 70 years or older). The two age items were collapsed to create the following age ranges: 18–39 years old, 40–49 years old, 50–74 years old, and 75 years or older. Participants indicated the highest level of education completed, which was then combined into the following categories: less than high school, high school graduate or equivalent (i.e., GED), and college graduate or higher. A single item with multiple options was used to collect employment data which was further collapsed into two categories: employed and not employed (which included unemployed, retired, disabled, etc.) Urban or rural location was generated by matching participants' zip codes to the 2013 National Center for Health Statistics' Urban-Rural Classification Schema for Counties.[44] Individuals residing in counties with codes 1–4 were classified as urban, and all remaining counties were designated as rural. A multi-select item was used to collect health insurance information, and respondents selecting at least type of insurance coverage were listed as having health insurance.

Cancer Status, Prevention, and Screening Behaviors.—BRFSS items measuring cancer status and screening behaviors were modified and incorporated into the survey tool.[43] Breast cancer diagnosis was assessed using a single item, "Have you ever been told by a doctor, nurse, or other health professional that you had breast cancer?" Cervical cancer screening behavior was assessed by asking women to report their time since their last Pap test. Response options were in the past 3 years, past 5 years, 5 years or more, and never. A revised survey tool was adopted from 2012–2013 and contained items assessing attendance at church education sessions. Responses were dichotomized to yes (attending one, two, or three or more sessions) and no (attending zero sessions) for this analysis.

Multiple items assessed breast cancer screening behavior. Frequency of breast self-exam completion was collected using a single item. Women reporting completing an exam once a week, every two to three weeks, and once a month were all listed as adherent to previous ACS breast self-exam recommendations.[10] Women were asked about their last clinical breast exam and were provided with the following response options of in the past 1 year, past 2 years, past 3 years, past 5 years, more than 5 years, and never. If respondents completed an exam in the past year, they were categorized as adherent to prior ACS clinical breast exam guidelines.[10] Time since last mammogram was collected using a single item, and respondents could select from the following response options: past year (12 months), past 2 years, past 3 years, past 5 years, 5 years or more, and never. Additionally, respondents were asked to indicate if the purpose of their last mammogram was to check a problem (i.e., diagnostic).

Data Analysis.

Survey data were managed at the university with the use of Teleform© software for data management and STATA 13 for data analysis.[45] This study was limited to the 1,909 female respondents who returned survey forms and reported completing the survey once during the administration period. Women reporting breast cancer diagnoses (n=74) or diagnostic mammograms (n=214) were removed from the analysis. Respondents were grouped according to the age ranges included in the USPSTF breast screening recommendations (40–

49, 50–74, and ≥75 years old).[5,36] Due to the different items used to collect age, many respondents >70 years could not be placed in the appropriate screening age range. These women, as well as those <40 years, who did not answer the mammography frequency item, and with missing data on variables of interest were removed from the analysis resulting in a final sample size of 789 women. Data were then grouped by year with surveys completed between 2006 and 2009 allocated to the pre-2010 USPSTF screening period and surveys completed between 2010 and 2013 forming the post-2010 screening period. Demographic characteristics and cancer screening rates were then compared by screening period using the chi-square test. The sample was further restricted to respondents with complete demographic and screening data during the 2012–2013 data collection period to determine influences on screening in the post-2010 screening period. Logistic regression models were created to determine predictors of ever having a mammogram in the 40–49 age group and having an annual mammogram in the 50–74 age group.

Results

Sociodemographic characteristics and cancer screening behaviors for the sample are displayed in Table 2. Overall, respondents in the pre-2010 screening period were very similar to those in the post-2010 period. A third of respondents were in the 40–49 year old age range; most were employed and had health insurance. A slightly higher number of respondents in the 50–74 year old age range had at least a high school education in the post-2010 period compared to the earlier time period (94.4% vs. 90.1%, $p<0.01$). Proportions of respondents completing Pap tests, breast self-exams, and clinical breast exams also were comparable across screening periods.

Mammography behavior for women 40–49 years of age and 50–74 years of age is displayed in Table 3. In both age groups, no significant differences in the completion of screening mammography were detected. For women 40–49 years old, the percentage of those ever completing a mammogram was higher in the post-2010 time period at 89.2% compared to those in the pre-2010 screening period at 86.5%, but this difference was not statistically significant ($p=0.52$). Similarly, in the 50–74 year old age group more women reported annual mammograms (78.6%) in the post-2010 time period as opposed to the pre-2010 time period (75.5%), yet this difference was not statistically significant ($p=0.41$).

Logistic regression models were constructed to identify influences on adherence to the pre-2010 mammography screening guidelines in the respondents completing the survey in the post-2010 period. Results of these analyses are displayed by age group in Table 4. Model 1, predicting ever completing a mammogram for women aged 40–49 years, was statistically significant with an $R^2 = 0.31$. Completing an annual clinical breast exam was the only significant predictor in this model (OR=19.85; CI 2.36–166.94). An additional model incorporating the attendance at church education sessions as a predictor of mammography completion was created, but the model was unstable (probably due to the small number of responses to this item for this age group).

Model 2 displays the predictors of annual mammography in women in the 50–74 age group and was also statistically significant ($R^2 = 0.34$). Again, completion of an annual clinical

breast exam was the only significant predictor of mammography screening in this model (OR=33.28; CI 14.41–76.85). Model 3 included the variables analyzed in Model 2 with the addition of attendance at church education sessions. Despite a much smaller sample size, the model remained statistically significant (R^2=0.35), annual clinical breast exam remained a significant predictor of the behavior (OR=44.34; CI 7.32–268.56), and attendance at church education sessions was also statistically significant (OR=4.26; CI 1.04–17.52).

Discussion

Our analyses indicated that Black women in this Southern sample did not change their mammography screening practices after the release of the 2009 USPSTF mammography guidelines as there were no significant differences in mammography rates before and after 2010. Our results paralleled several other investigations of mammography screening behavior after 2009, especially the work of Pace et al., which included a subgroup analysis of mammography rates in Black women.[15–18,20,24,25,46]. Similar to our findings, Pace et al. detected slightly higher, but not statistically significant different rates of adherence to the previous screening guidelines.[20] Both Jiang et al.[24] and Stiel et al.[25] determined that the national decline in mammography rates was slower for Black women but with much regional variation. Specifically in South Carolina, Stiel et al. found no statistically significant declines in mammography screening among Black Medicare enrollees in 2012.[25] Wharam et al. found significant decreases in screening frequency across age groups in White, Latina, and Asian women, but not Black women.[26] Mammography screening rates did not change among the Black women in that study, but the authors speculated that a number of factors including, patients' and providers' reluctance to change screening behaviors, Black women's increased breast cancer risk, and/or suspicion concerning the appropriateness of the newest USPSTF's recommendations for this group, may be responsible for adherence to previous guidelines.[26] Using additional information collected about other cancer prevention behaviors, we attempted to identify possible influences on mammography screening rates to obtain some insight into the screening trends we observed.

Logistic regression models revealed an association between receiving an annual clinical breast exam and adherence to older mammography guidelines in both age groups, yet there were no associations with adherence to older cervical cancer screening or breast self-examination recommendations. Over half of the women in our sample report receiving annual clinical breast exams, even though the USPSTF consistently rated the evidence for this procedure as inconclusive.[8,36] This suggested that our sample was not following older screening recommendations across cancer sites/breast cancer screening behaviors but receiving clinical breast exams and possibly mammography referrals during annual visits with their primary care providers.[47,48] However, it is not clear whether Black women are receiving guidance that reflects pre-USPSTF recommendations or no screening recommendation at all during these encounters. Research has documented that providers are less likely to recommend mammography screening to Black women compared to their White patients.[49,50] Fortunately, there are cancer equity initiatives that seek to improve Black women's knowledge and awareness of breast cancer screening knowledge that do not rely solely on clinical intervention.

The National Cancer Institute supported the development and implementation of research and educational activities to reduce the cancer burden in communities of color through its Community Networks Program Centers (CNPC).[42,51] The Community Outreach Core of the CNPC supported the development and implementation of several culturally appropriate church-based health education programs that provided cancer prevention and screening messages based on the ACS's guidelines. When incorporated in into the model, attendance at church education sessions was revealed as a statistically significant predictor of annual mammography in the post-2010 time period. Studies show that targeted, culturally appropriate community education efforts are effective in providing health information to Black populations.[52,53] Stability in the mammography screening practices of survey respondents may be due, in part, to the CNPC's statewide educational efforts in addition to (or potentially in spite of) provider recommendations.

While we are confident in the study's findings, there are several limitations worth noting. First is the timing of the revised USPSTF guidelines in relation to the collection of the survey data. The guidelines were released in November 2009, and screening behaviors take time to change. Surveys for the period post-2010 period consisted of 217 surveys collected in 2010 and 199 surveys collected between 2012 and 2013. To account for this possibility, additional analyses were conducted without the 2010 surveys, and the results of the chi-square and logistic regression models were unchanged.

Also, we were unable to directly assess respondents' awareness of mammography guidelines or provider recommendations as these items were not included in the survey tool due to length limitations. While the survey was conducted with a statewide sample, it cannot be generalized to the entire state or all Black communities as surveys were collected from a convenience sample of a specific faith-based community. However, given the similarity of our results to other studies of Black women's mammography behavior, we feel that our conclusions are valid.[20,24–26]

Conclusion

Our findings indicate that Black women in our sample continued to complete annual mammograms post-2010. This behavior may be attributed to interactions with primary care providers endorsing pre-2010 USPSTF/pre-2015 ACS guidelines and culturally targeted education sessions based on the same guidelines. While our study begins to illustrate some of the influences on Black women's mammography behavior, it is not completely clear as to how patient-provider dynamics and community-based health information sources interact to influence Black women's breast cancer screening behaviors and subsequently impact racial inequities in breast cancer burden. Research on these dynamics can aid in the development of racially appropriate communications about breast cancer screening guidelines.

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Table 1

American Cancer Society and United States Preventive Services Taskforce Mammography Screening Recommendations 1997–2016

Age Range (Yrs)	1997	2002	2003	2009	2015	2016
40–49						
ACS[a,b,c]	Women in this age range should complete annual mammograms.				Women should have the opportunity to start screening at age 40–44. *Qualified Recommendation* Women should start screening at age 45. *Strong Recommendation* Women age 45 −54 should complete annual screening. *Qualified Recommendation*	
USPSTF[d,e,f]	N/A	Women in this age range should complete annual or biennial mammograms. *Grade B*		The decision to start regular, biennial screening mammography before the age of 50 years should be an individual one and take patient context into account, including the patient's values regarding specific benefits and harms. *Grade C*		The decision to start screening mammography in women prior to age 50 years should be an individual one. Women who place a higher value on the potential benefit than the potential harms may choose to begin biennial screening between the ages of 40 and 49 years. *Grade C*
50–74						
ACS[a,b,c]	Women in this age range should complete annual mammograms.				Women age 45 −54 should complete annual screening. *Qualified Recommendation* Women age 55 and older should complete annual or biennial screening. *Qualified Recommendation*	
USPSTF[d,e,f]	N/A	Women in this age range should complete annual or biennial mammograms. *Grade B*		Women in this age range should complete biennial mammograms. *Grade B*		
75+						
ACS[a,b,c]	Women in this age range should complete annual mammograms.		Women in this age range should continue screening as long as they are in good health.		Women should continue screening if they have a life expectancy of 10 years or greater. *Qualified Recommendation*	
USPSTF[d,e,f]	N/A	Women in this age range should complete annual or biennial mammograms. *Grade B*		There is insufficient evidence to recommend mammography for women over age 75. *Grade I*		
Recommendation Grade Definitions and Suggestions for Practice (ACS)						
Strong Recommendation - Most individuals would choose the recommended procedure and a small proportion would not. Informed decision making based on patient preferences is suggested.						
Qualified Recommendation - Most individuals should receive the procedure. Procedure can be used as a quality/performance measure. Providers should spend time to help them come to an appropriate decision based on patient's values and preferences.						
Recommendation Grade Definitions and Suggestions for Practice (USPSTF)						
Grade A - Procedure provides substantial benefit. Providers should offer this service.						

Age Range (Yrs)	1997	2002	2003	2009	2015	2016
Grade B - Procedure provides moderate benefit. Providers should offer this service.						
Grade C - Procedure provides small benefit. Providers should offer this service for selected patients depending on provider's judgement and patient preferences.						
Grade D - Procedure has no net benefit or the harms outweigh the benefits. Providers should discourage the use of this service.						
Grade I - The balance of benefits and harms cannot be determined due to poor or absent evidence. If the service is offered, patients should understand the uncertainty about the balance of benefits and harms.						

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Table 2.

Sociodemographic Characteristics of Survey Respondents n=789

	2006–2009*				2010–2013*			
Age Range (years)	**40–49**		**50–74**		**40–49**		**50–74**	
	(f)	**(%)**	***(f)***	**(%)**	***(f)***	**(%)**	***(f)***	**(%)**
Education Level								
Less than High School	3	2.7	26	**9.9**	4	3.3	11	**6.6**
Greater than H.S. Degree	108	97.3	236	90.1	117	96.7	284	94.4
Employment Status								
Employed	98	88.2	130	49.7	96	79.3	162	54.9
Unemployed	13	11.7	132	50.3	25	20.7	133	45.1
Health Insurance Status								
Insured	99	89.2	243	92.8	106	87.6	271	91.9
Uninsured	12	10.8	19	7.3	15	12.4	24	8.0
Time Since Last Pap Test								
Within the Past 3 Years	104	93.7	220	84.0	107	88.4	234	79.3
More than 3 Years—Never	7	6.3	42	16.0	14	11.6	61	20.7
Self-Breast Exam								
Once a month or more frequently	69	62.2	175	66.8	78	64.5	215	72.9
Less than once a month—Never	42	37.8	87	33.2	43	35.5	80	27.1
Clinical Breast Exam								
Within the past year	59	53.2	173	66.0	75	62.0	208	70.5
Greater than past year—Never	52	46.8	89	34.0	46	38.0	87	29.5
Attended Church Education Session								
Yes	N/A	N/A	N/A	N/A	19	57.6	57	60.6
No	N/A	N/A	N/A	N/A	14	42.4	37	39.4

*Values for which $p<0.05$ are bolded

Table 3.

Trends in Respondent's Mammography Frequency from 2006–2013

Mammography Frequency		Time Periods				
Age Range (Years)	Screening Frequency	2006–2009		2010–2013		P-Value
		Frequency (*f*)	Percentage (%)	Frequency (*f*)	Percentage (%)	
40–49	Ever had mammogram	96	86.5	108	89.2	0.52
	Never had mammogram	15	13.5	13	10.7	
50–74	Mammogram in the past year	169	75.5	209	78.6	0.41
	Mammogram in the past two years	55	24.5	57	21.4	

Table 4.

Logistic Regression Models Predicting Influences on Mammography Completion

	Model 1* **Predictors of Ever Having a Mammogram: Women Aged 40–49 Post 2010 n=117 R^2=0.31 OR (CI)**	**Model 2*** **Predictors of Completing an Annual Mammogram: Women Aged 50–74 Post 2010 n=266 R^2=0.34 OR (CI)**	**Model 3*[a] Predictors of Completing an Annual Mammogram: Women Aged 50–74 Post 2010 n=90 R^2=0.35 OR (CI)**
Highest Level of Education			
(Ref – Less than HS Education)	1.00	1.00	1.00
High School Diploma or greater	N/A	2.68 (0.47 – 15.21)	1.43 (0.12 – 17.18)
Health Insurance			
(Ref – Uncovered)	1.00	1.00	1.00
Covered	1.56 (0.25 – 9.37)	1.80 (0.44 – 7.26)	3.70 (0.24 – 57.49)
Employment Status			
(Ref – Unemployed)	1.00	1.00	1.00
Employed	1.24 (0.24 – 6.32)	1.46 (0.67 – 3.19)	3.40 (0.74 – 15.58)
Pap Test Completion			
(Ref – 5 years or)	1.00	1.00	1.00
Three years or less (Adherent to pre-2015 ACS guidelines)	3.97 (0.86 – 18.24)	0.49 (0.17 – 1.44)	0.81 (0.14 – 4.79)
Breast Self-Exam Completion			
(Ref – Less frequently than once a month)	1.00	1.00	1.00
Once a month or more	1.77 (0.45–6.98)	0.50 (0.20 – 1.28)	0.21 (0.04 – 1.27)
Clinical Breast Exam Completion			
(Ref – Two years or more)	1.00	1.00	1.00
Within the past year (Adherent to pre-2015 ACS guidelines)	19.85 (2.36 – 166.94) *	33.28 (14.41 – 76.85) *	44.34 (7.32 – 268.56) *
Attend Church Education Session			
(Ref – Did not attend)	1.00	1.00	1.00
Attended session	N/A	N/A	4.26 (1.04 – 17.52) *

* $p < 0.05$,

[a] Model 3 contains all predictors in Model 2 with the addition of attendance of church education sessions.