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Screening Adherence for Colorectal Cancer Among Immigrant Hispanic Women

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Abstract

Purpose—We sought to assess factors related to colorectal cancer (CRC) screening adherence among immigrant, Hispanic women in Harlem, New York City.

Method—Adherence for colonoscopy and fecal occult blood test (FOBT) screening was measured among 255 women based on self-reported screening behaviors using American Cancer Society guidelines.

Results—Univariate results showed that age, language of the interview (English/Spanish), years in the United States, physician recommendation for either test, marital status (living alone/living with someone), and mammography adherence were associated with CRC screening adherence (*p*'s < .05). In the multivariate analysis, having an age greater than 65 years, being interviewed in Spanish, having lived in the United States longer, having a regular doctor and a physician recommendation, and being currently adherent for mammography were associated with higher CRC screening adherence.

Conclusion—Among this sample, there proved to be differences between having ever been screened and adherence with a greater proportion of women having ever completed either colonoscopy and/or FOBT compared to women who were adherent (72.9% vs 58.8%). Therefore, it is important to determine factors associated with adherence, not just screening utilization, in order to design strategies to increase adherence among immigrant Hispanic women.

Keywords

colorectal; cancer; screening; Latinos

BACKGROUND

Colorectal cancer (CRC) ranks third for cancer-related deaths among men and women in the United States.[1] In 2009, there will have been an estimated 49 920 deaths from CRC.[2] Mortality from CRC can be significantly reduced through regular screening, which can both prevent and detect cancer at its earliest stages.[3] Most CRC develops from adenomatous

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polyps,[1] which can be detected through screening and removed surgically. If polyps are detected and removed before becoming cancerous, CRC can be prevented. Screening also allows for the early detection of CRC. If detected at a localized stage, the relative survival rate for CRC is 90%; however, if detected at a distant stage, the relative survival rate decreases[2] dramatically to 11%.

Surveillance, Epidemiology, and End Results (SEER) Program data from 1996-2004 show that the percentages of those diagnosed at the local and distant stages of CRC vary among ethnicities to some extent. More non-Hispanic whites are diagnosed at a local stage compared to Hispanics (41% non-Hispanic whites vs 37% Hispanics), when survival rates are at their highest.[1] Diagnosis at the distant stage of CRC, when the chance of survival is very low, occurs slightly more among Hispanics than non-Hispanic whites (20% Hispanics vs 18% non-Hispanic whites).[1]

As the stage of diagnosis is greatly influenced by whether individuals undergo recommended screening, the racial/ethnic disparities in stage at diagnosis could be related to screening disparities among ethnicities. Two of the recommended CRC screening tests (from the joint guidelines of the American Cancer Society (ACS), the US Multi-Society Task Forces on Colorectal Cancer, and the American College of Radiology) are colonoscopy (common type of endoscopy; *endoscopy* also can refer to sigmoidoscopy or proctoscopy) and fecal occult blood test (FOBT) for the detection of polyps.[3] Nationally, screening rates[4] for combined FOBT/endoscopy are 47%. The screening rate for Hispanics/Latinos for combined FOBT/endoscopy is 32% compared to 50% for non-Hispanic whites.[1] In terms of screening adherence, Ata and colleagues found that Hispanics were half as likely to be adherent for FOBT/endoscopy compared to whites ($p < .001$).[5] Pollack and colleagues accounted for age, income, insurance, having a usual health care source, sex, race, and education, finding that Hispanics were still less likely than non-Hispanics to be adherent for CRC screening (Hispanics: FOBT, odds ratio [OR], 0.66; endoscopy, OR, 0.87; non-Hispanics as reference group).[6]

In order to decrease the financial burdens potentially associated with CRC screening (particularly colonoscopy), which may account for disparities among ethnicities, Medicare began coverage of colonoscopy in 2001 for average-risk individuals.[7] However, from 2000 to 2003, the screening rate disparities between non-Hispanic whites and Hispanics did not lessen and, in fact, became statistically significantly differences in 2003 in contrast to no significant differences in 2000 (Hispanics, 2000, OR, 0.81 vs 2003, OR, 0.77; non-Hispanic whites as reference group).[7]

Foreign-born Hispanics have been shown to have a lower likelihood of being screened for CRC compared to Hispanics born in the United States in a study by Shih and colleagues (foreign-born Hispanics, OR, 0.49 vs US-born Hispanics, OR, 0.64; non-Hispanic US-born whites as reference group).[8] This disparity may be due to different and/or greater barriers to CRC screening than those experienced by their US-born counterparts such as language, cultural, and health access barriers.[9] For example, Christie and colleagues evaluated endoscopy screening predictors among a population of African American and Hispanic women using self-reports of ever having had an endoscopy.[10] Their regression analysis

showed that the language of the interview was predictive of endoscopy completion with those interviewed in Spanish less likely to have completed screening than those interviewed in English. Language preference was also associated with CRC screening reporting in a study by Diaz and colleagues.[11] Latinos responding to the 2006 Behavioral Risk Factor Surveillance System (BRFSS) survey in Spanish were 36% less likely to report CRC screening than Latinos performing the survey in English (OR, 0.64; 95% CI, 0.48-0.84).

There are also gender disparities in CRC screening. Even though women are at the same risk for CRC as men, women have been found to be less likely to have had an endoscopic screening compared to men.[12] Non-Hispanic white men have higher screening rates for combined FOBT/endoscopy than non-Hispanic white women (51% and 48%, respectively).[13] Among Hispanics, 34% of men are screened compared to 30% of women.[13]

There are many factors that have been identified as being associated with and/or predictive of CRC screening. These include sociodemographic factors as well as health care–related factors. Individuals with lower levels of family income and education have lower likelihoods of screening.[14] Screening rates also vary by health insurance status, with numerous studies showing that those with no health insurance have lower CRC screening rates than those with some form of insurance.[14,15] Having a regular doctor[16,17] and a doctor's recommendation[14,16] for CRC screening accounts for screening rate variance as well. There is also evidence that other cancer screening behaviors can affect CRC screening behaviors. For example, Shapiro and colleagues found that women who had a mammogram or Pap test within the last year were more likely to be adherent for FOBT/sigmoidoscopy.[18] Gorin and colleagues found among Latina subgroups (Puerto Rican, Mexican, Cuban, and Central or South American) that women who reported clinical breast exams (CBEs) were more likely than other Latinas to have other cancer screening tests, including CRC screening.[19] However, Christie and colleagues did not find breast and cervical cancer screening history to be associated with ever having an endoscopy.[10]

Barriers to CRC screening specific to women include the belief that CRC affects males at a higher rate than females, incorrect risk estimations, and the belief that the screening procedure is painful.[20] In a study of 560 primary care clinic patients, Shokar and colleagues found that men had higher odds of receiving physician recommendation than women (OR, 1.67; $p < .05$); this translates as a screening barrier for women since physician recommendation is a significant predictor of CRC screening.[10,21] Also, 30% to 48% of women prefer to have female endoscopists, which may serve to decrease CRC screening as female endoscopists make up less than 10% of gastroenterological society membership.[20]

For this study, we collected adherence information for colonoscopy and FOBT screening among 255 Hispanic urban, immigrant women based on self-reported screening behaviors. In the present paper, we will identify factors associated with CRC screening adherence in this sample. It is important to determine the factors that are associated with adherence for this population as: (1) foreign-born Hispanics are less likely to be screened than US-born Hispanics, (2) Hispanics have low CRC screening rates, and (3) women are less likely to be screened for CRC because of gender-specific screening barriers. Identification of the factors

that are associated with adherence among this growing segment of the US population could inform interventions to address this important public health issue.

METHODS

Four hundred self-identifying Latino men and women were interviewed in person in East Harlem community-based sites (senior centers) and health clinics (academic and community clinics) for a larger parent study.[16] The parent study gathered information on patient, health care, and cultural factors in order to determine the barriers and facilitators of CRC screening among low-income, immigrant Hispanics aged 50 years or older who were asymptomatic and not at a high risk for CRC (no previous CRC history or gastrointestinal disease, no CRC among immediate family members). The study was approved by the institutional review board with participants signing informed consent and Health Insurance Portability and Accountability Act waivers. Complete methods of data collection are found in research by Jandorf and colleagues.[16] The subsample used in the present analysis involved 255 immigrant women (63.8% of parent study; 111 men were excluded as were 34 women who were born in the United States). The survey included screening histories for CRC (FOBT/colonoscopy), cervical cancer (Pap test), and breast cancer (mammography, CBE).

Women were asked if they ever had a specific screening test and, if they had, the year of their last test. While there are other recommended CRC screening tests and guidelines for screening adherence, this paper will define CRC screening adherence as those adherent to FOBT and/or colonoscopy according to ACS's Guidelines for the Early Detection of Cancer for average risk individuals (FOBT annually or colonoscopy every 10 years above age 50 years, Pap test every 3 years above age 30 years, mammography and CBE every year above age 40 years).[2] As the surveys were completed over a 1-year period (January 2008-January 2009) and only the year of the test was reported (no month or day), *screening adherence* was defined as reported testing within the range of appropriate years from 2008. For example, for mammography, a women was deemed adherent if she reported having a mammogram in 2007 or later. If participants reported adherence to either FOBT (within 1 year) or colonoscopy screening (within 10 years), they were coded as adherent to CRC screening. Participants who reported never having had a screening test or who could not remember when they had undergone screening were deemed nonadherent. We also differentiated between those who were adherent to CRC screening from those *ever screened*, defined as those who reported either or both CRC screening test outside the recommended ACS timelines.

For the univariate analysis, SPSS 16 was used to analyze the categorical variables. The χ^2 2×2 tables assessed the significance of relationships between selected sociodemographic and health care variables and CRC screening adherence. For 2×2 tables in which any cell size was less than 5, Fisher exact test was used to compute significance. Age was dichotomized into 2 groups based on age of public insurance eligibility (Medicare) (50-64 y, 65 y and older), education was dichotomized based on high school entry (0-8th grade, ≥9th grade), insurance status was dichotomized by public insurance (Medicare/Medicaid) vs all other options (private/other/don't know/none), and years in the United States was dichotomized by a rounded median split (40.00). Significant univariate results ($p \leq .10$) were entered into a

multivariate logistic model with adherence to CRC screening as the outcome using the SAS procedure LOGISTIC. Multicollinearity between variables was examined and 1 variable (CBE) was dropped from the final multivariate model due to high multicollinearity with another variable (mammography).

RESULTS

Sample

The selected sociodemographic variables for the study sample are shown in Table 1. The majority of the sample was aged 50 to 64 years (56.1%), preferred to be interviewed in Spanish (90.2%), had lived in the United States for fewer than 40 years (54.3%), and lived alone (75.7%). Education levels were low, with 45.9% having not attended more than eighth grade. Most participants had some form of public insurance (84.3%), had a regular doctor or provider (93.7%), and had received a physician recommendation for either an FOBT or a colonoscopy (80.8%). More than three-quarters of the women were adherent for mammography, CBE, and Pap test. Table 2 shows the number of women who have ever had FOBT, colonoscopy, or either FOBT/colonoscopy vs the number of women who are adherent to the guidelines for FOBT and colonoscopy or for either test.

Univariate Analysis

The χ^2 results listed in Table 1 are based on adherence to CRC screening to either FOBT or colonoscopy screening. Age was a significant factor for CRC adherence, with those aged 50 to 64 years less likely to be adherent (OR, 0.33; 95% CI, 0.20-0.56) than those aged 65 years or older. Women who preferred to be interviewed in Spanish rather than English were more than twice as likely to be adherent for CRC screening (OR, 2.82; 95% CI, 1.19-6.65). The amount of time spent in the United States was related to CRC adherence ($p = .022$). Those who had lived in the United States for more than 40 years were more likely to be CRC adherent (OR, 1.81; 95% CI, 1.09-3.01). Women who lived alone or were currently single had a higher likelihood of CRC adherence (OR, 2.09; 95% CI, 1.17-3.73) than those who were living with a partner or currently married.

In terms of health care factors and outcome, both physician recommendation and adherence to mammography screening were related to adherence. Women with a physician's recommendation for FOBT and/or colonoscopy were more than 27 times more likely to be adherent (OR, 27.38; 95% CI, 9.43-79.48) Being adherent for mammography screening more than doubled women's likelihood of being adherent for CRC screening (OR, 2.44; 95% CI, 1.33-4.45). The level of income and education, insurance, having a regular doctor/provider, and adherence to Pap or CBE test were not associated with adherence at a $p = .05$ level.

While factors related to ever having completed an endoscopy could possibly overlap with factors for being adherent for endoscopy, having had a cancer screening once may be different from being up-to-date with cancer screening. To illustrate this distinction among our study sample, Table 2 shows the number of women who reported having ever had FOBT (alone), colonoscopy (alone), both or neither FOBT/colonoscopy vs the number of women

who report adherence for FOBT (alone), colonoscopy (alone), both, or neither test. A greater proportion of women had reported ever completing FOBT (alone), colonoscopy (alone), or both than those who reported adherence to FOBT, colonoscopy, or both (72.9% vs 58.8%).

Multivariate Analysis

Results of the multivariate logistic analysis are located in Table 3. Participants aged 65 years or older were significantly ($p = .031$) more likely to be screening adherent than participants whose ages ranged between 50 and 64 years (OR, 2.17; 95% CI, 1.08-4.40). Those who preferred to be interviewed in Spanish were significantly ($p = .005$) more likely to be screening adherent than participants who spoke English in the interviews (OR, 4.76; 95% CI, 1.61-14.06).

Participants who lived in the United States for 40 or more years were more likely to be screening adherent ($p = .040$) compared to those who lived in the United States less than 40 years (OR, 2.23; 95% CI, 1.04-4.79). Those having received a physician recommendation for either FOBT or colonoscopy were more likely to be screening adherent ($p < .0001$) than those not having a recommendation (OR, 27.13; 95% CI 8.87-83.98). Respondents having a regular doctor were significantly ($p = .042$) more likely to screening adherent (OR, 3.56; 95% CI, 1.04-12.13).

When CBE was included in the multivariate model along with the other explanatory variables, CBE was not significant ($p = 0.71$) and mammography screening, previously significant ($p = 0.024$), had an insignificant probability ($p = .072$). However, due to the multicollinearity between them ($r = -0.70$), we did not include CBE screening in the final multivariate model. Therefore, our multivariate model determined that respondents who reported having a mammography screening were significantly ($p = .024$) more likely to be CRC adherent than those who did not (OR, 2.38; 95% CI, 1.12-5.06).

DISCUSSION

This analysis of CRC adherence is important, as it allows us to know more about the factors involved in being adherent or up-to-date with recommended screening for this specific population: immigrant, Hispanic women. These women face inherent barriers to CRC screening with Hispanics having lower rates of screening than their white counterparts, women having lower screening rates than men, and access barriers related to their immigrant status. We determined factors related to CRC screening adherence among immigrant Hispanic women, which could assist health care workers attempting to improve screening rates in this population.

The univariate analysis showed that several sociodemographic factors were associated with CRC screening adherence. We found that participants who were aged 65 years or older, were interviewed in Spanish, had lived in the United States for 40 years or more, and were living alone/single were more likely to be adherent to CRC screening. Two health care factors were also related to higher CRC screening adherence: having a physician recommendation for CRC screening and adherence to mammography screening. There were no significant associations for other sociodemographic factors such as income or education

level, which have proven significant in other studies on CRC screening. Also, while adherence to mammography was associated with CRC adherence, 2 other common cancer diagnostic tests for females—Pap tests and CBE—were not related to CRC screening adherence. It should be noted, however, that both colonoscopy and mammography screening generally require a visit beyond one's primary care provider and thus may impede screening. Further, results indicated that most of the factors that were associated with CRC adherence in the univariate analysis ($p < .10$) were associated in the multivariate analysis.

Although many researchers have analyzed factors related to CRC screening adherence, there is a paucity of research on CRC screening adherence among Hispanic women. Our results are both dissimilar and similar to those of other researchers who report adherence among more general populations. James and colleagues studied CRC screening adherence using data from the 2000 National Health Interview Survey (NHIS) of adults aged at least 50 years of different ethnicities.[22] Contrary to our results, their univariate analysis showed that education and income were related to screening adherence. Among a Hispanic population from the 2002 Behavioral Risk Factor Surveillance System survey, Pollack and colleagues reported that Hispanics with higher education levels (high school or above) and higher incomes (≥$20 000) had higher reported adherence to either FOBT or sigmoidoscopy/colonoscopy (no *p* values reported).[6]

Concerning marital status, James and colleagues found that being married or living with a partner predicted greater adherence, while the present study showed that living alone or being currently single was associated with higher adherence.[22] Ata and colleagues performed a secondary data multivariate analysis on the 2000 NHIS data and CRC screening adherence determining factors associated with adherence specific for the Hispanic subsample.[5] Supporting James and colleagues' findings, living with a spouse was predictive of greater adherence.

Our results regarding the importance of age are consistent with those of James and colleagues, as they found that 65- to 79-year-olds were most likely to be adherent when compared to the reference group of those aged 50 to 64 years old[22] (OR, 1.61; 95% CI, 1.44-1.79). Ata and colleagues used those aged 50 to 54 years as a reference and participants aged 65 to 69 years were most likely to be adherent to CRC screening.[6] Pollack and colleagues grouped their Hispanic subsample by decades and found that FOBT adherence increased until age 80 and then decreased, while sigmoidoscopy/colonoscopy adherence increased continuously.[6] Shokar and colleagues performed a multivariate model among participants of various ethnicities aged 50 to 80 years and found that education, age, and doctor recommendation were all significantly associated with screening adherence.[23] Finally, of interest is a study by Trivers and colleagues using the 2000 and 2005 NHIS data. They found that after adjusting for income, insurance, age, education, race, US residence years, and country region, there were still existing disparities between Hispanic and non-Hispanic women in CRC screening adherence.[24] None of these studies reported on language of interview.

This study found that, after controlling for the number of years living in the United States, those who preferred to be interviewed in Spanish were significantly more likely to be

adherent to CRC screening than those who preferred to be interviewed in English. However, this finding is incongruent with previous studies,[10,11] which have reported that those whose preferred language is Spanish report lower CRC screening than those whose preferred language is English. While our finding regarding language is not consistent with other studies, we used language preference for the interview rather than overall preferred language. Our interviewers were bilingual, native Spanish speakers, which might have influenced that choice. Thus, it is possible that language choice was confounded and future studies should assess not only the language in which the interview is conducted but also English proficiency or other more specific language use questions. For example, the 2000 US Census found that older Hispanics and those who have recently immigrated feel more at ease speaking their native language, even with most Hispanics knowing both English and Spanish.[25] Therefore, many of the participants could have been proficient in both languages.

In comparing our results to those of other researchers, it is important to differentiate research results in which the outcome is previous CRC screening completion or ever having been screened for CRC from adherence to CRC screening also referred to as "time-screening adherence."[5] In the present study, participants were defined as *adherent to CRC screening* if they had completed either a FOBT (within 1 year) or colonoscopy screening (within 10 years). Researchers need to be careful when using and/or defining the term *adherence* as there is a difference between those who have ever completed screening (or those who ever have completed screening for nonscreening purposes [high-risk patients; symptomatic]) and those who have completed screening within the recommended guidelines. The results of this paper are particularly important, as they illustrate that there may be differences in utilization and adherence rates and suggest that it may be necessary to determine what is associated with adherence as compared to use (ever having been screened) in order to identify important factors to increase screening adherence.

In addition, the success of various interventions to increase CRC screening utilization also suggests strategies that could be helpful in designing interventions to increase CRC screening adherence. Patient navigation has been proven to be successful at increasing colonoscopy screening rates. In a patient navigation study, Chen and colleagues found that 66% of urban minority patients navigated through the screening colonoscopy process from referral to screening completion compared to 34% of those non-navigated.[26] Interestingly, with regard to screening completion, navigation was more successful among women than men and among Hispanics compared with African Americans.[26] Reminders have been found to be another successfully used strategy. Lee and colleagues have shown that mailing an educational reminder 10 days after a physician appointment at which FOBT was recommended led to 65% of the intervention group returning FOBT cards compared with 48% in the control group (no educational reminder).[27] Finally, interventions attempting to increase physician recommendation of CRC screening directly could be successful, as numerous studies have shown that physician recommendation is a strong predictor of CRC screening,[28-31] and this was again confirmed in the present study. Interventions based on the predictors of adherence (found in this study to be older age, Spanish-speaking, living in the United States for ≥40 years, a physician recommendation, and screening adherence for

mammography) could follow in the steps of these interventions and design strategies to increase adherence to CRC screening recommendations.

This paper adds to the limited literature on factors related to CRC adherence and is beneficial for understanding how to increase adherence rates, in general, as well as for immigrant Hispanic women. This population faces many barriers to CRC screening and has low rates of CRC screening. Thus, it is crucial to use research conducted with Hispanics to design specific interventions to increase their adherence rates.

Our study has several potential limitations. First, it was cross-sectional and we cannot establish causality. Longitudinal research could compensate for this limitation such as a cohort study involving Hispanic women aged more than 50 years who are eligible for CRC screening. Second, colonoscopy screening was self-reported and may be subject to participant bias. Future studies should include chart and/or billing record review. Additionally, our study has not reported on all the CRC screening tests available, such as sigmoidoscopy, but it has reported adherence on the 2 most common screening tests, FOBT and colonoscopy. Therefore, the predictive factors determined in this study may not be applicable for interventions designed to increase other CRC screening tests. Finally, this study was conducted in only 1 community, East Harlem, with a predominately Spanish-speaking population from a specific composition of Hispanic countries of origin who were mostly insured, had a regular doctor, and had a CRC screening recommendation. Our sample is not representative of the US Hispanic population, and consequently, the results may not be generalized to the US Hispanic population more generally. In future studies, other geographical areas should be included as well as utilization of larger samples to be able to generalize more broadly to the Hispanic population. Despite the study limitations, this study does suggest that designing interventions for younger Hispanic women who do not have a physician recommendation and who have not lived long in the United States may be critically important to increasing urban, immigrant Hispanics' CRC screening adherence.

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Table 1

Sociodemographic and Health Care Variables[a]

Characteristics, N (%)	Total (N = 255)	Adherent With Colorectal Cancer (N = 150)	Nonadherent With Colorectal Cancer (N = 105)	*P* Value	Odds Ratio (Confidence Interval)
Age, y					
50-64	143 (56.1)	68 (45.3)	75 (71.4)	.000	0.33 (0.20-0.56)
≥65	112 (43.9)	82 (54.7)	30 (28.6)		
Language of interview					
Spanish	230 (90.2)	141 (94.0)	89 (84.8)	.015	2.8 (1.19-6.65)
English	25 (9.8)	9 (6.0)	16 (15.2)		
Years in the United States					
0-40	138 (54.3)	72 (48.3)	66 (62.9)	.022	0.55 (0.33-0.92)
≥40	116 (45.7)	77 (51.7)	39 (37.1)		
Income					
<$10000	166 (68.3)	104 (71.2)	62 (63.9)	.230	1.40 (.81-2.42)
≥$10000	77 (31.7)	42 (28.8)	35 (36.1)		
Marital status					
Living alone/single	193 (75.7)	122 (81.3)	71 (67.6)	.012	2.09 (1.17-3.73)
Living with partner/married	62 (24.3)	28 (18.7)	34 (32.4)		
Education					
Up to 8th grade	117 (45.9)	67 (44.7)	50 (47.6)	.641	0.89 (0.54-1.46)
≥9th	138 (54.1)	83 (55.3)	55 (52.4)		
Insurance					
Public	215 (84.3)	131 (87.3)	84 (80.0)	.113	1.72 (0.88-3.40)
Private/other/don't know/none	40 (15.7)	19 (12.7)	21 (20.0)		
Regular doctor/provider					
Yes	239 (93.7)	144 (96.0)	95 (90.5)	.073	2.53 (0.89-7.18)
No	16 (6.3)	6 (4.0)	10 (9.5)		
Physician recommendation for FOBT or colonoscopy[1]				.000	27.38 (9.43-79.48)
Yes	206 (80.8)	146 (97.3)	60 (57.1)		
No	49 (19.2)	4 (2.7)	45 (42.9)		
Mammography screening					
Yes	194 (77.3)	124 (83.8)	70 (68.0)	.003	2.44 (1.33-4.45)
No	57 (22.7)	24 (16.2)	33 (32.0)		
Clinical breast examination					
Yes	203 (80.9)	125 (84.5)	78 (75.7)	.084	1.74 (0.93-3.28)
No	48 (19.1)	23 (15.5)	25 (24.3)		
Pap test					
Yes	201 (80.1)	119 (80.4)	82 (79.6)	.877	1.05 (0.56-1.97)
No	50 (19.9)	29 (19.6)	21 (20.4)		

Abbreviation: FOBT, fecal occult blood test.

[a] Due to small cell size within variable, Fisher's exact test significance value is reported rather than χ^2 significance value.

Table 2

Screening Behavior and Adherence

Method	N (%)
Ever Had Colorectal Cancer Screening (N = 255)	
FOBT (alone)	44 (17.3)
Colonoscopy (alone)	38 (14.9)
Both FOBT/colonoscopy	104 (40.8)
Neither FOBT/colonoscopy	69 (27.1)
Adherent With Colorectal Cancer Screening (N = 255)	
FOBT (alone)	17 (6.7)
Colonoscopy (alone)	105 (41.2)
Both FOBT/colonoscopy	28 (11.0)
Neither FOBT/colonoscopy	105 (41.2)

Abbreviation: FOBT, fecal occult blood test.

Table 3

Multivariate Analysis of Variables with Colorectal Cancer Screening (N = 255) Screening as the Outcome[a]

Characteristic	Wald χ^2	Odds Ratio (95% Confidence Interval)	*P* Value
Age	4.68	2.17 (1.08-4.40)	.031
Language of interview	7.96	4.76 (1.61-14.06)	.005
Years in the United States	4.24	2.23 (1.04-4.79)	.040
Physician recommendation for FOBT/colonoscopy	33.49	27.13 (8.87-83.98)	<.0001
Regular doctor/provider	4.14	3.56 (1.04-12.13)	.042
Mammography screening	5.07	2.38 (1.12-5.06)	.024

Abbreviation: FOBT, fecal occult blood test.

[a]Clinical breast examination screening not included in reported multivariate model.