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Colorectal Cancer Screening: Language is a Greater Barrier for Latino Men than Latino Women

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Introduction

Colorectal cancer (CRC) remains the third leading cause of cancer-related mortality in the U.S. despite effective screening methods. CRC is also a leading cause of cancer-related mortality among Latinos. Despite improvements in CRC screening rates over the past several years, screening disparities between non-Latino Whites and minorities persist and may have increased.(1) Even after controlling for socioeconomic factors, screening rates are lower for Latinos than for non-Latino Whites,(1, 2) strongly suggesting that additional factors need to be identified and addressed. While CRC screening rates are generally higher in men than women (3–5), rates among Latino men are particularly low with rates approximately 17% lower among Latino men compared to non-Latino men.(6, 7)

Cultural barriers may impact the attitudes of Latino men toward CRC and CRC screening. Studies have demonstrated a negative association between limited-English proficiency and CRC screening.(8, 9) However, the role of English-proficiency is not clear as it may simply be a communication barrier or may be a proxy for acculturation levels.

Based on our prior mixed-methods research, we hypothesized that limited-English proficient (LEP) Latino men would have the lowest rates of CRC screening. The purpose of this analysis, is to examine the association between Latino race/ethnicity, gender, and English-proficiency and CRC screening uptake.

Methods

We conducted an analysis of 2008 Behavioral Risk Factor Surveillance System (BRFSS) data(10) for men and women ages 50–75 who completed the BRFSS in a state that administered the survey in English and Spanish and had 50 or more surveys completed in Spanish. The dependent variable was receipt of CRC screening tests defined as reporting fecal occult blood testing (FOBT) within the past year, and/or sigmoidoscopy within the past 5 years, and/or colonoscopy within the past 10 years.

The main independent variable was LEP. LEP was defined as responding to the BRFSS in Spanish. Results were stratified by race, ethnicity and gender. The main independent

variable was divided into 8 categories (Table II). Entries that were missing a language variable, gender, race or Hispanic/Latino status were excluded from the analysis.

Analysis

Respondent characteristics were calculated using standard means for continuous variables and proportions/frequencies for categorical variables. Chi-square tests were used to examine the relationship between the dependent and independent variables as well as each potential confounder. Logistic regression was used to estimate odds ratios (OR). The data were analyzed using SUDAAN version 10 (Research Triangle Institute). Sampling weights were included in all analyses. Weights are adjusted post-stratification to accommodate nonresponse and noncoverage within the sample.(10)

Results

The final analysis consisted of 99,883 respondents representing 42 million U.S. adults aged 50 and older. (Table I.) Non-Latino (NL) -White and NL-Black men had the highest adjusted rates of CRC screening, 63.3% and 66.3% respectively. Screening rates for NL-White women and NL-Black women (61.2% and 63.4% respectively) were lower than for their male counterparts. Latino men responding-in-Spanish had the lowest adjusted screening rates (48.2%), which were lower than the other three Latino sub-groups (56.2 to 57.9%).

Latino men responding-in-Spanish were the least likely to report CRC test use (AOR, 0.47; 95% CI, 0.35–0.63 (referent group NL-White men)). Non-Latino Black men were as likely as NL-White men to report screening (AOR, 1.16; 95% CI, 0.95–1.41). Latino men and women responding-in-English and Latina women responding-in-Spanish had similar AOR which were higher than those of Latino men responding-in-Spanish. (Table II.)

Discussion

Poor utilization of screening is a major barrier to decreasing CRC morbidity and mortality(11), particularly among Latinos. In order to minimize disparities in CRC screening, it is critical to identify factors associated with screening that may lead to the development of practical and culturally-acceptable solutions for raising utilization of CRC screening among Latinos.

Prior studies have consistently documented disparities in CRC screening between Latinos and NL-Whites.(1, 2, 7) The present analysis, however, demonstrates that these disparities are most dramatic for Latino men with LEP in both crude and adjusted analyses suggesting that limited-English proficient Latino men are at the greatest risk of not being screened for CRC compared to non-Latinos, English proficient Latinos, and even Latina women with LEP. In adjusted analyses, Latino men responding to the BRFSS in Spanish were less than half as likely to report receiving CRC screening compared to non-Latino White men and had screening rates 10% lower than Latina women responding in Spanish and English-responding Latino men and women. In an analysis of 2006 BRFSS data limited to obese/overweight respondents, Pearson et al found that men who answered the BRFSS in Spanish were less likely (OR=0.46, 95% CI, 0.27–0.79) to report receiving CRC screening compared to their English speaking counterparts.(12) The results of our analysis build on Pearson's work by not limiting the sample to overweight / obese participants. Additionally, our results highlight the particularly low odds of CRC screening among Spanish-speaking respondents relative to other gender, and racial/ethnic groups (see Table II.).

There are several potential socio-cultural factors that may explain these differences in screening. The connection between LEP and low CRC screening rates among Latinos is complex and does not simply represent a patient-provider communication barrier. Limited English proficiency is likely a proxy for lower levels of acculturation which has been demonstrated to be negatively associated with cancer screening behaviors among Latinos.(8, 13) In an analysis of the 2005 California Health Interview Survey, Johnson-Kozlow found that higher acculturated Mexican-Americans were 3–4 times more likely to report CRC screening than were less acculturated Mexican-Americans.(8) Lower English proficiency might also represent lower socioeconomic status or less access to care. As suggested by Solis et al. the effect of language on screening behaviors should be considered as a factor related to access to care rather than a cultural factor.(14) In the present analyses, however, after controlling for other factors Latina women who responded to the BRFSS in Spanish had similar odds of screening to Latino men and women who responded in English. Conversely, Latino men responding in Spanish had significantly lower odds of reporting CRC screening.

Understanding the cultural context within which screening does or does not occur is critical to addressing barriers to CRC screening among Latinos. For example, prior studies suggest that a higher proportion of Latinos compared to non-Latino Whites have erroneous understandings of cancer(15), and many have misperceptions about cancer that may impact their preventive behaviors.(16) Numerous studies in the social, behavioral, and medical sciences demonstrate that there are significant perceptual and behavioral differences related to patients' cultural and ethnic backgrounds that may impact cancer prevention behaviors, including delay in seeking preventive care(17), views about etiology of disease(18), and beliefs about treatment and prognosis(19). Similarly, our previous qualitative work highlighted the potential role of machismo and misperceptions such as the belief that rectal sex was associated with CRC as potential socio-cultural barriers to screening among LEP Latino men.(20, 21)

Acknowledgments

We acknowledge several study limitations. First, we categorized Latinos as LEP if they responded to the BRFSS in Spanish. While this may represent respondents' language preference, respondents who answered in Spanish may also be proficient in English and vice versa. Second, CRC screening status was based on self-report of having received FOBT, sigmoidoscopy, and/or colonoscopy testing. The BRFSS does not distinguish between testing done for screening versus symptoms. Finally, as a telephone survey of non-institutionalized adults, the survey may not be representative of those of lower socioeconomic status who may not have telephones and of those who primarily use cellular telephones.

Given the low CRC screening rates among Latinos, it is important to recognize LEP-Latino men as a group that is particularly vulnerable to non-adherence to screening. Providers and public health workers should consider this when counseling patients and devising interventions to decrease CRC screening disparities.

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Table 1
Selected Demographic Characteristics of 2008 BRFSS Sample *Participants 50–75 years old*

	Non-Latino White	Non-Latino Black	Latino Responding in English	Latino Responding in Spanish
N	87,153	6,121	4,247	2,362
Weighted N	32,026,512	4,185,632	3,698,503	2,561,335
Age	mean (se)	59.7 (0.17)	58.9 (0.21)	59.2 (0.29)
Gender (%)	Male	44.4	46.9	48.4
Partnered (%)		48.1	65.2	66.7
Current Smoker (%)		21.4	15.2	11.3
Education (%)	< High School	13.3	22.4	65.5
Income (%)	< \$20,000	28.7	27.3	54.8
	\$20,000–\$34,999	24.8	21.6	30.6
	\$35,000–\$74,999	26.7	30.4	13.7
	\$75,000+	19.9	20.8	0.9
Low SES (%)		32.4	37.4	80.4
Medical Insurance (%)		87.2	83.0	62.4
Identified Health Care Provider (%)		88.8	83.1	66.7
Northeast Region (%)		28.2	12.4	16.4

Table II

Multivariate Analysis - Determinants of CRC Screening

	Crude			Adjusted (*)		
	Screening Rates (%)	OR	95% CI	Screening Rates (%)	OR	95% CI
<i>Non-Latino White Men</i>	65.3	1.00	(n/a)	63.3	1.00	(n/a)
<i>Non-Latino White Women</i>	63.8	0.94	(0.89-0.99)	61.2	0.90	(0.85-0.95)
<i>Non-Latino Black Men</i>	62.8	0.89	(0.75-1.07)	66.3	1.16	(0.95-1.41)
<i>Non-Latino Black Women</i>	59.6	0.78	(0.69-0.89)	63.4	1.01	(0.87-1.16)
<i>Latino Men Responding in English</i>	52.0	0.58	(0.47-0.71)	57.9	0.77	(0.62-0.976)
<i>Latino Women Responding in English</i>	52.5	0.59	(0.50-0.69)	57.5	0.76	(0.65-0.90)
<i>Latino Men Responding in Spanish</i>	31.9	0.25	(0.19-0.33)	48.2	0.47	(0.35-0.63)
<i>Latino Women Responding in Spanish</i>	40.6	0.36	(0.29-0.45)	56.2	0.72	(0.57-0.91)

(*) adjusted for age, regular source of medical care, insurance, marital status, smoking status, perceived health, low SES, and region of country