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Race/Ethnicity and Primary Language: Health Beliefs about Colorectal Cancer Screening in a Diverse, Low-Income Population

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Abstract

Colorectal cancer (CRC) is an important cause of cancer death in adults in the U.S.; screening is effective but underutilized, particularly among minorities. The purpose of this paper was to explore whether health belief model (HBM) constructs pertaining to CRC screening differ by race/ethnicity and primary language. Data were from the baseline surveys of 933 participants (93.5%) in a randomized trial promoting CRC screening in San Francisco. Composite scores for each construct were created from multiple items, dichotomized for analysis, and analyzed using multivariate logistic regression. Most participants were Asian (29.7%) or Hispanic (34.3%), and

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many were non-English speakers. Non-English speaking Hispanics ($p<.001$) and English-speaking Asians ($p=.002$) reported lower perceived susceptibility than non-Hispanic Whites (NHW). Non-English speaking Hispanics reported more and non-English speaking Asians fewer perceived barriers (psychological and structural) than NHW. Understanding how different populations think about CRC screening may be critical in promoting screening in diverse populations.

Keywords

Colorectal cancer; minorities; health beliefs; prevention

Colorectal cancer (CRC) is the second leading cause of cancer death in the United States among men and women of all racial/ ethnic groups.¹ Colorectal cancer screening is effective at preventing CRC, but many adults are not up-to-date with recommended screening.²⁻⁵ Further, racial/ ethnic minority populations in the U.S. report lower screening rates than non-Hispanic White populations, particularly among the less acculturated.⁶⁻¹⁰ Acculturation is the process by which individuals adopt the attitudes, values, customs, beliefs, and behaviors of another culture.¹¹ Studies that have examined the impact of acculturation on CRC screening completion consistently show that individuals who report greater levels of acculturation are more likely than those less acculturated to complete a CRC screening.¹²⁻¹⁴ These findings are indicative that health beliefs or norms around health behaviors can change with greater acculturation to the U.S. Extensive research has been conducted to investigate factors contributing to screening disparities by race/ ethnicity and acculturation, including some consideration of the influence of health beliefs.¹⁵⁻¹⁹ However, there has been little emphasis on whether health beliefs may differ across racial/ ethnic and acculturation groups.

The Health Belief Model (HBM) was developed to help explain how an individual's beliefs and perceptions of an illness influence preventive health behaviors, including CRC screening.²⁰ The constructs of the HBM include perception of susceptibility to a disease, perception of seriousness of a disease, and the perceived benefits of and barriers to following the recommended behavior for prevention or early detection of a disease (e.g., a screening test).²⁰ Research has shown a significant relationship between people's perceptions of illness and disease and CRC screening completion among racial/ ethnic minority populations. For example, studies conducted in Hispanic and Asian populations in the U.S. have shown that individuals who perceived fewer barriers to getting screened for CRC were more likely to complete screening.^{15,16,18} Other studies have shown that individuals who report higher perceived susceptibility to CRC and greater worry about getting CRC (a sub-concept of susceptibility) were more likely to complete a CRC screening.^{18,19,21} Given the established association between the constructs of HBM and CRC screening, the HBM may also enable us to help explain screening disparities among different racial/ ethnic groups.

Previous research testing behavioral interventions designed using constructs of the HBM, such as perceived barriers, have been successful at promoting cancer screening, and some of these interventions have been conducted among members of racial and ethnic minority groups. Tu and colleagues²² conducted a large randomized trial testing the effectiveness of

an intervention to promote CRC screening in a Chinese population where a health educator addressed specific barriers (e.g., knowledge or language barriers) to screening completion. Nearly 70% of those who received the intervention completed screening, compared with 28% of the control arm. Allen and Barzagan, similarly, found that a breast cancer screening intervention aimed at urban Hispanic and African American women that addressed perceived barriers, such as cost of testing or fear of test results, achieved an increase in screening completion.²³ The findings from these previous studies suggest that understanding key differences in health beliefs across racial/ ethnic groups may be useful for targeting health information for CRC screening promotion. However, little work has been done to explore such differences.

The goal in this analysis was to explore whether there are differences in health beliefs about CRC screening across racial/ ethnic and primary spoken linguistic groups. In a population of participants in a CRC screening trial, individual health beliefs were examined across four racial/ ethnic groups (non-Hispanic Whites, non-Hispanic Blacks, Asians, and Hispanics) and reported primary language (English, Non-English) as a proxy for level of acculturation.^{24,25}

Methods

Data were collected as part of the Colon Cancer Screening Adherence Study,²⁶ a randomized trial of competing strategies for CRC screening promotion conducted in a low-income, predominantly non-White safety-net population in San Francisco. Participants in this study completed a baseline survey that included items measuring constructs of the HBM and self-reported race/ ethnicity and primary spoken language. The purpose of this analysis is to explore whether health beliefs about CRC and CRC screening differ across racial/ ethnic and linguistic groups.

Study design

The CRC Adherence Study was a three-arm randomized trial in which patients were randomized to groups receiving a recommendation of fecal occult blood test (FOBT) only, colonoscopy only, or a choice of either by their primary care physician. Briefly, the purpose of the original study was to estimate the effect of choice on CRC screening decision-making and behavior. As part of the original study, barriers inherent to the public hospital system were reduced or eliminated to the extent possible. For example, CRC screening instructions were provided in the patients' preferred language, all costs of screening tests were covered, colonoscopies were scheduled directly within two weeks of enrollment in the study, and transportation to and from the endoscopy center was provided if necessary. The research staff were all bilingual (English and Spanish; English and Mandarin; English and Cantonese). Further details of the study design have been published elsewhere.²⁶ The analyses reported in this paper used only baseline data. This study was approved by the University of Washington Institutional Review Board.

Study participants

Three clinics in the San Francisco Community Health Network participated in the study. Eligible participants were patients at one of these clinics, aged 50–79 years, at average risk for CRC, and not up-to-date with recommended screening. Participants were enrolled in the study between 2007 and 2008, and 933 (93.5%) of 997 study participants had complete baseline data and were included in this analysis.

Dependent variables

The four major constructs of the HBM were measured: perceived susceptibility, perceived severity, perceived benefits, and perceived barriers, with a total of 23-items (Table 1) that resulted in 17 dependent variables. The development of these items is described in detail elsewhere.^{27,28} Each survey item used a five-point Likert response scale. The summary score for each construct was calculated by averaging the items used to measure the specific construct. Each construct score ranged from 1 to 5, and higher score indicated greater perception. The average score was dichotomized using 3 as a cutoff. For instance, a score less than 3 indicated lower perception while 3 or greater indicated higher perception of that construct.

Perceived susceptibility consisted of two components, a cognitive component and an affective component of perceived susceptibility.²⁸ Cognitive susceptibility measured the perception of personal susceptibility of getting CRC and included three survey items. Affective susceptibility measured worry about diagnosis and treatment for CRC and included two survey items.

Perceived severity was collected using three survey items that measured the extent of the individual's perception of the seriousness of getting CRC, such as likelihood of dying from CRC if you get it. The items were summed to generate an average score.

Perceived benefit was collected using two survey items that measured perception of beneficial aspects of screening, such as decreasing chance of death from CRC.

Perceived barriers were measured with 13 items, and each item was scored separately. For each item, respondents rated how important the barrier would be to them in making a decision about CRC screening. A sample barrier was participants' embarrassment about the procedure.

Independent variables

The primary predictors for this analysis were race/ ethnicity and primary spoken language, measured by participant self-report. A combination of race and ethnicity was used to create four categories: non-Hispanic White, non-Hispanic Black, Hispanic, and Asian. Those who responded as "Other" for race/ ethnicity were too few to be examined separately (n=35) and were excluded. Racial/ ethnic groups were further categorized by primary spoken language as English or non-English. This resulted in six categories (groups): non-Hispanic White-English; non-Hispanic Black-English; Hispanic-English; Hispanic-non-English; Asian-English; and Asian-non-English. (See Table 2)

Statistical analysis

To examine whether health beliefs differed across racial/ethnic and linguistic groups, descriptive analyses were initially performed, looking at the proportion of each group reporting high versus low perception of each HBM construct. Next, using each of the dichotomized HBM construct or construct components as outcomes, seventeen logistic regressions with robust standard errors were performed to test potential associations with race/ ethnicity and primary language. All adjusted models included covariates measuring health access,^{10,12} demographic characteristics,^{13,29} health status,^{13,29} physician recommendation of screening,^{18,30} physician characteristics,^{31,32} socioeconomic status,¹³ and social support.²⁹ (See Table 2.) Wald tests were used for establishing associations between race/ ethnicity and primary language groups and each HBM construct with an alpha level of 0.025 to adjust for multiple statistical tests comparisons (analyses completed in 2013).

Results

Most participants included in the analysis were Asian (30.7%) or Hispanic (35.6%). All non-Hispanic White and Non-Hispanic Black participants spoke English. Less than half of Asian and Hispanic participants spoke English (40% and 23%, respectively). Slightly more than half (53.7%) were female and the mean age was 58.5 years. Non-Hispanic Whites were less likely to be female and somewhat more likely to have higher educational attainment than any other groups. English-speaking Asian participants were somewhat older than other groups, and non-English-speaking Hispanics were also somewhat older than others. English-speaking Hispanics were less likely to be female than non-English-speaking Hispanics (38.2% vs. 71.5%) (Table 3). Differences in health beliefs (measured using items described above) about CRC screening across racial/ethnic and primary language groups were observed in perceptions of susceptibility to CRC and in certain barriers to CRC screening.

Perceived susceptibility

The Hispanic-English, Hispanic-non-English, and Asian-English groups all reported lower cognitive perceived susceptibility than other racial/ethnic groups (Table 4). In multivariable analysis, the Hispanic-English group remained significantly more likely than non-Hispanic Whites to report lower cognitive perceived susceptibility (OR 0.40; $p=.003$). The Hispanic-non-English group was even more likely to report lower cognitive perceived susceptibility (OR 0.16; $p<.001$). Additionally, the Asian-English group was also more likely than non-Hispanic Whites to report lower cognitive perceived susceptibility (OR 0.40; $p=.002$) (Table 5). There were no significant differences across racial and linguistic groups in perception of affective susceptibility (i.e., sense of worry) ($p=.29$).

Perceived severity and benefits

There were no significant differences across racial/ ethnic and linguistic groups in perception of severity or of benefits. Nearly all respondents, regardless of racial/ ethnic subgroup and primary language, reported high perception of severity of CRC ($p=.17$). Nearly all respondents also reported lower (vs. high) perceived benefits of screening and this did not differ across racial/ethnic and linguistic groups ($p=.71$) (Table 4 and Table 5).

Perceived barriers

Perception of barriers to screening varied considerably across racial/ ethnic and linguistic groups (Table 4). In the Hispanic-non-English group, discomfort during the test was significantly less important than it was to non-Hispanic Whites (OR 0.37 $p=.001$). Prior testing experience (OR 18.3; $p<.001$) and the preparation for the test (OR 3.06; $p<.001$) were all significantly more important to the Hispanic-non-English group than to non-Hispanic Whites. Perception of the need for sedation during the test was marginally different for the Hispanic-non-English group compared to non-Hispanic Whites (1.11; $p=.045$). With the exception of discomfort during the test, perceived barriers to screening did not differ between the Hispanic-English group and non-Hispanic Whites. (Table 5)

In the Asian-non-English group compared with non-Hispanic Whites, the perception of potential need for additional testing (OR 0.14; $p<.001$), fear of the results of the test (OR 0.20; $p=.001$), concern about possible complications from the procedure (OR .23 $p<.001$), and the need for sedation (OR 0.30; $p=.002$) were significantly lower. Report of anxiety about the procedure as a potential barrier was marginally different in the Asian-non-English group (OR 0.44; $p=.04$). The Asian-English group and non-Hispanic Whites were similar in their perception of barriers. Perception of the cost of testing, however, was marginally different in the Asian-English group from its perception in the non-Hispanic White group (OR 1.97; $p=.03$) but not from its perception in the Asian-non-English group ($p=.52$) (Table 5).

Discussion

This study examined how individual perceptions of health beliefs differ across racial/ ethnic and linguistic groups guided by the theoretical framework of the HBM. In general, the findings show that participants who spoke English, regardless of their race/ ethnicity, report comparable health beliefs across all constructs (perceived susceptibility, perceived severity, perceived benefits, and perceived barriers). However, differences were observed in perceived health beliefs between participants who did and did not speak English within a racial/ ethnic group and between racial/ ethnic groups. Specifically, non-English speaking Asians and Hispanics reported less susceptibility to CRC than did non-Hispanic Whites. According to the health belief model an individual who perceives higher susceptibility to a disease is more likely to undertake the recommended health action (screening). Additionally, non-English speaking Hispanics reported greater importance of certain barriers to CRC screening completion than did non-Hispanic Whites, particularly prior testing experience. Non-English speaking Asians, however, typically reported lower levels of importance of some barriers to CRC screening completion. In general, study participants did not report importance in the benefits of screening, and there were no differences across groups.

Previous research has often shown that health beliefs about cancer and cancer screening are important predictors of screening behavior.^{33,34} The results of this study corroborate previous findings that some particular health beliefs may be common among certain racial/ ethnic and cultural groups. One previous study has suggested that differences in health beliefs across racial/ethnic populations may be a contributing factor to disparity in screening completion.³⁵ Level of acculturation, described as a conceptualization of the complex

process of acclimation to a foreign culture, has also been shown to be related to CRC screening.⁹ Although language preference is not a complete proxy for acculturation, the observation of differences in health beliefs about CRC screening across racial/ethnic and language preference groups suggests that differences in health beliefs about CRC and CRC screening across racial/ethnic groups may be partially attributable to acculturation. Thus, CRC screening interventions aimed at increasing screening rates should consider the importance of cultural differences, including level of acculturation, by targeting specific health beliefs examined in this study.

Previous work has established a relationship between perceived susceptibility and CRC screening completion in similar populations.^{15,18} Shokar and colleagues found that Hispanics with lower perception of susceptibility to CRC, compared with Hispanics with a higher perception of susceptibility, were less likely to complete screening. However, in contrast with what is reported here, they did not observe differences in perception of susceptibility between Hispanics and non-Hispanic Whites.¹⁸ In this study, perceived susceptibility was further differentiated into cognitive and affective; the differences were found specifically in cognitive susceptibility and not with affective. This finding may allow for fine-tuning of intervention design by enabling researchers to target specific components of susceptibility to improve screening uptake.

Considerable variation in perception of barriers to screening was also observed when comparing non-English speaking minority groups with non-Hispanic Whites. These differences appeared to be particularly important when comparing non-Hispanic Whites with non-English speaking Hispanics. Several past meta-analyses of studies using the HBM have all shown that perceived barriers may be influential in predicting screening behavior.³⁶⁻³⁸ The specific differences in perception of barriers that were observed suggests certain barriers that may be important in explaining some of the disparities in CRC screening for Hispanics. These barriers could be targeted in interventions to promote CRC screening in these populations.

Past research on the impact of perception of barriers on CRC screening in Asian populations has shown mixed findings.^{15,19} In this analysis, non-English speaking Asians reported *lower* perception of several barriers than non-Hispanic Whites (need for additional testing, fear of results of the test, concern about complications from the test, need for sedation, anxiety about the procedure). The underlying reason for this is not clear. This finding does not yield easy insights into why there are similar disparities in CRC screening for Asians as there are for Hispanics, when compared with non-Hispanic Whites.

Interventions aimed at promoting CRC screening in safety-net populations have often used a form of individual health counseling or patient navigation to address information deficits or structural barriers to screening.^{7,39} In research settings, these interventions have been shown to be highly effective in some studies, but also very expensive. It is therefore unclear whether individual health counseling is feasible and sustainable for the long term, outside of a research setting. By identifying barriers and facilitators of CRC screening common among specific racial/ethnic or cultural groups, it may be possible to address the common factors at a group level, reducing the need for individualized health counseling.

The results of this study should be interpreted with the following limitations in mind. First, these data were obtained from a trial in which many barriers to CRC screening were mitigated. It is possible that this understanding affected participants' reporting of potential barriers to screening. However, the data were collected prior to any intervention activities and the results are, therefore, unlikely to be affected. Second, the assessment of barriers, while specific to CRC screening, was not specific to a particular CRC screening test (e.g., barriers to completing FOBT). There, additionally, may be some variation in how participants interpreted barriers as they were presented in this study. However, the analysis considered the combined number of barriers, rather than each barrier individually. Finally, the participants in this study had low incomes and were receiving care at a safety-net institution. Results may not be generalizable to higher-income populations or to individuals with private health insurance.

The implications of these findings suggest differences in health beliefs about CRC and CRC screening between Hispanic, Asian, and non-Hispanic White populations in the U.S. This understanding may be useful in designing effective interventions to promote CRC screening in these populations. An intervention directed toward non-English speaking Hispanic populations, for example, might focus more heavily on information about test preparation and sedation than would one directed toward an Asian population. The findings also suggest a general need to address the benefits of early screening, and a need to raise perceptions of susceptibility to CRC among some Asian and Hispanic populations. Future studies will examine the independent effect of the differences in health beliefs that were observed on screening behavior in this population.

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Table 1**DEPENDENT VARIABLES – HEALTH BELIEF MODEL ASSESSMENT MEASURES**

Health Belief Model Variables		
Construct	Definition	Items/Assessment
Perceived susceptibility	Cognitive— perception of personal risk of colon cancer	<ul style="list-style-type: none"> Compared to other people your age, what do you think your chance is of getting colorectal cancer? How likely do you think it is that you could develop colorectal cancer sometime in the future? I do not need to worry about developing colorectal cancer because I get regular doctor check-ups.
	Affective—worry about personal risk of colon cancer	<ul style="list-style-type: none"> I don't want to be screened for colorectal cancer because I am afraid of the results. I do not want to know that I have colorectal cancer because I'm afraid of the treatment.
Perceived severity	Perception of severity of colon cancer	<ul style="list-style-type: none"> How serious would it be if you developed colorectal cancer? Most people who develop colorectal cancer die from the disease. If I were to develop colorectal cancer, it would totally change my life.
Perceived benefits	Perceived benefits of colon cancer screening	<ul style="list-style-type: none"> Finding colorectal cancer early will decrease my chances of dying from colorectal cancer. Finding colorectal cancer early will make the treatment easier.
Perceived barriers	Perceived barriers to screening	<p><u>Even if you have never been screened</u>, on a scale of 1 to 5 where 1 is “not at all important” and 5 is “extremely important”, please check the box that best describes how important the following factors <u>would be</u> for you if you were making this decision.</p> <p>Prior experience with testing...</p> <p>Cost...</p> <p>Discomfort...</p> <p>Embarrassment...</p> <p>Accuracy of results...</p> <p>Not enough time...</p> <p>Avoiding need for additional tests...</p> <p>Fear of the results...</p> <p>Transportation problems...</p> <p>Anxiety about the procedure...</p> <p>Concern about complications...</p> <p>Preparation...</p> <p>Need for sedation...</p>

Table 2

INDEPENDENT VARIABLES

Domain	Variables
Health Care Access	Insurance Status Transportation to colonoscopy needed
Acculturation	Primary spoken language ^a
Demographics	Sex Age Race/Ethnicity ^a
Health Status	Self reported health status
MD Recommendation	Any CRC test recommended Any CRC test discussed
Physician Characteristics	Sex of physician Language spoken by physician
SES	Educational level Income Employment Status
Social Support	Married or Partnered

^aPrimary predictors

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Table 3 CHARACTERISTICS OF STUDY SAMPLE, BY RACE/ETHNICITY AND PRIMARY SPOKEN LANGUAGE

	All N=933	Non-Hispanic White n=143		Non-Hispanic Black n=171		Asian		Hispanic	
		Non-English n=114	English n=173 ^a	Non-English n=114	English n=171	Non-English n=76	English n=256 ^a		
Age (m)	58.5	55.9	56.2	60.5	59	57.4	60.6		
Gender (%F)	53.7	24.1	41.5	64.9	69.4	38.2	71.5		
Education (%)									
<High School	33.4	5.6	16.4	17.5	45.1	22.4	66.4		
HS Grad	28.8	24.2	41.5	31.6	39.9	30.3	14.5		
Some College	18.9	31.5	30.4	11.4	4.1	29.0	12.9		
College +	18.9	38.8	11.7	39.5	11.0	18.4	6.3		
Unemployed	65.9								
Annual Income									
<\$10,000	57.1	49.4	57.9	51.8	37.0	46.1	81.3		
\$10,000–\$19,999	31.9	38.2	29.8	40.4	41.0	38.2	17.2		
\$20,000–\$29,999	8.0	7.9	7.6	7.9	16.8	11.8	1.2		
>=\$30,000	3.0	4.5	4.7	0.0	5.2	4.0	0.4		

^aNon-English Speaking

Table 4
PROPORTION REPORTING HIGHER VS. LOWER PERCEPTION OF EACH HBM CONSTRUCT, BY RACE/ ETHNICITY AND PRIMARY SPOKEN LANGUAGE

	All N=933	Non-Hispanic White n=143	Non-Hispanic Black n=171	Asian		Hispanic	
				English n=114	Non-English n=173	English n=76	Non-English n=256
Cognitive Susceptibility	0.47	0.66	0.53	0.47	0.67	0.43	0.20
Affective Susceptibility	0.10	0.11	0.11	0.18	0.10	0.15	0.05
Severity	0.97	0.95	0.97	0.94	0.98	0.99	0.97
Benefits	0.03	0.08	0.05	0.02	0.02	0.01	0.02
Barriers							
Prior testing experience	0.58	0.53	0.61	0.47	0.18	0.53	0.93
Cost	0.65	0.61	0.56	0.72	0.69	0.68	0.65
Discomfort	0.45	0.48	0.50	0.46	0.51	0.57	0.32
Embarrassment	0.23	0.21	0.23	0.15	0.13	0.34	0.31
Test Accuracy	0.97	0.94	0.98	0.95	0.97	0.97	0.98
Time	0.22	0.22	0.23	0.25	0.33	0.20	0.13
Need for additional testing	0.20	0.25	0.23	0.24	0.08	0.26	0.19
Fear of test results	0.22	0.23	0.22	0.25	0.12	0.25	0.27
Transportation	0.14	0.13	0.19	0.14	0.08	0.09	0.18
Anxiety	0.29	0.27	0.32	0.27	0.20	0.25	0.36
Complications	0.38	0.31	0.43	0.34	0.22	0.36	0.51
Prep	0.47	0.36	0.44	0.44	0.32	0.45	0.67
Sedation	0.58	0.55	0.57	0.57	0.36	0.61	0.74

Table 5
MULTIVARIATE RESULTS, BY RACE/ETHNICITY AND PRIMARY SPOKEN LANGUAGE

	Non-Hispanic White	Non-Hispanic Black				Asian				Hispanic			
		OR		P		English		Non-English		English		Non-English	
		OR	P	OR	P	OR	P	OR	P	OR	P	OR	P
Cognitive Susceptibility	ref	.63	0.078	0.40	(.002)	1.10	(0.81)	0.40	(.003)	0.16	(<.001)		
Affective Susceptibility	ref	0.88	(0.74)	1.37	(0.46)	0.91	(0.89)	1.33	(0.51)	0.50	(0.23)		
Severity	ref	1.43	(0.56)	0.43	(0.18)	1.50	(0.75)	3.25	(0.28)	0.88	(0.89)		
Benefits	ref	0.51	(0.22)	0.35	(0.17)	0.62	(0.74)	0.24	(0.17)	0.62	(0.59)		
Barriers													
Prior testing experience	ref	1.46	(0.13)	0.69	(0.21)	0.60	(0.28)	0.99	(0.96)	18.30	(<.001)		
Cost	ref	0.89	(0.62)	1.97	(0.03)	1.28	(0.52)	1.39	(0.30)	1.01	(0.98)		
Discomfort	ref	1.14	(0.58)	0.91	(0.72)	0.63	(0.22)	1.41	(0.24)	0.37	(.001)		
Embarrassment	ref	1.06	(0.84)	0.63	(0.21)	0.47	(0.09)	1.87	(0.07)	1.13	(0.71)		
Test Accuracy	ref	1.83	(0.38)	0.84	(0.79)	1.78	(0.50)	1.75	(0.48)	2.30	(0.38)		
Time	ref	1.12	(0.71)	1.15	(0.67)	0.91	(0.84)	0.81	(0.56)	0.48	(0.07)		
Need for additional testing	ref	0.71	(0.24)	0.89	(0.73)	0.14	(<.001)	0.88	(0.71)	0.51	(0.09)		
Fear of test results	ref	0.82	(0.50)	1.04	(0.91)	0.20	(.001)	1.08	(0.83)	0.81	(0.56)		
Transportation	ref	1.21	(0.58)	1.01	(0.98)	0.42	(0.13)	0.61	(0.30)	1.12	(0.80)		
Anxiety	ref	1.04	(0.89)	0.74	(0.33)	0.44	(.04)	0.81	(0.52)	1.15	(0.67)		
Complications	ref	1.42	(0.18)	0.86	(0.61)	0.23	(<.001)	1.05	(0.89)	1.21	(0.53)		
Prep	ref	1.31	(0.28)	1.33	(0.32)	0.66	(0.28)	1.49	(1.91)	3.06	(<.001)		
Sedation	ref	1.00	(1.00)	1.09	(0.76)	0.30	(.002)	1.32	(0.36)	1.81	(.045)		