Factors Associated with Colorectal Cancer Screening Among Cambodians, Vietnamese, Koreans and Chinese Living in the United States

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Abstract

The purpose of this community-based participatory study was to identify factors associated with colorectal cancer (CRC) screening compliance and non-compliance among Cambodians, Vietnamese, Koreans and Chinese men and women 50 years and older living in the United States. A cross-sectional design was used in the study. The completed sample included 815 Asian Americans which included Cambodians (N=215), Vietnamese (N=195), Koreans (N=94) and Chinese (N=311). A 95-item questionnaire was developed and pilot tested for content validity and reliability. An in-person data collection approach was utilized and participants were given choice in responding in English or their native language. Of the 815 participants, 79.1% (N=645) reported never-screened, 7.9% (N=64), non-compliance, and 13.0% (N=106) compliance. Education was significantly associated with never-screened for CRC for Vietnamese and Chinese; employment status for Cambodians and Koreans; lack of health insurance for Cambodians, Korean and Chinese; English fluency and years lived in the U.S. for Vietnamese, Koreans, and Chinese. Less acculturated Asian Americans were more likely to be never screened, but differentially across ethnic subgroups. Barriers to screening included lack of knowledge, language, transportation, and time. Increased culturally-targeted public awareness and education programs are needed to improve CRC screening and compliance among high risk Asian American ethnic subgroups.

Keywords

sigmoidoscopy or colonoscopy; fecal occult blood test; Vietnamese; Korean; Chinese; Cambodian; correlates of colorectal cancer screening

INTRODUCTION

Colorectal cancer (CRC) is the third leading type of cancer in the U.S. and is the second cause of cancer death in the country.[1] It is the second most diagnosed cancer among Asian

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CONFLICT OF INTEREST
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Americans, and is the third leading cause of mortality in these populations.[2] The American Cancer Society recommends that beginning at age 50, men and women should have a fecal occult blood test (FOBT) every year and either a flexible sigmoidoscopy every five years, a colonoscopy every 10 years, or a double contrast barium enema every five to 10 years.

Despite the effectiveness of current screening tests for CRC, only 43% of the U.S. population, aged 50 years and older, reported having had sigmoidoscopy within the past 5 years or a colonoscopy within the past 10 years. When taking a FOBT within the past year into account, the overall screening rate increased to 47%.[3] The overall screening rates among non-Hispanic Whites varied across the states, ranging from 58% in Pennsylvania, to 60% in New Jersey, and 64% in New York State. [3] In a study of a representative sample of 61,068 individuals, aged 50 years and older Ioannou and colleagues[4] found that less than half (44.4%) of individuals reported having CRC screening (22.8% sigmoidoscopy/colonoscopy, 9.9% FOBT, and 10.7% both) and Asian Americans reported one of the lowest screening rates (34.8%). Another study involving 1,771 Asian Americans and non-Latino Whites, aged 50 years and older, found a large discrepancy between the two groups in screening rates. Whites reported 58.0% FOBT rates, 57.0% endoscopy, and overall CRC screening rates of 75%.[2] For Asian Americans, FOBT rates were 38%, endoscopy 42% and, and overall CRC screening 58%. Korean Americans, however, had FOBT rates of 23%, and overall CRC of 49%, the lowest among all subgroups. A study focusing on Vietnamese Americans found screening rates for endoscopy to be 36%.[2]

Barriers to screening in the general population include lack of knowledge about CRC, negative attitudes about the tests, fear of positive test result, and lack of social support, and lack of physician recommendations.[5–7] Among Chinese, having a FOBT within the last 12 months was associated with fewer years of U.S. residency, lower levels of fear about test results, and higher levels of perceived susceptibility. Getting sigmoidoscopy within the last 5 years, however, was associated with higher levels of education, lower levels of fear of test results and perceived susceptibility to CRC.[7] One study among Chinese did not find any socio-demographic factors (insurance status, language) associated with CRC screening tests, or gender differences between those who had FOBT, sigmoidoscopy, and/or colonoscopy and those who did not, within the last 12 months.[8] Teng and colleagues[9] found that, while physician recommendation to obtain CRC screening was significantly associated with getting screened, acculturation and perceived risk did not. In the same study, qualitative analysis revealed other factors associated with screening. These included rapport with health providers, social support, insurance status, and recommendation from family members or physicians. A study among Koreans found an association between a history of blood in stool and FOBT testing, marital status, time spent in the U.S., and general health status with getting sigmoidoscopy.[10] Corroborating previous findings regarding barriers to screening, Choe and colleagues[11] reported that non-fluency in English, embarrassment to reveal personal health issues in the presence of an interpreter, fear of outcome of screening, and concern about cost of screening. Also corroborating previous findings, Tang and colleagues[12] noted that their study did not identify any factors that could be related to regular adherence to screening guidelines.

The purpose of this community-based study was to assess the CRC screening status and determine the acculturation, demographics, and risk factors associated with CRC screening compliance among Chinese, Korean, Vietnamese, and Cambodian men and women, 50 years and older.

METHODS

Study Participants

Asian Americans are the fastest growing ethnic group in the US, representing 6.3% of the total population in Philadelphia County, 9.8% of the total population in New York City, and 8.3% of the total population in New Jersey. [26] According to U.S. 2000 census data, Chinese Americans represent nearly 24% of Asian American population, about double the size of Korean American (11%) and Vietnamese American (11%) populations.[27] The study representative sample of Asian Americans was derived from a current member-list of 111 community-based Asian organizations representing Cambodian, Korean, Vietnamese, and Chinese Americans in the greater Philadelphia area, New Jersey, and New York City. The list of organizations was identified by the Asian Community Health Coalition and Center for Asian Health, Temple University. The organizations were located in geographic areas that maximized the coverage of the target populations across ethnicity, age, and socioeconomic status. The sampling consisted of two steps. At step 1, with a computer random number generator, a group of 52 Asian community organizations were randomly selected as clusters from the list of 111 organizations. At step 2, the selected organizations were stratified based on the four ethnic groups. A proportional sampling was then adopted to determine the sample size for each of the four ethnic groups.[13] A total of 2400 individuals were recruited to participate in the study, 302 chose not to participate. Of the 2,098 individuals who agreed to participate in the study, 2,011 completed the study questionnaire reflecting a response rate of 95.9%. The data used for the analysis of this article consisted of 815 eligible participants who age 50 and older. This is because the colorectal cancer screening is only recommended for men and women aged 50 years or older.

Data Collection Procedures

A cross-sectional research design was used in the study because of the common advantages provided by this method, such as collecting information from many and diversified participants in a short period of time.[13,15–17] Data collection occurred between June 2005 and October 2006 at facility sites of sampled organizations. Data collection administration training was provided to all survey administrators as accompanying bilingual translators. The Center for Asian Health research team, in partnership with Asian Community Health Coalition administered in-person survey. Instructions were provided verbally and in writing; and language assistance was available during the survey period. Participants responded in English or their native languages. The average time for survey completion was 25 minutes.

Measurements

A 95-item multi-lingual questionnaire was developed, back-translated, and pilot-tested for reliability and validity. The questionnaire contained items which included the following variables: demographics (age, gender, foreign born, ethnicity, marital status, education level, employment status, income, health insurance (have it or not), acculturation (competency in English language use, watch TV and read newspapers in native language, and length of time in the U.S.), knowledge of colon cancer, language spoken, and colorectal screening (behavior and barriers) items. The barriers included, lack of knowledge of screening, felt well, language problems, no regular doctor, no time for screening, no transportation to a facility, having insurance, insurance covers the cost, fear of getting bad results, embarrassment/shame.

The instrument was also field-tested for appropriateness of its format, content validity, level of difficulty and administration time. Face and content validity of the questionnaire was tested with 37 Asian American adults who did not participate in the study. The test-retest method was used to establish reliability. The reliability coefficients were high, indicating

that, overall, participants responded consistently to the questionnaire items. The following correlation coefficients were obtained for respective items: CRC screening (.84), reasons for getting CRC screening (.54), barriers to getting CRC screening (lack knowledge .46, feel well .81, language .69, no regular doctor .46, no time .66, no place to get it 1.0, no transportation .60, no insurance 1.0, insurance does not cover .79, fear of bad test results .69, and embarrassment or shame .69), items related to family history, getting free screenings and discussing with the family (.87), and demographics (year born .98, gender 1.0, born in the U.S. 1.0, years lived in the U.S. 1.0, degree of education .97, employment .81, covered by insurance 1.0, level of English .87, watch TV in English 1.0, and income level .85).

Data Analysis

The sample used for the analysis consisted of 815 men and women aged 50 and older. The variables associated with CRC screening consisted of demographics, acculturation, and barriers. The association between demographic and acculturation variables related to CRC screening status was examined through contingency tables and the chi-square test. The measures of the association between barrier variables and CRC screening status were odds ratios (OR) and associated 95% confidence intervals, which were calculated using logistic regression modeling. All statistical analyses were performed using the Statistical Analysis System (SAS v 9.2). We tested the significance with a p value of less than .05, due to the exploratory nature of the data analysis.

RESULTS

Of the 815 participants, 79.1% (n=645) reported never-screened, 7.9% (n=64) reported non-compliance, and 13.0% (n=106) reported compliance (Table 1). The sample involved four ethnic groups, with the largest proportion being Chinese (38.2%), followed by Cambodians (26.4%), Vietnamese (23.9%), and Koreans (11.5%). These proportions reflected ethnicity proportions in the sampling area with the exception of Cambodians, who were over-sampled. Due to the small number of participants reporting non-compliance (defined as those who ever tested, but not in compliance with CRC screening guidelines) and compliance, these two categories were combined as "screened" for the data analysis. The following section describes results of analyses of demographics, acculturation, and barriers for each all ethnic groups.

Demographic factors associated with CRC screening status

Table 2 presents CRC screening status and demographic factors for each of the four groups. The significant chi-square results are indicated in the table.

Cambodian—Screening status was associated with employment status, χ^2 (1) = 5.34, P<.05. Unexpectedly, the employed were more likely to report never-screened than those unemployed (97.7% vs. 90.6%). Screening status was significantly related to health insurance, χ^2 (1) =8.52, P<.01. Of those without current health insurance, 97.9% reported never-screened compared with 88.6% of those with health insurance reporting never-screened. Gender, education, marital status, and annual household income were not significantly associated with CRC screening status, P>.05.

Vietnamese—Screening status was significantly related to education, χ^2 (1) =4.47, P<.05. Of those below high school education, 93.6% reported never-screened compared with 82.2% of those with high school or higher education reporting never-screened. Gender, employment status, annual household income, marital status, and health insurance status were not significantly related to screening status, P>.05.

Korean—Screening status was associated with employment status, χ^2 (1) = 5.43, P<.05. Unexpectedly, the employed were more likely to report never-screened than unemployed (82.1% vs. 60.0%). Screening status was significantly related to health insurance, χ^2 (1) = 7.15, P<.01. Of those without current health insurance, 88.9% reported never-screened compared with 63.6% of those with health insurance reporting never-screened. Gender, education, annual household income, and marital status were not significantly related to screening status.

Chinese—Education was significantly related to screening status, χ^2 (1) = 13.28, P<.01. For Chinese with less than a high school education, 75.3% reported never-screened compared with 62.0% with high school or higher education who reported never-screened. Screening status was significantly related to health insurance, χ^2 (1) = 6.16, P<.05. Of those without current health insurance, 77.9% reported never-screened compared with 61.7% of those with health insurance reporting never-screened. Gender, marital status, annual household income, and employment status were not significantly associated with screening status, P>.05.

Acculturation factors associated with CRC screening status

Table 3 presents CRC screening status and acculturation factors for each of the four ethnic groups. The significant chi-square results are indicated in the table.

Cambodian—How well English is spoken was significantly related to screening status, χ^2 (2) = 18.37, P<.01. Of those who did not speak English at all, 97.3% reported never-screened. Those who watched TV in their native language were significantly more likely to be never-screened than those who watch TV in English (95.7% vs. 50.0%), χ^2 (1) = 9.26, P<.01. Those who did not read a newspaper in English (98.2%) were more likely to report never-screened than those who read a newspaper in English (85.7%), χ^2 (1) = 12.88, P<.01. Years of living in the U.S. was not significantly related to screening status.

Vietnamese—Years living in the U.S. was significantly related to screening status, χ^2 (1) = 4.84, P<.05. Those living in the U.S. less than 15 years were more likely to be never-screened (90.6%) than those living in the U.S. for more than 15 years (79.5%). How well English was spoken was significantly associated with screening status, χ^2 (2) = 6.91, P<.05. Of those who did not speak English at all, 92.6% reported never-screened, and 83.7% of those who did not speak English well reported never-screened while 73.1% of those who spoke English well or very well reported never-screened. Those who did not read a newspaper in English (96.2%) were more likely to report never-screened than those who read a newspaper in their native language (54.6%) or those who read a newspaper in English (87.0%), χ^2 (2) = 11.64, P<.01.

Korean—Years living in the U.S. was significantly related with screening status, χ^2 (1) = 4.36, P<.05. Those living in the U.S. less than 15 years were more likely to be never-screened (86.1%) than those living in the U.S. for more than 15 years (66.7%). No other acculturation variables were significantly related with screening status.

Chinese—Years living in the U.S. was significantly associated with screening status, χ^2 (1) = 5.03, P<.05. Those living in the U.S. less than 15 years were more likely to be never-screened (73.9%) than those living in the U.S. for more than 15 years (61.2%). No other acculturation variables were significantly related to screening status.

Barrier factors associated with colorectal cancer screening status

Table 4 presents the associations between barrier variables and CRC screening status, including odds ratios (OR) and 95% confidence intervals for each ethnicity. The significant chi-square results are indicated in the table.

Cambodian—The knowledge barrier, language and transportation barriers were not significantly associated with rescreening, while psychosocial, insurance, and time barriers each had insufficient cell size to obtain reliable odds ratios.

Vietnamese—None of the barrier variables was significantly associated with screening status.

Korean—Those reporting the knowledge barrier were more likely to report never-screened (OR=20.46). Those reporting language and transportation barrier were more likely to report never-screened (OR=15.56). None of the other barrier variables was significantly related to screening status. The insurance barrier had an insufficient cell size to obtain reliable odds ratios.

Chinese—Those reporting the knowledge barrier were more likely to report never-screened (OR=3.3). Those reporting language and transportation barriers were more likely to report never-screened (OR=2.98). Those reporting the time barrier were more likely to report never-screened (OR=4.68). Psychosocial and insurance barriers were not significantly associated with screening status.

DISCUSSION

The purpose of this community-based study was to determine demographic and acculturation risk factors associated with CRC screening compliance and non-compliance among Chinese, Korean, Vietnamese, and Cambodian men and women aged 50 years and older.

DEMOGRAPHICS

Education was significantly associated with never-screened for Vietnamese and Chinese. Those who reported lower level of education were more likely to report never-screened. Gender distribution in the two ethnic groups differed, however. Whereas there was an almost equal number of males and females in the Vietnamese sample, there were more females than males in the Chinese sample. The percentage of never-screened among the former group was nearly identical; in the latter group, the percentage of never-screened was higher among males. Further, a significant number of never-screened in both groups has lived <15 year in the U.S. and do not speak English. Previous studies have shown that among Chinese, those with higher levels of education were more likely to undergo FOBT and sigmoidoscopy screening.[4,7,18–19] This study showed, however, that educational levels have a differential effect on screening among the ethnic subgroups.

Although employment status was significantly associated with never-screened for Cambodians and Koreans, the results were unexpected. Those employed were more likely to be never-screened. This may be partly explained by the fact that many Asians in our sample were hourly wage earners and time off may be equated with lost wages. This assumption is borne by the significant correlation between never-screened and having no insurance among Cambodians, Koreans and Chinese, corroborated by other studies.[4,8] However, although our data showed that income >$10,000 does not change substantially the percentages of never-screened among Cambodians, a higher income among Koreans appears to increase

percentages of never-screened. Contrary to previous studies which did not find significant differences in demographic factors and CRC screening, our study found differential association with CRC screening among the four Asian groups.[8]

ACCULTURATION

The relative fluency in spoken English was significantly associated with CRC screening for Cambodians and Vietnamese. Those who were fluent in English were more likely to be screened; those who were not fluent were more likely to be never-screened. Recent studies corroborated our findings.[20] Choe and associates[11] found that limited English fluency is a barrier to understanding FOBT instructions and physician recommendations. Similarly, Cambodians and Vietnamese who did not read a newspaper in English or watch TV in English were more likely to never get screened versus those who do read and watch TV in English.

It is interesting to note that although years living in the U.S. was significantly associated with CRC screening for Vietnamese, Koreans, and Chinese, a large subset of the samples ethnic groups is not fluent at all in either spoken or written English. This phenomenon is more apparent in the Cambodian and Vietnamese groups than in the Korean and Chinese. The former groups appear to be more insular than the latter groups. Chinese and Korean communities in the U.S. are more established and new immigrants have greater opportunities to adapt to the new culture. Generally, the literature supports our findings[10] with the exception that living in the U.S. affects Asian ethnic groups screening status differentially. Tong and Spicer[21] found that length of residency in the U.S. can impact attitudes and values which, in turn, can facilitate the understanding of and accessibility to the U.S. health care delivery systems.[22–23]

Our study findings have revealed that general conclusions regarding the relationship between cultural variables and CRC screening among Asian American ethnic groups can be misleading. An earlier study by Tang and McCracken[12] led to the conclusion that acculturation is the only significant factor which predicts screening. Teng and colleagues,[9] on the other hand, found that acculturation and perceived risk did not predict screening and nor motivate an individual to seek screening. While we found that cultural factors and acculturation influence screening behavior among Asian groups differentially, the unexpected negative association between acculturation and screening was surprising. Among certain groups, acculturated individual Asians were more likely to be never-screened than those who were less acculturated. It is noteworthy that we and others who have examined the relationship between cultural variables and screening behaviors have focused only of those aspects of culture that fall within the realm of awareness (language, dress, and food). Deep culture factors include notions of modesty, ideals governing child rearing, courtship practices, incentives to work, conceptions of justice, ordering of time, patterns of visual perception and of handling emotions, among many others. Our observations have clearly indicated that the differences among the four ethnic groups show that Asian American cultures, like all cultures are continuous, cumulative and progressive, constantly changing over time.[24]

Barriers

Barriers that were associated with never-screened compared with those who were screened included lack of knowledge, language/transportation, and time. Koreans (OR=20.46) and Chinese (OR=3.3) who lacked knowledge of CRC were more likely to be never-screened. An earlier study by Beeker and colleagues[5] found that individuals who lacked knowledge about CRC and screening were less likely to seek screening. Furthermore, those Chinese (OR=2.98) and Koreans (OR=15.56) with language and transportation barriers were more

likely to be never-screened. Chinese who indicated they did not have time were 4.68 times more likely to be never-screened than those who were screened. These findings suggest that even if individuals wanted to get screened, transportation and language barriers prevent them from getting screened.

This community-based study was conducted in the preferred language of Cambodian, Vietnamese, Korean and Chinese spoken and written languages of participants effecting high rates of participation. Because of the nature of the study, including confidentiality and cost of follow up, it was not possible to determine differences in CRC colonoscopy, FOBT and/or both types of screenings. Furthermore, this cross-sectional study did not allow verification of CRC screening. It was assumed that there might be an overestimate of the frequency of CRC screening, making the screening rates even lower than reported. Despite its limitations, the study findings regarding the differential association of demographic, acculturation, and barrier factors for CRC screening is useful in the development and implementation of more culturally and linguistically educational interventions in disparate Asian ethnic communities where the rates of CRC are high but screening rate is low. Improving CRC screening rates among Asian Americans is consistent with the *Healthy People 2020* objective for increasing the proportion of adults about colorectal cancer screening to reduce invasive colorectal cancer.[25]

CONCLUSION

Our study revealed a low CRC screening rate among Asian Americans. Barriers to screening included lack of knowledge, language, transportation, and time. While demographic factors such as education level, employment and health insurance status and acculturation factors such as years lived in the U.S. and English fluency were most likely to be associated with screening, the associations differentiated across Cambodians, Vietnamese, Koreans, and Chinese. These findings suggest that increased culturally-targeted public awareness and education programs are needed to improve CRC screening and compliance among high risk Asian American ethnic subgroups.

Acknowledgments

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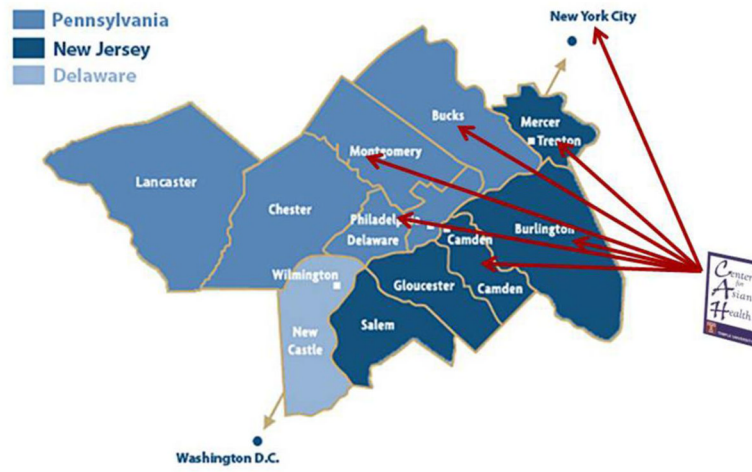
Figure 1.
Geographic distribution.

Table 1

Colorectal Cancer Screening Status by Ethnicity.

Ethnicity	Never screened	Non-Compliance*	Compliance**	Total
	% (n)	% (n)	% (n)	% (n)
Cambodian	94.9 (204)	2.8 (6)	2.3 (5)	100 (215)
Vietnamese	86.15 (168)	3.1 (6)	10.8 (21)	100 (195)
Korean	74.5 (70)	8.5 (8)	17.0 (16)	100 (94)
Chinese	65.3 (203)	14.2 (44)	20.6 (64)	100 (311)
Total	79.1% (645)	7.9% (64)	13.0% (106)	100 (815)

Table 2

Demographic and Colorectal Cancer Screening Status by Ethnicity.

	Ethnicity							
	Cambodian		Vietnamese		Korean		Chinese	
	Never screened	Screened	Never Screened	Screened	Never Screened	Screened	Never screened	Screened
	%	%	%	%	%	%	%	%
Gender								
Male	92.7	7.3	85.8	14.2	75.9	24.1	70.5	29.5
Female	97.1	2.9	86.6	13.4	71.8	28.2	61.9	38.1
Current Marital Status								
Unmarried	96.7	3.3	90.9	9.1	75.0	25.0	67.8	32.2
Married	94.1	5.9	85.9	14.1	73.6	26.4	64.7	35.3
Highest Degree								
<High School	91.8	8.2	93.5*	6.5	85.7	14.3	75.3*	24.7
>High School	85.0	15.0	82.2	17.8	75.0	25.0	62.0	38.0
Annual Income								
<$10,000	94.7	5.3	76.7	23.3	64.3	35.7	66.3	33.7
$10,000–$30,000	95.2	4.8	85.7	14.3	82.4	17.6	64.2	35.8
>$30,000	75.0	25.0	90.0	10.0	60.0	40.0	69.2	30.8
Employment								
Employed	97.7*	2.3	87.4	12.6	82.1*	17.9	67.4	32.6
Unemployed	90.6	9.4	85.4	14.6	60.0	40.0	62.0	38.0
Current Health Insurance								
No	97.9*	2.1	96.4	3.6	88.9**	11.1	77.9*	22.1
Yes	88.6	11.4	84.8	15.2	63.6	36.4	61.7	38.3

*
P<.05 from chi square test

**
P<.01 from chi square test

Table 3

Acculturation and Colorectal Cancer Screening Status by Ethnicity.

	Ethnicity							
	Cambodian		Vietnamese		Korean		Chinese	
	Never Screened	Screened	Never Screened	Screened	Never Screened	Screened	Never Screened	Screened
	%	%	%	%	%	%	%	%
Years live in the U.S.								
<15 yrs	96.5	3.5	90.6 *	9.4	86.1 *	13.9	73.9 *	26.1
>15 yrs	93.1	6.9	79.5	20.5	66.7	33.3	61.2	38.8
How well speak English								
Not at all	97.3 **	2.7	92.6 *	7.4	85.0	15.0	74.0	26.0
Not well	73.3	26.7	83.7	16.3	75.5	24.5	62.0	38.0
Well/Very well	90.9	9.1	73.1	26.9	58.8	41.2	61.8	38.2
Usually Watch TV in								
Native language	95.7 **	4.3	87.6	12.4	76.6	23.4	66.4	33.6
English	50.0	50.0	72.7	27.3	64.0	36.0	63.6	36.4
Usually Read News in:								
Native language	0.0	0.0	54.5 **	45.5	100.0	0.0	47.8	52.2
Don't read it	98.2 **	1.9	96.2	3.8	71.4	28.6	100.0	
English	85.7	14.3	87.0	13.0	74.4	25.6	66.9	33.1

*
P<.05 from chi square test

**
P<.01 from chi square test

Table 4

Colorectal Cancer Screening Status and Barrier Factors by Ethnicity (ORs and 95% CIs).

Risk Factors	Cambodian	Vietnamese	Korean	Chinese
Barrier	**Never-screened vs. Screened**	**Never-screened vs. Screened**	**Never-screened vs. Screened**	**Never-screened vs. Screened**
Knowledge	0.99 (0.21 – 4.71)	2.46 (0.74 – 8.22)	20.46 (1.88 – 222.81) [*]	3.3 (1.51 – 7.23) [*]
Psychosocial	n/a	0.16 (0.01 – 2.23)	0.05 (0.0 – 0.97) [*]	0.67 (0.2 – 2.24)
Insurance	n/a	3.4 (0.37 – 30.92)	n/a	1.96 (0.63 – 6.1)
Language/trans	1.26 (0.15 – 10.9)	1.72 (0.44 – 6.8)	15.56 (1.41 – 171.82) [*]	2.98 (1.2 – 7.4) [*]
Time	n/a	n/a	2.46 (0.36 – 16.76)	4.68 (1.21 – 18.11) [*]

[*] Indicates significance at P<.05

n/a indicates insufficient cell size to obtain reliable odds ratio