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Colorectal Cancer Screening among Underserved Korean Americans in Los Angeles County

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Abstract

Objectives—Use of colorectal cancer screening is extremely low among Korean Americans. The objective of this study was to gather information on predictors, facilitators, barriers, and intervention preferences with respect to colorectal cancer screening that may inform the development of future interventions for underserved Korean Americans.

Design—We developed a questionnaire guided by the Health Behavior Framework and administered it to a convenience sample of 151 Korean Americans aged 40–70 recruited through a community based organization in Los Angeles.

Results—In our sample in which 60% of the subjects did not have health insurance, only 17% reported having received a stool blood test within the past year or sigmoidoscopy or colonoscopy within the past 5 years. Having received a physician recommendation was significantly associated and having symptoms of the disease was marginally associated with the outcome variable. Although 64% of respondents reported having a primary care physician, only 29% received a screening recommendation from a physician. Barriers to colorectal cancer screening were lack of health insurance and inability to afford testing, not knowing where to go for testing, language barrier, and fear of being a burden to the family. Intervention preferences included educational seminars, media campaigns, and print materials.

Conclusion—Our findings point to the need for a multi-faceted approach that includes educational seminars at community venues, a media campaign, and physician education to increase colorectal cancer screening in this underinsured Korean American population.

Keywords

Colorectal cancer; Cancer screening; Korean Americans; Medically underinsured; Medically indigent

Introduction

Korean Americans, one of the most rapidly growing ethnic groups in the United States, have increased from fewer than 70,000 in 1970 to over one million in 2000 [1]. Perhaps due to this recent arrival, Korean Americans are under-represented in cancer screening efforts [2] less well studied than other ethnic minority groups, and research describing Korean Americans and cancer is limited [3–6].

Colorectal cancer is an important health concern among Korean Americans. In California where approximately 35% of Korean Americans reside (Census 2000), colorectal cancer is the most commonly diagnosed cancer in Korean American males and the second most commonly diagnosed cancer in females (after breast cancer) and the incidence of this disease is rising in this population [7–9]. Although screening, using the Fecal Occult Blood Test (FOBT), sigmoidoscopy or colonoscopy, is well established as an effective means of reducing the burden of the disease, [10] studies have shown extremely low screening utilization among Korean Americans. While in the general population, about 44–54 % of adults 50 and older report having been screened with either FOBT within the past year or sigmoidoscopy or colonoscopy within the past 5 years, [11,12] rates of between ten and 38% have been reported for age eligible Korean Americans in various community samples [13–16].

Despite this troubling evidence of underutilization, virtually no programs aimed at increasing colorectal cancer screening among Korean Americans have been designed or tested. To address this problem, we partnered with a community based organization, KHEIR (Korean Health Education, Information, and Research Center), to gather information on predictors, barriers, and intervention preferences with respect to colorectal cancer screening as a first step in developing such a program. Established in 1987, KHEIR provides primary and preventive services to underinsured Korean Americans and neighboring communities in Los Angeles County. The majority of those who seek KHEIR's services are indigent, elderly, immigrants, and/or disabled persons. This manuscript reports the results of a survey implemented among a convenience sample of Korea Americans recruited from this organization.

Methods

Survey Development and Content

Face-to-face in-person interviews were conducted with Korean Americans age 40 and older, utilizing a 103-item instrument. The questionnaire was based on the Health Behavior Framework [17,18]. The Health Behavior Framework is a synthesis of some of the major theoretical formulations in the area of adherence behavior including the Health Belief Model, [19] the Theory of Reasoned Action/Planned Behavior, [20,21] and components of the Precede Model [22]. Additional important constructs include self-efficacy, [23,24] and perceived control [20]. This conceptual model has been successfully used in many studies to understand cancer screening in various populations, including Korean Americans [17,25,26]. This framework consists of variables at a number of levels, including individual, community, and societal, that have been found to influence cancer screening. For this study, we focused on sociodemographics, patient-level variables, and facilitators and barriers to colorectal cancer screening. In order to guide development of future programs, we assessed preferred methods aimed at increasing screening utilization.

Survey items were drawn from a core questionnaire developed by the Asian American Network for Cancer Awareness, Research, and Training (AANCART), [27] the California Health Interview Survey questionnaire, [28,29] and from a pool of items previously used in research among Asian American populations [15,25,26]. Items on barriers, facilitators, and intervention preferences were also guided by the themes emerging from focus group discussions that were conducted in preparation for this survey. The questionnaire was developed in the Korean and English languages simultaneously in order to minimize loss of meaning due to translation. Prior to finalizing, the survey was pilot tested among 5 bilingual bicultural Korean Americans.

Survey Administration

From March to September 2003, trained Korean American interviewers approached 165 men and women 40–70 years old who were at KHEIR to receive health and social services. The participation rate for this convenience sample was 92% ($n = 151$). Although established organizations such as the American Cancer Society and the United States Preventive Services Task Force support screening starting at age 50, we included younger subjects beginning at age 40 because this is one of the first studies conducted among underserved Korean Americans and we wanted to be as inclusive as possible. Interviews were conducted at KHEIR or in subjects' homes, in the language preferred by the participant. All 151 subjects chose to be interviewed in the Korean language. Interviews took approximately 30 min to complete and subjects were paid \$10 in appreciation for their participation.

Analysis

Statistical analyses were performed using Stata 9.1 statistical software. Data analysis began with descriptive statistics on all measured variables. The main outcome variable, having received colorectal cancer screening, was defined as having received either FOBT within the past year or sigmoidoscopy or colonoscopy within the past 5 years. In addition to the main outcome variable, rates of individual screening modalities (i.e., FOBT or sigmoidoscopy or colonoscopy) were tabulated. A knowledge score was calculated as a percentage of correct responses out of 15 total items designed to assess general knowledge on colorectal cancer, risk factors, screening, and treatment. Bivariate analyses examining the relationship between the main outcome variable and Health Behavior Framework variables were performed by conducting Chi-Square or Fisher exact tests for categorical variables and t -tests for continuous variables. Linearity and multicollinearity of independent variables were also assessed. Logistic regression analysis was conducted to assess which of the variables were multivariately associated with the main outcome variable.

Results

Respondent Characteristics

Table 1 shows respondent characteristics and the results of the bivariate analysis. The mean age of participants was 54.2 years and more than two-thirds were females. About 90% were married or living with a partner, and approximately half had more than two members in the household. Greater than half (56%) of our subjects had more than high school education. About two-thirds (62%) reported currently working, and nearly two-thirds (60%) reported household income of \$30,000 or less. Sixty percent of the subjects reported not having health insurance. Almost all (96%) reported Korea as their birth country and greater than two-thirds (67%) reported living in the United States for more than 10 years. The p -values in this table reflect differences between screened and unscreened.

Screening Rates

Screening rates are presented in Table 2. We tabulated screening rates separately for the total sample, for those aged 50–70, and for those aged 40–49. Seventeen percent of the total sample, 22% aged 50–70, and 6% of those aged 40–49 reported having received colorectal cancer screening. About half of those who received FOBT also received sigmoidoscopy or colonoscopy. Approximately 75% of those who received sigmoidoscopy also received colonoscopy.

Correlates of Screening

From the bivariate analysis (presented in Table 1), the following thirteen variables were found to be associated ($p < 0.1$) with having received colorectal cancer screening: older age, smaller household size, not currently working, very high or very low income levels, US residence for over 20 years, health insurance, having a usual source of care, having a primary care physician, not having one's own car, having routine check-ups, having received a physician recommendation, having symptoms, and higher knowledge score. Having received colorectal cancer screening was not significantly associated with gender, marital status, years of education, English fluency, perceived susceptibility, knowing someone who got screened, and getting encouragement from others to get routine check-ups.

Income and working status had many missing values, were highly correlated with having one's own car, and were deleted from the multivariate analysis. Having health insurance and access to health care also had many missing values, were highly correlated with having a primary care physician, and were deleted from the multivariate analysis. The remaining nine variables were entered into subsequent regression analysis: age, household size, length of US residence, having a primary care physician, modes of transportation, having routine check-ups, having received a physician recommendation, having symptoms, and knowledge score. Stepwise logistic regression with forward and backward elimination procedures conducted to check for comparison showed very similar results.

Table 3 shows the results of the logistic regression. Having received a physician recommendation was significantly associated and having symptoms of the disease was marginally associated with the outcome variable.

Facilitators

We asked the participants to select up to three of the factors that may encourage or influence them to get colorectal cancer screening and to indicate what they considered to be the single most important factor. When we tabulated this single most important factor, we found that receiving a screening recommendation by a trustworthy physician (70%) and affordability of the test (17%) was most often selected. When we considered all three selections, receiving a recommendation by a trustworthy physician was selected by 85% and affordability of the test was selected by 61%. Hearing positive things from those who have been screened was selected by 28%, receiving recommendation from friend or relative was selected by 21%, and knowledge that the test can increase survival was selected by 19%.

Barriers

We asked the participants to select up to three of the factors that deter or discourage them from getting colorectal cancer screening and to indicate what they considered to be the single most important factor. When we tabulated only this single most important factor, lack of health insurance (41%) and inability to afford testing (11%) were most often selected. When we considered all three selections, not having insurance was selected by half of our subjects and inability to afford testing was selected by half. Not knowing where to go for testing was selected

by 30%, language barrier was selected by 25%, fear of being a burden to the family if diagnosed with cancer was selected by 21%, and inability to take time off from work was selected by 15% of our respondents.

On separate items, we assessed embarrassment on exposing their buttocks and handling stool for the purpose of testing. Approximately a third (34%) of our sample indicated that they would be embarrassed to show their buttocks to their physician. However of those, 94% said they would comply with testing if recommended by their physician. Ten percent of the respondents reported that they would be embarrassed to handle their own stool for testing purposes. However, of those, all said that they would comply with testing if recommended by their physician.

Intervention Preferences

We asked participants to select up to three methods that they would find acceptable for receiving educational information about colorectal cancer screening and to indicate the method they would most prefer. When we tabulated the number one choice only, an educational seminar (42%) was most preferred, followed by Korean media (30%) and print materials (20%). When we counted all three selections, Korean media was selected by 83%, educational seminar was selected by 61%, and print materials was selected by 30%. On a separate item, we asked whether or not they would attend an educational group seminar if offered. Almost all (94%) responded affirmatively. Of those, 73% preferred a physician as the educator. Physician gender and time of the seminar did not matter for most.

Discussion

Despite our small sample size, this is one of the first studies that examine correlates of colorectal cancer screening in an underserved Korean American population with a large proportion of uninsured respondents. Screening rates in our sample are much lower compared to other studies with Korean Americans where rates of two to three times as high as ours have been reported [13–15,30]. Lower screening rates in our sample are likely due to the fact that our sample was largely uninsured. Approximately 60% of our sample was uninsured, compared to 29 to 35% of the Korean American samples in the studies mentioned above. The higher proportion of uninsured in our sample is likely due to the fact that we recruited from KHEIR, a community based organization whose mission is to help the underserved and underinsured.

From the logistic regression, receiving a physician recommendation was most strongly associated with having received colorectal cancer screening. This is consistent with studies across populations, including Korean Americans [17,25,26,31–36]. As with other studies, [34,36,37] only a small proportion of our sample reported having received a physicians recommendation for colorectal cancer screening, underscoring the need to intervene at the provider level.

Despite the apparent significance of the physician recommendation, our results inform that interventions should not be limited only to physicians. To narrow the focus in this way would neglect the large number of Korean Americans who do not see physicians on a regular basis [38–40]. Community-based strategies are also needed for reaching these underserved Korean Americans. Community venues (i.e., churches, workplaces, adult schools) may represent one approach. In particular, churches may be practical sites for interventions in that a high proportion of Korean Americans attend church on a regular basis with estimates ranging from 67% to over 80% [41,42] Korean American churches may be able to serve as a site for health education and recommendations and may even provide limited health services such as cancer screening to those who otherwise have no access.

In the literature among immigrant populations, the length of US residence is a positive predictor to cancer screening [13–15,43]. From our bivariate analysis, the length of US residence did not increase the likelihood of getting screened until it exceeded 20 years (see Table 1), suggesting a delayed effect of this variable among the uninsured. Thus, intervention efforts, particularly for the underinsured Korean Americans should not be limited to the more recent immigrants.

Among the facilitators, receiving a screening recommendation by a trustworthy physician was most commonly selected by our subjects, further highlighting the importance of developing programs targeting providers. Among the barriers, lack of insurance and inability to afford testing were most commonly selected, confirming results of studies in many populations, including Korean Americans [12,13,25,33,38,44]. Other important barriers were lack of access to health care and language barrier, supporting previous research in diverse populations [12, 13,38,45,46]. In addition, our study brings to light a cultural barrier not commonly mentioned in the literature, the fear of being a burden to the family if diagnosed with cancer. Also commonly selected was the inability to take time off from work, shedding light to why a higher proportion of those who do not work have received screening compared to those who work in the bivariate analysis.

Understandably, due to barriers such as lack of insurance, lack of access, inability to take time off from work for health care, commonly selected intervention preferences in receiving information on colorectal cancer screening were not health center related or doctor-visit related (e.g., receiving messages at the physician's office). Rather, intervention preferences were community or individual oriented, such as educational seminar, media campaigns, and print materials. Thus, as discussed above, educational seminars held at community venues (i.e. churches, workplaces, adult schools) where Korean Americans gather on a regular basis, irrespective of having health insurance or employment status may be a sensible approach. Additionally, because media can reach a large number of Korean Americans in a short amount of time, a media campaign linked to group education interventions or other appropriate community outreach strategies may be effective for this population.

In summary, in our sample of underserved Korean Americans with a large proportion of uninsured respondents, having received a physician recommendation, and having symptoms are significant predictors of colorectal cancer screening. Strongest barriers to screening are inability to afford testing or lack of health insurance, not knowing where to go for testing, language barrier, and fear of being a burden to the family. Strongest facilitators are physician recommendation, affordability of testing, hearing positive things about the test, receiving recommendations from friends and family, and knowing that screening can increase survival. Most respondents preferred educational seminar, Korean media, and print materials to learn about colorectal cancer screening. In light of these findings, in this as in other populations, a multi-faceted approach that includes group educational seminars at community venues, a media campaign, and physician education may be most effective in increasing colorectal cancer screening.

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Table 1
Characteristics and screening rates of survey respondents

Respondent characteristics	Sample	Screened	Not screened	p-value
<i>N</i>	151 (100%)	25 (17%)	126 (83%)	
Gender				
Male	48 (32%)	9 (19%)	39 (81%)	0.621
Female	103 (68%)	16 (16%)	87 (84%)	
Age: mean (CI) ^a	54.2 (52.9, 55.6)	58.7 (55.2, 62.3)	53.3 (51.9, 54.8)	0.0064
Age category				
40–49	49 (32%)	3 (6%)	46 (94%)	0.033
50–59	62 (41%)	12 (19%)	50 (81%)	
60–70	40 (26%)	10 (25%)	30 (75%)	
Number of household members				
1–2	72 (52%)	15 (21%)	57 (79%)	0.094
≥3	67 (48%)	7 (10%)	60 (90%)	
Years of education: mean (CI)	13.8 (13.2, 14.4)	13.0 (11.2, 14.8)	13.9 (13.3, 14.6)	0.3212
Education				
< High school	18 (12%)	4 (22%)	14 (78%)	0.571
High school—some college	69 (46%)	12 (17%)	57 (83%)	
≥ College	62 (42%)	8 (13%)	54 (87%)	
Currently working				
Yes	94 (62%)	11 (12%)	83 (88%)	0.017
No	34 (23%)	10 (29%)	24 (71%)	
Income level				
<\$10,000	24 (16%)	8 (33%)	16 (67%)	0.039
\$10,001–\$30,000	66 (44%)	7 (11%)	59 (89%)	
\$30,001–\$50,000	24 (16%)	4 (17%)	20 (83%)	
\$50,001–\$70,000	18 (12%)	2 (11%)	16 (89%)	
>\$70,000	7 (5%)	3 (43%)	4 (57%)	
Length of US residence: mean (CI)	15.4 (13.8, 17.0)	18.4 (14.3, 22.6)	14.8 (13.0, 16.6)	0.1096
Length of US residence				
≤ 10 years	49 (32%)	5 (10%)	44 (90%)	0.012
11–20 years	60 (40%)	7 (12%)	53 (88%)	
> 20 years	42 (28%)	13 (31%)	29 (69%)	
English fluency				
Does not need translation	17 (11%)	6 (32%)	13 (68%)	0.169
Sometimes needs translation	68 (45%)	10 (15%)	58 (85%)	
Needs translation all the time	64 (42%)	9 (14%)	55 (86%)	
Has some form of health insurance				
Yes	48 (32%)	11 (23%)	37 (77%)	0.016
No	86 (60%)	7 (8%)	79 (92%)	
Has a usual source of care				
Yes	104 (67%)	24 (23%)	80 (77%)	0.003
No	40 (26%)	1 (3%)	39 (98%)	

Respondent characteristics	Sample	Screened	Not screened	<i>p</i> -value
Has a primary care physician				
Yes	96 (64%)	24 (25%)	72 (75%)	0.000
No	49 (32%)	1 (2%)	48 (98%)	
Mode of transportation				
My own car	113 (75%)	13 (12%)	100 (88%)	0.004
Other	36(24%)	12 (32%)	26 (68%)	
Had routine check-ups				
Yes	74 (51%)	19 (26%)	55 (74%)	0.001
No	72 (49%)	4 (6%)	68 (94%)	
Received CRC ^b screening recommendation by physician				
Yes	40 (29%)	18 (45%)	22 (55%)	0.000
No	111 (71%)	7 (6%)	104 (94%)	
Had CRC Symptoms				
Yes	24 (16%)	12 (50%)	12 (50%)	0.000
No	127 (84%)	13 (10%)	114 (90%)	
Perceived susceptibility to CRC				
Yes	59 (40%)	12 (20%)	47 (80%)	0.408
No	36 (24%)	4 (11%)	32 (89%)	
Don't Know	53 (36%)	7 (13%)	44 (87%)	
Know someone who got CRC screening				
Yes	41 (27%)	9 (21%)	32 (79%)	0.588
No	58 (39%)	9 (16%)	49 (84%)	
Don't Know	51 (34%)	7 (14%)	44 (86%)	
Social support for routine check-ups				
Yes	98 (65%)	18 (18%)	80 (82%)	0.278
No	52 (35%)	6 (12%)	46 (86%)	
Knowledge score: mean ($\pm$ 2 SD ^c)	34% (31–37%)	43% (35–51%)	32% (29–35%)	0.0128

^a CI, confidence interval

^b CRC, colorectal cancer

^c SD, standard deviation

Table 2

Screening rates

	40–70 years old	50–70 years old	40–49 years old
<i>N</i>	151	102	49
Had FOBT in the past 1 year	8 (5%)	7 (7%)	1 (2%)
Had Sigmoidoscopy within the past 5 yrs	16 (11%)	15 (15%)	1 (2%)
Had Colonoscopy within the past 5 yrs	12 (8%)	11 (11%)	1 (2%)
Had FOBT within past 1 year or sigmoidoscopy or colonoscopy within past 5 yrs	25 (17%)	22 (22%)	3 (6%)

Table 3

Results of the logistic regression

Variable	OR (95% CI ^a)	P value
Age	1.08 (0.96, 1.21)	0.189
Knowledge	1.00 (0.79, 1.27)	0.975
Length of US residence		
Less than 20 years	1	0.730
20 or more years	1.30 (0.30, 5.70)	
Household size		
1–2	1.29 (0.26, 6.37)	0.438
more than 2	1	
Has a primary care physician		
Yes	7.88 (0.87, 71.21)	0.066
No	1	
Mode of transportation		
My own car	0.52 (0.11, 2.52)	0.415
Other	1	
Has routine check-ups		
Yes	2.33 (0.50, 10.90)	0.282
No	1	
Received CRC recommendation by a physician		
Yes	4.22 (1.02, 17.39)	0.046
No	1	
Had CRC symptoms		
Yes	4.41 (0.95, 20.40)	0.058
No	1	

^aCI = Confidence interval