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IMPROVING KNOWLEDGE AND SCREENING FOR COLORECTAL CANCER AMONG HISPANICS: OVERCOMING BARRIERS THROUGH A *PROMOTORA*-LED HOME-BASED EDUCATIONAL INTERVENTION

Ernesto A. Morales, MPH,

Doctoral Candidate, Department of Health and Behavioral Sciences, University of Colorado Denver, 1201 5th Street, PO Box 173364, Denver, Colorado 80217-3354, 303-556-6796 (Phone), 575-571-7749 (Cell), 303-556-8801 (Fax), ERNESTO.MORALEZ@UCDENVER.EDU

Satya P. Rao, PhD, MCHES,

Associate Professor, Department of Health Science, New Mexico State University, 3 HLS, P.O. Box 30001, Las Cruces, NM 88001-8003, sakrishn@nmsu.edu, 575-635-6265 (Phone)

Jennifer C. Livaudais, MPH, PhD, and

postdoctoral fellow at the Department of Health Evidence and Policy, Mount Sinai School of Medicine, New York, NY, Jennifer.livaudais@mssm.edu

Beti Thompson, PhD

member of the Fred Hutchinson Cancer Research Center, 1100 Fairview Avenue, Seattle, WA 98109, bthompso@fhcrc.org, 206-667-4673 (Phone)

Abstract

Nearly 67% of Hispanics ages 50 and older report that they have never had a screening colonoscopy. Barriers to screening include cost, lack of health insurance, anticipation of pain, fear, lack of awareness, and embarrassment, significantly more problematic among those Hispanics who are poor and lived in underserved rural and border communities. This study addressed barriers using *promotoras* and a home-based educational intervention to improve knowledge of and screening for colorectal cancer among Hispanics in Yakima Valley, Washington. Study participants completed pre and post surveys on general cancer knowledge and knowledge specific to colorectal cancer and screening practices and attended a *promotora* led home-based educational intervention consisting of home-health parties. Results indicated increase in knowledge of and participation in screening for colorectal cancer. *Promotora* facilitated home-based interventions offer ways to reach Hispanics in rural and other underserved communities to reduce barriers and improve access to cancer screening.

Keywords

Hispanics; barriers; colorectal cancer; *promotora*; home-based; education

The American Cancer Society (ACS) estimated that in 2008, over 148,000 people were diagnosed with colorectal cancer (CRC) and almost 50,000 people died from it.¹ The U.S Preventive Services Task Force (USPSTF) currently recommends all individuals ages 50–75 receive annual screening for CRC including a colonoscopy every 10 years.² The USPSTF

specifically recommends annual fecal occult blood testing (FOBT) and colonoscopy or flexible sigmoidoscopy at longer intervals to reduce CRC mortality.² Health education strategies and interventions promoting adherence to these guidelines are imperative given that 5-year relative survival rate for CRC at a localized stage is 91%, compared to 11% for those individuals diagnosed at a later stage.³

Between 2002 and 2006, CRC was the second most commonly diagnosed cancer in both Hispanic women and men. During this period, the average age-adjusted incidence of CRC for Hispanic women was 35.1/100,000 and 50.0/100,000 for Hispanic men. Additionally, CRC is the third leading cause of cancer death among Hispanic women (10.7/100,000) and the second leading cause of cancer death among Hispanic men (16.1/100,000).³ Hispanics are more likely than non-Hispanic whites to be diagnosed with advanced stage CRC and have a lower probability of survival after diagnosis.³

The burden of CRC in the United States has heightened in recent years. Particularly among lower socio-economic groups, the risk of CRC increases with dietary and lifestyle changes that occur with American cultural adaptation.⁴ According to the Agency for Healthcare Research and Quality (AHRQ), 67% of Hispanics age 50 and older report that they have never had a screening colonoscopy compared to 47.1% of non-Hispanic whites.⁵ Hispanics in the U.S. also have the lowest rates of FOBT exams, and combined endoscopy/FOBT when compared to non-Hispanic Whites and African Americans.³ ACS reported that less than 30% of Hispanics are in compliance for FOBT exams, far below the Healthy People 2010 goal of 50%. Consequently, Hispanics are more likely to have larger colorectal tumors and more advanced-stage disease at diagnosis.⁶

High costs of screening procedures, anticipation of pain, embarrassment, fear, lack of awareness, and lack of encouragement or information from health care providers have been cited as barriers to CRC screening across racial/ethnic groups.⁷⁻⁹ Cancer screening recommendations and scheduling of procedures are often dependent on physicians, putting those without the financial means or health insurance or who do not visit a physician regularly, at high risk of late-stage cancer diagnosis. It is estimated that among adults age 50–64 years, 77.1% of those who are uninsured have never had a screening colonoscopy compared to 54.1% with private health insurance and 60.6% with public insurance.¹⁰

The problem of non-compliance with CRC screening guidelines is critical among Hispanics. According to the U.S. Census Bureau, by the year 2040 there will be 87.6 million Hispanics living in the United States comprising over 22% of the population.¹¹ Poor health outcomes are often common among Hispanic populations in the U.S, deriving from linguistic and cultural barriers, limited access to preventive care, and lack of health insurance.⁹ In addition, many Hispanics are economically disadvantaged with an estimated 23.2% living below poverty in 2006 and approximately 31% without health insurance of any kind.¹¹ Current research continues to support evidence of barriers to healthcare and low levels of health literacy among Hispanics. Combined with high rates of population growth, the need for translational health education, promotion, and prevention research to health outcomes among Hispanics is imperative. The high rate of late-stage CRC diagnosed among Hispanics in the U.S. represents a significant public health problem that warrants attention from public health and other healthcare professionals. Given that late-stage CRCs have a survival rate of 10%, improvements in and compliance to screening practices to detect early stage cancers among this group are warranted. In addition, increased efforts to reach out to underserved and poor Hispanic communities are particularly important in states with large numbers of Hispanics, many of whom are involved in long hours of agricultural and other manual labor-based work that limits their access and availability of health information,

prevention, and screening activities, and to meaningful and tangible social support networks.^{2, 6}

Existing literature and the U.S. Task Force on Community Preventive Services have identified gaps in community-based strategies to overcome barriers and increase screening for CRC. The Task Force found inconsistent findings for several interventions including the use of client incentives, mass media campaigns, and reducing client out-of-pocket costs aimed at improving CRC screening. Further, there exists insufficient evidence of the effectiveness of group education strategies as defined by the task force, in increasing screening for CRC.¹²

To help address some of the above mentioned gaps in the current CRC screening literature specifically among Hispanic populations, and to provide evidence of the effectiveness of group education interventions for CRC screening, we implemented a home-based group educational intervention among Hispanic men and women in the Lower Yakima Valley of Washington State, led by trained bilingual, lay health promoters from the community called *promotoras* to improve general cancer knowledge and awareness of screening procedures and increase participation in CRC screening. The use of *promotoras* was intended to improve and expand access and availability of information and services to the underserved as well as to provide support, comfort, and a cultural context to discuss health issues such as colorectal health among people who speak and understand the same language and recognize the cultural implications for such discourse. The study protocol and goals were guided by community organization and community building and community health worker models to develop the group educational intervention and to encourage underserved Hispanic participants to engage in colorectal cancer screening.¹³ Implicit in the above *promotora*-led educational intervention was collaboration through partnerships of academic, clinical, and community members' emerged collective aims, shared decision-making, and development of educational intervention materials. In fact existing literature suggests that *promotoras* can serve as knowledgeable resources, effective health promoters, and as liaisons among various constituencies, providers, and community residents to help with shared responsibilities, establish valued public health outcomes, and encourage retention and sustained participation in health interventions.¹³⁻¹⁵

Methods

The study was conducted in the Lower Yakima Valley of Washington State, a farming community in which approximately half of the residents identify themselves as Hispanics.¹⁶ The Valley reports low rates for employment of Hispanics over the age of 16, with 30% speaking exclusively Spanish in the home, and with 43% in 2000 reporting being born outside the U.S.^{16, 17} As 93% of Hispanics living in Yakima Valley are of Mexican origin, the term "Hispanic" is used throughout the article to refer to those of Mexican heritage.¹⁷ Individuals of Mexican descent continue to migrate to the Valley in search of jobs in agriculture and other low-skill arenas and to join family and friends already living in the region. Therefore, based on the demographic characteristics, the Valley was an ideal setting for a *promotora*-led intervention.

Study procedures

As respected and recognizable members of the Valley *promotoras* helped recruit community residents at migrant worker community meetings, at community faith-based organizations, and at other community events to participate in the CRC prevention home health parties (HHPs). Community residents interested in hosting HHPs were recruited first, gave informed consent, and then assisted with further recruitment of other local residents including friends and family members to participate in the intervention. Any interested

community resident was eligible to host a HHP at his/her home. Residents attending the HHPs and interested in the study signed an informed consent and agreed to complete surveys at both baseline and after approximately six months following the HHPs. The HHPs included residents who signed and did not sign the informed consent forms – those who did not sign the forms were not asked to complete the surveys. Following this, *Promotoras* facilitated open discussions, informed participants about general cancer topics and CRC screening procedures, and provided written information about CRC. At 6-months, follow up telephone surveys were conducted either in Spanish or English by trained, bilingual staff residing in Yakima Valley to assess HHP participants general cancer knowledge, beliefs, screening practices, and their intentions after the intervention. *Promotoras* conducted follow-up surveys with those participants unable to complete them by telephone.

A HHP is a guided group discussion among 3–7 people held in the homes of consenting community members designed as an informal gathering of recruited community residents, family members, neighbors, and friends to learn about various health topics from trained bilingual *promotoras*. HHPs are organized in a way for participants to feel comfortable about health topics that otherwise could be difficult to discuss with friends, family members, and health providers. Trained *promotoras* lead the discussions and informed participants about the specific topic. The *promotoras* were established community members in the Lower Yakima Valley trained in general health education and in CRC education specifically by bilingual Fred Hutchinson Cancer Research staff located in Sunnyside, Washington. The goal of the CRC HHPs was to encourage participants to learn about colorectal cancer, screening methods, and prevention. The HHPs included administration of a baseline survey, use of flip charts on the cancer topic, visual displays, including simulated colon segments, and the distribution of a resource guide with information on where to get screened locally. The sessions addressed the following topic areas: What is cancer? What is CRC? Who is at risk? How can the risk of cancer be reduced? What is a fecal occult blood test? Sigmoidoscopy? Colonoscopy? What types of treatments are available for CRC? Specifically the cancer education portion of the HHP sessions addressed CRC, risks for the disease, and prevention strategies. The CRC screening section addressed the various methods of screening such as FOBT, sigmoidoscopy and colonoscopy, and how each screening method is conducted. Finally, the HHP sessions addressed the different treatments for CRC (i.e. radiation and chemotherapy). Members of the local health offices assisted in the development of the presentation and written materials to establish consistent and appropriate content, language, and literacy level. The site supervisor from the program office in Sunnyside, Washington attended a random sample of HHPs to ensure consistency in implementation. The presentations were followed by discussions giving participants an opportunity to ask questions and/or share comments and concerns. A resource guide with information about free or low cost local CRC screening locations was distributed to all participants. Additionally, *promotoras* assisted interested participants in scheduling CRC screening appointments.

Study sample

A total of 252 community residents attended at least one of the CRC HHPs held between June 2006 and end of 2007. Although not the intended audience, community members younger than 50 years were able to attend the HHP with their families and friends in an effort to encourage learning about CRC. Of the participants in the CRC HHPs, 70 were between the ages of 50 and 79, age-eligible to receive colon cancer screening and therefore the target audience for the *promotora* led group CRC educational intervention. Of those, 65 participants completed the baseline surveys while 63 of them completed the follow-up surveys approximately 6 months after attending a HHP while the other two participants

could not be contacted. Of the 63 who completed follow-up surveys, 2 were excluded from the analysis because of incomplete information, yielding a final study sample size of 61.

Surveys

The baseline survey was used to assess participants' general cancer and colorectal cancer-specific knowledge, previous screening practices, and demographic characteristics. The survey also asked participants about their intentions to be screened for CRC in the future. Follow-up surveys asked participants similar questions about general cancer knowledge, and their intentions to be screened. A comparison of those responses asked both at baseline and follow-up (approximately 6 months after baseline) assessed the impact of the *promotora*-led HHP intervention on general cancer and CRC knowledge, CRC screening practices, and intentions to be screened. At the end of the follow-up survey, participants were asked to evaluate the CRC intervention.

Data analysis

Descriptive statistics were used to outline the demographic characteristics of the study participants at baseline, as well as their general cancer beliefs, colorectal cancer screening awareness and screening practices at both baseline and follow-up (6 months post-intervention). McNemar's test for marginal homogeneity was used to assess significant differences ($\alpha = 0.05$) between pre- and post-intervention in terms of the proportion of participants who agreed with certain general cancer beliefs and in the proportion of who were aware of and engaged in colorectal cancer screening practices (FOBT and sigmoid-/colonoscopy).

Results

Demographic Characteristics

A total of 61 participants (men and women) between the ages of 50 and 79 participated in the colorectal cancer HHPs and completed both baseline and follow-up surveys six months after the intervention. The majority of participants (67%) were between the ages of 50 and 59, and the majority (72%) were also female (Table 1). Only 21% of the participants had completed 9th grade or higher while 26% had no health insurance.

Changes in General Cancer Knowledge

There was a significant decrease from baseline to follow-up in the proportion of men and women agreeing with the statement "there is nothing that can be done to prevent cancer". At baseline, 47% of men and women agreed with this statement, while at follow-up only 18% agreed. However, no significant change was observed with respect to the belief that "a tumor is always cancerous". Similarly, no significant change was observed with respect to the belief that "finding cancer early helps you survive longer" although nearly all participants agreed with this statement at baseline (98% at baseline vs. 100% at follow-up) (Table 2).

Changes in Screening Awareness and Practices

There was a significant increase from baseline to follow-up in the proportion of men and women who reported that they had ever heard of FOBT. At baseline, only 48% reported ever having heard of FOBT while 6 months after the intervention, 75% reported ever having heard of this screening test. Similarly, there was a significant increase in the proportion of participants who reported ever having FOBT (31% at baseline vs. 41% at follow-up, $p = 0.014$). Further, there was a significant increase in the proportion of men and women who reported that they had ever heard of sigmoidoscopy or colonoscopy (Table 3). At baseline,

only 58% reported ever having heard of one or both of these screening tests compared to 87% of participants 6 months after the intervention. There was also a significant increase in the proportion of participants who reported ever having a sigmoidoscopy or colonoscopy (30% at baseline vs. 40% at follow-up, $p = 0.014$).

Discussion

In this study, Hispanic residents from the Lower Yakima Valley of Washington State participated in a community-based CRC intervention. Specifically, a health education intervention was brought into the home by *promotoras*, and supported by the community. This intervention yielded positive changes in colorectal cancer knowledge, awareness of colorectal cancer screening options and utilization of screening. The results of this study contribute to existing research on Hispanic health issues, add to the literature on group educational and CRC screening interventions, and further promote the use of *promotoras*, utilizing their cultural knowledge and awareness to increase reach, improve adoption, and ensure appropriate implementation of interventions targeting health issues that impact Hispanics but are often not talked about or adequately addressed in families and among friends.

Ultimately, the effectiveness of health promotion and prevention interventions in Hispanic communities will be based upon research and understanding of barriers and prevailing beliefs about various existing health conditions in these communities. Understanding the barriers to screening as well as beliefs and attitudes about susceptibility and prevention of colorectal cancer has the potential to profoundly reduce the high rates of late-stage carcinoma diagnosis prevalent in Hispanics. The authors support a dialogical approach to better understanding community beliefs and attitudes about cancer and cancer screening practices, presented here in HHPs.

The results of this study represent an effort to contribute to the existing body of research on Hispanic health issues. Concurrently, this study aimed to document knowledge and screening acceptance among Hispanics in the Yakima Valley, Washington regarding CRC and its prevention. This study addressed several aspects of concern from public health professionals about the low screening rates of Hispanics. In one particular study, the top four barriers to colorectal cancer screening were determined. The most frequently cited barrier was lack of knowledge and awareness of colorectal cancer.¹⁸ The education component of the HHP was to increase the knowledge of CRC, eliminate any misconceptions about tumors, and cancer prevention, and more importantly emphasize the importance of screening to prevent cancer from reaching a late stage diagnosis and the relation of compliant screening practices and quality of life.

Increasing public awareness about the prevention of CRC is beneficial to public health, especially among underserved populations that are documented to have less access to care, less health insurance coverage, and higher rates of risk. Because the survival rate between early and late-stage diagnosis is so drastic, public health campaigns to increase awareness and compliance can prove to be advantageous to the community and successful in combating years of potential life lost. Additionally, public health professionals must integrate the local community partners and community health workers to help implement programs and interventions to expand access and availability to underserved and poor communities, create sustainment, and direct their maintenance.

Limitations of the study included lack of a control group for comparison purposes. However, the pre- post-test comparison indicates significant changes in screening behavior. It is unlikely that those differences were due to another intervention or activity that occurred

simultaneously. Another limitation was a lack of resources to conduct medical record abstraction - meaning outcomes were calculated using self reported data. Although some studies have detected discrepancies between self-reports and medical records, others have noted that self-reports are fairly accurate.¹⁹

Our study has several strengths. The intervention attempted to address several aspects of concern about the low screening rates of Hispanics. The purpose of the group educational component of the HHP was to increase knowledge about CRC, eliminate any misconceptions about tumors, and cancer prevention, and more importantly emphasize the importance of screening to prevent cancer from reaching a late stage. The HHP addressed multiple barriers, first by offering the intervention in both Spanish and English, and including sections on insurance status and identifying insurance programs that could be utilized by the participants and concentrating on programs that emphasize CRC screening.

As demonstrated by the success of the intervention, a major strength was the use of *promotoras* to develop and facilitate the intervention along with disseminating information on health resources, a model that holds great promise for Hispanic populations.^{20–22} For Hispanic populations residing in rural areas, Spanish speaking *promotoras* where the dominant language is Spanish, can address linguistic barriers.²³ *Promotoras* can also utilize cultural traditions that often do not include certain modern medical practices, educate underserved and poor communities about access to care and prevention, and fill the gap where health education and health promotion are scarce.²²

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Table 1Baseline Demographic Characteristics of Colorectal Cancer Home Health Party Participants (ages 50–79) ^a

	Total (n=61) n (%)
Age (in years) (mean (sd))	57.9 (7.0)
Age group	
50–59	41 (67.2)
60–69	15 (24.6)
70+	5 (8.2)
Gender	
Female	44 (72.1)
Education	
8 th grade or less	48 (78.7)
9 th through 12 th grade	3 (4.9)
More than high school	10 (16.4)
Health insurance status	
Private	8 (13.1)
Basic Health Care Plan	15 (24.6)
Medicare	7 (11.5)
Medicaid/Coupons	13 (21.3)
No insurance	16 (26.2)
Other	2 (3.3)

^aPercentages based on non-missing values

Table 2Comparison of Baseline and Follow-up: General Beliefs about Cancer (n=61) ^a

	Baseline n (%)	Follow-up ^b n (%)	P- value*
A tumor is always cancerous	15 (25.0)	11 (18.3)	0.317
There is nothing that can be done to prevent cancer	28 (46.7)	11 (18.3)	0.003
Finding cancer early helps you survive longer	59 (98.3)	60 (100.0)	0.317

^aPercentages based on non-missing values* McNemar's test for marginal homogeneity (significance level $\alpha = 0.05$)^bFollow-up surveys completed approximately six months after intervention

