



An examination of early colorectal cancer screening guidelines for African Americans:
Hints from the HINTS data

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Abstract

Background: Despite the overall gains in reducing colorectal cancer (CRC) deaths due to the increase in screening, minority racial/ethnic groups who have disparately higher rates of death compared to Whites, also have disproportionately lower screening rates. Patient-provider communication about screening has a strong influence on the uptake of screening. In much the same way that gradual impact was made after the 1996 implementation of guidelines recommending screening starting at age 50 for those at average risk, it may be expected that the American College of Gastroenterology (ACG) guidelines suggesting screening start at 45 for Blacks combined with a recent trend toward increasing incidence of cancer in persons below the age of 50 might influence practitioners to offer screening with greater frequency to those younger minority groups. **Methods:** This study examines HINTS Cycle 4 data to examine the nationally representative rates at which providers offer patients the option to be screened for CRC, with emphasis on Blacks ages 45-49. We looked for a trend in these rates over time, compared the pooled proportion estimates across racial/ethnic groups aged 45-49, and compared the proportion of Black individuals in this age group to those between ages 50 and 75 who had been told they could choose to have a CRC screening. **Results:** Approximately 27.14% of Black individuals aged 45-49 had been offered the option of CRC screening by a healthcare provider compared to 32.57% of White individuals of the same age group and 43.53% of Black individuals age 50-75. **Discussion:** There is not yet any evidence of an increase in adherence to the ACG guidelines for the Black population aged 45-49 and there remains a significant racial disparity in discussion of the CRC screening option. Earlier information regarding the option to be screened may have the potential to reduce disparities CRC screening and mortality, as well as potentially halt a disturbing trend toward early cancers.

Keywords

colorectal cancer; screening guidelines; patient-provider communication



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ABSTRACT

Background: Despite the overall gains in reducing colorectal cancer (CRC) deaths due to the increase in screening, minority racial/ethnic groups who have disparately higher rates of death compared to Whites, also have disproportionately lower screening rates. Patient-provider communication about screening has a strong influence on the uptake of screening. In much the same way that gradual impact was made after the 1996 implementation of guidelines recommending screening starting at age 50 for those at average risk, it may be expected that the American College of Gastroenterology (ACG) guidelines suggesting screening start at 45 for Blacks combined with a recent trend toward increasing incidence of cancer in persons below the age of 50 might influence practitioners to offer screening with greater frequency to those younger minority groups. **Methods:** This study examines HINTS Cycle 4 data to examine the nationally representative rates at which providers offer patients the option to be screened for CRC, with emphasis on Blacks ages 45-49. We looked for a trend in these rates over time, compared the pooled proportion estimates across racial/ethnic groups aged 45-49, and compared the proportion of Black individuals in this age group to those between ages 50 and 75 who had been told they could choose to have a CRC screening. **Results:** Approximately 27.14% of Black individuals aged 45-49 had been offered the option of CRC screening by a healthcare provider compared to 32.57% of White individuals of the same age group and 43.53% of Black individuals age 50-75. **Discussion:** There is not yet any evidence of an increase in adherence to the ACG guidelines for the Black population aged 45-49 and there remains a significant racial disparity in discussion of the CRC screening option. Earlier information regarding the option to be screened may have the potential to reduce disparities CRC screening and mortality, as well as potentially halt a disturbing trend toward early cancers.

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INTRODUCTION

Colorectal cancer (CRC) is the third leading cause of cancer death in the United States (American Cancer Society [ACS], 2015). In 2014, an estimated 136,830 people in the United States were diagnosed and 50,310 people died from CRC (ACS, 2015). The rates of CRC

incidence and mortality among African American men and women are highest compared to other racial/ethnic groups in the United States (Agrawal, et al., 2005). Incidence rates among Blacks are 25% higher and mortality rates are about 50% higher than those in Whites (ACS, 2015).

The *2010 Annual Report to the Nation on Cancer* documented a steady decline in the incidence of CRC, largely attributable to CRC screening recommended for adults 50 and older (Edwards, et al., 2010). The *Healthy People 2020* objective is to increase the proportion of adults who receive a CRC screening based on the most recent guidelines to 70.5% (U.S. Department of Health and Human Services, 2011). However, it is estimated that only 59% of the US population aged 50 and older is current for recommended testing (ACS, 2014). The rates of screening are also lower among racial/ethnic minorities, and among persons of lower income, who have no insurance, and who have less education (Rim, Joseph, Steele, Thompson, & Seeff, 2011). Liss and Baker (2013) reported analyses of BRFSS data that indicated self-reported CRC screening among Whites at 62.0% followed by Blacks at 59.0%. These data suggest that although adherence to recommended screening may be closing the gap in screening between Blacks and Whites aged 50 to 75, disparities in CRC screening and mortality persists and there is still work to do.

In contrast to the overall trend toward declining incidence, a trend of increased CRC incidence has been noted among adults younger than 50 years for whom average-risk screening is not routine (Edwards, et al., 2010). The trend toward advanced-stage CRCs among those under the recommended screening age suggests a potential opportunity for increased clinical vigilance (You, Xing, Feig, Chang, & Cormier, 2012). In the first update of their guidelines since 2000, in 2009 the American College of Gastroenterology (ACG) recommended initiation of CRC prevention screening at age 45 in African American men and women, with colonoscopy as the preferred method (Rex, et al., 2009).

Barriers to screening identified by Ward, et al. (2008) can be grouped into three categories: patient factors (e.g. lack of knowledge), physician factors (e.g. physician recommendation) and system factors (e.g. lack of coverage). The focus of this study is physician recommendation, which has been shown to be one of the strongest independent predictors of a patient's decision to have a screening performed (Coleman Wallace, Baltrus, Wallace, Blumenthal, & Rust, 2013). In addition to trust, physician-patient communication has been shown to be critical in the screening decision for African Americans (Ward, et al., 2008). It is therefore important to evaluate whether or not physicians are discussing the option to be screened with their patients in accordance with these 2009 guidelines.

Adherence to CRC screening recommendations among physicians has previously been studied by Klabunde, et al. (2003) and Yabroff, et al. (2010) among others. In these studies, physician surveys were used to determine the frequency of adherence to CRC screening recommendations. Klabunde, et al. (2003) found that while physicians were generally aware of CRC screening recommendations for individuals over the age of 50, there were knowledge gaps in the appropriate timing and frequency of CRC screening. Yabroff, et al. (2010) found that only about 19% of physicians accurately applied CRC screening guidelines when recommending screening. Further, national screening guidelines have shown to be weak motivators of physician practices in the past (Cabana, et al., 1999). More careful evaluation of physician adherence to updated screening guidelines is needed, in light of the persistent CRC disparities among African Americans and the trend toward CRC in those below the previously recommended age.

METHODS

The goal of this research was to examine physicians' CRC screening recommendations to African Americans at the recommended ages for screening. Preliminary analysis examined whether individuals were offered the option to be screened for CRC by a doctor. We hypothesized that following the 2009 guidelines there has been an increase in the proportion of African Americans age 45 to 49 who report being given this option and that the disparity between Whites and Blacks in this area is being reduced. For this analysis, we used the Health Information National Trends Survey (HINTS). HINTS is a nationally representative survey which has been administered by the National Cancer Institute since 2003 (Westat, 2013). The HINTS survey is designed to identify changing communications trends and practices, including patient-provider communication. HINTS data is collected from adult (18 years old and above) men and women living in the United States and its territories and includes a weighting mechanism to be nationally representative of the U.S. population as a whole. This analysis included respondents from HINTS 4 Cycle 1 (2011), HINTS 4 Cycle 2 (2012), and HINTS 4 Cycle 3 (2013) which represent the only HINTS data collection since the 2009 recommendation. Previous research with an earlier cycle of HINTS by Laiyemo, et al. (2014) found that provider discussion of options and specific screening test recommendations improved compliance with CRC screening guidelines. However, this study solely examines the trend of doctor recommendation in the current cycle.

Variables were selected from the HINTS datasets to evaluate racial differences in whether or not doctors were discussing the option to be screened in accordance with the 2009 ACG guidelines. Respondents indicated whether they were Hispanic on the ethnicity item and were asked to select one or more categories on the race item. Using this information, participants were categorized as non-Hispanic White, non-Hispanic Black, and Hispanic. Small sample sizes of other races in the HINTS data sets led to inconsistent estimates even after weighting. As a result, the HINTS ethnicity categories of American Indian/Alaskan natives, Asian, Native Hawaiian or Pacific Islander, and Multiple Races were not included in this analysis. Survey participants were also stratified into 5-year age categories with ages 45-49 being the primary group of interest. To examine the rates of adoption of the ACG recommendations, we used the HINTS question asking whether or not respondents had ever been told by their doctor that they could choose to have a CRC screening. To account for the multi-stage sampling design of HINTS, the Jackknife Variance Estimation technique was used for generating replicate sampling weights to calculate population estimates for the United States (Calo, 2014). Using the weighted survey data, we calculated the proportion of individuals between the ages of 45 and 49 in each racial/ethnic group who had been given the option for CRC screening in each HINTS cycle. We then looked for a trend in these rates, compared the pooled proportion estimates across racial/ethnic groups, and compared the proportion of Black individuals in this age group to those between ages 50 and 75 who had been told they could choose to have a CRC screening.

RESULTS

Table 1 shows the estimated number and proportion of individuals aged 45 to 49 who had been informed of their CRC screening options for the three cycles of HINTS collection. These cycles represent separate cross-sectional estimations of the nationwide proportion of individuals of each race who been told they could have a CRC screening. We hypothesized that as the ACG guidelines became more widespread, the proportion of Blacks in this age group who had been

told would increase over time. The proportion of White individuals who had been told by their doctor they could have a screening did, in fact, steadily increase over the three cycles of HINTS data collection. However, results for Black/African-Americans and Hispanics were less consistent. It is noteworthy that while White individuals were the least likely to have been given a screening option in Cycle 1, they surpassed their Black/African-American counterparts in both Cycles 2 and 3. Further, despite increased risk of CRC in the 45-49 age group, the weighted pooled proportion of Blacks and Hispanics who were informed that they could be screened was significantly less than Whites ($p < .001$) for whom early screening is not recommended under the 2009 guidelines. The 2009 ACG guidelines do not explicitly recommend early screening for Hispanics, but there is a clear disparity in receiving information about screening options for this group as well as for Blacks.

Race/Ethnicity	Cycle 1 (Oct. 2011- Jan. 2012)*	Cycle 2 (Oct. 2012- Jan. 2013)*	Cycle 3 (Sept. 2013- Nov. 2013)*	Pooled Proportion
White	3,387,274 (24.28%)	4,917,421 (34.42%)	4,554,734 (40.50%)	32.57%
Black/African-American	571,163 (31.08%)	731,282 (33.51%)	612,927 (20.17%)	27.14%
Hispanic	945,009 (25.65%)	347,509 (14.97%)	1,075,259 (28.70%)	24.28%

*U.S. population estimates based on weighted HINTS sample data

Traditional CRC screening recommendations suggest regular screening for all individuals over the age of 50. We hypothesized that implementation of the 2009 ACG recommendations would result in equal screening recommendation rates for Blacks age 45-49 and Blacks above the age of 50. However, the proportion of Black individuals aged 50-75 reporting that they had been informed of the option to be screened for CRC was 43.53%, which is significantly higher than the proportion of individuals aged 45-49 (27.14%, $p < .001$). The results suggest that the 2009 guidelines have not yet been equally implemented across all at-risk age groups. Additionally, the proportion of Blacks age 50 and older being told about CRC screening choices was significantly lower than for Whites in the same age range (59.98%, $p < .001$). A significant disparity between Blacks and Whites in receiving information about CRC screening options exists at all age groups above 45. The 2009 ACG guidelines have not yet led to an equality of screening recommendations between Blacks aged 45-49 and those over the age of 50 nor is there currently a discernable trend towards increased screening advisement among Blacks age 45-49. The 2009 guidelines have also not yet alleviated the disparity in screening recommendations between Whites and Blacks.

DISCUSSION

The positive relationship between physician recommendations of CRC screening and patient screening has been clearly demonstrated by several studies. Results of this research suggest that the ACG recommendation of early screening for Blacks may not be effectively

implemented. While these guidelines may only represent one standard for clinical practice, they are the first suggestions to alleviate the growing disparities of early age CRC mortality. As such, they constitute a potential area for improvement in CRC disparities.

This study found that the proportion of Blacks aged 45 to 49 receiving advice about the option for CRC screening was lower than for both Whites of the same age range and Blacks aged 50-75. If ACG recommendations for earlier screening in Blacks were followed, rates of recommendation would be similar across these age groups. Not only is there not currently a trend toward compliance with the 2009 ACG guidelines, racial disparities still exist within our target age group. The 2009 ACG guidelines should be reemphasized among physicians and Black individuals in the target age group. It is important that physicians comply with specialty guidelines if we are to see an increase in CRC screening rates among racial and ethnic minorities. It is not enough that physicians become aware of these guidelines, they must also effectively communicate with their patients. Additionally, there is a large disparity for Hispanics in being told they could choose to have a CRC screening. The diverse CRC outcomes across Hispanic ethnicities suggest a need for reexamination of the CRC screening guidelines for Hispanics as well.

A limitation of this preliminary analysis is that only three HINTS data points were available for analysis of screening recommendations after the release of the 2009 guidelines. Differences in proportion estimates for the three cycles could be due to sampling variation across HINTS collections. Additionally, the time period covered by these collections may not have been long enough to observe actual change in the proportion of individuals being told about CRC screening options. Another limitation is that our analysis is dependent on patient-provided information and could be affected by recall bias or other miscommunications. Due to the increased risk of CRC in our target population, continued monitoring is needed to investigate these trends and to eliminate the disparity in CRC incidence and mortality. This is the first look at doctor-patient interactions following the release of the 2009 ACG guidelines and thereby represents an initial evaluation of the implementation of these guidelines.

CONCLUSION

The evidence suggests that before we can completely understand the patient screening decision process we must first address practitioners' adherence to screening guidelines. As we continue to investigate disparities in CRC among African Americans, it is crucial to examine the full range of factors that influence physicians' recommendations for screening. In addition to focusing on patient and system level factors, studies that inform the development of appropriate educational initiatives and interventions that enhance patient-physician interaction are needed to alleviate disparities.

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