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Racial Disparities Associated With Colon Cancer Screening in a Nationally Representative Sample; A Cross-sectional Study

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Abstract

Colon cancer impacts nearly 2 million individuals in the U.S. each year. Early detection of colon cancer by different means of screening modalities can reduce the risk of mortality. The United States Preventive Services Task Force (USPSTF) recommends routine screening for colon cancer for all adults 50 to 75 years of age. Previous studies have identified older age, male gender, higher education, higher income, marriage, and the presence of chronic diseases to be associated with increased odds of colon cancer screening. In this study we explored the racial differences in colon cancer screening behavior in eligible adults in the United States using a national representative sample and adjusting for potential confounders in a multivariable logistic regression model. We found that racial/ethnic minority status was associated with a lower odds of colon cancer screening (AOR = 0.72; 95% CI 0.65, 0.81). This finding can help bridge the existing gap on this issue and aid in targeting high risk racial groups to improve colon cancer screening practices in the nation.

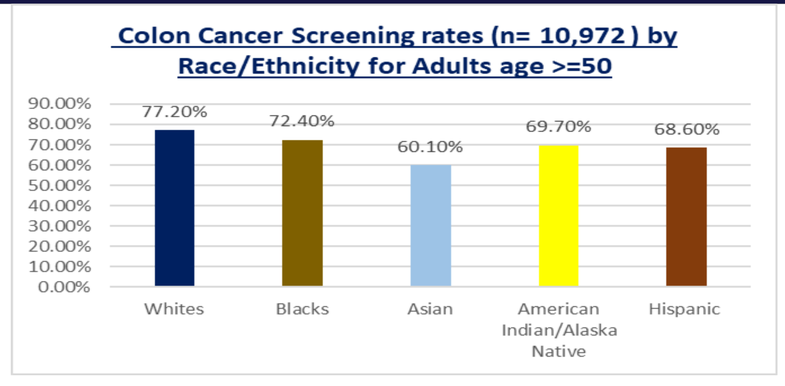
Background

- Colorectal cancer (CRC) is the third most common and the second most lethal cancer in the US. .[1] In 2020 alone, there were 104,610 incident cases of colon cancer and 53,200 CRC-related deaths in the nation.[1]
- The incidence and mortality of CRC are different across different racial groups. Between 2012 and 2016, incidence rates of CRC in Blacks were 20% higher than in Whites. From 2013 through 2017, CRC mortality rates in blacks were 40% higher than those in Whites.[1]
- CRC screening, by leading to early detection and treatment, reduces colon cancer mortality by 32%.[2]
- The United States Preventive Services Task Force (USPSTF) recommends routine screening for colon cancer for all adults 50 to 75 years of age. Colonoscopy, fecal occult blood test, and flexible sigmoidoscopy are some of the screening modalities the task force recommends.[3]
- Several individual-level factors affect the utilization of colon cancer screening modalities. Older age, male gender, marriage, higher education, higher income, smoking history, presence of chronic diseases, family history of CRC have been found to be associated with higher odds of CRC screening.[4]
- There is conflicting evidence in the literature regarding the association between race and CRC screening.[4,5]
- The aim of this study is to help bridge this existing gap on the association between race and CRC screening behavior and aid in identifying high-risk racial groups that could be targeted by future intervention strategies.

Methods

- For this cross-sectional study we used data from the 2019 Behavioral Risk Factor Surveillance System, a nationally representative U.S. telephone-based survey of adults aged 18 years or older.
- We included people between the ages 50 and above into our final sample of 10,972 respondents.
- A multivariable logistic regression analyses were conducted to test the association between race and colon cancer screening while controlling for chronic disease status, alcohol use, smoking, gender, income, education status, and age in our model.
- Chronic disease status was coded as self-reported 2 or more, 1 and 0 chronic disease (referent), which included the summation of heart disease, hypertension, COPD, and diabetes.

Results



Logistic regression analysis with colon cancer screening as outcome (n=10,972)

Variable	AOR, 95% CI
Chronic disease[a]	
≥ 2 chronic	**1.73 (1.53-1.96)***
1 chronic disease	**1.45 (1.31-1.65)***
Low income[b]	**0.64 (0.57-0.70)***
< High school education	**0.71 (0.59-0.84)***
Gender (female)	**1.14 (1.04-1.23)***
Race/ethnic minority	**0.72 (0.58-0.90)***
Age	**0.89 (0.84-0.94)***

a= Chronic disease was self-reported and coded as a three-level variable, which included summation of the following: heart disease, hypertension, COPD, and diabetes.

b= Low income was coded binary, with annual household income <$35,000 *= P< .05

Conclusion and Implications

- Our study showed that after adjusting for gender, age, chronic diseases, income, and education status, racial minorities have lower odds of colon cancer screening.
- To increase the utilization of CRC screening in the united states, preventive practices should focus on increasing awareness on and availability of these screening means to racial minorities in the nation.
- Further research on the the drivers of disparities in CRC screening among the different racial groups will maximize the impacts of these targeted intervention strategies.
- More research is also required to evaluate the racial disparities in screening practices of other cancer types and chronic disease conditions.

References

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