Introduction

• Colorectal Cancer (CRC) has well-established screening guidelines with strong evidence for decreasing incidence and mortality.
• CRC is the 3rd most common cancer and 2nd leading cause of death of overall cancer mortality.
• Updated CRC screening guidelines by the U.S. Preventative Services Task Force (USPSTF): screen all adults aged 45 to 75 years, multiple screening strategies
  • Colonoscopy every 10 years (COL)
  • Fecal occult blood test or FIT annually
  • Stool DNA-FIT every 1-3 years
  • Computed tomography colonography every 5 years

The objective of this study is to compare screening patterns within subgroups of the NHIS screening cohort. We also wanted to explore if participants met USPSTF guidelines for COL or SIG. We used answers from 21,863 respondents aged 40+ out of 31,997 participants from the 2019 NHIS.

Results & Discussion

• We gathered demographic information and CRC screening answers from 21,863 respondents (Table 1). 60.8% reported they had undergone COL or SIG in the past, while 55.7% were shown to have followed COL/SIG guidelines.

• We found significant disparities in CRC screening patterns based on sociodemographic factors, such as race/ethnicity, nativity, education, SES, health insurance, smoking status (Figure 1, Figure 2).

• Concern for increasing incidence in undetected, young-onset cancers before the age of 50 led the USPSTF to expand screening to 45 years of age in 2021.

Table 1. CRC Screening Participant Demographics

<table>
<thead>
<tr>
<th>Sex (N = 21863)</th>
<th>Participants (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>9981 (45.7)</td>
</tr>
<tr>
<td>Female</td>
<td>11992 (54.3)</td>
</tr>
</tbody>
</table>

Nativity (N = 21460)
- Born in U.S. or U.S. Territory: 18265 (85.1)
- Not born in U.S. or U.S. Territory: 3195 (14.9)

Race (N = 21863)
- White only: 15982 (73.1)
- Hispanic only: 2196 (10.4)
- Black / African American only: 2275 (10.4)
- Asian only: 942 (4.3)
- American Indian and Alaska Natives only: 139 (0.6)
- Other single & multiple races: 173 (0.8)

Education (N = 21746)
- College degree: 396 (18.0)
- Some college, no degree: 1398 (64.6)
- High school graduate: 1506 (70.0)
- No school / Incomplete high school: 2143 (9.9)

Ratio of family income to poverty threshold (N = 21863)
- <1.00: 2190 (10.0)
- 1.00-1.99: 3847 (17.6)
- 2.00-3.99: 6369 (29.1)
- >=4.00: 9457 (43.3)

Smoking status (N = 21472)
- Never Smoker: 11978 (55.8)
- Smoker: 9494 (44.2)

Health insurance status (N = 21822)
- Private or Military: 13223 (60.6)
- Any Public: 7268 (33.3)
- No health insurance: 1331 (6.1)

Access to usual place of care (N = 21857)
- Has access: 20620 (94.3)
- Has no access: 1237 (5.7)

Nativity
- Born in the U.S.: 10504 (48.3)
- Not born in the U.S.: 10759 (49.7)

Race/Ethnicity
- White only: 5900 (26.7)
- Hispanic only: 862 (4.0)
- Black / African American only: 1484 (6.8)
- Asian only: 156 (0.7)
- Other single & multiple races: 3195 (14.9)

Education
- No school / Incomplete high school: 10504 (48.3)
- High school graduate: 6369 (29.1)
- Some college, no degree: 396 (18.0)
- College degree: 1398 (64.6)

Age
- <50: 10927 (50.3)
- 50-59: 10920 (50.0)
- >=60: 0 (0.0)

Socioeconomic Status
- SES (1.00-1.99)*: 10759 (49.7)
- SES (2.00-3.99)*: 10759 (49.7)
- SES (>=4.00)*: 10759 (49.7)
- Hispanics: 10759 (49.7)
- Blacks/African Americans*: 10759 (49.7)
- Asians*: 10759 (49.7)
- AIAN only: 10759 (49.7)
- AIAN & any other group: 10759 (49.7)
- Other single & multiple races: 10759 (49.7)
- Not born in the U.S.*: 10759 (49.7)
- Does not have usual place of care*: 10759 (49.7)
- Not born in the U.S.*: 10759 (49.7)
- Health insurance coverage*: 10759 (49.7)
- No health insurance coverage*: 10759 (49.7)
- Smoking Status*:
  - Never Smoker: 10759 (49.7)
  - Smoker: 10759 (49.7)

Methods

• Used the 2019 NHIS and performed descriptive statistics on participant demographics and CRC screening with SIG and COL within the last 10 years

• Utilized bivariate and multivariable logistic regression using IBM SPSS Version 26 to highlight variables that were associated with the primary outcome

Future Directions

• Conduct a prospective study following implementation of 2021 guidelines using future NHIS data
• Further explore why certain populations with high CRC burdens have low screening rates
• Examine if past and current public health interventions have improved screening uptake in certain populations
• Develop new intervention studies to understand patient knowledge and physician-patient communication when discussing CRC screening guidelines

Responsible Conduct of Research

This work did not require IRB approval as 2019 NHIS data are deidentified and publicly sourced. Isabela Bumanlag was supported by a training grant from NIH/NCI (R25CA056452, Shine Chang, Ph.D., Principal Investigator).

Figure 1. Participants who met CRC guidelines by demographics

Figure 2. Forest plot showing odds ratios for likelihood of following screening guidelines among subgroups