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Effect of the Affordable Care Act on Colorectal Cancer Screening Utilization

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BACKGROUND

- Colorectal cancer (CRC) is the 2nd leading cause of cancer deaths affecting both women and men in the United States after lung cancer.[1]
- CRC risk increases significantly after 50 years. Over 90% cases are diagnosed, yet only 53% are currently up-to-date with screening.
- CRC screening prevalence varies across states from 54.1% to 75.2%, for the lowest and highest, respectively. Higher screening rates can reduces illness and death from CRC.
- Cost is a major barrier to accessing screening.[2]
- The Affordable Care Act (ACA), initiated in 2010, recommends screening without copay, reducing cost burden for at-risk population.
- Expanded coverage can increase utilization for the uninsured and under-insured.

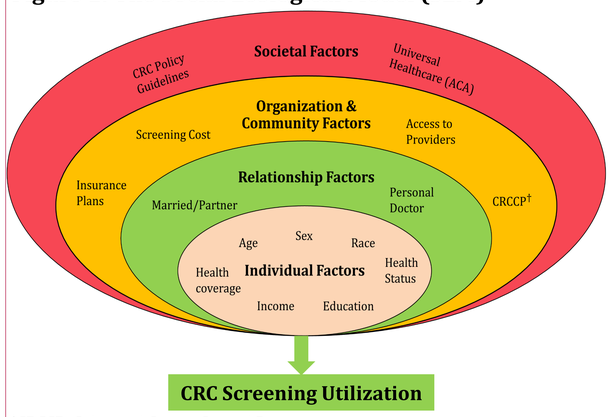
PURPOSE

Evaluate the initial effect of the Affordable Care Act (ACA) on colorectal cancer (CRC) screening services uptake in 50-75 year-old adults.

METHODS

- The study was a retrospective, multi-year, cross-sectional design using 2008-2012 Behavior Risk Factor Surveillance System (BRFSS) data.
- The sample comprised 657,359 adult respondents between 50-75 years from the 50 states and DC.
- The Social Ecological Model (Figure 1) posits that behavior is affected by factors at multiple levels of influence, namely, individual, relationship, organizational, community and societal.[3]

Figure 1: The Social Ecological Model (SEM)



†**CRCCP**: Colorectal Cancer Control Program

- SEM was used to selected variables for analysis.
- The Dependent variable: utilization of CRC screening services on a yes/no scale.
- A subject was considered to have been screened if they answered 'yes' to <u>at least one</u> of two questions regarding their obtaining the service through fecal occult blood testing, sigmoidoscopy or colonoscopy.
- Independent variables included individual, relationship, organizational/community, and societal factors (Figure 1).
- We used logistic regression to estimate ACA impact on CRC screening services utilization.
- All statistical analyses were weighted, based on BRFSS sampling scheme, to obtain national estimates using Stata version 13.
- The study was exempt from IRB review by the authors' institution.

RESULTS

Figure 1: Participant Characteristics

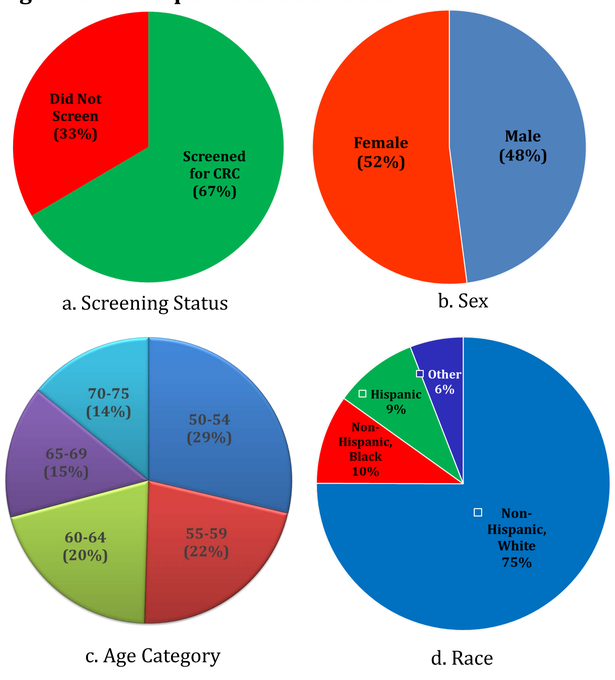


Table1: Participant Characteristics	Population Proportion
Perceived overall health status as good	77.5%
Had at least college education	59.8%
Married or Lives with Partner	68.6%
Have Personal Doctor	90.0%
Have Health Coverage	89.6%
Could not see a doctor due to cost	11.7%
Lives in CRCCP State	56.7%

Figure 2: Screening Status by Income ('000s)

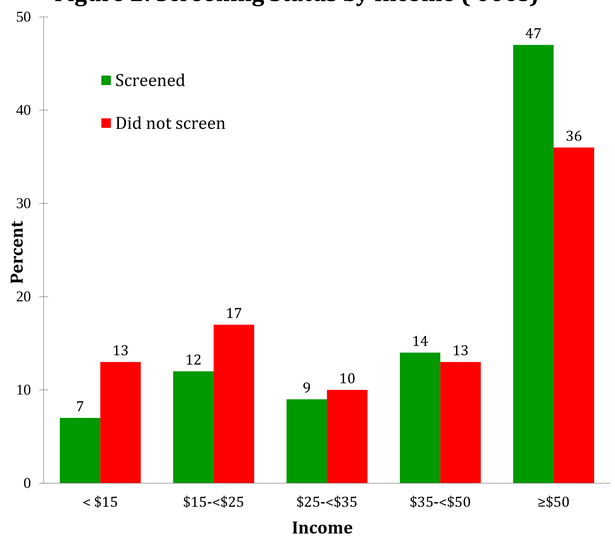


Figure 3: Screening Status by Survey Year

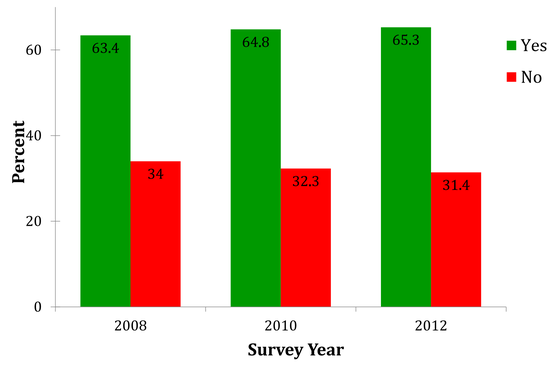


Table 2: Odds Ratio (OR) Estimates for Screening with 95% CI for Weighted Logistic Regression

	Odds Ratio	95% CI
1. Year		
2008	---	---
2010	1.08**	(1.05,1.11)
2012	1.19**	(1.16, 1.23)
2. Individual Factors		
Age:		
50-54	---	---
55-59	2.00**	(1.94, 2.06)
60-64	2.80**	(2.71, 2.89)
65-69	3.40**	(3.28, 3.53)
70-75	3.86**	(3.72, 4.01)
Sex: Male	0.90**	(0.88, 0.92)
Race:		
Non-Hispanic, White	1.22**	(1.16, 1.28)
Non-Hispanic, Black	1.37**	(1.28, 1.46)
Hispanic	---	---
Other	0.94	(0.87, 1.01)
Education:		
Not High Sch. Graduate	---	---
High School Graduate	1.35**	(1.29, 1.41)
Attended College	1.72**	(1.64, 1.80)
College Graduate	2.13**	(2.03, 2.24)
Income:		
Less than $15,000	---	---
$15,000 - < $25,000	1.02	(0.98, 1.06)
$25,000 - < $35,000	1.10**	(1.06, 1.15)
$35,000 - < $50,000	1.22**	(1.18, 1.27)
$50,000 or more	1.44**	(1.39, 1.49)
Overall health status: Good	0.85**	(0.82, 0.87)
Diabetes: Yes	1.11**	(1.07, 1.15)
Obese (BMI ≥30)	1.11**	(1.09, 1.14)
3. Relationship Factors		
Married or living with partner	1.22**	(1.19, 1.25)
Have a personal doctor	3.03**	(2.91, 3.15)
4. Organizational/Community Factors		
Health coverage: Yes	1.90**	(1.81, 1.99)
Could not see doctor: Cost	0.88**	(0.85, 0.92)
CRCCP States: Yes	1.19**	(1.17, 1.22)

**p<.001

FINDINGS

- Descriptive statistics are presented in Table 1, and Figures 1-3.
- Screening likelihood increased by 19% in 2012 (OR=1.19, 95% CI=1.16-1.23) from 2008.
- Strong associations between CRC screening and other factors at multiple levels of influence were observed
- Factors related to cost such as having health coverage, having a personal doctor and inability to see a doctor were significantly associated with CRC screening utilization. Similarly, those with higher income were more likely to be screened.
- Other factors included living with a partner/spouse, graduating from college and increasing age. There marked increase in screening utilization as age increased may be due to eligibility and coverage for senior citizens through Medicare.
- Risk factors were *not being able to see a doctor due to cost, low income and being in the younger age* bracket.
- Males and those who perceived their health status as good were less likely to obtain CRC screening.

POLICY IMPLICATIONS

- The observed increase in uptake of CRC screening services after the initial implementation of ACA may be an indicator of the need to address the prohibitive cost of clinical screening services.
- Because cost-related factors were significantly associated with uptake of CRC screening, full implementation of universal health coverage is likely to improve access and utilization. More attention should focus on enforcing the policy.
- Eliminating copays and deductibles may increase screening rates by removing factors currently hindering utilization. Therefore, ACA can help reduce cost as a major barrier for beneficiaries to increase screening uptake.
- Similarly, having advocacy programs like the Colorectal Cancer Control Program (CRCCP) would help increase utilization by creating awareness.
- These results can also be used by practitioners to implement intervention programs that address associated factors at multiple levels of influence.

LIMITATIONS

- This was secondary data and thus we only used variables that were available.
- The survey questions do not specifically ask whether the test. was for screening or confirmatory, thus, screening estimates may be higher or lower than typical.
- The survey relies on self-reports with no means of verification using medical records.
- Data used in this study was collected before the full implementation of the ACA in 2014.
- Due to the partial implementation of ACA when data was collected, further studies with data from subsequent years are needed to examine the full effects after implementation.

REFERENCES

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