Impact of COVID-19 on Trends and Healthcare Disparities on Utilization of Screening Colonoscopy

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Background

Screening colonoscopy is the cornerstone of colorectal cancer (CRC) prevention.

In March 2020, all elective outpatient procedures were halted by Ohio public health authorities.

In this study, we aimed to study the impact of COVID-19 on trends and disparities in screening colonoscopy utilization.

Methods

All screening colonoscopies at all Ohio facilities of Cleveland Clinic health system in 2019, 2020 and 2021 from July 1st to December 31st in each year.

The timeline of July 1st to December 31st was selected based on lockdown which lasted till the end of June 2020 in Ohio and to compare the factors before, immediately after, and a year after COVID lockdown to understand its long-term impact.

We then calculated rates of screening colonoscopy and factors associated with colonoscopy utilization during the study periods of each year.

Results

Table 1: Demographics, socioeconomic and colonoscopy findings during the study periods.

Factor	2019 (N=7905)	2020 (N=6737)	2021 (N=8674)	p-value
Age in years (mean ± sd)	59.8 ± 8.6	59.6 ± 8.9	58.9 ± 9.3	<0.001
Age>=65	2275 (28.8%)	1871 (27.8%)	2472 (28.5%)	0.38
Sex				0.97
Male	3648 (46.1%)	3107 (46.1%)	4014 (46.3%)	
Female	4257 (53.9%)	3630 (53.9%)	4660 (53.7%)	
Race				<0.001
Caucasians	6004 (76%)	4999 (74.2%)	6672 (76.9%)	
African Americans	1303 (16.5%)	1271 (18.9%)	1381 (15.9%)	
Others	598 (7.6%)	467 (6.9%)	621 (7.2%)	
Insurance type				<0.001
Medicare	1965 (24.9%)	1619 (24%)	1868 (21.5%)	
Medicaid and other public	435 (5.5%)	491 (7.3%)	541 (6.2%)	
Private	4662 (59%)	4061 (60.3%)	5641 (65%)	
No insurance	843 (10.7%)	566 (8.4%)	624 (7.2%)	
Education level (% high school grads in zip code)				<0.001
Q1<88	1905 (22.8%)	1557 (24.1%)	1768 (21.3%)	
Q2 >=88 to <92.5	1815 (24.3%)	1503 (23.3%)	1923 (23.1%)	
Q3 >= 92.5 to <94	1714 (22.9%)	1549 (22.6%)	1942 (23.3%)	
Q4 >= 94	2237 (29.9%)	1935 (30%)	2686 (32.3%)	
Median household income				<0.001
Q1 <43449	1647 (22%)	1544 (23.9%)	1715 (20.6%)	
Q2 >=43449 to <55969	1837 (24.6%)	1532 (23.7%)	1964 (23.6%)	
Q3 >= 55969 to <67917	1889 (25.3%)	1569 (24.3%)	2154 (25.9%)	
Q4 >= 67917	2098 (28.1%)	1809 (28%)	2486 (29.9%)	
Tobacco Use	699 (8.8%)	636 (9.4%)	827 (9.5%)	0.13
Alcohol use	5033 (63.7%)	4310 (64%)	5747 (66.3%)	0.001
Illicit drug use	259 (3.3%)	245 (3.6%)	326 (3.8%)	0.22
Preferred language				0.5
English	7732 (97.8%)	6613 (98.2%)	8489 (97.9%)	
Spanish	83(1%)	60 (0.9%)	81 (0.9%)	
Others	90 (1.1%)	64 (0.9%)	104 (1.2%)	
BMI	29.6 ± 6.4	29.8 ± 6.5	29.7 ± 6.5	0.52
Colonoscopy Findings:				
Number of polyps				<0.001
0	4483 (56.7%)	3770 (56%)	4643 (53.5%)	
1	2456 (31.1%)	2049 (30.4%)	2721 (31.4%)	
>=2	966 (12.2%)	918 (13.6%)	1310 (15.1%)	
Adenoma	1697 (21.5%)	1503 (22.3%)	2059 (23.7%)	0.002
Advanced Adenoma	361 (4.6%)	324 (4.8%)	382 (4.4%)	0.48
CRC	12 (0.2%)	12 (0.2%)	9 (0.1%)	0.45

Patients with private insurance, the highest quartile of median household income, and education had increasing rates of colonoscopy (p< 0.001) in 2020 and 2021. (Table 1)

Patients who had ≥2 polyps and adenomas on screening colonoscopy significantly increased from 2019 to 2021 (p< 0.05).

Fortunately, there was no significant increase noted in rates of advanced adenomas (p=0.48) and colorectal cancer (p=0.45) (Figure 1).

Figures

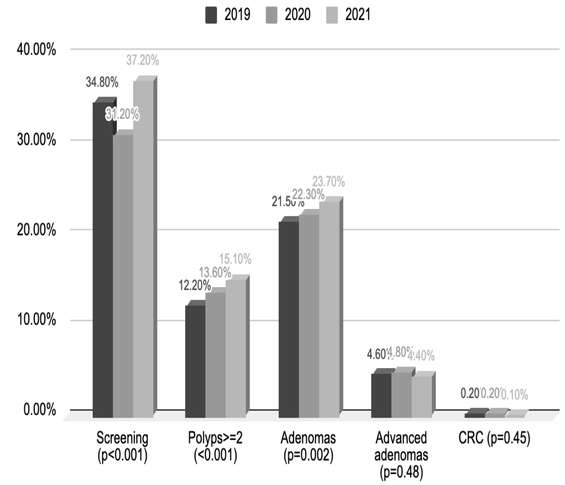

Figure 1: Trends of screening colonoscopy, polyps >=2, adenomas, advanced adenomas, and new diagnosis of CRC in 2019, 2020 and 2021 study period

Conclusion

The pandemic exacerbated preexisting healthcare disparities in colonoscopy utilization which have continued to persist in 2021.

This data will assist current and future efforts to increase the uptake of CRC screening, especially in marginalized populations.