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The Effects of The COVID-19 Pandemic on Primary Prevention



To the Editor:

The COVID-19 pandemic interrupted daily life and directly caused the deaths of millions of people worldwide.¹ Due to delayed and forgone preventative care, it is possible that there could be consequences of the pandemic for years to come.² Furthermore, interruptions to daily life, including stay-at-home orders and the closure of workplaces, social gatherings, and schools could result in negative behavioral habits. Therefore, we sought to characterize the incidence of missed preventative health appointments and changes in behavioral health habits during the COVID-19 pandemic.

This study was approved by the University of Louisville and University of New Hampshire IRBs as exempt and consent was obtained from each respondent prior to starting the survey. There was no financial support for this study.

We distributed an original survey online on Amazon Mturk between January 15–21 and March 7–9, 2021. All U.S.-based adults 18 years of age and older were eligible, the survey was elective, and survey participants were compensated.

Respondents were asked about their healthcare utilization and health behaviors both prior to March 2021 and between March and December 2020. COVID- and non-COVID-related reasons for missed appointments were determined with multiple select questions with free text options. Attention checks were present throughout the survey and respondents could exclude their data from analysis without penalty. Data were analyzed with STATA IC/16.1 (StataCorp LLC, College Station, TX). Frequency data were reported in mean \pm standard deviation.

The responses of 1019 survey participants were used after excluding 12.3% of respondents who failed attention checks or elected to exclude their data due to inattention.

Table 1 details the incidence of missed medical care and reported reasons. Procedural care was missed more frequently than primary care appointments, though a large portion of primary care occurred via telehealth during the pandemic. Almost half of respondents who normally would have sought immediate care did not due to pandemic related reasons, though 30 respondents (14%) were able to utilize telehealth to see their PCP instead. The most cited overall reason for missed care, including those not related to the pandemic, was fear of contracting COVID-19.

Self-reported weight changes, cigarette smoking, and alcohol consumption are reported in **Table 2**. Average BMI increased during the pandemic. Cigarette

smoking increased during the pandemic in the 220 respondents who reported smoking, though the results were not statistically significant. Alcohol consumption (drinks/week) increased significantly. Furthermore, 642 respondents (63%) consumed alcohol during the pandemic compared with 517 (51%) before March 2020.

Previous research indicated that 40% of US adults delayed or avoided urgent or emergency care due to the pandemic,² and our data support these findings. However, our results indicate that telemedicine unexpectedly offset this lack of care, with some respondents able to see their PCP via telehealth rather than go to an urgent care center or emergency room. Furthermore, primary care appointments were not missed as often as we hypothesized, likely due to the utilization of telemedicine. In fact, during the pandemic, almost 40% of patients covered by Medicare and Medicaid received care through telemedicine.³

On the other hand, procedural screenings were frequently missed. Many screenings, specifically colonoscopies and mammograms, were not rescheduled. There has been little study on cancer screenings during the pandemic, but previous studies estimated that over the next decade there would be a 1% increase in deaths from breast and colorectal cancer due to the delay of elective treatments alone.⁴ Without intervention, the lack of screening could compound this increase in mortality due to later stage diagnoses.

Behavioral health habits were worse during the pandemic for all outcomes measured. Self-reported weight increased among most respondents. Our results agree with previous research and suggest that primary prevention efforts need to be refocused on behavior changes, as body mass is correlated with all-cause mortality.^{5,6} Furthermore, respondents reported higher alcohol and tobacco consumption, and many respondents who did not consume alcohol prior to the pandemic started drinking during the pandemic. This is especially concerning as previous research reported a substantial increase in alcohol-related problems during the pandemic.⁷ Since behaviors developed during the pandemic could continue afterwards, a renewed focus on healthy lifestyle habits is necessary.

Because this was a retrospective study of patient reported data, recall and reporting bias are possible. Furthermore, we only examined causes of missed appointments and procedures, and it is likely that fewer appointments and procedures than usual were scheduled during the pandemic and consequently rates of preventative care were even lower than reported. Therefore, physicians and health systems should renew the focus on preventative health and screenings and address

Table 1. Incidence of missed and cancelled appointments between March and December 2020.

	Primary Care	Colonoscopy	Mammogram	Cervical Ca Screening	Preventative Total	ER/Urgent Care
Indicated/Scheduled	497 ¹	23	98	156	774	482
Did not occur (%)	22 (4.4%)	7 (30%)	10 (10%)	24 (15%)	63 (8.1%) ²	220 (46%)
Rescheduled (%)	8 (36%)	3 (43%)	4 (40%)	20 (83%)	35 (56%)	N/A
Fear of Contracting COVID-19	14	7	4	17	42 (67%)	104 (47%)
Loss of Insurance	3	4	2	4	13 (21%)	31 (14%)
Facility Closed due to COVID-19	2	2	4	2	10 (16%)	0
Loss of Income due to COVID-19	2	2	0	2	6 (10%)	18 (8%)
Patient Quarantined	1	2	0	1	4 (6%)	22 (10%)

¹ 166 PCP appointments occurred via telehealth.
² 59 unique respondents missed appointments.

Table 2. Reported body mass, cigarette smoking, and alcohol consumption prior to and during the COVID-19 pandemic.

	Prior to the Pandemic	During the Pandemic	Paired T test
BMI (kg/m ²)	25.9 ± 6.4	26.2 ± 6.4	<i>p</i> = .0026
Cigarettes per day	31.0 ± 31.0	33.5 ± 30.0	<i>p</i> = .33
Alcohol per week	4.5 ± 4.1	5.8 ± 4.0	<i>p</i> < .001

behaviors such as alcohol use, smoking, and diet and exercise to mitigate long-term negative health consequences of the pandemic.

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DECLARATION OF COMPETING INTEREST

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