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## BACKGROUND

- Smoking prevalence and smoking-related health issues are elevated among vulnerable populations, including women with low SES, women of childbearing age, opioid dependent individuals, and people with affective disorders.<sup>1,2</sup>
- Smoking is a risk factor for worse outcomes from COVID-19.<sup>3</sup> Surveys suggest large proportions of tobacco users have modified their cigarette consumption during the pandemic.<sup>4,5</sup> It remains unclear whether and how the pandemic has affected the smoking of individuals most at risk for tobacco-related health disparities.
- This study examined changes in smoking among vulnerable populations during the COVID-19 pandemic. We sought to identify psychosocial risk factors associated with different trajectories of smoking

## METHOD

- Participants of a previous multi-site trial<sup>1</sup> investigating effects of VLNC cigarettes in vulnerable populations of smokers were surveyed between June and November of 2020 about their smoking related behaviors during the ongoing COVID-19 pandemic.
- Participants were asked how many cigarettes they smoked per day currently (During COVID) and during February of 2020 (Pre-COVID)
- Cigarettes per day (CPD) before and during the pandemic were compared by repeated measures ANOVA, controlling for parent study covariates and psychosocial risk factors for smoking.
- A follow-up multiple regression examined association of the same risk factors on change in CPD

## Respondent Demographic and Smoking Characteristics

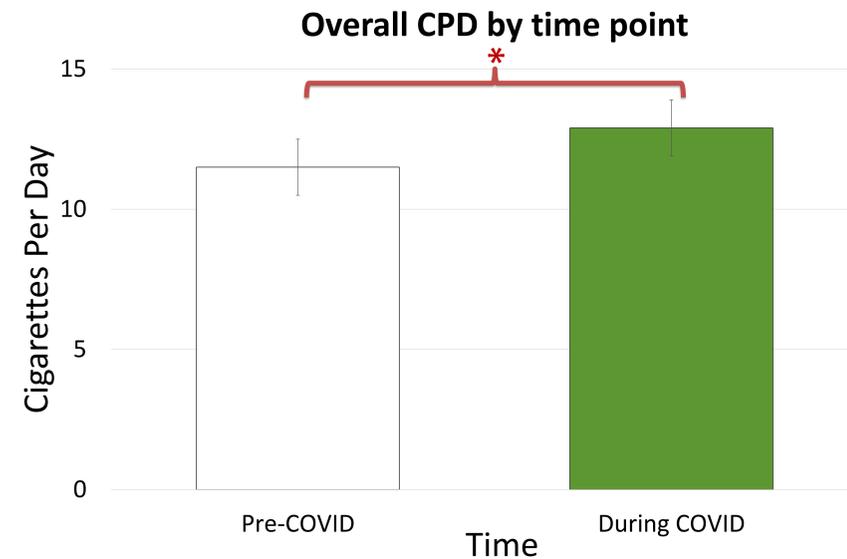
Population	
Women with low SES, n (%)	127 (38.3)
Opioid Dependent, n (%)	77 (23.2)
Affective Disorders, n (%)	128 (38.6)
Site	
Rhode Island, n (%)	48 (14.5)
Baltimore, n (%)	57 (17.2)
Vermont, n (%)	227 (68.4)
Menthol Status	
Menthol, n (%)	147 (44.3)
Non-menthol, n (%)	185 (55.7)
Employment	
Employed, n (%)	170 (51.2)
Students/Homemakers/Retirees, n (%)	102 (30.7)
Unemployed, n (%)	60 (18.1)
Sex	
Female, n (%)	262 (79.2)
Male, n (%)	69 (20.9)
Race/Ethnicity	
Non-Hispanic White, n (%)	286 (86.1)
Education	
High school or lower, n (%)	152 (45.9)
Depression†, m (SD)	
	4.02 (1.69)
Anxiety‡, m (SD)	
	4.37 (1.84)

†As measured by the PHQ-2; ‡As measured by the GAD-2

## Survey Responses

- Final sample of n=332 (46.8% response rate)
- The majority (84.6%, n=281) of respondents were still smoking at the time of the survey
  - Of those who had quit smoking (n=51), 78.4% (n=40) had quit smoking before COVID
- 55.2% of all respondents believed their smoking increased risks associated with COVID-19

## RESULTS



## CPD from Pre-COVID to During COVID

- Overall, CPD was greater during vs. before COVID (12.9±1.0 vs. 11.5±1.0, respectively; p<.001)
- Opioid-dependent smokers reported higher CPD across time points compared to those with affective disorders, p<.001
- CPD was higher among older participants (p=.004) and those who had attained a high school degree or less (p=.016)
- CPD did not differ by parent study site, randomization condition, menthol status, sex, race, employment status, or current anxiety or depression symptoms
- There were no significant interactions between time and parent study condition and population

## Change in CPD

- Among psychosocial risk factors, only employment status was significantly associated with change in CPD (p=.02)

Category	CPD Increase	SE
Employed	0.69	0.73
Student, homemaker, retired	1.98	0.78
Unemployed	2.83	0.88

## DISCUSSION

- Overall, smoking increased among vulnerable populations, despite over half of respondents perceiving that smoking exacerbates risk from COVID-19. This suggests that vulnerable smoker populations might be adversely affected by the pandemic.
- The magnitude of CPD increase was greatest among those who were unemployed. Unemployment might be a risk factor for smoking during periods of stress.<sup>6</sup>
- Future work is needed to identify which groups are most vulnerable to tobacco use during public health crises.

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