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## Pulling Your Mask down to Smoke: Qualitative Themes from Young Adults on Nicotine Use during a Pandemic

Elizabeth G. Klein<sup>a</sup>, Sarah Koopman Gonzalez<sup>b</sup>, Stephanie Pike Moore<sup>b</sup>, Eli J. Bohnert<sup>a</sup>, Amanda J. Quisenberry<sup>c</sup>, Erika S. Trapl<sup>b</sup>

<sup>a</sup>College of Public Health, Columbus, Ohio, USA;

<sup>b</sup>Case Western Reserve University, Cleveland, Ohio, USA;

<sup>c</sup>Division of Health Behavior & Health Promotion, Roswell Park Comprehensive Cancer Center, Buffalo, New York, USA

### Abstract

**Introduction:** The COVID-19 pandemic may have resulted in a change in life routines for tobacco users, but little is known about the rationale underlying these changes.

**Methods:** A convenience sample of young adults ages 21–28 ( $n = 29$ ) were recruited online May–July 2020 to participate in semi-structured interviews about nicotine use behaviors specific to cigarillos and e-cigarettes. Audio-recorded interviews were 60–90 min long and were conducted remotely. Participants were asked opinions and behavioral effects of the COVID-19 pandemic on tobacco use. Verbatim transcripts and field notes from each interview were coded by a trained researcher using a codebook developed using inductive and deductive approaches. Thematic analysis was used to examine product access, use frequency, stress and use triggers.

**Results:** Most current users reported tobacco use stayed the same or increased since the pandemic and attributed this to being home more with greater time/boredom. COVID-19 impacted purchasing behaviors such as purchasing products in greater quantities, through the Internet, or at a different store due to perceived cleanliness. Few reported using tobacco products less frequently and not smoking in public due to the perception of risks associated with smoking and COVID-19, plus having to take off their mask to smoke. Lack of social use modified shared product use, flavors selected, and setting of use. Financial impacts included increased product costs and job loss. Few mentioned wanting to quit due to the pandemic.

**Discussion:** Current tobacco users have experienced major changes in their tobacco use routines during the COVID-19 pandemic.

### Keywords

COVID-19; smoking; qualitative research; tobacco use

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**CONTACT** Elizabeth G. Klein Klein.232@osu.edu College of Public Health, 1841 Neil Avenue, Columbus, OH 614-292-5424, USA.

Declaration of interest

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A pandemic can create anxiety for adults which can create new, or change existing, health-related behaviors (Taylor, 2019). Social stresses can increase intensity of tobacco use (Colby et al., 1994) and undermine cessation efforts (Wewers, 1988). COVID-19 has resulted in stay-at-home orders, working from home or loss of employment, and mask mandates causing change in life routines for tobacco users in the United States. Changes in routines and environments may also impact tobacco use acceptability; whether these changes in routines and/or policies promote or undermine tobacco use cessation has not been well characterized.

Young adulthood is known as a risk period to accelerate tobacco use (Villanti et al., 2019), making this age group a priority population for tobacco use. The proportion of smokers who initiate in young adulthood (ages 18–23) has more than doubled to 42.6% between 2002 and 2018 (Barrington-Trimis et al., 2020). This age group smokes cigarettes and cigarillos, uses e-cigarettes, and also uses multiple products simultaneously (Johnson et al., 2018).

Data are emerging regarding tobacco use patterns during the early response in the COVID-19 pandemic. In a survey of cigar users in April-May 2020, 46.5% reported making a quit attempt since the start of the COVID-19 pandemic, yet 40.9% of adults reported increasing their tobacco use compared to 17.8% who reported decreasing their tobacco use (Kowitt et al., 2020). In another study of adult, primarily dual cigarette and e-cigarette, tobacco users roughly 30% of current smokers and vapers reported increased use of tobacco products since learning of COVID-19 (Klemperer et al., 2020). A gap exists in our understanding of the reasons tobacco users may change their use behaviors as a result of COVID-19. The goal of the present research is to conduct an in-depth qualitative investigation to understand how the COVID-19 pandemic influenced tobacco use behaviors among a sample of young adults.

## Methods

In May-July 2020, a convenience sample was recruited *via* online advertisements in a large Midwestern U.S. city *via* institutional postings, Reddit, and Craigslist to participate in semi-structured interviews about tobacco use behaviors as part of a larger study about young adult tobacco and nicotine product familiarity, perceptions of flavored products, purchasing behaviors and marketing exposure. Eligibility criteria were being between ages 21–28 and either (1) never use of tobacco products or (2) current use of cigarillos or e-cigarettes. Interviews were conducted *via* videoconference, lasting 60–90 min and audio recorded. Data presented within this manuscript include all tobacco user and non-user responses to two questions on COVID-19: (1) “How has the Coronavirus pandemic affected your buying and using of tobacco products? How do you think the Coronavirus pandemic has affected the buying and using of nicotine products for other people you know?” and (2) “When you were answering the survey questions about how many cigarillos and e-cigarettes you would purchase at the different prices, did you answer like you would have before the pandemic or after the pandemic? How would your answers have been different if you answer as if it were before/after the pandemic?” Both non-users and users were asked to respond to the first question to allow for examining the perceptions of never users about the impact of COVID-19 and to look at variations between what individuals report for themselves and

their perceptions of how the pandemic is impacting others, such as household members, friends and/or family.

Verbatim transcripts and field notes from each interview were coded by a trained researcher. Initial coding categories were identified based on the interview guide content (e.g. tobacco use, tobacco knowledge, flavor, COVID-19) and review of the fieldnotes. All themes coded as “COVID-19” were included in this thematic analysis. Segments in this code were read multiple times to understand themes within the code, such as changes in tobacco usage and changes in tobacco purchasing, as well as relationships between those emergent themes, such as purchasing changes that impact use patterns. Coded segments were also examined within the context of other statements by the participant. Negative cases were also examined to understand the variability of experiences and perceptions. The [redacted] University Institutional Review Board approved the research protocol.

## Results

Overall, participants ( $n = 29$ ) reported using cigarillos ( $n = 7$ ), e-cigarettes ( $n = 7$ ), dual use of both cigarillos and e-cigarettes ( $n = 8$ ), or never use ( $n = 7$ ). The sample was 55.2% female with an average age of 23.8 years.

### Theme 1: Frequency/intensity of use

Among current users ( $n = 22$ ) who reflected on their current product use, eight reported their use increasing, five reported their use staying the same, and five reported using less; three current users did not specify their current use behaviors. Table 2 includes specific illustrative comments for each theme. Many individuals attributed one or more reasons for their frequency and intensity of use. Of those who reported tobacco use increasing, participants said that it is due to stress ( $n = 1$ ), having more time to use tobacco ( $n = 5$ ), and being home more ( $n = 3$ ). Lower frequency of use was attributed to less social access for product sharing ( $n = 2$ ) and job change/loss ( $n = 1$ ). Two current users noted health fears due to COVID-19. Respondents commented on other’s tobacco use, noting an increase in nicotine use ( $n = 15$ ), less use ( $n = 10$ ), or no change ( $n = 3$ ). Of those who reported other’s use increasing, the most common reasons were stress, being at home, boredom, and having more time. For those who said that others use less, reasons included health concerns of COVID-19, being at home, financial issues, issues with product access, and not using in public. See Table 1 for example quotes for all themes.

### Theme 2: Stay-at-home orders changed tobacco patterns

Being at home due to the pandemic and its impact on their own and others’ use was described by 20 participants. Two participants explained that being at home more often resulted in more frequent use. Fourteen participants also described their own or other people’s increased use of tobacco products because of being at home and being bored ( $n = 6$ ), having more time ( $n = 8$ ), and no longer having to hide use ( $n = 2$ ). Additionally, one participant described trying different flavors because they have more time. Two participants mentioned being home around their families led to less tobacco use.

Several participants ( $n = 7$ ) mentioned the stay-at-home orders and other restrictions impacted their social use of tobacco, leading to more use at home and buying more personally. Further, participants ( $n = 2$ ) noted the changing circumstances of their tobacco use influenced their tobacco product flavor choices.

### **Theme 3: Stress and health concerns**

Concerns for the health impact of COVID-19 were discussed by 14 participants, resulting in buying more at one time, purchasing online, or selecting different stores due to cleanliness. These participants noted using less and not smoking in public due to the perception of smoking and COVID-19 as well as having to take off their mask in order to smoke. One participant said they do not try as many products now due to frequenting fewer stores. One participant also mentioned not seeing advertisements for smoking because of the health risks with COVID-19.

Stress due to the COVID-19 pandemic was discussed by nine participants; all ( $n = 9$ ) said that stress leads to more nicotine use. One participant said that they want to quit but felt they could not quit due to the stress.

### **Theme 4: Tobacco product access and resources**

Financial changes were described by four participants. A few ( $n = 3$ ) reported less use due to financial issues like high costs; rising tobacco prices during the pandemic were mentioned ( $n = 1$ ). Two participants mentioned stores being closed changed purchasing because they have moved to purchasing online and stockpiling their products.

## **Discussion**

Tobacco users and never users identified several ways the COVID-19 pandemic impacted tobacco use behaviors, including the frequency of use, changes to tobacco patterns, stress and health, and tobacco product access and costs. As product access was reduced, some users noted stockpiling products, and employment changes from the pandemic changed perceptions of the costs for products. Few participants mentioned the pandemic making them want to quit using tobacco. The uncertainty related to COVID-19 has directly and indirectly impacted mental health of the general population (Torales et al., 2020), but our findings help to illustrate how tobacco use may be increased as a coping strategy at this time. Tobacco use as a coping strategy for stress has been well established (Sussman et al., 1993), but this behavior carries additional risks as current users have a 1.42 increased risk of hospitalization if infected with COVID-19 (Hamer et al., 2020).

This research has limitations to consider. The convenience sample of users may not be generalizable or representative despite thematic saturation within interview transcripts. In-depth exploration of cessation motivations and interests were not examined given the research agenda focused on product perceptions. Only minor differences by product type were reported (data not shown); future examination into differences in products used are likely relevant as stay-at-home orders are anticipated as the COVID-19 pandemic continues.

A tobacco user's sense of autonomy, control, and competence are associated with tobacco cessation among adolescents and adults (Williams et al., 2006). Few current users reported feelings of control or motivations to quit during the COVID-19 pandemic, despite the financial burden or difficulties in accessing tobacco products. These circumstances may result in tobacco users being receptive to cessation messages to regain a sense of control, which can promote cessation success (Schnoll et al., 2011).

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**Table 1.**Participant demographics ( $n = 29$ ).

<b>Demographic characteristics</b>	<b>%</b>
Race/Ethnicity	
White, non-Hispanic	41.4%
Black, non-Hispanic	24.1%
Asian, non-Hispanic	17.2%
Other, non-Hispanic	13.8%
Hispanic	3.4%
Educational attainment	
High school graduate (including GED or equivalent)	3.4%
Some college	20.7%
Associate's degree	3.4%
Bachelor's degree	58.6%
Graduate or Professional degree	13.8%
Current employment status	
Working – as a paid employee	51.7%
Working – self-employed	10.3%
Not working – looking for work	17.2%
Not working – on temporary layoff from a job	6.9%
Not working – other	13.8%
Income changed due to COVID-19 pandemic	72.4%
Household members who use tobacco or nicotine products	
0	24.1%
1	48.3%
2	20.7%
3	6.9%

Table 2.

## Quotes on nicotine use during COVID-19 pandemic.

Theme	Exemplary quotes (participant ID)
<b>Being at home more</b>	
Increased use	“Yeah, and this is something I think about often actually being at home or I smoke more than I would normally in a normal day. So say I was going into the office. I work a nine to five job, I’m out of the house from eight in the morning until six o’clock so, I don’t smoke during those hours. I smoke once after I get home and then I would maybe smoke one before bed. Now I work from home. So my access to them is increased, my time, my free time, the time on my hands is increased. So as a time filler. It’s just, it’s more readily available um it’s there and it’s something to do so.” (10006) “Um, I would say it’s probably increased it because it’s something that you can do like at home like by yourself. I know a few of my friends were like, I wish I like had my vape pen because like there’s nothing to do right now. And like I guess like I have seen like a lot of adults like smoking more. So I think people are just kind of like bored.” (10011)
Decreased use	“But I think people have been spending more time at home. And usually people probably smoke away from home, I would imagine. I mean, some people probably smoke at home too. Instances I’m more familiar with is away from home.” (10007)
Product use changes	“Um, with the stress levels and things being the way that they are and also trying to get a different variety when it comes to flavors and things like that, you know, when I, now that I have more time, I guess, more off time I’m I have more time to try different flavors and different things. Whereas when the coronavirus, before the coronavirus it was usually just the fruit flavored things that I was getting you know, sweet or things like that. So I feel like it’s definitely helped me branch out and try different flavors and products as well.” (10053)
<b>Social use decreased</b>	
Decreased use	“And then also, like, since there are less, like no people to interact with you don’t get that share of nicotine that you do when I guess when I’m around people, because I’m usually most of people that I’m around usually have some form of nicotine.” (10028)
Use changes	“Participant: Because like some of the tobacco usage is based on like where I would hang out with friends, like in a bar or restaurant or club or something like that. So, I wasn’t obviously going to those places in the last four or five weeks so yeah, that’s slightly changed. Interviewer: Like when you’re saying, you’ll choose a certain flavor based on where you’re going to use it, that that’s the part that changed? Participant: Right, yeah.” (10036)
Access changes	“Yeah, I personally buy because a lot of times I was socializing lot more. So people would just have them when I go out, but now I buy them lot more myself.” (10062)
<b>Stress</b>	
Increased use	“Um yeah I think it’s it’s like a lot of people’s coping mechanism for stress and for anxiety. So I think a lot of people’s pre, like conditions are heightened now like if you were smoking before you probably are smoking a little more now, if you’re not working or, you know, your life’s kind of all up in the air. But when you’re a lot more busy and focused it’s a lot easier to like be distracted and not think about smoking all the time.” (10030)
Barrier to quitting	“And I am smoking more than I would usually so I’m trying to, you know, have a mental chat with myself. I guess you could say, and try to get away from that because I do want to stop smoking. I was planning to stop smoking before this coronavirus pandemic happened. And, you know, everybody was stuck in the house and stressed. Not knowing what was going to happen or it was very stressful. So I think that coronavirus definitely impacted not only my health, but also my habits.” (10053)
<b>Health concerns</b>	
Decreased use	“My nicotine has significantly decreased to the point where right now. Like, I’m not even buying anything because the coronavirus when it first came out, I was like, oh, God, why did I ever start smoking because usually like that leads to long term effects. Right. And some people are not really scared about nicotine products like, like e-cigs for especially some people aren’t scared about because there isn’t enough like conclusive evidence to say that it’s going to o this, that, or the other thing to you. You know, it’s not good for you. You know it’s bad, but I still think the research is going to show that it’s better than cigarettes, but still very bad for you. So this like there’s no long term. You know, scary results to be scared of right now, but with the coronavirus we were finding out that like you know, smoking and all that stuff is making the after effects of that worse for you. So I definitely was like, holy crap. I have to stop.” (10044)
Use location changes	“I don’t smoke out in public anymore I smoke at home like in my backyard. I don’t, like you can’t smoke driving down the road or you can’t smoke out in public or you can’t smoke. No, Nobody smokes in public anymore. You don’t see anybody smoking on street or anybody outside of building, you don’t do that because that means you have to take off your mask.” (10075)
Purchase changes	“Yeah, um, I buy everything except for cigarillos online now and I just have them mailed directly to me. Um cigarillos I still have to buy in a store, but what I’ve been doing is I’ve been going to grocery stores instead of gas stations now, because it seems like a gas stations sometimes they’re a little bit dirtier. And there might be like more hands touching the actual packaging everywhere where a grocery store you know as behind glass counter. I have to go get it. And ask somebody to get it for me and everything. I feel like I’m much less exposed Corona that way.” (10052)



Theme	Exemplary quotes (participant ID)
<b>Product access</b>	“That, it has made it a lot more difficult, especially say that the beginning of the lockdowns you know tobacco shops, they are shops were not prioritized as essential businesses, which despite being a patron of them, I wholeheartedly agree they are not essential. So it limited the, the local supply you know, it’s yeah like my, my vape shop that I normally go to, I think, in mid-March they closed down. And it wasn’t until I want to say the middle of May, that they began opening for like four hours a week to, you know, to only do like phone orders that you pick up at door, you know, non-contact. So it was very restrictive for me to, to get the products that I use. I, you know I shopped online. I have and I still do.” (10049)
<b>Financial issues</b>	“... it has it has limited, limited me only due to financial concerns. You know, I lost my job so money has been tight, finances have been you know, something that I have to stretch over a course of the last few months um so my normal procedure of going through the process of buying my normal weekly amount had to come down. I had to cut down on. In fact, I had to stop smoking for a little bit, just so I can save some money. So it definitely impacted it.” (10035)

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