



Short communication

A qualitative study exploring older smokers' attitudes and motivation toward quitting during the COVID-19 pandemic

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ABSTRACT

Older individuals who smoke are at increased risk of having severe outcomes from COVID-19, due to their long-term smoking and underlying health conditions. In this qualitative study, we explored the impact of COVID-19 on attitudes toward smoking and motivation to quit. Participants (N = 30) were enrolled in a larger ongoing randomized controlled smoking cessation trial conducted in the lung cancer screening setting. From March to May 2020, we assessed quantitative and qualitative responses to participants' overall concern about COVID-19, changes in amount smoked, and motivation to reduce/quit smoking. Responses to the quantitative questions indicated that 64.3% of participants were extremely concerned with COVID-19, 20.7% reported reductions in amount smoked, and 37.9% reported increased motivation to quit. The qualitative responses, which were transcribed and coded using Consensual Qualitative Research guidelines, expanded upon these findings by providing the content of participants' concerns, which included perceived risk of contracting COVID-19, the added stressors caused by COVID-19, and a variable impact on the amount smoked and motivation to quit. Although half of participants expressed extreme concern regarding COVID-19, fewer indicated increased motivation or reduced smoking. Qualitative themes suggested that the initial two months of the pandemic prompted some smokers to reduce or quit, but it exacerbated smoking triggers for others. Understanding how the pandemic continues to affect this vulnerable group will aid in adapting methods to support their efforts to stop smoking and remain abstinent.

1. Introduction

The understanding of the relationship between COVID-19 and smoking is evolving (CDC, 2020), with preliminary studies showing associations between smoking and COVID-19 infection (Engin et al., 2020), progression (Lowe et al., 2021), and severity (Patanavanich and Glantz, 2020; Paleiron et al., 2021; Kashyap et al., 2020). Smokers may be more susceptible to bacterial and viral infections (Berlin et al., 2020) that may be more likely to progress compared to non-smokers (Lowe et al., 2021; Patanavanich and Glantz, 2020), possibly due to older age (Liu et al., 2020) and certain chronic conditions (Engin et al., 2020; CDC,

2020).

Higher perceived risk of COVID-19 among smokers has been associated with increased motivation to quit (Klemperer et al., 2020), and COVID-19 related stress has been linked to both increased and decreased smoking (Bommel   et al., 2020). Although there are benefits of quitting during the pandemic (Eisenberg and Eisenberg, 2020), motivation and ability to stop smoking have been impacted by new and unexpected stressors.

In this qualitative study, we explored the effects of COVID-19 on older smokers enrolled in the Lung Screening, Tobacco and Health (LSTH) trial, an ongoing telephone-based randomized cessation trial

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conducted with individuals undergoing lung cancer screening (LCS) (Taylor et al., 2019; Joseph et al., 2018). Increasing the understanding of smoking attitudes and behaviors during the pandemic, particularly through qualitative analyses, may help clinicians tailor cessation interventions to support efforts to reduce or quit smoking.

2. Methods

2.1. Subjects and procedures

Older smokers, ages 55–76, are accrued to LSTH after registering for low-dose computed tomographic LCS at one of seven collaborating sites (Supplemental Figure). After undergoing LCS, participants are randomly assigned to the intensive arm (8 counseling sessions + 8 weeks of nicotine patches) or the usual care arm (3 sessions + 2 weeks of patches) (Taylor et al., 2019; Joseph et al., 2018). The study was based at Georgetown University Medical Center.

Post-randomization, tobacco treatment specialists (TTS) conduct audio recorded, protocol-based, 20-minute phone counseling sessions encompassing standard topics (e.g., triggers, motivation/confidence regarding quitting, NRT use). After COVID-19 was declared a pandemic, (WHO, 2020) we sought IRB approval and TTSs then assessed reactions to COVID-19 during sessions completed between 3/20/20 and 5/14/20. For some, this was the first session and others had already started treatment. During the sessions, TTSs asked: (1) Overall, how concerned are you with COVID-19 (not at all, a little, somewhat, extremely); (2) Since hearing about COVID-19, has the amount you are smoking (decreased, increased, stayed the same); and (3) has your motivation to reduce or stop smoking (decreased, increased, stayed the same). TTSs did not address COVID-19 beyond what participants shared voluntarily, but engaged participants on strategies to deal with COVID-19-related stressors that were impacting smoking.

2.2. Data analyses

We used R Psych (v.1.8.12) to describe demographics, smoking-related characteristics, and COVID-19 responses, collapsed across study arm (Table 1).

Participants' qualitative responses were transcribed and coded by the two TTSs who conducted the counseling and two additional co-authors. Guided by Consensual Qualitative Research guidelines (Braun and Clarke, 2006; Saldaña, 2009; DeCuir-Gunby et al., 2011), coders worked in pairs to create preliminary codes using an open-coding/thematic analysis approach. After three rounds of iterative coding in alternating pairs, the authors reached consensus on identified themes until saturation was achieved (O'Reilly and Parker, 2013) (Table 2).

3. Results

We collected qualitative data from 30 participants, nine of whom raised additional COVID-19 concerns in a subsequent session, resulting in 39 coded sessions (Supplemental Figure).

Table 1 presents participant characteristics and the COVID-19 quantitative responses. Over one-half indicated extreme concern with COVID-19 (64.3%), no changes in smoking intake (51.7%), and no change in motivation to quit (55.2%).

Table 2 summarizes the most frequently discussed themes: (1) Perceived risk of contracting COVID-19; (2) Attitudes toward smoking; (3) Changes in the amount smoked; and (4) Additional stressors due to COVID-19. We describe the themes below and in Table 2 using exemplar quotes along with participants' gender, age, and state of residence. The 7 participants who stopped smoking during the intervention described similar pandemic-related stressors and perceived risk as current smokers. They also mentioned the importance of resources needed for motivation and support but rarely discussed the impact of COVID-19 on motivation to remain quit (Table 2).

Table 1
Demographic and Tobacco-Related Characteristics and COVID-19 Quantitative Responses (N = 30).

Continuous variables		M ± SD
Age		62.9 ± 5.8
Pack years		38.6 ± 15.4
Cigarettes per day — Current Smokers (N = 23)		16.4 ± 11.4
Categorical variables	Category	N (%)
Sex	Female	18 (60.0)
Race	White	25 (83.3)
Education	High School/GED or less	6 (20.0)
	Associate's Degree/Tech School	10 (33.3)
	Bachelor's Degree or more	13 (43.3)
	Refused	1 (3.3)
Location	District of Columbia and Maryland	4 (13.3)
	Iowa and Illinois	6 (20.0)
	Massachusetts	15 (50.0)
	New Hampshire and New Jersey	5 (16.7)
Comorbid Conditions	0	6 (20.0)
	1	9 (30.0)
	2 +	15 (50.0)
Smoking status	Current	23 (76.7)
Days quit among those who stopped smoking (N = 7)	< 30	5 (71.4)
	31+	2 (28.6)
Study arm	Intensive Counseling Arm	21 (70.0)
Overall concern with COVID-19 (N = 28)*	Not at all	4 (14.3)
	A little	2 (7.1)
	Somewhat	4 (14.3)
	Extremely	18 (64.3)
Change in smoking due to COVID-19 (N = 29)*	Decreased amount smoked	6 (20.7)
	Increased amount smoked	8 (27.6)
	No change in amount smoked	15 (51.7)
Change in motivation due to COVID-19 (N = 29)*	Decreased motivation to quit	2 (6.9)
	Increased motivation to quit	11 (37.9)
	No change in motivation to quit	16 (55.2)

*Responses to the three COVID-19 questions had similar distributions for current and former smokers.

3.1. Perceived risk of contracting COVID-19

There were differing levels of perceived risk among smokers regarding contracting COVID-19 or having a serious case if diagnosed. Due to their age, smoking histories, comorbid conditions, and geographic location, some participants believed they were at high risk of contracting the virus:

"I'm really nervous about the coronavirus, and I feel like if I'm smoking, I'm putting myself in bigger danger if I get it because I don't know if my lungs would be healthy enough to fight it off." (P1) Female, 55, MA

Other participants expressed that although they may be at higher risk for contracting COVID-19, their perceived risk was moderate because they were taking precautions to limit their exposure:

"I am concerned, I just don't go overboard... I've understood that 80% of the people who get it just get the flu symptoms... I'm more concerned about my wife getting it [on oxygen]. So I take precautions... but I'm just not going wacko running around trying to buy hordes of toilet paper." (P2) Male, 67, IA

In contrast, some had low perceived risk because they believed the

Table 2
Exemplar Quotes by Theme (Qualitative Findings).

Theme	High perceived risk	Moderate perceived risk	Low perceived risk
Theme 1: Perceived risk of contracting COVID-19	<p>High perceived risk "... and the underlying conditions I have, I'd be at high risk to get it [COVID-19]. With my underlying conditions, you know I have diabetes, I smoke, I have high blood pressure, and high cholesterol." (P12) Female, 58, MA</p>	<p>Moderate perceived risk "I mean, [I am] cautious because of my age and, of course, my loved ones, but I am social distancing. So when I get the chance to see somebody, I will, but I am not going out. Like I am stuck in the house and am not leaving the house." (P7) Female, 64, MA</p>	<p>Low perceived risk "I've read other scientific studies, they're actually looking at nicotine and coronavirus they are seeing survival rates higher in smokers than are in non-smokers. Somehow coronavirus doesn't like the nicotine." (P11) Female, 59, IA</p>
Theme 2: Changes in amount smoked	<p>Smoking more "I don't know what else to do, like right now I am just finding that this is a stressful situation that nobody has ever been put in, so I am just being truthful with you. I have smoked at least a pack a day now, and I continue to do it until I figure out what's going on and until I can go back to work." (P13) Female, 61, NJ</p>	<p>Smoking less "So sure, It's been different now because I'm staying at home [CPDJ]. You know every day is kind of a repeatable kind of thing... every day is very predictable. And I've also found my smoking kind of regular as well. So yea I am really pleasantly surprised that I can do six [cigarettes] with relative ease." (P14) Male, 57, MA</p>	<p>Smoking stayed the same "I don't smoke any more, or any less. I try to do less but I, I haven't been very good about doing less...No, it's not any more or any less." (P2) Male, 67, IA</p>
Theme 3: Attitudes toward smoking	<p>Increased motivation to make changes "I think just because of this emergency I'm realizing that doing this [smoking] is just really toxic." (P1) Female, 55, MA</p>	<p>Decreased motivation to make changes "Yeah, I think it would probably be easier once this corona thing blows over because it really does impact my job and even though I, I work a certain amount of hours, I'm still really not off the clock." (P15) Male, 58, MD</p>	<p>No changes in motivation "I don't think that [COVID-19] has anything to with it as far as motivation [to quit]. I can't make the connection there" (P16) Male, 72, IL</p>
Theme 4: Additional concerns due to COVID-19	<p>Familial concerns "I'm worried about my daughters. My daughter is out in rural Alabama and she's so sick, she's been having so much trouble breathing, I'm just scared to death for her because they don't have the best healthcare out there in Alabama." (P17) Female, 60, IA</p>	<p>Financial concerns "... Being out of work and who knows when unemployment will come through. So now money's been real tight but now, geez, it's like ten bucks to buy a pack of cigarettes and I can do it but, you know? Now it's like, I could use that extra ten dollars." (P18) Female, 63, NJ</p>	<p>Uncertainty "I mean I'm worried about the virus but I'd say I'm more worried about the economy and how big the country's tanking...6 weeks ago we had 3% unemployment and now they're saying maybe tomorrow when the numbers come out it could be 33%, that's crazy..." (P3) Male, 61, MA</p>
Individuals who had stopped smoking	<p>Relapse Risk: "Surprisingly, with all the stress of this crisis, I haven't even picked up a cigarette and I thought I was going to the other day, but I didn't... we have the shutdown till April 17 so I'm working from home all day. That actually makes it a lot easier since when I'm home I</p>		

Table 2 (continued)

<p>don't even really think about it." (P8) Male, 55, IA Motivation to remain smoke free: "I don't think so [referring to the pandemic motivating their smoke free status]. I mean everything around me is motivating me to stay smoke free. You, the patches, my family, you know? That's what motivates me to stay smoke free." (P9) Male, 74, MA</p>
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virus did not pose a real threat (e.g., it is not real, same as the flu, everyone will eventually get infected):

"I think it was more of a political virus than anything else... we've already had over 35,000 people this year die from the regular flu, and what are we, at 3,000 with the coronavirus?... maybe I'm wrong who knows, but the numbers just don't seem to add up..." (P3) Male, 61, MA

3.2. Attitudes towards smoking

Participants described whether the pandemic impacted their motivation to reduce/quit smoking. Some described becoming more motivated/confident due to their health and/or finances, becoming more conscious of their smoking habits, and that smoking-related change was a priority:

"... if you're going to do anything to help yourself during the virus going around, it better be getting your lungs back in good shape." (P4) Male, 66, NJ

However, most participants described no change in their motivation to reduce/quit. Some had already made changes before the pandemic began and did not see a connection between the virus and their smoking:

"I don't put the two and two together [COVID-19 and motivation to reduce/quit]. To me, they're separate things. I don't see how one affects the other, except for my stress level when I start thinking about it." (P5) Female, 60, MD

For a few, the pandemic made them feel less confident to cut down or quit due to feeling overwhelmed, increased anxiety, or competing priorities:

"Confidence right now is very low, probably like a two [of 10]. Mostly from this virus thing and being in [inside] so much. I have all this time I could be doing really good things for myself but I just blow it off." (P6) Female, 60, NH

3.3. Changes in amount smoked

The impact of the pandemic on participants' daily life, including the shelter at home order for most, produced a mixed effect on amount smoked. For some, their smoking increased due to being at home more, boredom, stress, or greater exposure to smoking triggers:

"I'm not doing as well as I was because I'm stuck in the house and doing nothing all day long ... boredom sets in and [smoking] is kind of a go to thing..., this was not supposed to happen when I decided to [attempt to quit]. I expected to be out and about doing my thing." (P7) Female, 64, MA

For others, the amount smoked stayed the same (vs. pre-pandemic) because their lives were not greatly disrupted and/or they were able to sustain earlier changes they had made:

"I'm still smoking just the same way because I kept the schedule the same because I know myself. I knew if I changed anything then I probably would smoke more." (P6) Female, 60, NH

However, for some, changes to daily routines provided an

opportunity to reduce smoking due to going out less frequently to buy cigarettes and reduced exposure to triggers like driving in traffic, work-related stress, and being around other smokers:

"I have the opportunity now that we're all sort of sheltered in the same house to start doing my meditation again and I was able to quit years ago because of it. ... but I already told myself I'm not leaving my house to get cigarettes. When I don't have any, which'll be soon, I can't get any more." (P1) Female, 55, MA

3.4. Additional stressors due to COVID-19

Participants described additional pandemic-related stressors that were indirectly related to their smoking habits or motivation to reduce or quit, including concerns about: loved ones' well-being, financial issues, and the uncertain social climate in the country.

"I have some [concern] for my parents, my in-laws, and for me. If I get it, and I die... I have a son that is mentally challenged... he's got schizophrenia, bipolar. I don't know what he would do without me. I don't know what my daughter would do without me. I'm very afraid. That's the bottom line." (P10) Female, 61, IL

"... None of us are working. Unemployment pays such a little bit of money. How many months can we be out of work, my husband ... is self-employed, like is his business going to survive when he does get back to work? We don't really know... we've been putting in for things like FDA loans and other things, but if we don't get them, that's going to be a huge stressor..." (P1) Female, 55, MA

"My anxiety is higher tomorrow. Our city is opening. I think way prematurely as many cities all over this country are, so that, you know, we're day by day right now." (P11) Female, 59, IA

4. Discussion

Findings from this qualitative study suggest that among older individuals enrolled in a cessation trial, COVID-19 resulted in both new obstacles and new advantages for reducing or stopping smoking. The understanding of why some were unable to make changes or to become motivated was informed by the qualitative responses, such as perceptions of the legitimacy of the virus and reduced confidence due to new pandemic-related stressors. It also shed light on the dynamic effects this evolving global emergency is having on older smokers, suggesting that for some people, ambivalence towards reducing or quitting increases in times of great uncertainty. Two recent studies exploring changes in motivation among individuals enrolled in cessation trials have also found that uncertainty, boredom, and stress affected participants' self-efficacy and ability to quit. (Rosoff-Verbit et al., 2021; Joyce et al., 2021)

Understanding these barriers may help practitioners tailor counseling to address specific concerns, provide increased support to deal with stressors, and capitalize on motivation to reduce, quit, or remain abstinent. For example, practitioners can help manage smokers' expectations about what changes might be realistic during extreme stress. For some participants, the primary goal was to maintain the same number of cigarettes per day, since they were more exposed to triggers due to changes in routine. Practitioners can affirm the effort and control it takes to not increase cigarettes per day and normalize that as a goal. Another recommendation is to adapt evidence-based cessation interventions according to individual preferences (e.g. discussing strategies to deal with stress vs. postponing treatment to avoid becoming more overwhelmed). As research regarding the connection between COVID-19 and tobacco use grows, evidence-based tobacco treatment, research, and practice must continue to adapt to new public health threats.

Study conclusions are limited by the small sample of older smokers. Further, the findings may not apply to younger, lower risk smokers who

are not considering quitting. Larger studies are needed to assess the extent to which perceived risk to COVID-19 affects motivation and whether that differs by gender, age, race/ethnicity, location, and quit status.

For some in this high-risk group of smokers, the pandemic has been a teachable moment to reduce, quit, or remain smoke free, though for others it has exacerbated smoking. As these data were collected during the first two months of the pandemic, it may be the case that the impact of COVID-19 on smoking has changed over time, although data collected subsequently have resulted in conclusions similar to ours. (Rosoff-Verbit et al., 2021; Joyce et al., 2021) Research is needed to assess ways that tobacco treatment can help smokers make or maintain progress during the remainder of the pandemic, which may provide insights for helping smokers manage other forms of extreme stress in the future.

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CRedit authorship contribution statement

Marisa Cordon: Conceptualization, Writing - original draft, Methodology, Formal analysis. **Ellie Eyestone:** Conceptualization, Writing - original draft, Methodology, Formal analysis. **Sarah Hutchison:** Writing - original draft, Formal analysis. **Daisy Dunlap:** Writing - original draft, Formal analysis. **Laney Smith:** Project administration, Data curation, Writing - review & editing. **Randi M. Williams:** Writing - review & editing. **Emily Kim:** Project administration, Data curation. **Jen-Yuan Kao:** Data curation, Writing - review & editing. **Alejandra Hurtado-de-Mendoza:** Supervision, Writing - review & editing. **Cassandra Stanton:** Supervision, Writing - review & editing. **Kimberly Davis:** Supervision, Writing - review & editing. **Jennifer Frey:** Supervision, Writing - review & editing. **Brady McKee:** Writing - review & editing. **Vicky Parikh:** Writing - review & editing. **Kathryn L. Taylor:** Funding acquisition, Conceptualization, Writing - review & editing. : .

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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Appendix A. Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.pmedr.2021.101359>.

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