

Reactions to a Nicotine Reduction Policy Among Adolescents Who Smoke: A Qualitative Study

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Overview

We examined how adolescents who smoke cigarettes daily responded to very low nicotine content (VLNC) cigarettes in the study context, and how they might react if a nicotine reduction policy were implemented in the U.S.

Background

- The FDA is considering a nicotine reduction policy to promote smoking reduction and cessation by rendering cigarettes less addictive.¹
- Very low nicotine content (VLNC) cigarettes have shown promising results for decreasing smoking among adults in several large clinical trials.^{2,3}
- Adolescents are an important population to consider when evaluating policy implications, due to their unique smoking patterns compared to adults.⁴
- Among adolescents and young adults, it is important to further investigate subjective responses to VLNC cigarettes, reasons for non-adherence, and reactions to a reduced nicotine product standard.

Methods

- Adolescents who smoke cigarettes daily (ages 15-19; N=52) enrolled in a three-week double-blind randomized clinical trial.
- Participants assigned to smoke study cigarettes with either normal nicotine content [NNC; 15.8 mg nicotine / g tobacco (n=27)] or very low nicotine content [VLNC; 0.4 mg/g (n=25)].
- At end of trial, participants completed qualitative interviews about experiences smoking study cigarettes, and what they would do if they only had access to the study cigarettes.
- Thematic codes were developed based on interview script and refined iteratively to reflect emergent themes. Interviews were transcribed and coded independently.

Representative Quotes

Theme	Quotations from Participants VLNC group; NNC group
SUBJECTIVE RESPONSES TO RESEARCH CIGARETTES	
Product dislikes related to taste, harshness, experience of smoking	<p>134: <i>At like one point I needed a regular cigarette because it was just really harsh.</i></p> <p>146: <i>Well, I was trying to smoke as many study cigarettes for this study. But sometimes I had to smoke non-study because just the taste...wasn't good or it wasn't enough.</i></p> <p>148: <i>I thought they tasted kind of weird and I had a feeling they might have had less nicotine in them. Smoking these definitely decreased my interest for smoking cigarettes.</i></p> <p>176: <i>It was very uncomfortable because I'm used to smoking cigarettes and having it be like a really like good positive thing. And when I smoked those, it just made me feel very like not good...so it made it kind of a negative association with smoking.</i></p>
Non-adherence due to less satisfaction with study cigarettes compared to usual brand	<p>150: <i>What I'd have to do is I have to smoke a real cigarette in order to smoke the study cigarette.</i></p> <p>168: <i>I could just I could tell I wasn't getting the nicotine that I needed from those cigarettes, so it was kind of hard to stick to that schedule with just those knowing that without that nicotine, I was getting very agitated very easily.</i></p> <p>196: <i>The beginning I tried to only smoke them, but then I was like getting really like irritated and agitated and I just needed a regular cigarette because I didn't feel like I was even smoking a cigarette. It just felt like I was smoking cardboard.</i></p> <p>197: <i>I kind of smoked another one of my usuals to get it to kick in and make me feel good because sometimes I feel like I hadn't had enough of a cigarette.</i></p>
REACTIONS TO NICOTINE REDUCTION POLICY	
Participant expectations to cut down and eventually quit smoking	<p>148: <i>I mean if it is if it came to that point, I probably wouldn't smoke. Like the study cigarettes are nice because they're free but I wouldn't go out of my way to buy a pack.</i></p> <p>150: <i>Honestly over a period of like a month or two, I'd probably quit.</i></p> <p>201: <i>I think it would just lead to me stop smoking over time, like I would probably like smoke those for a bit and then just stop smoking.</i></p>
Predicted e-cigarette or other tobacco product use	<p>117: <i>Probably roll my own cigarettes.</i></p> <p>121: <i>Like I would try rolling the cigs.</i></p> <p>138: <i>Probably Black N' Milds.</i></p> <p>148: <i>Well vaping, obviously. But that's not tobacco. It's vape...with nicotine</i></p> <p>156: <i>Yeah, possibly I might smoke more cigars than cigarettes if this is really the only option.</i></p> <p>176: <i>Um, I would probably like just use an e-cigarette just for like the nicotine.</i></p>

Results

Baseline Participant Characteristics	Mean (SD)
Age	18.5 (0.08)
Sex	50% Female
Race	46% Non-white
Menthol status	45% Menthol
Average cigarettes per day	8.1 (7.4)
Salivary cotinine (ng/mL)	227.5 (196.9)
CO (ppm)	11.0 (8.1)
Age of onset, daily smoking (years)	16.5 (0.2)

- Adolescents' reasons for incomplete adherence to smoking only their assigned study cigarettes were mainly related to disliking the taste of the study cigarettes and experiencing less satisfaction compared to smoking their usual brand.
- Negative subjective evaluations of the study cigarettes were common across both the VLNC and NNC groups.
- Most participants assigned to both groups reported they would likely decrease their smoking or quit entirely if the study cigarettes were the only ones available for purchase in the U.S. Others reported they would not change their smoking behavior.
- Among participants who indicated they would use alternative products if a nicotine reduction policy were implemented, most said they would use e-cigarettes or vaping devices; several others predicted rolling their own cigarettes or using other tobacco such as cigars.

Conclusions

- Overall, adolescents anticipated they would respond to a nicotine reduction policy by decreasing their cigarette smoking and eventually quitting.
- Because many adolescents in the trial anticipated switching to e-cigarettes or other tobacco products, future research should examine the impact of a reduced nicotine policy on the use of alternative products in this population.
- These findings point to a need for public health strategies to reduce smoking initiation and encourage cessation in the context of a reduced nicotine product standard.

References

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