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INTRODUCTION

- Research in the general population of smokers suggests that reducing the nicotine content in cigarettes to very low levels reduces smoking rate, nicotine dependence, and toxin exposure without substantial adverse consequences.
- Our center conducted further research to examine the effects of very low nicotine content cigarettes (VLNCs) in highly vulnerable populations and results of our clinical trial systematically replicate and extend earlier observations on reduced nicotine content cigarettes among the general population.
- Reducing the nicotine content of cigarettes could lead smokers to seek other sources of nicotine to compensate, particularly for smokers living in rural areas where use of some non-cigarette tobacco products is already higher compared to urban areas.
- The current study is examining associations between use of e-cigarettes among vulnerable populations and the effect of VLNCs on total cigarettes smoked per day (CPD) observed in the parent trial.

METHOD

Parent Trial

- 775 adult cigarette smokers from one of three vulnerable populations (i.e., smokers with comorbid affective disorders [n=258], opioid use disorder (OUD) [n=260], or socioeconomically disadvantaged women [n=257]) not currently planning to quit.
- Participants completed a one-week baseline period using usual-brand cigarettes provided at no cost.
- For 12 weeks, participants were randomly assigned to use one of three research cigarettes (0.4, 2.4, 15.8 mg nicotine/g of tobacco) under double-blind conditions.
- Cigarette use and e-cigarette use were assessed daily via interactive voice response (IVR).
- Primary outcome was cigarettes per day (CPD) during Week 12. Outcomes were analyzed using repeated measures analysis of variance with alpha at $p < .05$.

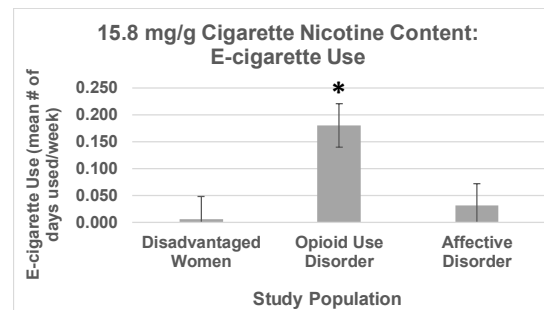
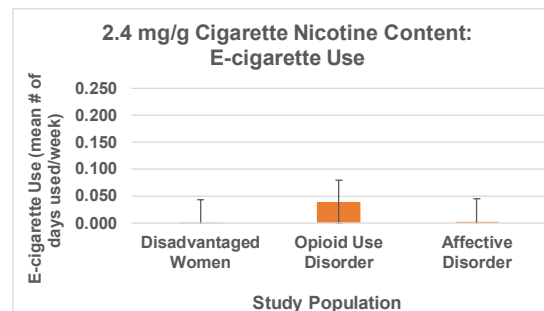
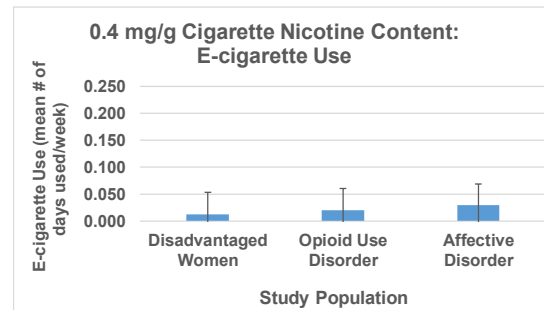
Current Study

- A secondary analysis of e-cigarette use during the 12-week study period. E-cigarette use was examined as mean number of days used/week.
- A growth curve model, with alpha at $p < .05$, was conducted to look at associations between e-cigarette use, population, and assigned cigarette nicotine content and the effect of e-cigarette use on CPD.

ACKNOWLEDGMENTS

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RESULTS



Effect of e-cigarette use on CPD:

- We saw no significant main effect of e-cigarette use ($F[1,252]=0.06$, $p=0.81$) nor interaction of use with cigarette nicotine content ($F[2,7413]=1.95$, $p=0.14$) on total CPD.

Associations between e-cigarette use, population, and assigned cigarette nicotine content:

- We found a significant interaction with population and cigarette nicotine content, collapsed across all time points ($F[4,758]=3.30$, $p=0.01$).
- As shown in the figure, there were no differences in e-cigarette use by population among smokers assigned to the 0.4 mg/g condition (top panel) or smokers assigned to the 2.4 mg/g condition (middle panel).
- Among smokers assigned to the 15.8 mg/g content cigarette, smokers with OUD were more likely to report use of e-cigarettes than smokers with affective disorders or disadvantaged women ($P_s \leq .005$).

DISCUSSION

- Few participants reported e-cigarette use.
- Overall, we found no evidence that e-cigarette use moderated the effect of VLNCs on reducing total CPD among these vulnerable populations.
- While there was a significant difference in e-cigarette use among smokers with OUD, it is unclear how clinically significant this difference is given that the frequency of e-cigarette use across all three nicotine content conditions and populations was very low (all averaging <0.2 days of use/week).
- It is possible that participants are using other forms of nicotine besides e-cigarettes. Additional analyses focused on use of other tobacco products, like smokeless tobacco and NRT, are warranted.