Factors Associated with Past 30-day Abstinence from Cigarette Smoking in a Non-Probabilistic Sample of 15,456 Adult Established Current Smokers in the United States Who Used a JUUL Vaporizer for Three Months

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Background

JUUL is the fastest growing and highest-selling brand of e-cigarettes/vapor products in the United States. Assessing the impact of JUUL vapor products on adult smokers’ use of conventional/tobacco cigarettes can help inform the potential population health impact of these products. There are no published data on the likelihood that adult tobacco smokers who begin using a JUUL vaporizer then switch completely to use of JUUL vaporizer, or the likelihood that adult tobacco smokers who begin using a JUUL vaporizer then continue to use a JUUL vaporizer in addition to continuing to smoke conventional cigarettes. Additionally, no data are available on the user characteristics and product use features that are positively and negatively associated with smokers’ likelihood of quitting smoking cigarettes through use of a JUUL vaporizer.

This study examined demographic, smoking-related and JUUL-related factors associated with adult smokers’ self-reported past 30-day abstinence from cigarette smoking after six months use of a JUUL vaporizer for three months.

Methods

Participants were 15,456 U.S. adult (21 years) established current smokers, recruited at the time of their first purchase of a JUUL Starter Kit in a retail store or on JUUL’s e-commerce platform.

Online surveys administered every 30 days assessed prevalence and patterns of past 30-day use of conventional cigarettes, JUUL vapor products, and other e-cigarettes/vapor products.

Rates of past 30-day abstinence from smoking at the 3-months follow-up assessment are reported for the intention-to-treat (ITT) sample (n = 15,456) that comprised the baseline survey assessment. In this analysis, participants with a missing response to the question “In the past 30 days, have you smoked any cigarettes, even one or two puffs?” were coded as ‘current smokers’ under the worst-case scenario assumption of a return to baseline patterns of cigarette smoking.

Rates of past 30-day abstinence from smoking at the 3-months follow-up assessment are also reported for an efficacy subset comprising participants who provided smoking data at the 3-months follow-up assessment (n = 9,372; 60.9% of the ITT sample).

Logistic regression models examined factors associated with participants’ odds of reporting past 30-day smoking abstinence at the 3-months assessment.

Results

Past 30-day smoking abstinence at the 3-months assessment was reported by 28.3% of the intent-to-treat (ITT) sample (n = 15,456) and 47.1% of the efficacy subset sample that completed the 3-months assessment (n = 9,372).

Odds ratios (ORs) for reporting past 30-day smoking abstinence at the 3-months assessment were significantly higher among participants who:

1. Primarily used Marijuana-flavored JUUL pods (vs. Virginia Tobacco flavor) in the past 30 days (OR = 1.19; 95% CI, 1.15, 1.23).
2. Primarily used Mango-flavored JUUL pods (vs. Virginia Tobacco flavor) in the past 30 days (OR = 1.08; 95% CI, 1.05, 1.12).
3. Exclusively used JUUL pods in the past 30 days (OR = 1.19; 95% CI, 1.17, 1.21).
4. Used a JUUL as AFO of the past 30 days (OR = 1.02).
5. Purchased their first JUUL device in a retail store (vs. online) (OR = 1.17; 95% CI, 1.03, 1.23).
6. Purchased their first JUUL Starter Kit to help quit smoking cigarettes completely (OR = 1.24; 95% CI, 1.18, 1.30).

Conclusions

Approximately half of new JUUL users reported having quit smoking after using a JUUL vaporizer for three months.

Daily use of JUUL pods in characterizing flavors, particularly Mint and Mango, and the availability of flavored JUUL pods in both retail stores appear to be important to new JUUL users’ chances of quitting smoking within three months.

Research should closely assess the extent to which statutory or voluntary restrictions on sales of flavored JUUL pods onto a careful public health balance between maximizing access to especially less harmful sources of nicotine for adults who want to transition away from combustible cigarettes, and reducing youth appeal and access to JUUL pods.

Conflict of Interest

Using the Department of Health and Human Services regulation, I declare that the submitted manuscript has been approved by all co-authors and that there is no conflict of interest that would prejudice or limit the impartiality of this scientific work. This work was supported by TPD grant awarded to the University of Minnesota Tobacco Prevention and Control Research Center and to the Center for Substance Use Research Ltd. in the United States. The funders had no role in the study design, data collection and analysis, decision to publish, or preparation of the manuscript.