

Factors Associated with Changes in ENDS Dependence: Findings from Waves 2 and 3 of the VAPER Study

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Background

Little is known about how demographics, device and liquid characteristics, and smoking status impact users' future ENDS dependence. We addressed this gap by evaluating the changes in dependence in a cohort of regular adult ENDS users.

Methods

- Our sample includes US adults (21+) who use ENDS 5+ days/week.
- Participants from waves 2 (12/2020-4/2021) and 3 (9/2021-11/2021) were included (N=628).
- Changes in E-cigarette Dependence Scale scores between waves were coded as increasing, decreasing, or stable dependence. People who never smoked were defined as <100 cigarettes; people who currently smoke as >100 cigarettes + past 30 day use; people who quit or recently smoked and stopped as >100 cigarettes + no past 30 day use. Device and liquid characteristics were from coded photo data if available; otherwise, self-reports were used.
- Analyses included chi-square tests with Bonferroni correction for pairwise comparisons and

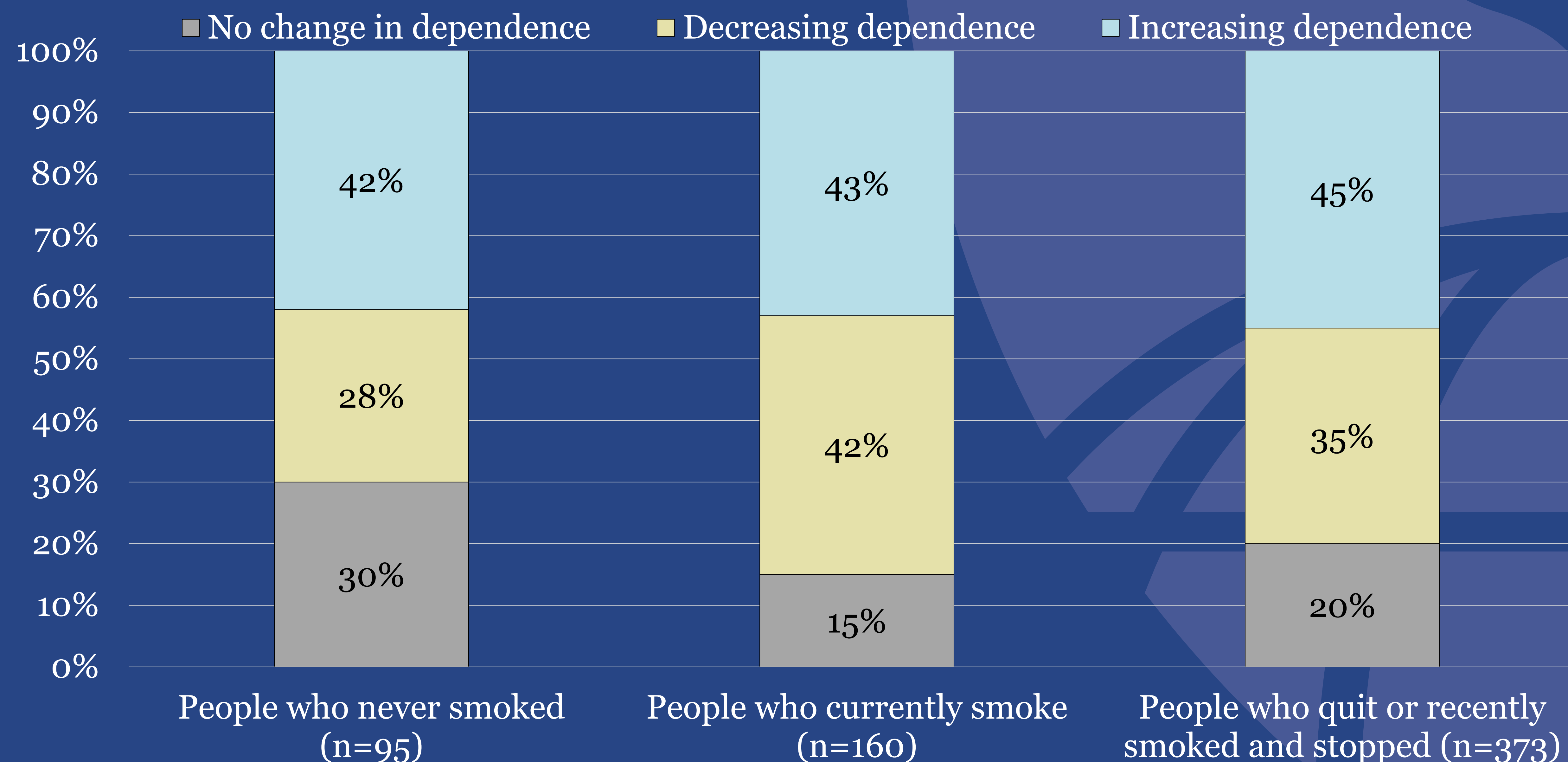


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Smoking status is associated with changes in ENDS dependence, even within a year

Change in ENDS dependence, by smoking status (N=628)



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Competing Interests: Dr. Eissenberg is a paid consultant in litigation against the tobacco industry and also the electronic cigarette industry and is named on one patent for a device that measures the puffing behavior of electronic cigarette users, on another patent application for a smartphone app that determines electronic cigarette device and liquid characteristics, and a third patent application for a smoking cessation intervention.

Methods (cont...)

- Analyses included chi-square tests with Bonferroni correction for pairwise comparisons and multinomial regression.

Results

- Between waves 2 and 3 overall 20% (n=126) reported no change in dependence, 36% (n=224) a decrease, and 44% (n=278) an increase.
- Smoking status was associated with a change in dependence (p<0.05).
- Differences in change in dependence between people who never smoked and people who currently smoke were significant (p=0.011).
- Demographics (age, gender, race, income, sexual orientation, and region) and device and liquid characteristics (device type, nicotine formulation, paired combination of device type and nicotine formulation, nicotine concentration) were not associated with changes in dependence.

Conclusions

- A within persons relationship between smoking status and ENDS dependence change emerged within a year.
- The differences between people who never smoked and people who currently smoke suggest the latter may be less likely to have stable dependence and more likely to have decreasing dependence. Further investigation of these findings is warranted.
- Regulations that impact dependence could differentially impact users based on their smoking status.