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Characterizing Vaping Behavior Among Current Smokers Introduced to E-cigarettes

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Background: E-cigarette use (i.e., vaping) has risen in prevalence, and health experts agree that pose fewer risks than traditional cigarettes. However, we know relatively little about changes in e-cigarette use across time among current smokers who try e-cigarettes. The goal of this study was to utilize objective methods to characterize changes in e-cigarette use among current smokers who try e-cigarettes. Baseline predictors of use were also explored.

Methods: Data were collected from current smokers with limited e-cigarette experience (n=26) participating in a larger study investigating the effects of e-cigarette device characteristics on reinforcement. At baseline, participants sampled an e-cigarette and completed a variety of e-cigarette reinforcement assessments. Participants then took the device home for three weeks, and the device recorded every e-cigarette puff, providing an objective assessment of use. Primary outcomes included the average number of puffs/day and the number of days used/week. **Results:** In the last week of sampling, 85%, 42%, and 15% of participants used the e-cigarette on at least 1 day, 4 days, and 7 days, respectively. Across the sampling period, there was no significant change in average puffs/day ($p > 0.05$) but there was a significant decrease in the number of days used/week ($F(2,50) = 5.81, p < 0.05$). Baseline e-cigarette satisfaction and reinforcement predicted the numbers of puffs/day and number of days used in week 3 (Spearman's ρ all $> 0.44, ps < 0.05$). **Conclusion:** On average, e-cigarette use frequency decreased across the sampling period. Baseline measures of e-cigarette satisfaction and reinforcement significantly predicted e-cigarette use at the end of sampling. However, there was wide variability in e-cigarette use frequency. A larger sample size and longer sampling period would allow for better characterization of use. Furthermore, this study may be reflective of only one type of e-cigarette; future studies should investigate other e-cigarette types.