

## Background

- E-Cigarette use (i.e., vaping) has risen in prevalence over the last decade and health experts agree that they pose fewer risks than traditional cigarettes<sup>1,2,3</sup>.
- It is important to understand patterns of e-cigarette use and adoption among current smokers introduced to e-cigarettes<sup>4</sup>.
- Previous literature has mainly utilized self-report methods to characterize vaping behavior<sup>5</sup>.
- This study aimed to 1) characterize changes in vaping behavior in current smokers who try vaping across a 3-week sampling period by using an e-cigarette device that records puffs, 2) investigate whether baseline smoking and e-cigarette variables predict e-cigarette use at the end of sampling period.

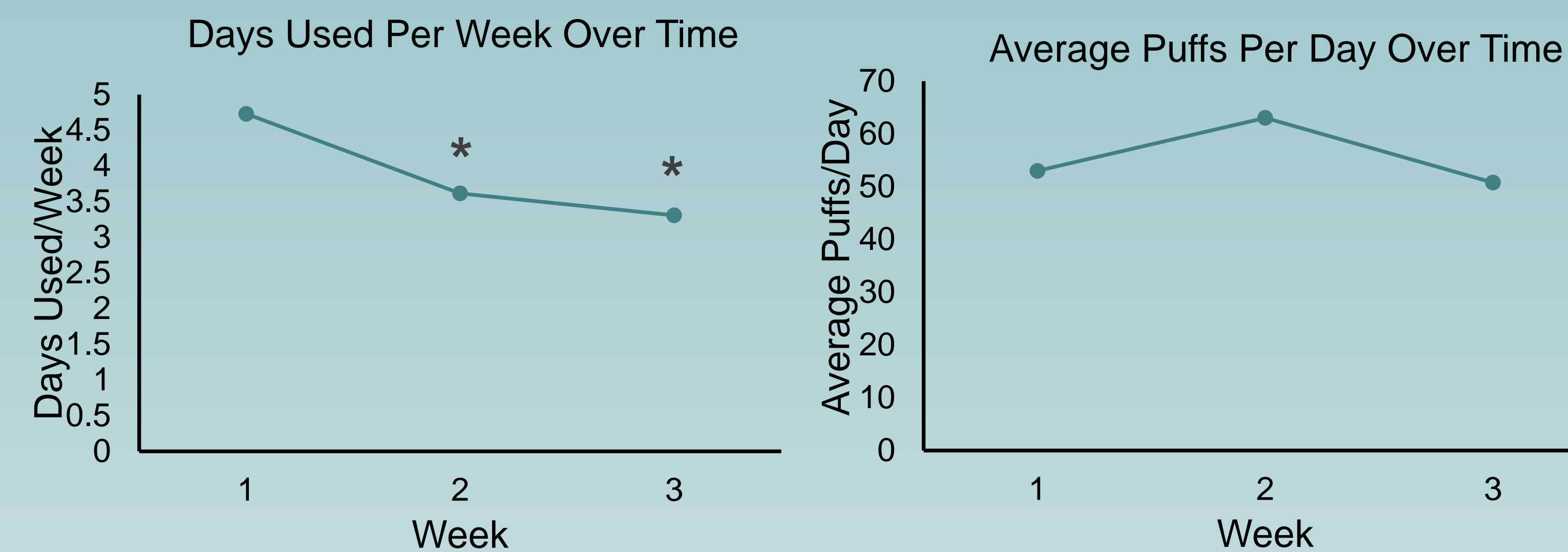
## Methods

- Data were collected from current smokers at least age 21 with limited e-cigarette experience (n=26, 42% female, 84.6% non-Hispanic white, age M= 44.2 (SD = 11.0), CPD M= 18.6, (SD = 7.4), 58% menthol) who were participating in a larger study investigating e-cigarette device characteristics and reinforcement.
- At baseline, participants completed baseline questionnaires before sampling a conventional cigarette and an e-cigarette in the lab (4 puffs each). Participants completed questionnaires assessing their satisfaction and perceived health risk for both smoking and vaping.
- Participants then completed a lab task designed to assess e-cigarette reinforcement value in which they chose between smoking and vaping across a series of trials.
- Participants then took the device home for three weeks, and the device recorded every puff
- The e-cigarette was a mod type (Mirage DNA 75c with Joyetech atomizer), and e-liquid was American e-liquid brand.
- Primary outcomes included average number of puffs/day and number of days used/week as recorded by the e-cigarette device during the 3-week sampling period.



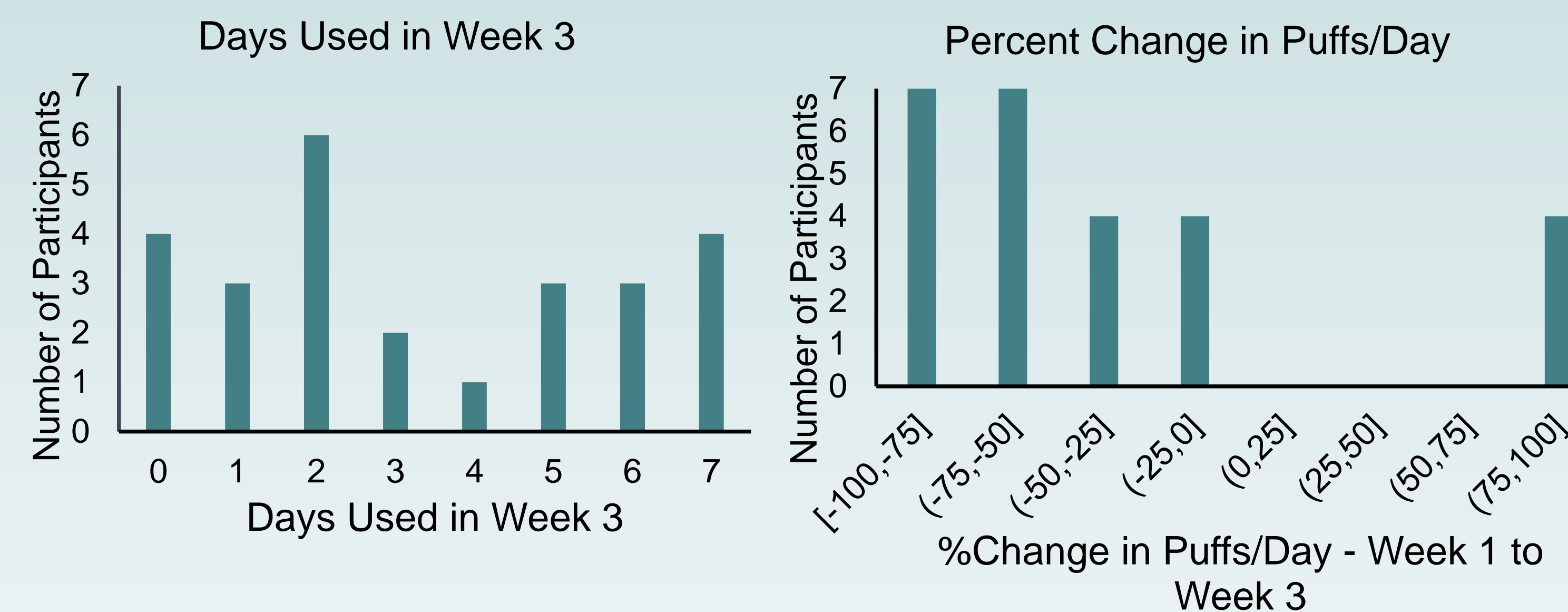
## Results

### Number of Days Used / Week Decreased Across Sampling



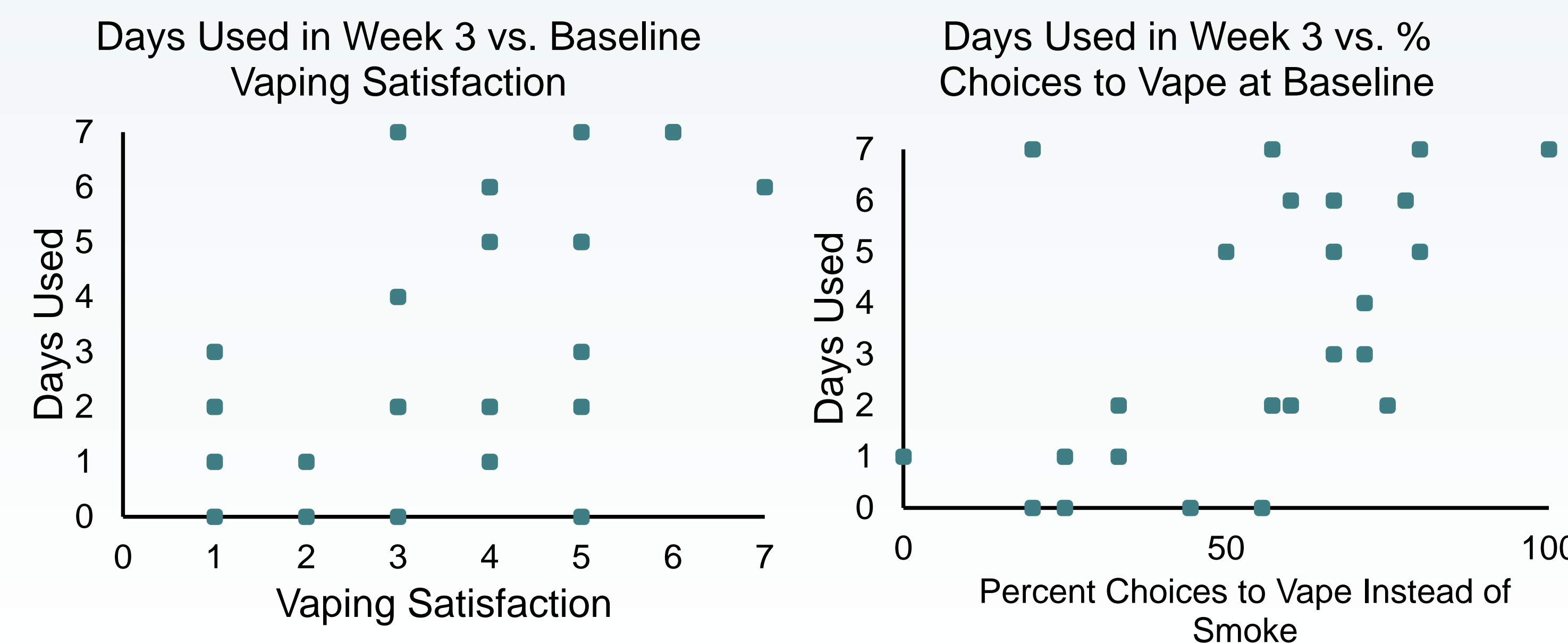
There was a significant decrease in the number of days used/week ( $F(2,50)=5.81, p < 0.05$ ) but no significant change in average puffs/day ( $p > 0.05$ ). Asterisks show significant difference from week 1.

### E-Cigarette Use was Highly Variable



In the last week of sampling, 85%, 42%, and 15% of participants used the e-cigarette at least 1 day, 4 days, and 7 days, respectively. Percent change over sampling period shows a small subset of participants increasing use frequency.

### E-Cigarette Satisfaction and Reinforcement Predict Use



Baseline e-cigarette satisfaction and reinforcement predicted the numbers of puffs/day and number of days used in week 3 (Spearman's  $\rho$  all  $> 0.44, ps < 0.05$ ). Motivation to quit smoking, Baseline cigarettes per day, cigarette satisfaction, perceived risk of cigarettes and e-cigarettes were not predictive.

## Conclusions

- On average, the number of days participants vaped per week decreased across the sampling period. There was no significant change in average puffs per day.
- However, there was wide variability in e-cigarette use frequency, with a small subset of participants (15%) using everyday and increasing use across the sampling period.
- These data indicate that e-cigarettes, at least the one used here, likely appeal to only a subset of current smokers.
- Baseline measures of e-cigarette satisfaction and reinforcement significantly predicted e-cigarette use at the end of sampling. Indicating that e-cigarette appeal after only a few puffs can be a significant predictor of e-cigarette use weeks later.
- A larger sample and longer sampling period would allow for better characterization.
- This study may be reflective of only one type of e-cigarette (mod systems). Future studies should investigate other e-cigarette types (Pod-based, disposable, etc.)
- In analyzing e-cigarette use, objective measures from the devices can provide valuable information. Future studies might compare data collected using the e-cigarette device to retrospective self-report data from participants

## References

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