

ASHES, Vol. 10(3) - E-volution: E-cigarette use patterns over one year

March 19, 2014

Editor's Note: Today's ASHES was written by Kerry Brechbiel. Kerry is a special contributor to the BASIS and a graduate student at East Carolina University.

Electronic cigarettes (e-cigarettes) have become a popular alternative to smoking, viewed as a cleaner, safer way to obtain a nicotine fix (Ungar, 2014). Although there is a paucity of scientific research on e-cigarettes, preliminary evidence suggests that their use might reduce cigarette use and increase smoking cessation (Bullen et al., 2013; Caponnetto et al., 2013; see [ASHES 7\(3\)](#) and [ASHES 9\(13\)](#)). This week, the ASHES reviews a longitudinal study of behavior change among e-cigarette users across 12 months (Etter & Bullen, 2014).

Methods

- The researchers posted a questionnaire about smoking and e-cigarette behaviors (in English and French) on the smoking cessation website Stop-Tabac.ch.
 - The researchers posted links to the questionnaire on websites that provided information about or sold e-cigarettes, as well as specialized discussion forums.
 - A total of 1,329 individuals completed the questionnaire. Of these, 773 provided their e-mail address and opted to participate in a follow-up study.
- Participants completed questionnaires at baseline, one month post-baseline, and one year post-baseline addressing the following topics:
 - E-cigarette use
 - Current smoking
 - Tobacco use in the past 7 days
 - Cigarettes per day (for current smokers)
 - Quit date (for former smokers)
- 477 individuals (62% of the 773 who provided email addresses) responded to the survey after one month, and 367 (48%) responded after one year.

Results

- Participants who completed at least one follow-up questionnaire were different at baseline than those who dropped out. They were more likely to be daily e-cigarette users, more likely to be former smokers, and more likely to report an intention to quit smoking in the next 6 months than those who dropped out.
- Figure 1 indicates daily e-cigarette use, dual use (i.e., both smoking and using e-cigarettes daily), relapse to smoking, and smoking cessation at one month and one year post-baseline.
 - On each occasion, about three quarters of the sample used e-cigarettes daily.
 - Among those who were ex-smokers at baseline, later relapse to smoking was rare: 6% had relapsed to smoking cigarettes at the one month follow-up, and 6% had relapsed at one year post-baseline.
 - The percentage of dual users remained at 4% from baseline to the one month follow up, and one year post-baseline follow up.
 - Among dual users at baseline, 22% quit smoking by the one month follow-up, and 46% quit by the one year post-baseline follow-up.

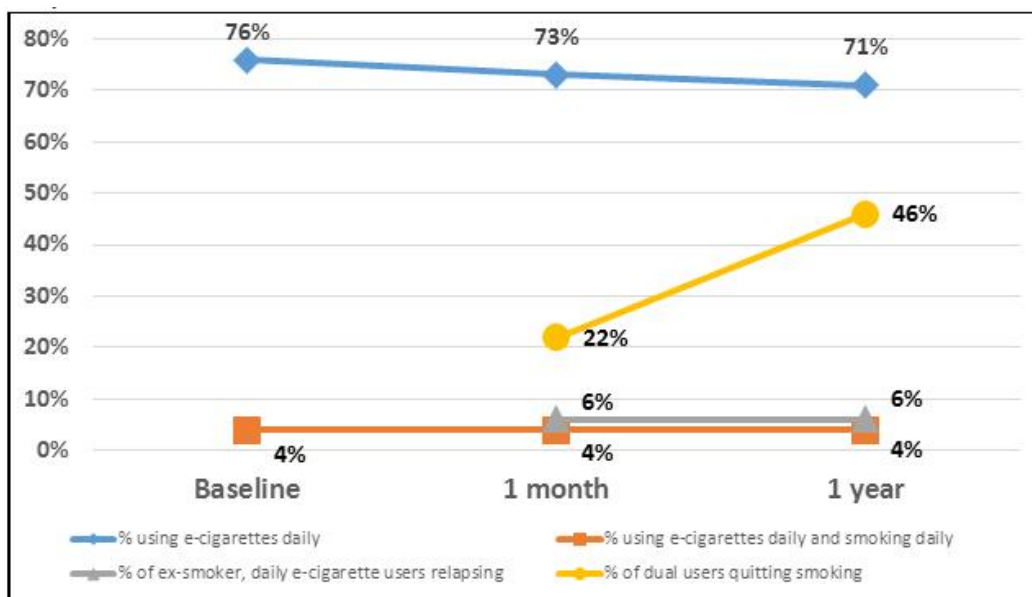


Figure. Participant e-cigarette-related and tobacco-related behaviors (adapted from Etter & Bullen, 2014). Note. Reported results at baseline were limited to the 477 who completed at least a 1 month follow-up. Sample sizes for baseline and one month post-baseline follow-up are therefore 477; sample size for one year post-baseline follow-up is 367. Click image to enlarge.

Limitations

- Information about use of cigarettes and e-cigarettes was based on self-report, which is susceptible to bias and memory errors.
- Participants were self-selected from a smoking cessation website and other e-cigarette-related websites. Therefore, they are not necessarily representative of all smokers.
- Participants who dropped out of the study differed significantly from those who completed the study on several key variables.
- There were a small number of dual users who participated in the study.

Conclusion

In this study, the majority of daily e-cigarette users remained using throughout the 12 month study, signifying that e-cigarette use might be a chronic behavior for many users. Among the small number of participants who were both smoking and using e-cigarettes at baseline, many stopped smoking. However, this study was not able to establish a causal link between e-cigarette use and smoking behaviors. Future research is needed to replicate these findings for further validation with a larger and more representative sample. Researchers should look into the specifics of how e-cigarette use directly contributes to smoking cessation, including comparing e-cigarette use to other cessation tools. In addition, this study indicates that future research should examine the health consequences associated with the chronic use of e-cigarettes.

-Kerry Brechbiel

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