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## **In-Vivo E-Cigarette Usage is Associated with Fluctuations in Positive and Negative Affect**

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**In-Vivo E-Cigarette Usage is Associated with Fluctuations in Positive and Negative Affect**

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Prepared for the 2022 Summer Scholarship Creative Arts and Research Program, Mentored by

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## Abstract

The use of e-cigarettes has become a popular replacement for traditional cigarettes since they were first introduced to the market in 2006. Evolution of these customizable devices has provided young adults with a plethora of different ways to vape nicotine. Although e-cigarettes are increasingly widely used, little research has been conducted to learn about factors that motivate and maintain usage of these devices at the intersection of affect, stress, and overall mood. The current study utilizes ecological momentary assessment (EMA) as a way to collect information in the moment, representative of daily life. In the study, 25 participants responded to a baseline survey and four daily surveys over the course of a 2-week period, providing information about their vaping behaviors. Results indicated that vaping prior to the daily survey prompt was associated with reduced negative affect (within-subjects  $b = -0.03$ ,  $p = 0.04$ ; between-subjects  $b = -0.17$ ,  $p < .001$ ) and enhanced positive affect (within-subjects  $b = 0.05$ ,  $p = 0.004$ ; between-subjects  $b = 0.13$ ,  $p < .001$ ), and that experiencing beneficial changes to affect as a result of vaping at one daily survey predicted likelihood of vaping at the next (positive affect between-subjects  $b = 0.15$ ,  $p = 0.02$ ; negative affect between-subjects  $b = -0.4$ ,  $p < .001$ ). Contrary to study hypotheses, participants' beliefs about the positive and negative consequences of vaping at baseline were generally not associated with daily vaping behavior. Participants' baseline belief that vaping provides negative affect reduction was associated with their change in negative affect following vaping in the daily surveys ( $b = -0.16$ ,  $p = 0.04$ ). This study is among the first to use EMA to examine vaping behaviors in-vivo and demonstrates that participants' affective responses to vaping indeed influence their continued usage. These findings have implications for interventions aimed at curbing young adults' e-cigarette consumption.

*Keywords:* e-cigarettes, vape, ecological momentary assessment (EMA), affect, stress