

Baylor College of Medicine Cancer Center

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Perceptions of E-Cigarettes and Effects on Craving, Withdrawal and Smoking Severity after Exposure to Virtual Reality Cues

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Abstract:

According to the 2011 National Survey on Drug Use and Health, 56.8 million Americans aged 12 or older were current (past month) cigarette smokers and nicotine is the most common form of chemical dependence in the US. The negative health effects of smoking are well known, but the vast majority of those who try to quit smoking fail by a week of the quit attempt. In place of quitting, many have turned to alternative products such as e-cigarettes to help control their cravings for nicotine. Recent data indicate dramatic increases in both awareness and use of e-cigarettes in the USA. However, little is known about the effects that e-cigarettes on smokers, particularly on craving. The current application is project 1a - one of two laboratory-based experiments for the P30 application. In this application, we will assess how e-cigarettes affect perceptions, craving, withdrawal symptoms and smoking severity after exposure to virtual reality (VR) cues. We are utilizing the VR platform under the assumption that by mimicking real world scenarios, cue reactivity observed in the laboratory will approximate that observed in the natural environment. Participants will include non-treatment seeking cigarette smokers (N=90) who agree to refrain from smoking for 24 hrs. Behavioral and physiological changes will be evaluated on three separate visits after exposure to an e-cigarette (0 or 18 mg) or their own preferred brand of cigarette using a single-blind, placebo-controlled, randomized controlled study design. Each visit will be separated by at least one week. This application has three Specific Aims: Aim 1. To evaluate the effects of e-cigarettes (0 or 18 mg) or own cigarette on VR-induced cue-reactivity (craving), perceptions and withdrawal symptoms; Aim 2. To evaluate the physiological effects produced by nicotine obtained from smoking e-cigarettes (0 or 18 mg) or own cigarette; and Aim 3. To evaluate the effects of e-cigarettes (0 or 18 mg) or own cigarette on smoking severity. Nicotine craving and withdrawal produce a host of unpleasant sensations that contribute to ongoing smoking and increased likelihood of relapse. This project will provide the FDA with empirical, hypothesis-driven, laboratory-based data showing whether e-cigarettes affect smoking severity by altering craving, withdrawal and physiological responses among smokers, and this information can be utilized to assess the extent to which e-cigarettes should be regulated or not.