



## Short Communication

## Length of smoking deprivation moderates the effects of alcohol administration on urge to smoke

Anne M. Day<sup>a,\*</sup>, Christopher W. Kahler<sup>a</sup>, Nichea S. Spillane<sup>a</sup>, Jane Metrik<sup>a,b</sup>, Damaris J. Rohsenow<sup>a,b</sup><sup>a</sup> Center for Alcohol and Addiction Studies, Brown University School of Public Health, Box G-S121-4, Providence, RI, 02912, United States<sup>b</sup> Providence Veterans Affairs Medical Center, Providence, RI 02908, United States

## HIGHLIGHTS

- Previous work from our laboratory found no effect of alcohol on urge to smoke.
- We hypothesized that this was due to a ceiling effect of urge after overnight smoking deprivation.
- The current study used an identical design with only 3 h of smoking deprivation.
- Participants who received alcohol experienced an increase in urge to smoke.
- 3 h of smoking deprivation appears useful in studies of alcohol's effect on smoking variables

## ARTICLE INFO

Available online 6 February 2014

## Keywords:

Alcohol  
Urge  
Smoking  
Balanced placebo design

## ABSTRACT

Although smoking deprivation is often used in laboratory studies to induce urges to smoke cigarettes, the optimal length of deprivation has not been established. Previous research showed that overnight abstinence from cigarettes led to high baseline urge to smoke that potentially masked alcohol's acute effects on urge to smoke (Kahler et al., 2012). The current study examined whether alcohol's effects on smoking urge were more pronounced when a shorter length of smoking deprivation was used (i.e., 3 h instead of overnight abstinence). Using a balanced placebo design for alcohol administration, we found that participants experienced a significant increase in self-reported urge to smoke when administered alcohol after a 3-h smoking deprivation ( $n = 32$ ), whereas this effect was smaller and nonsignificant when smokers were required to be abstinent overnight ( $n = 96$ ). Research on factors that heighten smoking urges may find stronger effects if a 3-h deprivation is used compared to using overnight abstinence.

© 2014 Elsevier Ltd. All rights reserved.

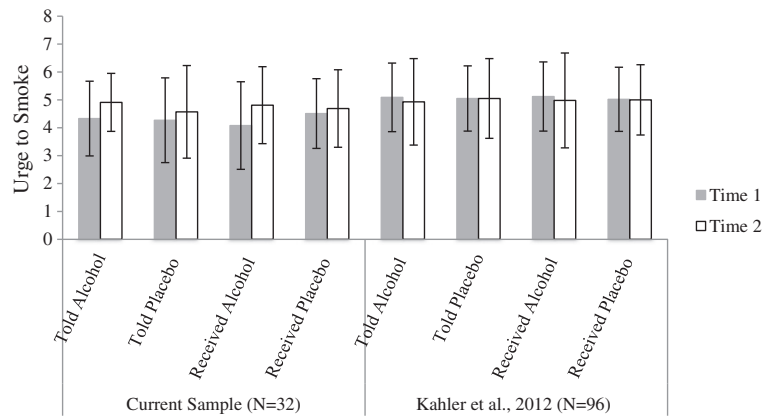
## 1. Introduction

Relapse to smoking often occurs in the context of alcohol consumption (Borland, 1990; Kahler, Spillane, & Metrik, 2010), although the reasons for this are not clear. To understand the links between acute alcohol intoxication and subsequent smoking, laboratory studies have been developed. These studies, which measure how alcohol and other experimental factors impact urge to smoke, typically use a smoking deprivation period prior to alcohol administration or another experimental manipulation to ensure that participants are not sated (Ashare & McKee, 2012; Colby et al., 2004; Cooney, Cooney, Pilkey, Kranzler, & Oncken, 2003; Harrison, Coppola, & McKee, 2009; Kahler et al., 2012; Leeman, O'Malley, White, & McKee, 2010; Palfai, Monti, Ostafin, & Hutchison, 2000). However, the optimal length of smoking deprivation to use in such studies has not been established. There is

reason to believe the length of smoking deprivation may influence results, with longer periods of deprivation potentially resulting in a ceiling effect (Kahler et al., 2009, 2012); that is, if participants are already experiencing a near-maximal level of urge to smoke, there may be little room for additional increments to that urge. For example, previous studies demonstrated an acute effect of alcohol on smoking urge in the context of a 3-h smoking deprivation (McKee, 2009; McKee, Krishnan-Sarin, Shi, Mase, & O'Malley, 2006), whereas a laboratory study requiring overnight smoking abstinence did not find a significant acute pharmacologic or expectancy effect of alcohol on cigarette urge (Kahler et al., 2012). (See Fig. 1.)

We know of no attempts to compare directly the effects of alcohol on urge to smoke following 3 h vs. overnight cigarette abstinence. Establishing the optimal period of smoking abstinence is important for the design of future lab studies on alcohol's impact on smoking as well as other acute experimental procedures aimed at eliciting smoking urges. In addition, this knowledge can inform models of how alcohol use contributes to smoking lapse at different stages of a smoking cessation attempt.

\* Corresponding author at: Center for Alcohol and Addiction Studies, Brown University, Box G-S121-4, Providence, RI 02912. Tel.: +1 401 863 6629; fax: +1 401 863 6697.  
E-mail address: anne\_day@brown.edu (A.M. Day).



Note: Time 1=immediately drink administration, 3 hrs after last cigarette; Time 2=42 minutes after drink administration began; cells reflect averages irrespective of crossed condition (e.g., told alcohol average takes into account those who received alcohol and placebo).

**Fig. 1.** Self-reported urge to smoke across conditions in balanced placebo design. Note: Time 1 = immediately drink administration, 3 hrs after last cigarette; Time 2 = 42 min after drink administration began; cells reflect averages irrespective of crossed condition (e.g., told alcohol average takes into account those who received alcohol and placebo).

### 1.1. Aims and hypotheses

We conducted a study mirroring that of Kahler et al. (2012) using 3 h instead of overnight abstinence. We compared the acute effects of alcohol on self-reported urge to smoke cigarettes in the new sample relative to the effects in the Kahler et al. (2012) study. We hypothesized that the sample using a short abstinence period (3 h) would show lower levels of initial urge to smoke and greater increases in urge following alcohol administration.

## 2. Method

### 2.1. Participants

The Brown University Institutional Review Board approved this study. Inclusion and exclusion criteria and procedures were identical to those used in Kahler et al. (2012), except for length of nicotine deprivation. Participants were community members who met the following inclusion criteria: 21 to 65 years of age, smoking 10–30 cigarettes a day, a carbon monoxide (CO) level >10 ppm, current heavy drinking ( $\geq 5$  drinks per occasion for men,  $\geq 4$  drinks for women) at least twice a month, and reported no history or intention to seek alcohol treatment. Exclusion criteria were: using nicotine replacement therapy or other tobacco product, planning to quit smoking in the next month, incapable of abstaining from alcohol for 24 h without significant withdrawal symptoms, current affective disorder or psychotic symptoms; illicit drug use on more than four occasions in the past 4 weeks, current pregnancy or nursing, medical issues or medications contraindicated for alcohol consumption, weighing greater than 250 lbs, and prior knowledge about study procedures or contact with study participants.

Those who met eligibility criteria completed a single experimental session ( $n = 32$ ). During informed consent, participants were informed that the study evaluated effects of alcohol on smoking behavior and that they would be randomly assigned to consume a beverage containing alcohol or a nonalcoholic beverage.

### 2.2. Design

Complete details on study design are presented in Kahler et al. (2012). In both studies we used a 2x2 balanced placebo design crossing alcohol administration (0.4 g/kg of alcohol or placebo) with beverage

content instructions (told alcohol or told placebo). Designs differed only in length of deprivation period (3 vs. 15 h), and we performed analyses on the combined sample of the current study and sample of Kahler et al. (2012), using length of deprivation as an independent variable in these analyses. Research assistants were blind to the alcohol content of the beverage.

### 2.3. Procedure

Participants completed interview and self-report assessments including demographics, diagnostic interview, and smoking and alcohol use questions. Participants were instructed to refrain from drinking alcohol for 24 h prior to both sessions, confirmed by a zero breath alcohol concentration (BrAC) per an Alco-Sensor IV (Intoximeters, Inc., St Louis, MO, USA) upon arrival. Participants were instructed not to eat any solid foods within 4 h or drink any liquids within 2 h prior to the session. In Kahler et al. (2012), participants were instructed to abstain from smoking overnight before the session, which was verified by a reduction in carbon monoxide levels of at least 50% relative to baseline. In the current study, participants were allowed to smoke *ad libitum* prior to the session, were provided a small meal, and then smoked in the lab, exactly 3 h before alcohol administration. All sessions occurred in a ventilated smoking room with a one-way mirror window.

Participants completed measures of urge to smoke immediately prior to beverage administration (Time 1), and a second measure of urge to smoke 42 min after starting drinking (Time 2). Participants who received alcohol received a drink that contained a 5:1 ratio of fresh tonic/vodka, and those who received placebo received a drink that contained 5:1 ratio of fresh tonic/flat tonic (0.0 g/kg). Participants had to consume each of three drinks over 15 total minutes (5 min per drink).

### 2.4. Measures

Demographic and substance use characteristics were assessed using a self-report measure.

Alcohol dependence was measured via Structured Clinical Interview for DSM-IV (SCID; First, Spitzer, Gibbon, & Williams, 1995).

Urge to smoke was assessed using the Brief Questionnaire of Smoking Urges (Cox, Tiffany, & Christen, 2001). This well-validated measure includes 10 items that assess urges to smoke for either positive reinforcement (Factor 1) or negative reinforcement (Factor 2). Previous

Download English Version:

<https://daneshyari.com/en/article/10443259>

Download Persian Version:

<https://daneshyari.com/article/10443259>

[Daneshyari.com](https://daneshyari.com)