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Expectancies for smoking cessation among drug-involved smokers: Implications for clinical practice

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ABSTRACT

Drug-involved smokers may be less motivated to quit smoking because they expect smoking cessation to occasion adverse outcomes (e.g., exacerbation of drug use). Non-treatment-seeking adult smokers from the community ($N = 507$) reported drug involvement, expectancies for smoking abstinence via the Smoking Abstinence Questionnaire (SAQ), and motivation to quit smoking (desire to quit and abstinence goal). Mediation analyses evaluated the indirect effects of binge drinking, marijuana, cocaine, other stimulant, opiate, and barbiturate/other sedative involvement on motivation to quit smoking through the SAQ Adverse Outcomes scale. Adverse outcomes expectancies accounted for a reduced desire to quit smoking and a lower likelihood of endorsing a goal of complete smoking abstinence among those involved with binge drinking, marijuana, cocaine, other stimulants, opiates, and barbiturates/other sedatives. Drug-involved smokers' greater expectancies for adverse outcomes upon quitting smoking may deter smoking quit attempts. Interventions are encouraged to counteract the notion that smoking cessation jeopardizes sobriety.

1. Introduction

Whereas neurobiological and other factors have been implicated in the comorbidity between tobacco and other drug use (e.g., Guydish et al., 2011; Hall & Prochaska, 2009; Pontieri, Tanda, Orzi, & Di Chiara, 1996), a lore that cigarette use is therapeutic and supports drug abstinence may contribute to this overlap. Tobacco industry efforts to market cigarettes as medicinal (e.g., Gardner & Brandt, 2006; Prochaska, Hall, & Bero, 2008) as well as the pervasive influence of Alcoholics Anonymous, which has historically viewed smoking cessation as an impediment to sobriety (Bobo & Husten, 2000), are likely culprits in this cultural zeitgeist. Accordingly, less than 20% of drug abuse treatment centers offer smoking cessation counseling (Knudsen, Studts, Boyd, & Roman, 2010), with approximately 40% discontinuing this service over time (Knudsen, Muilenburg, & Eby, 2013). Furthermore, the smoking prevalence among drug abuse treatment staff is as high as 40%, twice the prevalence of the general U.S. population (Guydish, Passalacqua, Tajima, & Manser, 2007), and drug abuse treatment settings are among the only clinical venues that still allow their patients to smoke (Prochaska, 2010). Although policies that require drug abuse treatment facilities to establish tobacco-free sites and provide tobacco interventions have been enacted, they are new and not yet universally adopted (e.g., New York State's tobacco-free services regulation of 2008; see Brown, Nonnemaker, Federman, Farrelly, & Kipnis, 2012 and Eby & Laschober, 2013). While the notion that smoking cessation exacerbates drug use is perhaps most apparent in clinical settings, it nonetheless appears to extend beyond clinical settings (e.g., Hendricks, Wood, & Hall, 2009), and may correspond to a widespread assumption (Bobo & Husten, 2000).

Despite the lore that smoking helps maintain sobriety, smoking cessation interventions delivered to those with drug abuse problems increase the likelihood of drug abstinence by 25% (Prochaska, Delucchi, & Hall, 2004), and quitting smoking during the first year of drug abuse treatment predicts more favorable drug abuse outcomes as long as 9 years after the initiation of treatment (Tsoh, Chi, Mertens, & Weisner, 2011). Conversely, drug involvement typically decreases the likelihood of smoking cessation (e.g., Hendricks, Delucchi, Humfleet, & Hall, 2012). While the mechanisms underlying this effect have only recently been investigated (Hendricks et al., 2012), it has been suggested that drug-involved smokers may be less motivated to quit smoking than their non-drug-involved counterparts (e.g., Asher et al., 2003; Hughes & Kalman, 2006).

Are drug-involved smokers less motivated to quit smoking because they have internalized the notion that smoking cessation jeopardizes drug abstinence? The most pertinent findings indicate

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that between 13 and 70% of alcohol dependent individuals in treatment believe smoking cessation could compromise sobriety, although alcohol- and other drug-dependent individuals in treatment report smoking to cope with drug urges less than half of the time (Asher et al., 2003; Carmody et al., 2012; Rohsenow, Colby, Martin, & Monti, 2005). Nevertheless, differences in expectancies for smoking abstinence between those who are and are not involved with drugs, and the effect of these differences on motivation to quit, have not yet been investigated. Examining non-treatment-seeking smokers rather than the minority of drug-involved smokers who seek treatment (Substance Abuse and Mental Health Services Administration, 2013) would allow not only for comparisons across levels of drug involvement, but also for generalizability of results to the wider population of cigarette users.

In this study, non-treatment-seeking cigarette users from the community completed a questionnaire of drug involvement, an instrument of expectancies for smoking abstinence, and two distinct indices of motivation to quit smoking. We hypothesized that greater expectancies for those consequences that may be particularly meaningful to drug-involved smokers, namely adverse outcomes upon smoking cessation, would account for lower levels of motivation to quit smoking among those involved with drugs.

2. Materials and methods

2.1. Participants

This research compared participants from a study designed to develop a measure of smokers' abstinence-related expectancies, the details of which can be found elsewhere (Hendricks et al., in press; Hendricks, Wood, Baker, Delucchi, & Hall, 2011). Participants were 507 non-treatment-seeking smokers recruited from the San Francisco Bay Area via community advertisements. Eligibility criteria were as follows: (1) ≥ 18 years old; (2) fluent in English; (3) currently smoking ≥ 10 cigarettes/day; and 4) expired breath carbon monoxide (CO) levels of ≥ 10 parts per million. Participants who met telephone screening criteria were scheduled for an in-person appointment. Upon providing informed consent, participants provided a CO sample and were given a packet of paper-and-pencil questionnaires to complete at their own pace. This study was approved by the institutional review committees of the University of Alabama at Birmingham and the University of California, San Francisco, and therefore complied with the Helsinki Declaration of 1975.

The sample was 53.3% male and 76.1% heterosexual with a mean age of 40.8 years (SD = 12.4); 36.5% was White, 29.8% was African American, 17.2% was American Indian, and 16.5% belonged to other racial groups. Participants smoked daily for a mean of 21.05 years (SD = 12.64), smoked a mean of 17.84 cigarettes per day (SD = 7.68), had a mean Fagerström Test for Cigarette Dependence (FTCD; Fagerström, 2012) score of 4.94 (SD = 2.14), and had a mean past 24-hour Minnesota Nicotine Withdrawal Scale (MNWS; Hughes & Hatsukami, 1986) total score of 1.67 (SD = .94). Participants reported a mean of 12.18 quit attempts of at least 1 day (SD = 18.75) and a mean of 7.83 quit attempts of at least 1 week (SD = 25.61).

2.2. Measures

2.2.1. Drug involvement

An author-constructed questionnaire provided a definition of a standard drink ("1 drink = 12 oz. beer, 4 oz. wine, or 1.5 oz. distilled spirits") and asked participants, "How often do you have six or more drinks on one occasion?" (a gender-neutral criterion that may more accurately reflect binge drinking than five or more drinks on one occasion; Lange & Voas, 2001) with the following response options: "never," "less than monthly," "monthly," "weekly," and "daily or almost daily." The same questionnaire also asked participants, "How often do you use marijuana?", "How often do you use cocaine (including crack)?", "How often do you use other stimulants (e.g., amphetamine, methamphetamine, etc.)?", "How often do you use opiates (e.g., heroin, morphine, etc.)?", and "How often do you use barbiturates or other sedatives?" with the following response options: "never," "monthly or less," "two to four times a month," "two to three times a week," and "four or more times a week."

2.2.2. Expectancies for smoking abstinence

The Smoking Abstinence Questionnaire (SAQ; Hendricks et al., 2011) was used to measure expectancies for smoking abstinence, instructing participants to rate how likely 55 consequences (i.e., items) would be for them if they quit smoking (0 = "not likely at all" to 6 = "extremely likely"). The SAQ is composed of 10 scales with adequate to excellent reliability that: (1) demonstrate robust correlations with a number of smoking-related constructs including dependence (Hendricks et al., 2011); (2) mediate the relationships of race and gender with motivation to quit and abstinence self-efficacy (Hendricks et al., in press); and (3) prospectively predict abstinence-induced withdrawal symptoms (Hendricks & Leventhal, in press). In the current study, analyses focused on the Adverse Outcomes scale ($\alpha = .75$), which assesses expectancies that quitting would result in a number of negative consequences on seven items, including two items specific to drug use (i.e., "My drug habit would increase if I quit," "My use of other drugs would increase.") and five pertaining to unfavorable interpersonal outcomes (i.e., "The people close to me would make fun of me for trying to stop smoking," "I would feel like a traitor to my fellow smokers," "I would look less attractive than before," "Without a cigarette, I would not look as cool," and "I would feel like I had been bullied into quitting."). Though only two of seven items refer explicitly to drug use, analyses using these two items only, the five non-drug items only, and the complete scale each yielded similar results (not reported here). Analyses thus used the complete scale. As a priori hypotheses were not developed for the remaining nine SAQ scales, these scales were excluded from primary analyses.

2.2.3. Motivation to quit

The Thoughts About Abstinence Questionnaire (TAA; Hall, Havassy, & Wasserman, 1990) assessed motivation to quit smoking "at this time" on two distinct items. The first asked participants to rate their "desire to quit smoking" on a 1 to 10 scale (1 = "no desire to quit", 10 = "full desire to quit"), and the second asked participants to choose one of seven categories that best reflects their abstinence goal: (1) no goal; (2) controlled use; (3) abstinence for a short time, then decide about continued use; (4) smoking occasionally, but not let it be a habit; (5) quit smoking, but might slip; (6) complete abstinence; and (7) other. Both items are consistent predictors of smoking cessation (e.g., Hall, Havassy, & Wasserman, 1991; Hendricks, Delucchi, & Hall, 2010).

2.3. Data analysis

Drug involvement data were positively skewed, comprising largely "never" responses (see Results), and therefore were combined into two categories each for binge drinking, marijuana, cocaine, other stimulants, opiates, and barbiturates/other sedatives: (1) no involvement or (2) involvement (dummy coded 0 and 1, respectively). For each drug, differences in demographic and smoking characteristics between those reporting no involvement and those reporting involvement were examined with analyses of variance and chi-square tests; any characteristics that differed significantly ($p < .05$) between groups were included as covariates in subsequent analyses. As in prior work (e.g., Hall et al., 1991; McKay, Merikle, Mulvaney, Weiss, & Koppenhaver, 2001), abstinence goal was defined by two categories: (1) endorsement of a goal other than complete abstinence or (2) complete abstinence (dummy coded 0 and 1, respectively).