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Heavy-Drinking Smokers' Treatment Needs and Preferences: A Mixed-Methods Study

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ABSTRACT

The purpose of this mixed methods study was to describe the smoking and psychological characteristics of heavy-drinking smokers, their perceptions of smoking and drinking, and their smoking and alcohol treatment preferences to inform an integrated smoking and alcohol intervention. Heavy-drinking smokers (N = 26) completed standardized surveys and participated in semi-structured focus group interviews. Participants reported a strong association between their smoking and drinking. Participants were more motivated to quit smoking than to reduce their drinking but perceived greater barriers to smoking cessation. Stress/negative affect was closely linked with both behaviors. They expressed overall enthusiasm for a smoking and alcohol intervention but had specific format and content preferences. Half preferred an integrated treatment format whereas others preferred a sequential treatment model. The most preferred content included personalized health feedback and a way to monitor health gains after behavior changes.

1. Introduction

Cigarette smoking rates are elevated among individuals who report heavy alcohol consumption. More than 50% of individuals who report drinking (defined as >14 drinks per week/5 per day for men and >7 drinks per week/4 per day for women (Substance Abuse and Mental Services Administration, 2006)) smoke cigarettes compared with 23–39% of individuals who either abstain from alcohol or drink only moderately (Dawson, 2000; Falk, Yi, & Hiller-Sturmhöfel, 2006). Cigarette smoking is the leading preventable cause of morbidity and mortality in the United States (U. S. Department of Health and Human Services, 2014), and when combined with heavy alcohol has a synergistic effect on health including increased risk of liver, head, and neck cancers, liver cirrhosis, pancreatitis (Kuper et al., 2000; Lowenfels et al., 1994; Vaillant, Schnurr, Baron, & Gerber, 1991; Znaor et al., 2003), and abnormalities in brain structure and function (Durazzo, Cardenas, Studholme, Weiner, & Meyerhoff, 2007).

Combined heavy alcohol use and cigarette smoking is also associated with poor treatment outcomes. Heavy-drinking smokers are less likely to initiate a smoking quit attempt (Cook et al., 2012; Osler, Prescott, Godtfredsen, Hein, & Schnohr, 1999; Zimmerman, Warheit, Ulbrich, & Auth, 1990), achieve and maintain smoking abstinence (Cook et al., 2012; Dawson, 2000; Hughes & Kalman, 2006; Kahler et al., 2009; Leeman et al., 2008), and successfully moderate or abstain from alcohol use (Baltieri, Daró, Ribeiro, & Andrade, 2009; Fucito et al., 2012). Thus, more effective treatments for concurrently reducing smoking and heavy drinking are warranted.

Several factors may limit treatment response in heavy-drinking smokers. Heavy alcohol use may enhance smoking motivation, and smoking may promote motivation to drink (Barrett, Campbell, Roach, Stewart, & Darredeau, 2013; Carter & Tiffany, 1999; Cooney, Cooney, Pilkey, Kranzler, & Oncken, 2003; Gulliver et al., 1995; King & Epstein, 2005; Lê et al., 2000; McKee, Krishnan-Sarin, Shi, Mase, & O'Malley, 2006; Rohsenow et al., 1997). Heavy drinking may disinhibit individuals to smoke (Drobes, 2002) or potentiate the rewarding effects of nicotine (Harrison, Hinson, & McKee, 2009; King, McNamara, Conrad, & Cao, 2009; McKee, Hinson, Rounsaville, & Petrelli, 2004; Piasecki, McCarthy, Fiore, & Baker, 2008; Rose et al., 2004). Similarly, cigarette smoking may enhance alcohol reinforcement by reducing the sedating effects and cognitive deficits associated with alcohol use thereby enabling drinkers to consume heavier amounts of alcohol (Drobes, 2002). Therefore, treating one behavior in isolation of the other may render heavy-drinking smokers' efforts to change either behavior less successful.

Despite these risks, smoking cessation treatment is not typically provided concurrently with treatment for co-occurring substance use, psychiatric, or medical disorders (Fiore et al., 2008; Hall & Prochaska, 2009). Moreover, effective integrated interventions for smokers with common co-morbidities are understudied. With regard to heavy drinking, there is concern that smoking cessation will negatively affect drinking outcomes (Gulliver, Kamholz, & Helstrom, 2006) and misperceptions that smoking is less harmful than heavy drinking. On the contrary, more heavy drinkers will die from smoking-related causes than alcohol-

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related causes (Prochaska, 2010), quitting smoking does not jeopardize and may even promote drinking changes (Cooney et al., 2015; Prochaska, Delucchi, & Hall, 2004), and many heavy drinkers are motivated to quit smoking (Gulliver et al., 2006).

Prior studies have investigated smoking interventions provided during or shortly following outpatient or inpatient alcohol treatment (Kalman, Kim, DiGirolamo, Smelson, & Ziedonis, 2010; Prochaska et al., 2004). Most interventions were brief (i.e., a few sessions), provided concurrent to but not integrated with alcohol treatment, and associated with low smoking quit rates (Kalman et al., 2010; Prochaska et al., 2004). Adding smoking pharmacotherapy to these interventions yielded higher smoking quit rates, but quit rates were still low and not sustained beyond treatment (Cooney et al., 2015; Kalman et al., 2010; Prochaska et al., 2004). Two studies have examined a brief alcohol intervention integrated into smoking cessation treatment for heavy-drinking smokers seeking to quit smoking (Kahler et al., 2008; Toll et al., 2014). Heavy-drinking smokers, not currently alcohol dependent, received 8 weeks of nicotine patch therapy starting on the quit day and either 4 weeks of standard smoking counseling or standard smoking counseling plus brief alcohol advice starting 2 weeks before quitting. The integrated treatment resulted in greater smoking abstinence and alcohol use reductions, but these effects were modest; smoking changes also did not persist beyond treatment and were greatest among only moderately heavy-drinking smokers. Another study tested the provision of a brief alcohol intervention to heavy-drinking smokers contacting a state smokers' quitline (Toll et al., 2014). Adding alcohol-related content to a single smoking cessation phone session increased smoking quit rates compared to standard care 7 months after treatment completion. In addition, the integrated intervention group reported fewer heavy drinking days at the 7-month follow-up than the standard care group, but the difference was not significant ($p = .07$).

Despite these limitations, integrated treatment is a promising model for addressing smoking and heavy drinking and highlights how smoking treatment can provide an opportunity to identify and intervene with individuals who report heavy drinking. Providing a more intensive intervention before and after quitting smoking and incorporating skill development relevant for changing alcohol use might promote sustained smoking abstinence and greater drinking reductions in this population.

The purpose of this mixed methods study was to understand heavy-drinking smokers' smoking and drinking behaviors and their reactions to a proposed integrated smoking and alcohol treatment program to inform intervention development. The aims were threefold: (1) to describe the heavy-drinking-reported smoking, drinking, and psychological characteristics of heavy-drinking smokers, (2) to characterize heavy-drinking smokers' perceptions of smoking and the association between smoking and alcohol use, and (3) to describe smokers' smoking and alcohol treatment preferences.

2. Material and methods

2.1. Design

A mixed-methods descriptive design was used (quantitative + qualitative) (Creswell & Plano Clark, 2011). Participants were 26 smokers who reported an interest in quitting smoking. Participants completed standardized surveys and participated in semi-structured focus group interviews. Data were collected and analyzed for each qualitative and quantitative strand individually and then integrated in the discussion.

2.2. Study sample

Heavy-drinking smokers were recruited between May and December of 2013 from the local community primarily through advertisements on Facebook and Craigslist and flyers posted on public noticeboards. Advertisements targeted smokers who drink alcohol and stated that the purpose of the study was to conduct interviews with them to better understand the association between smoking and drinking and to assess their smoking cessation and alcohol treatment preferences. Inclusion and exclusion criteria were based on eligibility criteria for a larger clinical trial of pharmacotherapy plus counseling for heavy-drinking smokers. To be eligible, participants had to be at least 18 years of age and report the following: (1) smoking ≥5 cigarettes/day on average for ≥1 year and have an expired breath carbon monoxide level of >4 ppm (participants did not have to report daily smoking), (2) interest in quitting smoking, and (3) exceed NIAAA heavy drinking criteria (i.e., for men, >14 drinks/week or 5 drinks/day at least once per month over the past 12 months; for women, >7 drinks/week or >4 drinks/day at least once per month over the past 12 months. Participants were excluded for the following: (1) clinically severe alcohol dependence in the past 12 months defined by seizures, delirium, or hallucinations during withdrawal or a Clinical Institute Withdrawal Assessment Scale (Sullivan, Sykora, Schneiderman, Naranjo, & Sellers, 1989) score of > 8; (2) current enrollment in alcohol or smoking cessation treatment; (3) current substance dependence other than nicotine; (4) current psychosis, suicidality, cognitive impairment; (5) report new onset of psychiatric disorders or new psychotropic medications within the past 3 months; (6) currently pregnant or nursing.

2.3. Procedures

Interested volunteers who clicked on Web-based advertisements or contacted study staff were first directed to the study Web site to complete a Web-based pre-screener that took approximately 5 minutes. Individuals who met initial eligibility were then invited to participate in an in-person intake appointment of approximately 90 minutes to verify final eligibility and assess demographic information and smoking, drinking, and psychosocial characteristics. Eligible participants participated in 1 of 8 focus group interview sessions that took place immediately following or up to 7 weeks after intake. Focus group sessions were composed of 2–6 participants who were interviewed as a group; one participant who was unable to attend any group session completed an individual interview. In interview sessions, each participant was asked to provide his/her opinion at the end of a given discussion topic by raising his/her hand in agreement so that we could get an estimated count of heavy drinkers' perceptions and treatment preferences. At the beginning of each interview session, participants were informed that a primary goal of the study was to evaluate their reactions to an integrated program to help people “quit smoking and reduce drinking.”

2.4. Quantitative measures

At intake, two interviews were conducted: (1) the Timeline Followback Interview (TLFB) (Sobell & Sobell, 2003) assessed quantity and frequency of smoking and alcohol use for a 90-day period prior to study enrollment, and (2) the Structured Clinical Interview (SCID) (First, Spitzer, Gibbon, & Williams, 1996) determined current and lifetime diagnoses of DSM-IV substance use and specific Axis I psychiatric disorders (i.e., alcohol, drug, panic disorder, psychosis, and mood disorders).

All other measures were computer-based. Participants completed demographic and smoking history questionnaires that were designed for this study. Nicotine dependence was measured by the six-item Fagerström Test for Nicotine Dependence (Heatherton, Kozlowski, Frecker, & Fagerström, 1991). The 14-item Obsessive Compulsive Drinking Scale (OCDS) assessed thoughts about drinking, urges to drink, and the ability to resist these thoughts and urges (Anton, 2000). A 5-item version of the Questionnaire on Smoking Urges-Brief (Toll, Katulak, & McKee, 2006) was used to measure the structure and function of cravings to smoke cigarettes. The scale has two factors and characterizes urge to smoke in response to: (1) desire and intention to smoke and (2) relief from nicotine withdrawal or negative affect. The Contemplation Ladder (Biener & Abrams, 1991), a single item measure of stage of behavior change (i.e., precontemplation, contemplation, preparation,