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Characterizing smoking, cessation services, and quit interest across outpatient substance abuse treatment modalities☆,☆☆,★,★★

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ABSTRACT

The majority of individuals seeking treatment for substance use disorders are cigarette smokers, yet smoking cessation is rarely addressed during treatment. Conducting a detailed smoking-related characterization of substance abuse treatment patients across treatment modalities may facilitate the development of tailored treatment strategies. This study administered a battery of self-report instruments to compare tobacco use, quit attempts, smoking knowledge and attitudes, program services, and interest in quitting among smoking patients enrolled in opioid replacement therapy (ORT) versus non-opioid replacement (non-ORT). ORT compared with non-ORT participants smoked more heavily, had greater tobacco dependence, and endorsed greater exposure to smoking cessation services at their treatment programs. Favorable attitudes towards cessation during treatment were found within both groups. These data identify several potential clinical targets, most notably including confidence in abstaining and attitudes toward cessation pharmacotherapies that may be addressed by substance abuse treatment clinics.

1. Introduction

The prevalence of tobacco use among substance abuse treatment program enrollees has been shown to be astonishingly high, with a number of studies demonstrating ranges of 75–97% (Bobo, 1989; Guydish et al., 2011a; Kalman, 1998; Nahvi, Richter, Li, Modali, & Arnsten, 2006; Pajusco et al., 2012). This is significantly higher than smoking rates in the general population, which is approximately 19.3% in the United States (Centers for Disease Control and Prevention (CDC), 2011). Those enrolled in substance abuse treatment are more likely to die due to smoking-related illnesses than from complications from their primary drug of choice (Baca & Yahne, 2009; Hser, McCarthy, & Anglin, 1994; Hurt et al., 1996). Despite high rates of smoking in substance abuse treatment patients, and the well-known health risks of smoking, the problem is generally not addressed in treatment clinics. Survey studies administered across treatment settings have reported estimates of smoking cessation services being offered in approximately 18% to 41% of programs that responded (Friedmann, Jiang, & Richter, 2008; Fuller et al., 2007; Richter, Choi, McCool, Harris, & Ahluwalia, 2004).

High rates of smoking and smoking-related illness among patients receiving treatment for substance use disorders has prompted several states and national organizations to encourage the development of smoking cessation interventions for these patients (American Society of Addiction Medicine, 2008; New York State Office of Alcoholism and Substance Abuse Services, 2008; Williams, 2008), which is consistent with the recommendations of the Tobacco Use and Dependence Clinical Practice Guidelines (Fiore et al., 2008). This approach is supported by studies suggesting that smoking cessation interventions during substance abuse treatment do not jeopardize and may even enhance long-term abstinence from drugs and alcohol (Bobo,

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☆☆ All authors contributed to the design and execution of the study, analyses of data, and manuscript preparation. All authors have approved the manuscript.

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McIlvain, Lando, Walker, & Leed-Kelly, 1998; Frosch, Shoptaw, Nahom, & Jarvik, 2000; Hughes, 1993; Joseph, Nichol, & Anderson, 1993; Prochaska, Delucchi, & Hall, 2004; Richter & Arnsten, 2006; Tsoh, Chi, Mertens, & Weisner, 2011). For example, among patients receiving treatment for substance use disorders, smoking abstinence at the end the first year of treatment was the most robust predictor of abstinence from illicit drug use at a 9-year follow-up (Tsoh et al., 2011), and a meta-analysis of smoking cessation in substance abusers reported a 25% increased likelihood of long-term drug abstinence among patients who also achieved smoking cessation (Prochaska et al., 2004). Substance abuse treatment centers also have the ability to provide smoking cessation resources. Patients generally attend the clinic frequently and for extended periods of time, which provides a unique opportunity to consistently monitor smoking, adjust smoking cessation strategies as needed, and generally implement an extended cessation intervention.

Understanding the smoking characteristics and cessation needs of patients receiving substance abuse treatment is critical for integrating cessation services into clinics. Smoking and cessation resources have been well-characterized among substance abuse treatment patients receiving methadone maintenance. Approximately 92% of methadone-maintained patients smoke cigarettes (Clemmey, Brooner, Chutuape, Kidorf, & Stitzer, 1997; Haas et al., 2008; Nahvi et al., 2006; Richter, Gibson, Ahluwalia, & Schmelzle, 2001), 70–80% report an interest in quitting smoking, 68–75% have attempted to stop smoking at least once, and 75% report willingness to participate in a smoking cessation intervention if one were made available (Clemmey et al., 1997, Nahvi et al., 2006; Richter et al., 2001; Clarke, Stein, McGarry, & Gogineni, 2001; Frosch, Shoptaw, Jarvik, Rawson, & Ling, 1998; Kozlowski, Skinner, Kent, & Pope, 1989; Sees & Clark, 1993). Frequent access to medical staff in methadone clinics has also been associated with increased availability of smoking cessation resources (Friedmann et al., 2008) and more sustainable use of nicotine replacement therapy (Knudsen & Studts, 2011). However, several studies have reported that opioid agonists increase the reinforcing effects of cigarettes (Chait & Griffiths, 1984; Mello, Mendelson, Sellers, & Kuehnle, 1980; Mello, Lukas, & Mendelson, 1985; Mutschler, Stephen, Teoh, Mendelson, & Mello, 2002; Schmitz, Grabowski, & Rhoades, 1994), which suggests that opioid-dependent patients with continued use or who are receiving opioid replacement therapy (ORT) like methadone or buprenorphine maintenance may have different smoking profiles than those with non-opioid substance use. Thus, these data may not generalize to non-opioid maintained patients, and there is a dearth of current studies available to characterize smoking and interest in quitting among general substance abuse treatment patients. Further, interest in specific smoking cessation products has not been well-characterized in either population. Finally, although a recent review reported that smoking has generally decreased in ORT and non-opioid replacement therapy (non-ORT) patients over time (Guydish et al., 2011a), consistent with downward smoking trends evident in the general population, the results did not address the specific smoking characteristics and interest in quitting that might persuade substance abuse treatment clinics to offer smoking cessation resources to their patients.

The purposes of the current study were to characterize the smoking profile of substance abuse treatment patients receiving either ORT or non-ORT treatment services and to identify any potential differences among these patients, which may then inform smoking cessation treatment strategies. Demographic information, smoking characteristics, interest in quitting (and in the use of specific cessation products), perceived availability of cessation services offered by their substance abuse treatment program, and beliefs regarding whether smoking resources should be available during substance abuse treatment were surveyed.

2. Methods

2.1. Participants

Participants ($N = 266$) were recruited from eight substance abuse treatment clinics in the Baltimore City metropolitan area, through posted fliers in clinic areas, word of mouth, and clinic staff. Recruitment took place between August of 2011 and June of 2012. Being a smoker was not required for study participation. The only criteria for participation were age older than 18 years and currently enrolled in substance abuse treatment (for any length of time). Eight participants failed to provide information on their medication status (methadone, buprenorphine, or neither) and were excluded from the data set. Among the remaining 258 participants, 203 (78.7%) were current smokers by self-report, with a higher percentage of smokers identified in ORT (85% compared to 74% of the non-ORT clinic sample; $p = 0.01$). All study procedures were approved by the Johns Hopkins School of Medicine Institutional Review Board and were in accord with the Helsinki Declaration of 1975. Questionnaires were de-identified and participation was completely voluntary. Completion of the questionnaire served as consent.

2.2. Study setting

All study sites were substance abuse treatment providers. Sites varied in the type and breadth of substance abuse treatment resources provided, with some study sites providing opioid replacement therapy only ($n = 3$ sites), some providing psychosocial counseling and non-ORT services only ($n = 1$ site) and the remainder providing both types of services ($n = 4$ sites). Participants recruited from each clinic represented a convenience sample and comprised only a proportion of the entire in-treatment population.

2.3. Survey measures

Participants answered several questions designed to characterize demographics, substance abuse treatment details, and smoking information. Questionnaires included a locally-derived, self-report smoking measure that surveyed participant demographics, treatment status, current smoking status, history of quit attempts in the past year, and interest and confidence in quitting smoking. Due to evidence that methadone may increase the reinforcing effects of smoking and may therefore increase smoking rates (Chait & Griffiths, 1984; Mello et al., 1980; Mello et al., 1985; Mutschler et al., 2002; Schmitz et al., 1994), several questions regarding smoking status before and after beginning treatment were included to assess whether treatment modality was associated with differential changes in smoking status during treatment. In addition, participants were asked which smoking cessation products they have used in the past (e.g., nicotine replacement, switching to low tar cigarettes or chewing tobacco, bupropion, varenicline), as well as what products they would be interested in trying, if offered. Not all products were evidence-based smoking cessation products and included options such as smokeless tobacco, special holders/filters, and electronic cigarettes.

Participants also completed the Fagerström Test for Nicotine Dependence (FTND; Heatherton et al., 1991); a 6-item Confidence to Quit Questionnaire (Juliano, Donny, Houtsmuller, & Stitzer, 2006); and the Smoking, Knowledge, Attitudes, and Services questionnaire (S-KAS; Guydish, Tajima, Chan, Delucchi, & Ziedonis, 2011b; Guydish et al., 2012a). The S-KAS is a comprehensive self-report measure that assesses patient knowledge regarding the hazards of smoking (7 items), attitudes about smoking cessation in the context of substance abuse treatment (including the recommended timing of smoking cessation in relation to stopping drug use; 8 items), clinician services specific to promoting smoking cessation as part of substance abuse treatment, services provided, and clinician smoking cessation competence