Drug and Alcohol Dependence 166 (2016) 93–99

Contents lists available at ScienceDirect

Drug and Alcohol Dependence

journal homepage: www.elsevier.com/locate/drugalcdep

Full length article

Use of multiple tobacco products in a national sample of persons enrolled in addiction treatment

Joseph Guydish (Professor of Medicine and Health Policy)[a,*], Barbara Tajima[a], Sowmya Pramod[a], Thao Le[a], Noah R. Gubner[a], Barbara Campbell[b], Paul Roman[c]

[a] Philip R. Lee Institute for Health Policy Studies, University of California San Francisco, 3333 California St., Ste. 265, San Francisco, CA 94118, United States
[b] Department of Public Health and Preventive Medicine, Oregon Health and Sciences University, 3181 SW Sam Jackson Park Road, Portland, OR 97239-3098, United States
[c] Center for Research on Behavioral Health and Human Service Delivery, Owens Institute for Behavioral Research, 106 Barrow Hall, University of Georgia, Athens, GA 30602, United States

ARTICLE INFO

Article history:
Received 23 December 2015
Received in revised form 27 June 2016
Accepted 28 June 2016
Available online 14 July 2016

Keywords:
Tobacco
Nicotine
Drug treatment
Policy

ABSTRACT

Objective: To explore use of tobacco products in relationship to marketing exposure among persons in addiction treatment.
Method: A random sample of treatment programs was drawn from the National Institute on Drug Abuse (NIDA) Clinical Trials Network (CTN). Participants in each program completed surveys concerning use of tobacco products (N = 1113). Exposure to tobacco marketing and counter-marketing, advertising receptivity, and perceived health risks of smoking were tested for their association with use of multiple tobacco products.
Results: Prevalence of combustible cigarette use was 77.9%. Weekly or greater use of other products was: e-cigarettes (17.7%), little filtered cigars (8.6%), smokeless tobacco (5.2%), and standard cigars (4.6%) with 24.4% using multiple tobacco products. Compared to single product users, multiple product users smoked more cigarettes per day (OR = 1.03, 95% CI 1.01–1.05, $p < 0.001$), were more likely to have tried to quit (OR = 1.41, 95% CI 1.02–1.96, $p = 0.041$), reported greater daily exposure to advertising for products other than combustible cigarettes (OR = 1.93, CI 1.35–2.75, $p < 0.001$), and greater daily exposure to tobacco counter-marketing (OR = 1.70, 95% CI: 1.09–2.63, $p = 0.019$).
Conclusion: Heavier smokers and those trying to quit may be more likely to use e-cigarettes, little filtered cigars, or smokeless tobacco and have greater susceptibility to their advertising. This highlights the importance of regulating advertising related to smoking cessation as their effectiveness for this purpose has not been demonstrated.

1. Introduction

The Family Smoking Prevention and Tobacco Control Act (TCA) wrested control of tobacco products from corporations and assigned it to an agency with the charge to protect public health. Since the TCA became law in June 2009, the Food and Drug Administration (FDA) banned most cigarette flavorings, restricted sale of tobacco products to children and adolescents, banned tobacco advertising with misleading terms (National Institutes of Health, 2012), and now plans to regulate e-cigarettes (U.S. Department of Health and Human Services, 2016).

Tobacco control efforts in the U.S. have driven smoking prevalence to 16.8% as of 2014 in the United States, a 20.9% decrease over the last decade (Jamal et al., 2015). Yet these strategies have left prevalence high in subgroups with mental health and substance use disorders (Guydish et al., 2011; Lasser et al., 2000). While tobacco company advertising, incentives and product development have targeted vulnerable populations (Apollonio and Malone, 2005), tobacco control strategies have not (Guydish, 2012). The FDA has recognized the intersection of tobacco use, marketing, and regulation in vulnerable populations, and called for research in these groups to inform its regulatory efforts.

Persons with substance abuse and dependence are vulnerable to tobacco use. As a group they smoke at higher rates (Kalman et al., 2005; McClure et al., 2014), smoke more heavily than the general population (Hughes, 2002; Ward et al., 2012), and are less successful in quitting than non-substance abusers (Drobes, 2002; Ferron et al., 2011; Stein et al., 2013). Alcohol and drug dependent persons die from smoking-related causes more frequently than from drug or alcohol-related causes (Bandiera et al., 2015; Hser et al., 1994;

* Corresponding author.
E-mail address: joseph.guydish@ucsf.edu (J. Guydish).

http://dx.doi.org/10.1016/j.drugalcdep.2016.06.035
0376-8716/

Hurt et al., 1996). Cigarette and alcohol consumption may be mutually reinforcing, with possible behavioral (Ait-Daoud et al., 2006, 2005; Sayette, 2002) and genetic components (Littleton and Little, 2002; Schlaepfer et al., 2008). Although most persons in addiction treatment also smoke, many are interested in quitting smoking (Saxon et al., 1997), and two studies have reported 10% quit rates for persons in addiction treatment even in the absence of cessation intervention (Chun et al., 2009; Kohn et al., 2003). However, even in the context of robust tobacco control strategies (Walsh and Gordon, 1986), the smoking prevalence among persons in addiction treatment has shown little change over time (Guydish et al., 2011, 2015b), highlighting the continued need to address tobacco use in this population.

While there are now developed literatures concerning smoking (Guydish et al., 2015a, 2011) and smoking cessation among persons in addiction treatment (Prochaska et al., 2004; Thurgood et al., 2016), little is known about their use of other tobacco products. For example, among 96 papers included in reviews of smoking prevalence in addiction treatment (Guydish et al., 2015a, 2011), only 7 papers reported on use of tobacco products other than cigarettes (Aubin et al., 1999; Basu et al., 2012; Ellingstad et al., 1999; Hurt et al., 1996; Patten et al., 2003; Richter et al., 2001; Rooban et al., 2009). Recently, e-cigarette use has been reported in addiction treatment samples (Peters et al., 2015; Stein et al., 2015). Similarly, there are few reports concerning the concurrent use of multiple tobacco products, or factors that may be associated with use of multiple products. One study found that 10.6% of US adults used multiple tobacco products, and that younger age, male gender, never having been married, and having tried to quit smoking were associated with multiple product use (Lee et al., 2014).

Based on their association with use of combustible cigarettes, a number of factors may also be associated with use of more than one tobacco product. Age, gender, education and race/ethnicity are associated with smoking prevalence in the general population (Centers for Disease Control and Prevention, 2015b; Garrett et al., 2011). Among those in drug treatment, smoking is more prevalent among opioid users (Stark and Campbell, 1993) and number of cigarettes per day (CPD) and use of tobacco cessation services have been associated with making a quit attempt (Martinez et al., 2015). Advertising receptivity predicts smoking initiation and maintenance (Henriksen et al., 2010), and advertising exposure has been associated with smoking initiation (Robertson et al., 2015). Counter-marketing campaigns to prevent smoking initiation and promote quitting can be successful (Davis et al., 2008), and messages focusing on negative health effects appear effective in increasing awareness of risks and facilitating quitting behavior (Durkin et al., 2012). While effects of tobacco advertising, counter-marketing, and risk perception have been explored in youth populations (Halpern-Felsher et al., 2004; Henriksen et al., 2010; Paynter and Edwards, 2009), they are little explored among adults engaged in addiction treatment.

This report describes findings from a national sample of persons enrolled in addiction treatment concerning their use of multiple tobacco products. We assessed factors associated with use of multiple tobacco products while controlling for demographic characteristics.

2. Materials and methods

2.1. Sampling design

Addiction treatment programs were recruited in collaboration with the National Institute on Drug Abuse (NIDA) Clinical Trials Network (CTN), a national network of research centers or "nodes," where each node included one or more university partners and a number of addiction treatment programs (National Institute on Drug Abuse, n.d.). There were 13 CTN nodes at the time the research was conducted. However, since its creation in 2000, the organizational membership of the CTN changes frequently, with both nodes and treatment programs entering and exiting with changing patterns of Federal funding and reciprocal willingness to continue to participate in the network. The CTN is dedicated to the conduct of clinical trials designed to improve addiction treatment (Nunes, 2011) and was used for this research because it offers a national network of addiction treatment programs that are research experienced, and where challenges of field research were less likely to interfere with implementation. The population of programs used in the current study was the 2013 list of CTN-affiliated treatment programs (N = 166) identified in prior research (Roman et al., 2010).

2.2. Program selection

Eligible for inclusion were CTN-affiliated programs that were: a) publicly-funded – defined as those receiving over 51% of their revenue from federal/state governmental sources; b) moderate or large in size – having at least 60 active patients, so that recruitment of the target 40 patients per program could be accomplished during a 1–3 day site visit; and c) willing to assign a staff liaison to coordinate data collection with the study team. Excluded were: a) privately funded programs; b) Veterans Administration (VA) programs: c) adolescent programs: and d) criminal justice or hospital-based programs that would require local IRB approval in addition to approval from the lead university. VA programs were excluded because they had standard policies on tobacco assessment and treatment, which differ from programs sampled from non-VA systems. Meeting eligibility criteria were 48 programs. The data collection plan was for a sample of 25 programs and, to allow for refusals, we drew a random sample of 33 programs stratified by program type. In this sample were outpatient (n = 15), residential (n = 13) and methadone (n = 5) programs.

2.3. Program recruitment

The research team contacted the coordinator of each CTN node where selected programs were affiliated, and each "node coordinator" contacted programs in their node to assess interest. At this stage, six programs were no longer active in the CTN, two programs declined, and one was not needed to meet patient recruitment goals. Remaining in the sample were 9 outpatient,10 residential and 5 methadone programs.

The research team then scheduled a phone meeting with each Program Director, in which the study was discussed the program was recruited. All programs contacted at this stage agreed to participate. In three instances Program Directors preferred that the study occur in a different program, within the same agency, than the program originally selected. This resulted in changes to the type of program where data were collected. One program changed from residential to methadone, one changed from outpatient to methadone, and one changed from outpatient to residential. The final sample included 7 outpatient, 10 residential, and 7methadone programs. Programs were from 13 States (California, Ohio, Texas, Hawaii, Florida, Oregon, North Carolina, Pennsylvania, Vermont, Connecticut, South Carolina, New York, West Virginia), with at least 1 program from each of the 4 US census regions.

2.4. Participants

Clients in each program (including both smokers and non-smokers) were eligible to participate if they had been in treatment for at least 10 days. This ensured that they had time to become aware of tobacco policies and services in their program. To partic-