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Characterizing substance use and mental health profiles of cigar, blunt, and non-blunt marijuana users from the National Survey of Drug Use and Health

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ABSTRACT

Background: Smoking marijuana in a cigar (blunt use) is gaining popularity in the U.S. Research suggests that blunt users differ from exclusive cigar or marijuana users on a variety of demographic and substance use factors. Misreporting of blunts and cigars is also common, particularly among young people, and may lead to inaccurate prevalence estimates. To determine subtype differences, this study investigated the prevalence and demographic, mental health, and substance use correlates of four mutually-exclusive groups of blunt, cigar, and marijuana past 30-day users (cigar-only, blunt-only, non-blunt marijuana, or dual cigar-blunt).
Method: Data were analyzed from the 2013 National Survey of Drug Use and Health.
Results: In weighted multinomial logistic regression models, respondents who were younger, Black, and who had used tobacco, alcohol, or other drugs in the past 30-days had the highest odds of reporting blunt-only or dual cigar-blunt use. Those reporting blunt-only and dual cigar-blunt use also endorsed a greater number of marijuana and alcohol use disorder symptoms compared to those reporting cigar-only and non-blunt marijuana use. Lower marijuana risk perceptions were associated with increased odds of marijuana use with or without blunts. Major depressive episode was uniquely associated with non-blunt marijuana use. With respect to misclassifiers, respondents who reported past 30-day blunt use but not past 30-day marijuana use were younger, Black, female, and had lower education and income.
Discussion: Those who report blunt-only and dual cigar-blunt use showed the most severe risk profiles. Communicating health consequences and risks of blunt use should be directed toward specific subgroups.

1. Introduction

The co-use of marijuana and tobacco is becoming increasingly prevalent in the U.S., especially among tobacco users and young adults (Schauer et al., 2015a). Blunt smoking is a specific form of dual tobacco and marijuana use where one removes some or all the tobacco from inside a cigar and replaces it with marijuana. Blunt use may be particularly appealing because of the intense high one experiences that extends beyond use of either tobacco or marijuana alone (Collins et al., 1998; Jolly, 2008; Pennings et al., 2002) and because of the social and ceremonial-like aspects that surround blunt smoking (Dunlap et al., 2006a,b; Johnson et al., 2006).

Prior research shows that blunt users are more likely to be male (Fairman, 2015; Schauer et al., 2015b; Soldz et al., 2003), African–American (Corey et al., 2014; Fairman, 2015; Golub et al., 2006; Montgomery, 2015; Nasim et al., 2012; Schauer et al., 2015b), young adults (Fairman, 2015; Schauer et al., 2015b), and have lower education (Soldz et al., 2003). Blunt use across all age groups is correlated with greater marijuana dependence severity than use of either tobacco or marijuana alone (Fairman, 2015; Ream et al., 2008, 2006; Timberlake, 2009), and higher incidence of other illicit drug use (Schauer et al., 2015b). Alcohol and other tobacco use are also associated with blunt use at the "event" level. "Chasing" a blunt with a cigarette (smoking a cigarette following blunt use), and using alcohol during blunt smoking sessions are common among young adult users (Johnson et al., 2006). However, the extent to which blunt use is associated with health-risk behaviors and substance use problems may vary by certain subgroups. Ethnographic studies of youth and young adults suggest that blunt use is asso-

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ciated with moderate use of marijuana and may be less strongly linked to addiction (Golub et al., 2006; Ream et al., 2006). Because of the social aspect surrounding blunt use, users are encouraged to share equally with the rest of the group, and are discouraged from overconsumption and over intoxication (Dunlap et al., 2006a,b).

There are several limitations of the research on blunt use. First, misreporting of cigar and blunt use is common (Corey et al., 2014; Delnevo et al., 2011; Nasim et al., 2012; Soldz et al., 2003; Trapl et al., 2011; Yerger et al., 2001). Findings from a national study of youth and young adults showed that only 8.6% of respondents reported using cigars in the past month, but when the definition of cigars included blunt use, the prevalence increased to 13.4% (Delnevo et al., 2011). Younger and African–American respondents—all individuals who have higher risk of being blunt and/or marijuana users—are most likely to under-report cigar use (Delnevo et al., 2011; Nasim et al., 2012). Knowledge, attitudinal, and cultural factors may play a role in the misclassification of cigar vs. blunt use (Dunlap et al., 2006a; Jolly, 2008). Yerger et al. (2001) reported that some youth are unaware that the product they use for blunt smoking is a cigar; they only know the product by brand name. Further, because they remove the tobacco from the product, most young people perceive blunts as less addictive and harmful than other tobacco products (Dunlap et al., 2006a; Jolly, 2008; Malone et al., 2001; Ream et al., 2006; Sterling et al., 2015). Thus, blunt users may be less likely to label a blunt as a cigar, perhaps because cigars are synonymous with tobacco and therefore, greater harm.

Second, no studies have teased apart differences between marijuana, blunt, and cigar users within a large population-based sample. Most studies to date have been qualitative in nature, queried about blunt use irrespective of cigar use, have collapsed cigar and blunt use into one category, or have focused on youth or young adults, and not made comparisons with older adult groups. Richardson et al. (2013) found no significant association between marijuana use and reports of either little cigars/cigarillos or large cigar use, while Schuster et al. (2013) did. Neither study examined blunts separately from cigars. Schuster et al. (2013) focused on adolescents while Richardson et al. (2013) focused on a slightly older sample (ages 18–34), but the age comparisons were not made in either study. Recently, Schauer et al. (2015b) collapsed blunt users and cigar users into one category and found that alcohol use factors were unrelated to cigar and/or blunt use, even though prior work shows alcohol use is linked to both cigar use (Cavazos-Rehg et al., 2014; Cohn et al., 2015; Frazier et al., 2000) and marijuana use (Compton et al., 2004; Stinson et al., 2006). Thus, studies that "aggregate" cigars and blunts into one group limit our ability to detect potentially meaningful subgroup risk profiles. This information is vital if we are to develop more effective and appropriately tailored public health campaigns.

A more detailed assessment of the differences that exist among subtypes of cigar, blunt, and marijuana users is warranted. The present study examined the prevalence and demographic, substance use, and mental health correlates of past 30-day use of cigars, blunts, non-blunt marijuana, and dual use of cigars and blunts in a national sample of adolescents and adults. Knowledge of the factors uniquely correlated with "true" cigar use vs. "true" blunt use could improve measurement on national surveys and aid in developing health messages directed toward specific at-risk groups.

2. Methods

2.1. Participants

Data were from the 2013 National Survey on Drug Use and Health (NSDUH), an annual cross-sectional US survey that examines prevalence and correlates of substance use among noninstitutionalized civilians aged 12 and older. The NSDUH incorporates a multistage area probability sample for each of the 50 states and the District of the Columbia. Within each state, sampling regions were formed to stratify across equally-sized regions and five age groups were targeted (12–17, 18–25, 26–34, 35–49, and 50+). Interviews were conducted via audio computer-assisted self-interviews, computer-assisted personal interviews, and computer-assisted self-interviews. Additional details about survey methodology have been published elsewhere (Kennet and Gfroerer, 2005; Substance Abuse and Mental Health Services Administration, 2010). The public use sample size consisted of $n = 55{,}160$ unweighted cases (Center for Behavioral Health Statistics and Quality, 2014).

2.2. Measures

Participants were grouped into one of five mutually exclusive categories of cigar, blunt, and marijuana use; these categories were used as outcomes: (a) Those who reported past 30-day cigar use only, but who did not report past 30-day use of marijuana or blunts (cigar-only users); (b) those who reported past 30-day blunt use, but who did not report using a cigar in the past 30-days other than for smoking marijuana (blunt-only users); (c) those who reported using marijuana in the past 30-days, but not in the form of a blunt and who did not use a cigar in the past 30-days (non-blunt marijuana users); (d) those who reported using both cigars and blunts in the past 30-days (dual cigar-blunt users); (e) and those who did not report using either a cigar, blunt, or marijuana in the past 30-days (non-users). Respondents with inconsistent reports of marijuana and blunt lifetime use ($n = 459$) or past 30-day use of both ($n = 392$) were excluded from analyses, leaving a sample size of 54,309 (unweighted) respondents. From those who were excluded, 148 individuals who reported past 30-day use of blunts, but did not report past 30-day use of marijuana. These respondents were examined separately in post-hoc analyses.

In addition to cigars, participants were queried about past 30-day use of five different tobacco products (cigarettes, smokeless tobacco, chewing tobacco, pipe, and snuff) and eight classes of drugs (cocaine, heroin, hallucinogens, inhalants, pain relievers, tranquilizers, stimulants, and sedatives) (see Supplementary materials).

Lifetime and past-year major depressive episode (MDE) were assessed based reports of endorsing 5 out of 9 criteria from the Diagnostic and Statistical Manual of Mental Disorders Fourth Edition (DSM-IV; American Psychiatric Association, 1994), where at least one of the criteria was either depressed mood, loss of interest, or pleasure in daily activities lasting for at least 2 weeks. Questions varied slightly between adolescent and adult samples to be age-appropriate. Separate variables were created for never, lifetime, and past-year MDE. Number of symptoms of past-year abuse and dependence for alcohol and marijuana were assessed based on the clinical criteria from the DSM-IV (American Psychiatric Association, 1994), including spending a great deal of time in activities related to substance use, tolerance, withdrawal, unsuccessful efforts to cut down or quit, continued use despite emotional or physical problems; giving up important social or occupational activities; engaging in dangerous activities; and recurrent legal, social, and/or occupational problems.

Participants were asked to indicate "how much do people risk harming themselves physically and in other ways when they smoke marijuana once or twice a week", with response options ranging from 1 = "no risk" to 4 = "great risk". Items were reversed scored so that higher scores indicated lower harm perceptions of marijuana use.

Demographic correlates included age (12–17, 18–25, 26+), race (White, Black, Hispanic, Other), gender, education (<high school, high school, some college or more), and income (<$20,00–≥$75,000).

2.3. Analyses

Analyses were conducted using Stata/SE, version 14.0 (StataCorp, 2015). Sample weights were applied to yield nationally representative estimates in the target population. Prevalence estimates and bivariate associations were examined across the groups. Next, two separate multinomial logistic regression models were conducted to examine (a) the association of demographic, substance use (alcohol, tobacco, other drug use), and marijuana harm perceptions to each of the subgroups and (b) the association of MDE (lifetime and past-year), alcohol and marijuana use disorder symptom counts to each of the subgroups, after adjusting for demographic covariates. Following recommendations of Van Belle (2011) and Schenker (2001), differences in the magnitude of risk were evaluated across all subgroups using the adjusted Wald statistic and were considered statistically significant at the $p < 0.05$ level.

3. Results

3.1. Sample characteristics

Table 1 displays weighted column percents (and unweighted n's) of the study variables for the total sample and across each subgroup. Within the full sample, 3.3% reported cigar-only use, 4.6% blunt-only use, 5.0% non-blunt marijuana use, 0.9% dual cigar-blunt use, and 86.2% did not use any of these products.

Bivariate analyses showed that men were more likely than women to be in any of the use-groups. A quarter of those reporting blunt use in any form were Black. Young adults and those