The changing demographic of blunt smokers across birth cohorts

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A B S T R A C T

Background: It has been suggested that African-American males, born in the 1970s, initiated the practice of smoking blunts during the rise of the hip-hop subculture in the 1990s. The objective of this study was to determine if other racial/ethnic groups from more recent birth cohorts adopted the practice as well.
Methods: Data from seven cross-sectional surveys, the 2004–2010 National Surveys on Drug Use and Health, were aggregated for constructing six five-year birth cohorts ($n = 297,478$), starting with the 1970–1974 cohort. Age-stratified regression models were then developed to test the effect of the interaction between race/ethnicity and birth cohort on the past-year use of blunts.
Results: Fewer differences in the prevalence of past-year blunt smoking were observed between African-Americans and other racial/ethnic groups from more recent birth cohorts. Statistically significant interaction terms in age-stratified models indicated that relative to African-Americans, the odds ratios of blunt smoking were greater in Caucasians and Hispanics born in the 1980s compared to those born in the late 1970s. These results were replicated when the sample was limited to past-year cannabis users ($n = 61,038$).
Conclusions: African-Americans, who likely initiated blunt smoking as adolescents/young adults in the 1990s, continued the practice into adulthood. As characterized by other drug eras, the drug became popular over time and expanded into other demographic groups. The additional exposure to tobacco should alert tobacco-control advocates about blunt smokers' risk of developing nicotine dependence.

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1. Introduction

The marijuana/blunts generation is believed to have originated among African-American males who experienced the ravages of crack cocaine in the 1980s (Golub and Johnson, 1999). The blunt, a cigar shell filled with marijuana, has been popular among urban youth (born since 1970) for social and practical reasons. The act of smoking a blunt, which occurs predominantly in a group setting (Dunlap et al., 2005), is characterized by moderation as opposed to intoxication commonly experienced among users of heroin and cocaine. The disdain for the "crack head" in the late 1980s/early 1990s (Furst et al., 1999) may have precipitated a new generation of more conscientious drug users. As observed by Golub et al. (2004) the birth cohorts defining three drug eras: (1) Heroin Injection Generation (1945–1954), (2) Cocaine/Crack Generation (1955–1969), and (3) Marijuana/Blunts Generation (≥1970) were all established by users in their late teens or early 20s. This age period coincided in the early 1990s with the rise of hip-hop music and increase in the prevalence of marijuana use. The hip-hop subculture was integral to the marijuana/blunts generation because of its emphasis on

"living large," expressed in oversized clothing, jewelry, beer (e.g., "40s"), etc. (Ream et al., 2006). This subculture discovered a new way of expressing itself through blunt smoking, a practice considered an American phenomenon. It has been suggested but not proven that blunt use accounted for the increase in marijuana use in the 1990s (Golub et al., 2005). During this period, national surveys such as the National Survey on Drug Use and Health (NSDUH) included measures on marijuana use, but not blunt use. Using NSDUH surveys through 2003, Golub et al. (2005) observed an aging cohort whose marijuana use increased into young adulthood. The authors concluded that the marijuana/blunts generation entered a plateau in 1996, and as of 2003, showed no signs of decline. It is likely that individuals from this birth cohort continued to smoke blunts into their late 20s/early 30s because of identity or dependence on marijuana or tobacco (Golub and Johnson, 1999). Furthermore, these individuals may have introduced blunts to the broader population as characterized by the expansion phase of a drug era, subsequently leading to widespread use (i.e., plateau phase) (Golub et al., 2004). This hypothesis, the basis for the current investigation, has not been tested to my knowledge.

The hypothesis that blunt smoking is becoming popular among other demographic groups is supported by qualitative studies (Kelly, 2005; Lee et al., 2010; Sinclair et al., 2012; Soller and Lee, 2010). Kelly (2005) observed that Caucasian suburbanites' rationale

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for smoking blunts did not differ substantially from that of urban African-Americans. Both groups identified with hip-hop subculture and expressed desire for moderation of drug use. For example, one suburbanite preferred the blunt over the bong because the marijuana could be savored; smoking marijuana from a bong left one "annihilated." The same individual indicated that most of his friends from the suburbs of New York smoked blunts. Blunt smoking has also been observed among individuals of Laotian or Cambodian origin from low-income neighborhoods in the San Francisco Bay Area (Soller and Lee, 2010). Compared to the Caucasian suburbanites, these individuals shared more in common with urban African-Americans because of their exposure to violence and hard drug use. Some of the participants expressed no interest in smoking marijuana from a pipe because they associated the drug paraphernalia with crack cocaine or crystal methamphetamine. Despite their preference for moderation of drug use, blunt smokers' dual exposure to tobacco and marijuana may pose health risks. Exposures to nicotine and the combustible byproducts of tobacco occur through the burning of a cigar wrapper, the burning of residual tobacco in a blunt, and the smoking of a small cigar or cigarillo upon finishing a blunt (Sifaneck et al., 2005). There is a growing body of literature suggesting that youths' use of marijuana may contribute to later dependence on nicotine (Agrawal et al., 2011; Patton et al., 2005; Timberlake et al., 2007). Results from a national survey suggest that blunt smokers have greater odds of being dependent on nicotine and marijuana compared to individuals who smoke cannabis in other forms (Timberlake, 2009).

Two recent age-period-cohort analyses indicated significant birth cohort effects on past-year marijuana use in individuals born after World War II (Kerr et al., 2007; Miech and Koester, 2012). Using NSDUH data from 1985 to 2009, Miech and Koester (2012) reported that cohort effects peaked in those born in the late 1950s. By the early 1970s, cohort effects on marijuana use were still present in men and women, but substantially less than in prior decades; this trend was observed in African-Americans and Caucasians. These findings appear to conflict with those of Golub and Johnson (1999) who reported a large increase in marijuana use among predominantly African-American arrestees who were born in the 1970s. Aside from methodological differences between the two studies, Miech and Koester (2012) may not have identified a strong birth cohort effect for African-Americans because blunt smoking was not differentiated from other forms of marijuana use. The authors may have chosen not to make this distinction because blunt smoking was not assessed in the NSDUH prior to the year 2000. Thus, it is the intent of the current study to examine cohort effects on blunt use in individuals born since 1970. Based on qualitative data (Kelly, 2005; Soller and Lee, 2010), it is hypothesized that in contrast to the earlier birth cohorts, participants from recent cohorts are likely to smoke blunts at rates more similar across racial/ethnic groups.

2. Methods

2.1. Participants

The National Survey on Drug Use and Health was selected for analyses because it is the only national survey in the United States that has queried participants about their use of blunts since the year 2000. The NSDUH is an annual cross-sectional survey administered to a nationally representative sample of non-institutionalized U.S. residents over the age of 11 years. This study was based on the aggregated sample of 12–34-year-olds who participated in the 2004–2010 surveys ($n = 297,478$). Thirty-four was chosen as the upper end of the age range because it limited the sample to individuals born since 1970, the period defining the marijuana/blunts generation; 35–40-year-olds, who were born in the 1970s and participated in the 2005–2010 surveys, were excluded from analyses because of the broad age category (i.e., 35–49 years) provided in NSDUH public datasets.

The seven surveys corresponding to the years 2004–2010 were selected for two reasons. First, measures for blunt use in the 2000–2003 surveys, administered solely to 12–17-year-olds, include lifetime and past-month blunt use, not past-year blunt use. For comparative purposes, two recent age-period-cohort analyses assessed past-year marijuana use (Kerr et al., 2007; Miech and Koester, 2012). The second reason for analyzing the 2004–2010 surveys is that blunt use was previously examined among 12–17-year-old participants of the 2000–2003 NSDUH (Golub et al., 2005). The current study was intended to complement the work by Golub et al. (2005) by examining trends in blunt use from 2004 to 2010. Secondary analyses of blunt use were conducted amongst past-year marijuana users ($n = 61,038$).

2.2. Measures

The main outcome measure, past-year blunt use (yes/no), was derived from a question inquiring about the last time a blunt was smoked. The predictors of past-year blunt use included gender (male, female); race/ethnicity (non-Hispanic Caucasians, non-Hispanic African Americans, Hispanics, other); birth cohort as derived from the difference between survey year and age at survey (1970–1974, 1975–1979, 1980–1984, 1985–1989, 1990–1994, 1995–1998) (Miech and Koester, 2012); and geographic area of residence as defined by the core-based statistical area (≥1 million persons, <1 million persons, non-CBSA). In contrast to CBSA counties, non-CBSA counties have populations of less than 10,000 persons. Other demographic measures, such as income and education, were not examined because their responses lacked heterogeneity among adolescents from the more recent birth cohorts.

Secondary outcome measures, nicotine and marijuana dependence, were used in comparing past-year blunt smokers to other cannabis users. Nicotine dependence was defined on the basis of either scoring 2.75 or above on the Nicotine Dependence Syndrome Scale (NDSS; Shiffman et al., 2004), or smoking a cigarette within 30 minutes upon waking. Participants who had not smoked a cigarette in the prior month were considered non-nicotine dependent. A participant was defined as being dependent on marijuana if he or she satisfied at least three of the six dependence criteria from the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV; American Psychiatric Association, 1994). Since marijuana dependence was assessed only among participants who reported past-year use of marijuana ($n = 61,038$), blunt smokers who did not acknowledge such use were excluded from the analysis by design ($n = 2411$). These participants, representing 5.9% of all past-year blunt smokers, were included in the other analyses of this study. The misclassification of not reporting past-year marijuana use varied across birth cohorts (range: 4.5–12.7%). Furthermore, misclassification was more pronounced in the African-American blunt smokers compared to blunt smokers of other racial/ethnic groups. For example, in the 1980–1984 birth cohort, 5.5% of African-American blunt smokers versus 4.2% of blunt smokers of other racial/ethnic groups misclassified their marijuana use; for the 1970–1974 cohort, 10.1% versus 6.1% of the respective groups misclassified their marijuana use.

2.3. Data analyses

A conventional age-period-cohort (APC) analysis was considered (Mason et al., 1973), but not chosen because of the brief period examined in the current study. Such an analysis would have been prohibitive due to the high correlation between age and birth cohort ($\rho = .90$; $p < .0001$). In lieu of an APC analysis, a series of age-stratified logit models were developed to test the hypothesis of a birth cohort by race/ethnicity interaction on blunt use. Using past-year blunt use as the dependent variable, predictors in the models were gender, core-based statistical area, race/ethnicity, birth cohort and a series of two-way interactions between birth cohort and race/ethnicity. Models for the adolescents were stratified into two-year age groups (12–13, 14–15, 16–17); models for young adults were stratified into four-year age groups (18–21, 22–25); and the remaining age groups, 26–29-year-olds and 30–34-year-olds, were provided by the NSDUH (USDHHS, 2002). Since the latter age groups could not be sub-categorized, their mid-years were used in determining their assigned birth cohorts.

As indicated in Fig. 1, all age-stratified models contained at least two of the six birth cohorts, thus, enabling tests for cohort by race/ethnicity interactions. The brief period in this study precluded an analysis of all six birth cohorts in a single model. Sample sizes for age groups and birth cohorts could be determined by summing the rows and columns, respectively, of Fig. 1. All logit models were developed using STATA v10.0 (StataCorp, 2012), accounting for the sampling design in the aggregated NSDUH sample. Associations between categorical variables were tested using a second-order corrected F statistic in order to account for the sampling design (Rao and Thomas, 1989). The Breslow-Day Test for Homogeneity of Odds Ratios (unweighted) was used in testing for variation in associations across the six birth cohorts.

3. Results

3.1. Descriptive analyses

A moderate increase in the annual prevalence of blunt smoking occurred among all participants from 2004 (.12) to 2010 (.14). This increase was observed over the 7 years for Caucasians