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Reasons for Drug Use among American Youth by Consumption Level, Gender, and Race/Ethnicity: 1976–2005

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Abstract

This study examined self-reported reasons for the use of nine substances among nationally representative samples of US high school seniors participating in the Monitoring the Future study from 1976 through 2005. In general, social/recreational reasons were the most commonly reported reasons for the use of most drugs. However, for psychotherapeutic drugs, coping with negative affect and physical needs reasons were most commonly mentioned. Results indicated that the proportion of students reporting various reasons has shifted significantly over time. Further, we found significant differences by gender and race/ethnicity in reported reasons for use. Prevention and intervention efforts must address the facts that (1) while social usage reasons do predominate, it is essential to consider coping and drug-effect reasons for use as well; and (2) there are appreciable differences by gender and race/ethnicity in reasons for drug use.

Introduction

Efforts to prevent and/or reduce substance use among youth have been informed by a complex array of both theoretical models and academic disciplines, each attempting to add to the understanding of adolescent drug use etiology. Specifically, what issues are involved in the stages of adolescent drug use, moving from non-use to experimentation, to regular use, to heavy use, with the possibility of discontinuation at any point along the continuum? Are these issues constant across time and within socio-demographic groups? Are the same issues relevant for all substances?

A better understanding of the motives behind drug-using behavior is important for aiding the development of effective prevention and intervention policies and programs: if we can understand the “why” of adolescent drug use, perhaps we can do a better job of reducing, delaying, or preventing it altogether. Significant time, age, and cohort effects in substance use have been demonstrated (Bachman et al., 1997; O'Malley et al., 1984; 1988; Johnston et al., 2007a). Changes in use over time in particular have been shown to be best explained by

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changes in the perceived risk and disapproval of use of any particular substance even after including lifestyle factors (Bachman et al., 1991; 1998; Bailey et al., 1992; Johnston et al., 2007a and previous volumes in the series). The question remains, however, of what motives underlie such risk and disapproval perceptions. The perceived risk and/or approval of any behavior can be better understood by investigating what benefits are believed to be associated with that behavior--why, exactly, do individuals report using particular drugs?

A variety of studies have investigated the reasons (or motives) behind substance use among youth in the United States (US). However, this study is unique in its examination of 30 years of nationally representative data on the reasons reported by American high school students for the use of nine separate substances, examining variance by consumption level, gender, race/ethnicity, and social trends.

Findings from Research on Motives for Substance Use

Motivational models of substance use are based on the theory that, consciously or unconsciously, an individual decides to consume any particular substance "...according to whether or not he or she expects that the positive affective consequences of [such use] will outweigh those of not [using]" (Cox & Klinger, 1988, p. 168). Further, motivational models of drug use posit that behavior based on different motivations will be associated with unique antecedents and consequences (Cutter & O'Farrell, 1984; Cooper 1994). The majority of research with motivational models of substance use has focused on alcohol. In a recent extensive review of that literature, Kuntsche et al. (2005) report that, in general, four main motive dimensions have been defined: (1) enhancement (to enhance positive mood; internally based), (2) social (related to obtaining social rewards; externally based), (3) coping (to decrease negative emotions; internally based), and (4) conformity (to avoid social rejection; externally based). Kuntsche and colleagues also found that motive dimensions have consistently related to specific drinking patterns: social motives with moderate alcohol consumption, enhancement motives with heavy consumption, and coping motives with problematic consumption.

While the majority of motivational research has focused on alcohol use, additional studies have included cigarettes and/or illicit drugs (e.g., Butler & Gunderson, 1981; Carlson & Edwards, 1987, 1990; Comeau et al., 2001; Chabrol et al., 2005; Johnston & O'Malley, 1986; Novak et al., 2003; Parks & Kennedy, 2004; Pascale & Evans, 1993; Sheppard et al., 1985; Simons & Cary, 2000; Simons & Cary, 2003). Studies that have included multiple substances have shown that unique motivation dimensions accompany different drugs (Johnston & O'Malley, 1986; Segal, 1983; Segal et al., 1982, 1980; Simons et al., 2000), and have also supported the findings that reasons differ by level of involvement (Carlson & Edwards, 1990; Johnston & O'Malley, 1986; Segal, 1983; Segal et al., 1982, 1980; Shearn & Fitzgibbons, 1973; Simons & Cary, 2000, 2003). Motivations also differ within drug classes, as illustrated by the work of Parks & Kennedy (2004), who found that the positive consequences reported associated with the use of club drugs by young adults differed by substance within the "club drug" grouping.

Little research is available that investigates trends in drug use reasons over time. Johnston & O'Malley (1986) found that in contrast to substantial changes in high school senior prevalence rates for some drugs from 1976–1984, trends in the reasons given for the use of various drugs changed only minimally. However, they observed some degree of shift away from social/recreational reasons toward what they describe as "psychological coping" and "functional" reasons (i.e., dealing with anger/frustration, getting away from problems, getting more energy, etc.). While it is not clear how trends in reasons for use may have changed following the mid-1980s, it is certainly the case that drug use prevalence rates have shifted dramatically since that time (Johnston et al., 2007a).

Research on differential relationships between gender and substance use indicates important differences that may directly relate to substance use motivations. Consistent gender differences in substance use prevalence (with males using most substances significantly more than females) have been observed for both adolescent and adult populations (Johnston et al., 2007a; 2007b). Longitudinal research with adolescents indicated females may have significantly shorter transition times from substance use initiation to experiencing problems related to substance use (Ridenour et al., 2006) as well shorter progression from onset of abuse to dependence (Ridenour et al., 2005). However, among middle-aged drug users, males were more likely to continue substance use (Hartel et al., 2006). Laboratory studies have indicated significant gender differences in biological responses to stimulant use including higher perceived nausea among females, higher perceived lethargy among males, and greater increases in diastolic pressure among females (Vansickel et al., 2007). Further, among 87 treatment-seeking cocaine-using adults, associations between childhood maltreatment and substance use onset, escalation, and severity of substance use indicate that various forms of maltreatment were more strongly associated with substance use among females than males. Regarding motivations for use, one longitudinal study with high school students in the Midwestern US found that although gender was significantly related to drug use prevalence, perceived harm, and age of first use, no gender differences in the reasons for actually using drugs were observed (Pascale & Evans, 1993). Other research involving smaller cross-sectional studies of college students indicated the possibility of significant differences: (a) human values, in general, may differ between males and females (Carlson & Edwards, 1987, 1990); (b) anxiety levels may associate positively with nicotine use for coping reasons among females but not males (Stewart et al., 1997), and (c) females may be more likely to expect cognitive/behavioral impairment and generally negative effects associated with marijuana use, while males may be more likely to expect relaxation and perceptual/cognitive enhancement (Schafer & Brown, 1991). Given such findings, one could hypothesize that females would be more likely than males to report motivations related to coping with negative affect (such as anger, frustration, or other problems) as well as using for compulsive reasons (such as self-perceived addiction). In contrast, males may be more likely to report social and recreational reasons for use.

Similarly, given the documented racial and ethnic differences in adolescent substance use (e.g., Wallace et al., 2003; Johnston et al., 2007a), it is reasonable to hypothesize possible racial/ethnic differences in motivations accompanying substance use. However, little research has addressed this issue. Research among adults is mixed, and limited to studies with individuals already experiencing problematic drug use. Among approximately 1,000 adult heroin- and cocaine-using patients in an inner-city hospital, significant differences by race/ethnicity were found in degree of difficulty in functioning (as measured by the Addiction Severity Index) (Bernstein et al., 2005). Higher levels of problems in both drug and psychiatric composite scores were found for Whites than for African Americans; Hispanics had higher levels of problems than Whites related to drug severity. Among a sample of adult male street-based heroin users in the San Francisco Bay area, significant differences were found between White and African American men in drug use methods, social backgrounds, and self-identity (Bourgois et al., 2006). White men were more likely to perceive themselves as defeated by addiction and as using heroin only to prevent physical withdrawal symptoms. African American men were more likely to view their addiction from a viewpoint of defiance and pleasure seeking. In contrast, work by Bradizza et al. (1999) indicates that among adolescents, those who cited social reasons for use were more likely to become alcohol misusers, but differences in this relationship were observed by ethnicity: social motives predicted more strongly among Whites, while coping predicted more strongly among African Americans. Thus, the available research does not provide strong guidance in hypothesizing drug use reasons that might resonate with particular adolescent racial/ethnic groups. However, it is clear that significant differences exist in drug use and related

outcomes by both gender and race/ethnicity. Improving the research field's understandings of subgroup differences in drug use motivations—including those related to gender and race/ethnicity—may assist in greatly improving prevention and cessation efforts.

Direct assessment of motives for substance use requires self-report data. While it can be argued that an individual may not always be cognizant of the actual reasons for his or her behavior (Johnston & O'Malley, 1986), self-report data provide the only direct method to access an individual's internal motivations (Cooper, 1994). Reviews of motivational research indicate that tremendous variation exists in measurement approaches and instrumentation (Kuntsche et al., 2005). As a result of such variation, it has been difficult to compare reported results across drug classes and time.

Purpose of the Current Study

The current paper adds to the literature by providing data over a long historical interval (1976–2005) from a nationally representative sample of US high school students using a stable set of self-report measures to examine reasons for use of nine substances: alcohol, heroin, marijuana, LSD, amphetamines, barbiturates, tranquilizers, cocaine, and narcotics other than heroin. Items addressing many of the classic motive dimensions noted previously are included. These analyses build on initial work by Johnston and O'Malley (1986), who investigated the reported reasons US high school seniors gave for drug use from 1976 to 1984. They found (a) clear differences in the relative importance of different reasons for substance use (including alcohol and illicit drugs), (b) significant relationships between reasons for use and substance consumption levels, and (c) some use reason factors were common across drugs; however, most factors proved to be drug-specific. Johnston and O'Malley's analyses found few differences in reasons by either gender or time. Racial/ethnic differences were not reported. The analyses to be reported here will significantly expand the scope of time to be included, and are better able to investigate differences by time, gender, consumption level, and race/ethnicity. Specifically, the following research questions will be addressed:

1. What are the reasons given by US high school seniors for their use of the following nine substances: alcohol, marijuana, LSD, amphetamines, barbiturates, tranquilizers, cocaine, heroin, and narcotics other than heroin?
2. Do the reasons for use change over time, and do the trends in the reasons for drug use follow trends in drug use prevalence?
3. Do the reasons for use differ by gender or race/ethnicity?
4. Do the reasons for use vary significantly by a student's degree of involvement with a specified drug?

Methods

Sample Description and Data Collection Methods

Data were obtained from the Monitoring the Future (MTF) study (Bachman et al., 2006; Johnston et al., 2007a) and were collected yearly from 1976 to 2005 with sampling representative of all 12th grade students in the 48 contiguous states. All surveys were self-completed and group administered within school settings by University of Michigan personnel, and data collection protocols remained consistent over time. Multiple questionnaire forms were used, distributed to random subsets of students within schools. Student response rates averaged 82.8% (range 77%–86%); nonresponse was almost entirely due to absenteeism. The obtained total weighted sample size used in the current analyses (summing over the 30 years, and including only those students who received the one form

with the questions about reasons for drug use, and who provided valid data on both gender and race/ethnicity) was 75,515 12th graders.

Measures

Measures used for these analyses included reasons for use, gender, race/ethnicity, drug use prevalence and consumption level, and year (to account for time trends).

Reasons for Drug Use—For each of the nine substances, those who indicated any use of the drug in the prior 12-months were asked, “What have been the most important reasons for your using [name of drug]? (Mark all that apply.)”. For a listing of all reasons, please see Table 1. Each reason was either checked or not; thus, there was neither quantification nor ranking of items by the respondent.

Assessment of reasons for use of heroin was discontinued after 1981 and of barbiturates after 1989, due to low prevalence of use and the need for space for additional questions. This is unfortunate, because in the years since there has been some increase in the use of both drugs. As noted above, the initial questionnaire items represent the percent of past 12-month users reporting each reason for use per drug. An additional version of each item was created to indicate the percent of *all* seniors reporting each reason for use per drug (created by multiplying the percentage of past 12-month users reporting the reason by the percentage of all seniors reporting relevant past 12-month substance use). Finally, reasons were collapsed across drugs to indicate the percent of all seniors reporting each reason regardless of substance of use (created by dividing the total number of cases who responded “yes” to any drug specific reason by the total number with valid data on both gender and race/ethnicity).

As noted previously, Johnston and O’Malley’s work with these data from 1976 through 1984 (1986) showed that the majority of factors underlying the various reasons for use were drug-specific. However, based on exploratory factor analysis, four general factors did appear to be relevant across most substances: (1) social/recreational, including “to get high” and “to have a good time with my friends”; (2) coping with negative affect, including “to relax”, “to get away from my problems”, and “because of anger or frustration”; (3) compulsive use, incorporating the reasons of “to get through the day” and “because I am hooked”; and (4) drug effect, which included the two reasons of “to decrease” or “to increase the effects of some other drug(s)”. The current paper will organize findings related to reasons for use using the above four groupings. In addition, one further group has been added--coping with physical needs--to include reasons that focus directly on such coping strategies, and a final group is included to address miscellaneous reasons that do not appear to be connected in any logical way with other groups:

1. Social/recreational: “to get high”, “to have a good time with my friends”, “to experiment”, “to fit in”, “because of boredom” (the final three reasons are included in this grouping based on Johnston and O’Malley’s findings for alcohol, amphetamines, narcotics other than heroin, and tranquilizers);
2. Coping with negative affect: “to relax”, “to get away from my problems”, “because of anger or frustration”;
3. Compulsive use: “to get through the day”, “because I am hooked”;
4. Drug effect: “to decrease” or “to increase the effects of some other drug(s)”;
5. Coping with physical needs: “to sleep”, “to stay awake”, “to get more energy”, “to relieve physical pain”, “to control coughing”;

6. Miscellaneous: “to seek deeper insights”, “tastes good”, “to help lose weight”, “heroin substitute”.

Gender and Race/Ethnicity—Gender is a 0,1 dichotomy where 1=male, based on self-report. Race/ethnicity was measured using a trichotomy including only African American, Hispanic, and White (for these analyses, students indicating a different race/ethnicity were excluded due to lower sample sizes), based on self-reported answers to the question, “How do you describe yourself?” For the last year used in the analyses (2005), students were allowed to indicate multiple racial/ethnic categories. In order to maintain consistency in data coding over time, only those students who indicated single racial/ethnic membership were included in the 2005 sample. Dummy variables were then made for African American and Hispanic students, and White was used as the referent category in multivariate analyses.

Drug Use Measures—Past 12-month drug use prevalence measures were created for each of the nine substances included in these analyses, and a combined prevalence measure was created indicating use of any/all of the nine substances (valid data was required for all nine substance measures for the combined measure; further, to reflect the changes in years in which drug use reason items were asked, heroin was excluded from the combined prevalence measure after 1981, and barbiturates after 1989). Drug use consumption levels for all substances were then created and bracketed into a limited number of categories as follows: no lifetime use, experimental use (1–2 times in one’s life), occasional use (3–9 times in one’s life), and heavier use (10 or more times in one’s life).

Analysis Models

MTF data utilizes a complex multi-stage sampling procedure in order to obtain nationally representative data from US students (Johnston et al., 2007a). In order to correctly address the complexities of the data, analyses used survey commands in Stata 8.2 for descriptive population estimates and multivariate regression models (using the *svylogit* procedure). The *svylogit* procedure is able to account for the complex multi-stage sample design by using sampling weights to adjust for differential selection probabilities, and by using Taylor linearization-based variance estimators to adjust for clustering by sampling strata (particular geographic areas) and cluster (schools), computing robust standard errors.

Results

Sample Description: Gender, Race/ethnicity, and Drug Use Prevalence

A total of 75,515 students provided valid data on both gender and race/ethnicity. Forty-eight percent were male; 13% African American, 7% Hispanic, and 80% White. Table 2 provides data on prevalence of past 12-month use for each specific substance. Males were significantly more likely than females to report alcohol, marijuana, cocaine, LSD, barbiturate, and heroin use in the past 12 months ($p < .05$ or lower). However, females were more likely than males to report both amphetamine and tranquilizer use ($p < .001$) (no gender differences were observed for narcotics other than heroin). African American and Hispanic students reported significantly less past 12-month use than White students for all drugs other than heroin ($p < .05$ or lower). For heroin, no significant differences were observed between African American and White students; in contrast, Hispanic students reported higher use rates ($p < .01$). Past 12-month drug use among African American seniors was significantly lower than among Hispanic seniors for all substances examined ($p < .05$ or lower). For all students, alcohol was reported to be the substance most often used, followed by marijuana. Amphetamines held third place for prevalence among the total sample, males, females, and Whites; but among African Americans and Hispanics, cocaine use was slightly higher than amphetamine use. Heroin was the only substance consistently reported by less than 1% of

seniors. Of course, the relative ranking of some of the substances changed over time as their prevalence rates fluctuated (see Johnston et al., 2007a).

Reasons for Drug Use: Overall Results

Figure 1 provides the percent of seniors who reported a specific reason for use regardless of which substance or substances were used. For example, 57.2% of all seniors checked “To have a good time” as a reason for use of one or more substances. Social/recreational reasons predominated, with “to have a good time”, “to experiment”, and “to get high” being the three top reasons reported. A significant number of students reported using substances in order to cope with negative affect: 38% reported using a substance “to relax”; 19% “to get away from problems”, and 15% “because of anger/frustration”. A smaller percentage of students reported using substances for drug effect reasons: just under 7% of all seniors reported using a substance “to increase drug effects”, while approximately 1% reported using a drug to decrease the effect of some other substance. In regards to compulsive use, 6% of all seniors reported they used at least one substance “to get through the day”, and 2% reported using a substance because they felt they were “hooked”. The reported use of substances to cope with physical needs (these items not asked for all substances) ranged from less than 1% for “to control coughing” to 7% for “to sleep”.

Table 3 provides the percent of *all* seniors who reported various reasons for drug use based on the specified drug, while Table 4 provides the percent of past 12-month *users* of the relevant drug. Consistent with the data in Figure 1, social/recreational use reasons predominated for most of the drugs examined. “To have a good time”, “to experiment”, and “to get high” were chosen by the first and second highest percent of respondents for alcohol, marijuana, LSD, cocaine, heroin, and narcotics other than heroin. However, social/recreational reasons did not predominate for all drugs examined. The two top reasons listed by past 12-month amphetamine users related to coping with physical needs: “to get more energy” and “to stay awake”. Past 12-month barbiturate users were most likely to choose the coping with negative affect reason of “to relax”, followed by the social/recreational reason “to get high”. Past 12-month tranquilizer users were the least likely to cite social/recreational usage reasons, being most likely to choose “to relax” and “to sleep”—reasons associated with coping with negative affect and physical needs.

Overall, few students reported either drug-effect or compulsive use reasons. However, given the considerable social and individual costs associated with substance misuse and addiction, it is worthwhile to consider variation by substance in the percent of past 12-month drug users who reported using for compulsive reasons. About one quarter (26%) of amphetamine users reported using in order “to get through the day”, followed by 12% of heroin users (alcohol and LSD users were the least likely to report this reason, at 2% and 3%, respectively). The percent of past 12-month users who reported being hooked on a substance ranged from 1% for alcohol, barbiturate, and tranquilizer users to 12% for heroin users. After heroin, marijuana users were most likely to report being hooked (3%).

Trends in Overall Drug Use and Reasons for Use

Figure 2 shows trends in past 12-month drug use among seniors from 1976 to 2005 (for detailed data on past 12-month drug use rates among American youth, see Johnston et al., 2007a). For ease of graphical representation, time points have been collapsed into 5-year groupings. The data again indicate that alcohol, marijuana, and amphetamines are the drugs with highest use prevalence levels. Also evident is that while alcohol use has shown a decline over time, use of most of the other substances declined from the early 1980s until the early-mid 1990s, when use either increased or leveled (note that LSD prevalence rates again showed a decline between the 1996–2000 time interval and the 2001–2005 time interval).

Thus, significant changes in prevalence rates over time are clearly evident. Of interest is whether changes in the reasons given for using the various drugs parallel or diverge from changes in the prevalence rates for those drugs.

In order to examine trends in drug-specific reasons for use, two types of analyses were conducted. First, data were aggregated to the year level (resulting in an N of 30 for most substances and reasons), and correlations were run to examine relationships between the percent of students reporting the specified past 12-month substance use and the percent of past 12-month drug users reporting each reason for use relevant for each substance. Second, significance testing for time trends using non-aggregated data was done with a centered, continuous year variable with linear and quadratic terms.

Analysis of correlations between aggregate past 12-month prevalence rates and reasons for use showed that the majority of significant findings related to social/recreational, coping with negative affect, and compulsive use reasons. Within these reason groups, no significant correlations were found for LSD, tranquilizers, or narcotics other than heroin (due to the limited number of years of data available for heroin and barbiturate use reasons, these substances were not included in the analysis). As shown in Table 5, correlation direction was mixed for social/recreational reasons. However, for coping with negative affect and compulsive use reasons, significant and negative correlations were observed between past 12-month use prevalence levels for one or more of alcohol, marijuana, amphetamines, and cocaine. These results indicate that in eras of decreasing drug use, reasons associated with coping with negative affect and compulsive use play proportionally greater roles in youth decisions to use or not use drugs.

Turning to analyses focusing on time trends, Figures 3, 4, 5, and 6 present trends in drug-specific reasons for use of alcohol, marijuana, amphetamines, and cocaine. Figures for reasons for use of LSD, barbiturates, tranquilizers, and narcotics other than heroin can be found in Appendix A (Figures A1-A4). Again, for ease of data presentation, time points in the graphs have been collapsed into 5-year groupings.

Based on the results of parameter estimates from models containing both a centered, linear year measure as well as quadratic term, certain reasons appeared to show a gradual increase over the duration of the study for multiple substances. The percentage of past 12-month users reporting being “hooked” on a substance increased steadily and significantly over time for alcohol, marijuana, amphetamines, and cocaine. Also appearing to increase over time (but with some indications of a curvilinear nature for some substances) was the reason “to relax” (for alcohol, marijuana, amphetamines, and narcotics other than heroin). At least two reasons showed an increase across multiple substances across time in general: “because of boredom” (for alcohol, marijuana, tranquilizers, and cocaine), and “to get away from problems” (for marijuana, amphetamines, and cocaine). Thus, observed significant changes over time in reasons for use for multiple drugs appeared to have some tendency to show a general increase in reasons of compulsive use and coping with negative affect.

Of interest were some additional significant trends in reasons for use observed for specific substances. Significant decreases were observed in the percent of users reporting “because it tastes good” for alcohol; as well as “to get more energy” and “to stay awake” for amphetamines. For LSD, “to seek deeper insights” showed a strongly significant curvilinear relationship over time, peaking at more than 50% of users in the early 1990s before decreasing to just over 30% in the most recent years of the study. Finally, while the increase in “because of boredom” has been noted above for tranquilizers, strong increases in three other social/recreational reasons were observed for tranquilizer use the last half of the 1990s: “to have a good time”, “to experiment”, and “to get high”.

Multivariate Modeling of Reasons for Use

Multivariate models were used to investigate relationships of gender, race/ethnicity, and drug consumption level on reasons for use *among past 12-month drug users*. In all models, year was included using dummy variables. For some substances, the N of students reporting any past 12-month use was quite low for minority groups. In order to have more reliable estimates, a minimum cut-off of an average of five students per racial/ethnic group reporting past 12-month use of a substance per year was required for reporting (thus, at least 150 students reporting use of a specific substance over the 30 years of data reported). Using this criterion, estimates for racial/ethnic groups are reported only for alcohol, marijuana, amphetamines, and cocaine. Models for other substances controlled for race/ethnicity, but resulting estimates are not reported. Tables 6, 7, 8, and 9 report findings for alcohol, marijuana, amphetamines, and cocaine. Findings for the remaining substances (LSD, barbiturates, tranquilizers, and narcotics other than heroin) are reported in Tables B1-B4 found in Appendix B.

Gender—Strong gender patterns in reasons for use are evident, controlling for race/ethnicity, drug consumption level, and time. Male users had higher odds of reporting both social/recreational and drug effect reasons for amphetamines, barbiturates, tranquilizers, and narcotics other than heroin. Male users were also more likely to report using any substance to increase and/or decrease the effects of other drug(s) for all of the eight substances for which multivariate analyses were run. The one other area in which male users consistently showed higher odds than females was related to seeking deeper insights and understanding (with higher odds for all substances examined other than barbiturates and tranquilizers). In contrast, female users tended to have higher odds of reporting reasons related to coping with negative affect (for all substances except narcotics other than heroin), as well as higher odds of reporting reasons related to coping with physical needs (for barbiturates, tranquilizers, cocaine, and narcotics other than heroin). Male users reported higher odds than female users of being hooked on both alcohol and marijuana, while female users had higher odds than males of being hooked on amphetamines. Female users were also more likely than males to report the reasons of “weight loss” for amphetamines and “tastes good” for alcohol.

Race/Ethnicity—As noted previously, race/ethnicity estimates are reported only for alcohol, marijuana, amphetamines, and cocaine (substances for which there were at least an average of five past 12-month users per year). Results gave some support to prior research indicating White users may be more likely to have social reasons for their drug use decisions than members of minority groups (Bradizza et al., 1999). Patterns supporting this were observed for marijuana and amphetamines. Indications that minority users have compulsive use reasons for some substances more than White users were found for alcohol, marijuana, and cocaine. Both African American and Hispanic users reported being more likely than White users to use alcohol and marijuana “to get through the day.” Hispanic users reported significantly higher odds than Whites of feeling they were hooked on amphetamines, while African American users reported higher odds than White users of feeling they were hooked on cocaine.

Drug Use Consumption Level—The likelihood of being reported as a reason for drug use increased with the individual’s consumption level for all of the many reasons, with the exceptions of experimentation and “to fit in”. For all substances other than barbiturates and tranquilizers, the odds of reporting experimentation as a reason for use were lower for occasional (3–9 times in one’s lifetime) and heavier (10+ times in one’s lifetime) use than for experimental use. (For barbiturates, no significant difference was observed between experimental and occasional use, although significance was found between occasional and heavier use). The odds of students reporting using a drug “to fit in” did not increase with

higher consumption levels, except for tranquilizer use. Significant differences in the odds of reporting being “hooked” were higher for heavier users in comparison with experimental users for all substances, as would be expected. Only for one substance, amphetamines, did the likelihood of being “hooked” increase with occasional use versus experimental use.

Based on prior research indicating that different types of coping reasons for use may be related to specific drug consumption patterns (Kuntsche et al., 2005), findings were examined to see if this pattern existed in the present data. Not surprisingly, the usage grouping that reported the strongest difference in odds between experimental and heavier usage (with heavier usage reporting much higher odds) was compulsive use reasons (including “to get through the day” and “because I am hooked”). Following compulsive use reasons, drug effect reasons (to increase or decrease the effects of other drugs) generally showed the strongest differences between experimental and heavy usage.

Discussion

The current study examined 30 years of cross-sectional data on self-reported reasons for the use of nine substances among a nationally representative sample of US high school seniors. While no attempt has been made to define causal links between drug use motivations and resulting consumption levels, results indicate that social/recreational reasons for drug use (such as “to get high”, “to have a good time”, and “to experiment”) have consistently remained the most frequently cited reasons for the use of most substances. However, this is not the case for all drugs; further, significant time trends were observed for several reasons for drug use overall, as well as for individual substances. Significant differences in reported reasons for use were also found between male and female users (with males more likely to report social/recreational and drug effect usage reasons, and females more likely to report coping with negative affect and physical needs reasons), as well as indications of significant differences by race/ethnicity (with White users somewhat more likely to report social/recreational reasons than minorities, and some indications that minority users were more likely to report compulsive use reasons, at least for specific substances).

From a prevention or treatment perspective, the importance of researching personal motivations for substance use lies in the extent to which such motivations can be identified and then targeted by policy, programmatic, or therapeutic interventions. Based on the results of the current study, stressing non-drug alternatives for having a good time and/or feeling good would clearly address the motivations reported by the largest numbers of youthful drug users. Interestingly, using “to fit in” (presumably indicating succumbing to peer pressure) did not appear to be relevant to most drug users in the current study, though this reason may be underreported due to the low social desirability of conforming. Non-drug alternatives and standing up to peer pressure messages have been common in prevention programming, such as the Office of National Drug Control Policy’s still-ongoing National Youth Anti-Drug Media Campaign, where normative education/positive alternatives was a theme in 2000 through early 2002; and resistance skills were stressed in early 2000 and 2001 (Hornik et al., 2003). However, research on the effects of anti-tobacco messages has shown that the most powerful prevention messages may be those that accurately and directly address the harms associated with use (Biener et al., 2004; Terry-McElrath et al., 2005; Wakefield et al., 2003). Such messages may be particularly important to address the fact that the current analyses indicate that a sizable number of recent drug users report using drugs for very specific purposes: for energy, to relax, to stay awake, to deal with physical pain, to lose weight, to avoid problems/troubles, to deal with anger/frustration, etc. Realistic portrayals of the risks and results of substance use, together with efforts to help youth deal with real problems they are facing via non-drug use options, may be critical as youth make decisions about drug use. These decisions, based on motivational theory noted at the beginning of this paper, involve

weighing the consequences of using any substance versus not using—and as illustrated in the responses in the current analysis, many youth have real issues with which they are attempting to cope. Such an approach may be especially important for females and members of minority racial/ethnic groups, because the data presented here indicate that social/recreational motivations may play a somewhat lesser role among these groups than for males and Whites (although prevention efforts targeting social/recreational usage reasons are clearly relevant for all population groups).

The observed differences in reasons for use by gender only partially agreed with the hypotheses noted in the introduction. As expected, females were more likely to report reasons related to coping with negative affect as well as physical needs. Further, as expected, males were more likely to report using for social/recreational reasons. However, although the literature indicates that females progress to problematic substance use at faster rates than males (Ridenour et al., 2005; 2006), overall, females were less likely to report using for compulsive reasons. Females may be less likely to acknowledge such reasons, or may be more likely to cease problematic use rather than continue. In regards to racial/ethnic findings, results supported earlier cited work by Bradizza et al. (1999). In the current study, White users were somewhat more likely to report social/recreational reasons than minorities; further, there was some support for minority users being more likely to report compulsive use reasons for some substances. It is important to note that these models did not control for socioeconomic status, which may play a large role in explaining racial/ethnic differences (Buka, 2002).

Prevention programming should also carefully consider the evidence presented supporting the fact that motivations for the use of various drugs appear to change over time. Given that social/recreational reasons for use are the most commonly cited use reasons, it is perhaps not surprising that these reasons correlated especially strongly with historical use trends for the most commonly-reported substances of alcohol and marijuana. However, the data also indicate that as overall drug use rates decrease, the relative importance of reasons related to coping with negative affect and compulsive use increases. I.e., it appears that reductions in drug use prevalence may be concentrated especially among experimental and light substance users; during downward trends, heavy users and those dealing with substance abuse and dependence make up a larger proportion of the overall substance using population. This fact, together with the results indicating that reasons related to coping with negative affect and compulsive use may be experiencing an overall increase regardless of trends in actual use, suggests a need for prevention programming to focus more directly on use reduction and cessation. Importantly, the data suggest that prevention programming messages may need to change focus over time, in order to best address the needs of youth considering or already engaging in substance use.

Prevention efforts most commonly target those individuals who are neither confirmed abstainers nor confirmed users. Treatment efforts address those individuals who have developed problematic consumption patterns. The results from this study indicate that among US high school seniors who have used drugs within the past 12 months, the percentage that report they feel “hooked” on any substance has been steadily increasing over time, though the rate of increase has been slowing. The overall trend of youth reporting being “hooked” has continued throughout periods of increasing and decreasing overall drug use prevalence. Further, the proportion of users reporting being “hooked” on any specific substance was not evenly distributed across substances; significantly more users reporting being hooked on heroin and marijuana than other substances. While it was not surprising that heavier use students had the highest odds of reporting they were “hooked” on a substance, it may be important to point out that students who reported being hooked on any particular substance were also highly likely to report using a drug to either increase or

decrease the effects of some other substance. More than half (53.5%) of past-year users who reported they used a drug because they were hooked reported using a substance to increase/ or decrease the effect of another drug, versus only 7.9% of past-year users who did not report being hooked as a reason for their use ($p<.001$). Such a pattern indicates that even among young individuals, very complex drug use patterns can evolve and therefore interventions may require addressing multiple substances and reasons for their use.

The results of the present analyses do not necessarily provide practitioners and policy makers, who may be seeking the best return for intervention programming dollars, with a clear roadmap for intervening into youth substance use. However, it does make clear that prevention and intervention programming must address the likelihood that, while social/ recreational usage reasons do predominate, it is essential to consider other reasons for use as well, and that there appear to be strong differences by gender and race/ethnicity in reasons for drug use.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

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Figure 1. Percent of Seniors Giving Each Reason for Using *Any* of the Drugs, 1976–2005 Combined

Note: N (wtd) for reasons of relieving pain and cough = 69,905; all other reasons = 75,515. ^aReason not relevant for all drugs.

Figure 2. Various Drugs: Trends in Past 12-Month Prevalence of Use Among Seniors

Figure 3. Alcohol: Trends in Reasons for Use Among Past 12-Month Users

†Centered year variable significant at $p < .001$. ‡Quadratic of centered year variable significant at $p < .001$.

Figure 4. Marijuana: Trends in Reasons for Use Among Past 12-Month Users

‡Centered year variable significant at $p < .001$. ‡‡Quadratic of centered year variable significant at $p < .001$.

Figure 5. Amphetamines: Trends in Reasons for Use Among Past 12-Month Users

†Centered year variable significant at $p < .001$. ‡Quadratic of centered year variable significant at $p < .001$.

Figure 6. Cocaine: Trends in Reasons for Use Among Past 12-Month Users

†Centered year variable significant at $p < .001$. ‡Quadratic of centered year variable significant at $p < .001$.

Table 1**Reasons for Drug Use**

Reasons Listed for All Drugs^a	
To experiment—to see what it's like	
To relax or relieve tension	
To feel good or get high	
To seek deeper insights and understanding	
To have a good time with my friends	
To fit in with a group I like	
To get away from my problems or troubles	
Because of boredom, nothing else to do	
Because of anger or frustration	
To get through the day	
To increase the effects of some other drug(s)	
To decrease (offset) the effects of some other drug(s)	
Because I am "hooked"—I have to have it	
Drug-Specific Reasons	Relevant Drugs
To get to sleep	alcohol, barbiturates, tranquilizers, narcotics other than heroin
Because it tastes good	alcohol
To stay awake	amphetamines, cocaine
To get more energy	amphetamines, cocaine
To help me lose weight	amphetamines
To relieve physical pain ^b	barbiturates, tranquilizers, narcotics other than heroin
As a substitute for heroin	narcotics other than heroin
To control coughing ^b	narcotics other than heroin

^a“All drugs” includes the following: alcohol, amphetamines, barbiturates, cocaine, heroin, LSD, marijuana, narcotics other than heroin, and tranquilizers.

^bNot asked until 1978.

Table 2

Past 12-Month Drug Use Prevalence Rates among Seniors Averaged across 1976–2005
(Table entries are percentages reporting use of the indicated drug)

Drug	Total	Male	Female	African American	Hispanic	White
Alcohol	80.5	81.9	79.1	63.9	75.7	83.3
Marijuana or hashish	37.5	41.1	34.1	28.6	31.9	39.3
Amphetamines	10.6	10.0	11.2	2.7	6.3	12.2
Cocaine	7.3	8.8	5.9	2.9	6.6	8.0
LSD	5.5	6.9	4.2	0.8	4.5	6.3
Narcotics other than heroin	4.9	5.1	4.6	1.2	2.4	5.6
Tranquilizers	4.8	4.5	5.2	1.2	2.8	5.6
Barbiturates	3.7	3.9	3.5	1.2	2.3	4.2
Heroin	0.5	0.7	0.4	0.4	0.9	0.5

Note: Ns range as follows: Total 72,022–73,152; Male 34,515–35,094; Female 37,422–38,058; African American 8,662–9,050; Hispanic 5,102–5,236; White 58,059–58,866.

Table 3
Percent of All Seniors Reporting Both Use of Each Drug and Reason Indicated, Averaged across 1976–2005

	Alcohol	Marijuana	LSD	Amphetamines	Barbiturates	Tranquilizers	Cocaine	Heroin	Narcotics other than heroin
Social/recreational reasons:									
To have a good time	57.9 ^a	24.7 ^b	3.0 ^c	4.0	1.7	1.2	3.4 ^c	0.2 ^b	1.6
To experiment	35.6	24.3 ^c	4.8 ^a	6.7 ^c	2.9 ^c	2.4 ^c	5.6 ^a	0.4 ^a	2.9 ^b
To get high	38.3 ^b	28.3 ^a	3.7 ^b	6.3	3.2 ^b	2.4 ^c	5.1 ^b	0.4 ^a	3.0 ^a
Because of boredom	18.2	10.2	1.1	2.0	0.9	0.8	1.0	0.1	0.9
To fit in	8.3	4.1	0.3	0.5	0.2	0.2	0.4	0.1	0.2
Coping with negative affect reasons:									
To relax	32.9	17.3	0.7	2.5	3.5 ^a	4.1 ^a	1.5	0.2 ^b	2.6 ^c
To get away from problems	16.7	8.2	0.7	1.5	1.3	1.2	0.7	0.1	0.8
Because of anger/frustration	13.5	5.7	0.3	1.1	0.9	1.0	0.4	0.1	0.5
Drug effect reasons:									
To increase drug effects	4.7	4.7	0.6	1.2	0.7	0.6	0.8	0.0	0.7
To decrease drug effects	0.7	0.8	0.1	0.3	0.3	0.2	0.2	0.0	0.1
Compulsive use reasons:									
To get through the day	1.6	2.8	0.2	3.3	0.4	0.6	0.4	0.1	0.5
Because I am hooked	1.0	1.1	0.1	0.3	0.1	0.1	0.2	0.1	0.1
Coping with physical needs reasons:									
To sleep	5.0	-	-	-	2.6	2.7 ^b	-	-	1.5
To get more energy	-	-	-	7.9 ^a	-	-	2.2	-	-
To stay awake	-	-	-	7.0 ^b	-	-	1.5	-	-
To relieve pain	-	-	-	-	1.9	2.1	-	-	2.6 ^c
To control coughing	-	-	-	-	-	-	-	-	0.9
Miscellaneous usage reasons:									
Because it tastes good	37.5 ^c	-	-	-	-	-	-	-	-
To seek deeper insights	3.3	5.7	2.0	0.7	0.3	0.3	0.6	0.1	0.4
To lose weight	-	-	-	4.6	-	-	-	-	-
Heroin substitute	-	-	-	-	-	-	-	-	0.1

Note: ‘-’ Indicates that the question was not asked for a particular drug. To illustrate how to read the table, the first cell indicates that 57.9% of all seniors reporting that they used alcohol *and* did so “to have a good time.”

^a Most frequently reported reason per drug.

^b Second most frequently reported reason per drug.

^c Third most frequently reported reason per drug.

Table 4
Percent of Past 12-Month Users of Each Drug Reporting Each Reason Indicated, Averaged across 1976–2005

	Alcohol	Marijuana	LSD	Amphetamines	Barbiturates	Tranquilizers	Cocaine	Heroin	Narcotics other than heroin
Social/recreational reasons:									
To have a good time	72.4 ^a	65.9 ^b	53.2 ^c	30.8	29.6	19.5	46.2 ^c	28.7 ^c	27.8
To experiment	44.5	64.8 ^c	84.5 ^a	51.9 ^c	49.4 ^c	38.1	75.7 ^a	64.6 ^b	50.5 ^b
To get high	47.8 ^b	75.6 ^a	63.8 ^b	48.8	53.8 ^b	38.7 ^c	68.2 ^b	67.3 ^a	52.0 ^d
Because of boredom	22.8	27.1	19.8	15.3	15.5	13.0	13.3	17.5	15.4
To fit in	10.4	11.0	5.0	4.1	3.9	2.6	5.3	11.8	2.8
Coping with negative affect reasons:									
To relax	41.2	46.1	11.7	19.4	59.7 ^a	66.7 ^a	20.0	24.6	45.4 ^c
To get away from problems	20.9	21.8	11.8	11.5	22.3	19.7	9.4	19.9	14.0
Because of anger/frustration	16.9	15.3	6.0	8.6	15.9	16.0	5.6	8.4	9.2
Drug effect reasons:									
To increase drug effects	5.9	12.6	10.1	9.6	12.3	10.3	11.2	7.3	12.9
To decrease drug effects	0.8	2.1	1.2	2.6	4.7	3.1	2.5	5.6	1.5
Compulsive use reasons:									
To get through the day	2.0	7.5	2.9	25.9	7.5	9.0	6.0	12.2	8.1
Because I am hooked	1.2	3.0	1.7	2.3	1.4	1.0	2.5	12.3	1.8
Coping with physical needs reasons:									
To sleep	6.2	-	-	-	44.1	42.6 ^b	-	-	25.1
To get more energy	-	-	-	61.3 ^a	-	-	29.3	-	-
To stay awake	-	-	-	54.1 ^b	-	-	20.4	-	-
To relieve pain	-	-	-	-	34.9	36.1	-	-	44.3
To control coughing	-	-	-	-	-	-	-	-	16.0
Miscellaneous usage reasons:									
Because it tastes good	46.8 ^c	-	-	-	-	-	-	-	-
To seek deeper insights	4.2	15.2	34.8	5.1	5.7	5.4	8.6	19.9	7.7
To lose weight	-	-	-	35.6	-	-	-	-	-
As a heroin substitute	-	-	-	-	-	-	-	-	1.9

Note: ‘-’ Indicates that the question was not asked for a particular drug. To illustrate how to read the table, the first cell indicates that of all seniors reporting alcohol use, 72.4% did so “to have a good time.”

^a Most frequently reported reason per drug.

^b Second most frequently reported reason per drug.

^c Third most frequently reported reason per drug.

Table 5

Correlations between Past 12-Month Use Prevalence Rates for Each Drug and the Proportion of Users Giving Each Reason for Their Use

Reason for Use	Alcohol	Marijuana	Amphetamines	Cocaine
Social/recreational				
To have a good time				0.55**
To experiment	-0.89***	-0.71***		
To get high	0.83***			0.60***
Because of boredom	-0.80***			-0.59***
To fit in	0.82***	0.73***		
Coping with negative affect				
To relax	-0.74***		-0.49**	
To get away from problems	-0.49**	-0.54**		-0.51**
Because of anger/frustration				-0.54**
Compulsive use				
To get through the day	-0.72***			
Because I am hooked	-0.75***		-0.53**	-0.51**

Note: Data aggregated to the year level, resulting in an N of 30. Correlations with barbiturates and heroin not investigated due to the short time periods in which reasons for use of these substances were asked. No significant correlations found for LSD, tranquilizers or narcotics other than heroin. Only correlations significant at $p < .01$ or lower reported.

**
p < .01;

p < .001

Table 6

Reasons for Alcohol Use: Multivariate Analyses among Past 12-Month Users

Reason for Use	Gender			Race/Ethnicity						Drug Use Level					
	Females		Males	White		Black		Hispanic		Experimental		Occasional		Heavier	
	%	%	OR	%	%	%	OR	%	OR	%	%	%	OR	%	OR
Social/recreational															
To have a good time	70.3 (ref)	74.8	1.10***	74.7 (ref)	54.3	0.54***	70.1	0.86**		32.7 (ref)	55.5	2.53***	79.2	7.49***	
To experiment	47.8 (ref)	41.5	0.86***	42.9 (ref)	57.5	1.35***	50.0	1.10*		77.3 (ref)	63.7	0.53***	38.0	0.20***	
To get high	44.5 (ref)	51.3	1.15***	50.3 (ref)	33.1	0.71***	37.7	0.71***		7.4 (ref)	21.8	3.43***	56.8	15.10***	
Because of boredom	21.6 (ref)	24.1	1.07**	23.3 (ref)	21.7	1.15**	18.6	0.76***		7.8 (ref)	13.2	1.84***	26.1	4.47***	
To fit in	9.0 (ref)	11.9	1.37***	10.9 (ref)	7.7	0.67***	7.7	0.74**		10.0 (ref)	11.2	1.10	10.2	0.87	
Coping with negative affect															
To relax	40.2 (ref)	42.3	0.98	43.3 (ref)	25.5	0.58***	36.7	0.77***		10.3 (ref)	22.8	2.52***	47.7	7.88***	
To get away from problems	22.3 (ref)	19.4	0.77***	21.5 (ref)	14.7	0.78***	22.0	1.03		6.1 (ref)	11.7	2.01***	24.1	5.14***	
Because of anger/frustration	17.6 (ref)	16.1	0.83	17.3 (ref)	12.5	0.87**	17.2	1.05		4.3 (ref)	8.6	2.04***	19.7	5.52***	
Drug effect															
To increase drug effects	4.3 (ref)	7.5	1.64***	6.1 (ref)	4.5	1.04	4.5	0.79**		0.4 (ref)	0.8	2.35	7.4	22.33***	
To decrease drug effects	0.5 (ref)	1.2	2.22***	0.8 (ref)	0.6	0.94	1.2	1.45*		0.1 (ref)	0.1	1.34	1.0	9.80**	
Compulsive use															
To get through the day	1.5 (ref)	2.5	1.56***	1.9 (ref)	2.1	1.47***	3.2	1.61***		0.3 (ref)	0.6	2.33**	2.5	10.62***	
Because I am hooked	0.7 (ref)	1.8	2.30***	1.2 (ref)	1.0	1.09	1.4	1.01		0.1 (ref)	0.1	1.85	1.6	23.28***	
Coping with physical needs															
To sleep	5.1 (ref)	7.3	1.37***	6.1 (ref)	7.6	1.61***	5.5	0.92		1.4 (ref)	3.3	2.41***	7.2	5.82***	
Miscellaneous															
To seek deeper insights	2.8 (ref)	5.6	2.00***	4.1 (ref)	4.2	1.25**	5.5	1.36*		1.8 (ref)	2.5	1.39	4.7	2.69***	
Tastes good	46.7 (ref)	47.2	0.92***	49.0 (ref)	32.9	0.65***	40.6	0.80***		16.9 (ref)	31.3	2.18***	52.7	5.08***	

Note: All models controlled for year using year dummies.

*
p<.05;

100> p

;10< p
**

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Table 7

Reasons for *Marijuana* Use: Multivariate Analyses among Past 12-Month Users

Reason for Use	Gender				Race/Ethnicity				Drug Use Level			
	Females	Males	White	Black	Hispanic	Experiment	Occasional	Heavier	Females	Males	White	Black
	%	%	%	%	%	%	%	%	%	%	%	%
Social/recreational												
To have a good time	64.6 (ref)	67.4	67.2 (ref)	56.1	65.9	29.6 (ref)	55.0	74.6	71.0	***		
To experiment	67.0 (ref)	62.9	64.9 (ref)	63.7	65.8	92.7 (ref)	83.0	55.1	0.10	***		
To get high	74.9 (ref)	76.6	77.3 (ref)	65.9	70.5	31.0 (ref)	60.9	86.8	15.01	***		
Because of boredom	26.6 (ref)	27.9	27.5 (ref)	27.6	24.1	7.8 (ref)	14.7	34.0	6.34	***		
To fit in	9.8 (ref)	12.2	11.4 (ref)	9.5	8.9	11.1 (ref)	12.9	10.5	0.86			
Coping with negative affect												
To relax	45.4 (ref)	47.1	47.1 (ref)	38.0	47.4	11.0 (ref)	26.0	57.7	12.45	***		
To get away from problems	23.1 (ref)	20.8	21.7 (ref)	20.7	26.0	5.4 (ref)	12.9	27.1	7.12	***		
Because of anger/frustration	17.0 (ref)	13.9	15.0 (ref)	16.7	19.1	3.5 (ref)	8.3	19.3	7.24	***		
Drug effect												
To increase drug effects	9.9 (ref)	15.3	13.6 (ref)	7.6	8.6	1.5 (ref)	3.7	17.2	14.09	***		
To decrease drug effects	1.8 (ref)	2.5	2.2 (ref)	1.5	2.8	0.2 (ref)	0.3	3.0	13.39	***		
Compulsive use												
To get through the day	6.8 (ref)	8.1	7.4 (ref)	7.7	9.1	0.9 (ref)	1.3	10.4	13.80	***		
Because I am hooked	2.2 (ref)	3.7	2.9 (ref)	3.0	3.6	0.2 (ref)	0.2	4.3	22.63	***		
Miscellaneous												
To seek deeper insights	11.9 (ref)	18.3	15.7 (ref)	12.2	14.5	2.8 (ref)	6.0	20.0	9.21	***		

Note: All models controlled for year using year dummies.

* p<.05;

** p<.01;

*** p<.001

Table 8

Reasons for *Amphetamine* Use: Multivariate Analyses among Past 12-Month Users

Reason for Use	Gender			Race/Ethnicity				Drug Use Level					
	Females	Males		White	Black	Hispanic	Experiment	Occasional	Heavier				
	%	%	OR	%	%	%	%	%	%	OR			
Social/recreational													
To have a good time	28.4 (ref)	34.2	1.34***	31.5 (ref)	22.9	0.74	26.9	0.83	21.7 (ref)	29.8	1.54***	35.2	2.00***
To experiment	48.0 (ref)	57.3	1.43***	52.5 (ref)	50.7	0.84	46.1	0.76*	63.2 (ref)	57.2	0.77***	45.2	0.47***
To get high	45.1 (ref)	53.6	1.44***	49.8 (ref)	36.8	0.70*	37.1	0.65**	33.3 (ref)	47.9	1.86***	55.3	2.54***
Because of boredom	13.8 (ref)	17.4	1.36***	15.6 (ref)	16.0	1.19	11.2	0.68	9.4 (ref)	13.4	1.49**	18.8	2.27***
To fit in	3.6 (ref)	4.6	1.29*	4.2 (ref)	1.8	0.41*	3.4	0.77	4.6 (ref)	3.7	0.78	4.1	0.87
Coping with negative affect													
To relax	20.6 (ref)	18.1	0.86*	19.6 (ref)	18.2	0.98	17.5	0.73	12.8 (ref)	20.5	1.76***	21.4	1.92***
To get away from problems	13.9 (ref)	8.7	0.59***	11.4 (ref)	9.3	0.84	17.2	1.54**	6.7 (ref)	11.0	1.76***	13.7	2.27***
Because of anger/frustration	10.1 (ref)	6.7	0.64***	8.5 (ref)	6.6	0.82	11.3	1.26	6.0 (ref)	7.4	1.27	10.2	1.81***
Drug effect													
To increase drug effects	6.7 (ref)	13.2	2.24***	9.7 (ref)	9.7	1.27	7.6	0.79	4.3 (ref)	7.3	1.75***	13.0	3.51***
To decrease drug effects	1.5 (ref)	4.1	3.02***	2.7 (ref)	1.2	0.57	3.2	1.36	0.6 (ref)	1.4	2.57**	4.1	8.17***
Compulsive use													
To get through the day	26.2 (ref)	25.4	0.98	26.3 (ref)	13.9	0.53**	23.9	1.01	10.9 (ref)	18.9	1.92***	35.4	4.45***
Because I am hooked	2.8 (ref)	1.7	0.66*	2.1 (ref)	2.9	1.85	5.1	1.73*	0.2 (ref)	0.7	3.58*	4.0	24.53***
Coping with physical needs													
To stay awake	55.0 (ref)	53.2	0.94	55.5 (ref)	29.7	0.39***	42.5	0.70**	32.6 (ref)	47.2	1.87***	66.1	3.94***
To get more energy	63.3 (ref)	59.1	0.85*	62.8 (ref)	33.4	0.33***	50.1	0.67***	40.1 (ref)	56.7	1.98***	71.9	3.71***
Miscellaneous													
To seek deeper insights	3.9 (ref)	6.7	1.89***	5.0 (ref)	8.9	2.27**	5.7	0.99	2.8 (ref)	5.3	1.94**	5.8	2.41***
To lose weight	55.5 (ref)	11.3	0.09***	35.5 (ref)	37.7	1.19	37.7	1.31*	22.3 (ref)	29.3	1.60***	44.2	3.33***

Note: All models controlled for year using year dummies.

*
p<.05;
**
p<.01;

p<.001

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Table 9

Reasons for Cocaine Use: Multivariate Analyses among Past 12-Month Users

Reason for Use	Gender				Race/Ethnicity				Drug Use Level							
	Females		Males		White		Black		Hispanic		Experiment		Occasional		Heavier	
	%	OR	%	OR	%	OR	%	OR	%	OR	%	OR	%	OR	%	OR
Social/recreational																
To have a good time	48.0 (ref)	45.6	0.93		47.8 (ref)	34.5	0.56**	39.4	0.74		28.8 (ref)	47.6	2.28***	60.0	3.84***	
To experiment	77.0 (ref)	75.2	0.88		75.8 (ref)	77.2	1.00	76.7	1.06		89.7 (ref)	81.2	0.47***	60.2	0.16***	
To get high	69.2 (ref)	68.2	0.98		70.3 (ref)	55.5	0.48***	54.6	0.53***		43.4 (ref)	70.3	3.38***	87.2	10.60***	
Because of boredom	12.7 (ref)	13.4	1.11		12.8 (ref)	14.2	1.33	16.5	1.03		6.1 (ref)	12.7	2.22***	19.0	3.52***	
To fit in	4.4 (ref)	5.7	1.32*		4.9 (ref)	5.3	1.18	8.5	1.83*		6.0 (ref)	4.3	0.71	5.2	0.87	
Coping with negative affect																
To relax	20.6 (ref)	19.5	0.94		19.8 (ref)	22.6	1.29	20.5	1.04		9.2 (ref)	18.6	2.39***	29.9	4.68***	
To get away from problems	10.9 (ref)	8.0	0.72**		9.2 (ref)	7.0	0.88	12.2	1.02		3.6 (ref)	8.1	2.28***	14.8	4.47***	
Because of anger/frustration	6.4 (ref)	4.8	0.73*		5.1 (ref)	6.0	1.45	11.1	1.60		1.8 (ref)	4.1	2.24**	9.7	5.60***	
Drug effect																
To increase drug effects	9.2 (ref)	12.8	1.52***		11.2 (ref)	11.8	1.19	11.1	0.79		5.1 (ref)	10.1	2.12***	17.2	3.98***	
To decrease drug effects	1.9 (ref)	3.0	1.70*		2.3 (ref)	3.2	1.56	4.5	1.46		0.7 (ref)	1.7	2.29**	4.7	6.39***	
Compulsive use																
To get through the day	6.5 (ref)	5.4	0.86		5.6 (ref)	7.0	1.51	8.8	1.31		1.0 (ref)	3.1	3.17**	12.3	13.72***	
Because I am hooked	2.0 (ref)	2.7	1.47		2.2 (ref)	3.7	2.21*	3.9	1.13		0.4 (ref)	0.4	0.77	5.9	12.90***	
Coping with physical needs																
To stay awake	25.4 (ref)	16.5	0.59***		20.2 (ref)	15.0	0.75	25.1	1.20		7.7 (ref)	17.0	2.43***	33.3	5.80***	
To get more energy	34.6 (ref)	25.4	0.62***		29.6 (ref)	19.6	0.60**	33.3	1.06		11.2 (ref)	27.4	2.98***	45.5	6.55***	
Miscellaneous																
To seek deeper insights	7.0 (ref)	9.6	1.43***		8.5 (ref)	10.6	1.39	5.6	0.67		4.0 (ref)	8.1	2.24***	12.3	3.73***	

Note: All models controlled for year using year dummies.

*
p<.05;

100> p

;10< p
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