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Powder Cocaine and Crack Use in the United States: An Examination of Risk for Arrest and Socioeconomic Disparities in Use

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Abstract

Background—In light of the current sentencing disparity (18:1) between crack and powder cocaine possession in the United States, we examined socioeconomic correlates of use of each, and relations between use and arrest, to determine who may be at highest risk for arrest and imprisonment.

Methods—We conducted secondary data analyses on the National Survey on Drug Use and Health, 2009–2012. Data were analyzed for adults age 18 to determine associations between use and arrest. Socioeconomic correlates of lifetime and annual use of powder cocaine and of crack were delineated using multivariable logistic regression and correlates of frequency of recent use were examined using generalized negative binomial regression.

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Contributors

All authors are responsible for this reported research. J. Palamar conceptualized and designed the study, conducted the statistical analyses, and drafted the initial manuscript. S. Davies, D. Ompad, and M. Weitzman helped draft the manuscript, helped interpret results, critically reviewed the manuscript, and reviewed and revised the manuscript. C. Cleland advised J. Palamar regarding statistical analyses, critically reviewed methods and results, and reviewed and revised the manuscript. All authors edited and approved the final manuscript as submitted.

Conflict of Interest

No conflict declared.

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Results—Crack users were at higher risk than powder cocaine users for reporting a lifetime arrest or multiple recent arrests. Racial minorities were at low risk for powder cocaine use and Hispanics were at low risk for crack use. Blacks were at increased risk for lifetime and recent crack use, but not when controlling for other socioeconomic variables. However, blacks who did use either powder cocaine or crack tended to use at higher frequencies. Higher education and higher family income were negatively associated with crack use although these factors were sometimes risk factors for powder cocaine use.

Conclusions—Crack users are at higher risk of arrest and tend to be of lower socioeconomic status compared to powder cocaine users. These findings can inform US Congress as they review the proposed Smarter Sentencing Act of 2014, which would help eliminate cocaine-related sentencing disparities.

Keywords

cocaine; crack; arrest; socioeconomic status; disparities

1. INTRODUCTION

Cocaine is one of the most prevalent and potentially dangerous illicit drugs (National Institute on Drug Abuse [NIDA], 2010; Substance Abuse and Mental Health Services Administration [SAMHSA], 2013a). In 2012, almost 4.7 million individuals (aged 12 and older) in the US reported past-year use (SAMHSA, 2013b). There are notable racial and ethnic disparities in cocaine use with Whites more likely to report lifetime cocaine use (i.e., powder and/or crack cocaine) as compared to Blacks and Hispanics (16.9%, 9.7%, and 11.6%, respectively), but smaller differences for past-year use (1.9%, 1.8%, and 1.7%, respectively; SAMHSA, 2013c). For crack use specifically, Blacks were more likely to report lifetime use as compared to Whites and Hispanics (4.6%, 3.7%, and 2.3%, respectively), as well as past-year use (0.8%, 0.3%, and 0.1%, respectively; SAMHSA, 2013c). Possessing cocaine places an individual at risk for arrest and incarceration, which can lead to health consequences and loss of federal rights and benefits (e.g., student loans, housing, food stamps) (US Department of Justice, 2013; US Government Accountability Office [GAO], 2005).

Cocaine has been a controlled substance in the US since the enactment of the Harrison Act of 1914, and cocaine was scheduled under the Controlled Substances Act in 1970, which defined modern drug regulation (Musto, 1999; Spillane, 2004). However, a smokable rock form of cocaine—crack—emerged, and became widely available in most US cities by the mid-1980s (Vagins and McCurdy, 2006). Crack was sold in smaller quantities than powder cocaine and thus at less expensive prices, and as a result use was highly prevalent in inner-city drug markets in urban America (Vagins and McCurdy, 2006). The introduction of crack markets was followed by largely unsubstantiated claims that crack is more dangerous than powder cocaine and warranted heightened penalties (Hatsukami and Fischman, 1996; US Sentencing Commission [USSC], 2014a; Vaughn et al., 2010). Notably, in 1991, the likelihood for serving time for a violent crime while under the influence of crack or powder cocaine was found to be similar (Leigey and Bachman, 2007). Moreover, although Vaughn et al. (2010) found that crack was associated with higher likelihood of violence in bivariable

analyses, there was no increased likelihood for violence after controlling for demographics, mood disorders, and other substance use disorders.

The Anti-Drug Abuse Act of 1986 was the first federal criminal law to differentiate crack from other forms of cocaine, establishing a 100:1 weight ratio as the threshold for eliciting the required five-year “mandatory minimum” penalty upon conviction of possession (USSC, 2011, 2014a; Wallace, 2014). Specifically, the penalty for possessing 500g of powder cocaine was comparable to possessing only 5g of crack (Kleiman et al., 2011). The Fair Sentencing Act (2010) reduced sentencing disparities to 18:1, but sentencing disparities remain and the law is not retroactive, thus, those arrested prior to enactment remain in prison. The Smarter Sentencing Act (2014) was recently proposed to create less costly minimum terms for nonviolent drug offenders and would allow for the 8,800 federal prisoners (87% of whom are black) imprisoned for crack offenses to be resentenced in accordance with the Fair Sentencing Act.

The longstanding differential incarceration rates and lengths of sentences for crack and powder cocaine users have disproportionately affected African American communities (Lowney, 1994; Vagins and McCurdy, 2006; Wallace, 2014). Spohn (2013) examined racial disparities in sentences from drug-trafficking cases in three US district courts and found that, compared to White men, Black and Hispanic men were significantly more likely to be detained prior to adjudication and received significantly longer sentences. African Americans are also more likely to be convicted for crack offenses, while powder cocaine convictions are more common in affluent white communities (USSC, 1995; Vagins and McCurdy, 2006).

The vast majority of offenders convicted of crack trafficking offenses are African American (83%; USSC, 2014b). This is significant as data collected from several prominent social justice groups, such as the American Civil Liberties Union (ACLU) and the Drug Policy Alliance (DPA), report that African Americans comprise only 15% of regular drug users, but represent 37% of individuals arrested, 59% of those convicted, and 74% of those sentenced to prison for drug offenses (DPA, 2014; Vagins and McCurdy, 2006). In 2003, African Americans accounted for over 80% of those sentenced for crack offenses even though whites and Hispanics accounted for over 66% of crack users (Vagins and McCurdy, 2006). It has been argued by advocates and members of Congress that federal prosecution and sentencing should be equalized in order to end disparities embedded in the law (Scott, 2013; Vagins and McCurdy, 2006).

Aside from a host of negative adverse health outcomes commonly associated with use (NIDA, 2014; Washton and Gold, 1984), cocaine use and possession can also have profound social consequences, including increased crime and imprisonment, which changes family structure and makes father less available (Williams and Latkin, 2007). According to Monitoring the Future (MTF), a nationally representative study of high school seniors, by age 27–28 about one in five adults has used cocaine (Johnston et al., 2013). Consequently, policy for cocaine-related offenses has the potential to impact a substantial portion of Americans.

Most of the current literature on arrest and incarceration is derived from the penal system with little self-reported data. Guided by a fundamental causes perspective (Link and Phelan, 1995), which posits that socioeconomic status (SES) is a fundamental cause of health disparities, we utilize a recent national dataset of self-reported data on crack and powder cocaine use with a larger sample, focusing solely on adults, in order to explore the most current disparities in use, which continue to have profound legal consequences for users.

2. METHODS

2.1. Sample

Data were examined for the four most recent cohorts (2009–2012) of the National Survey on Drug Use and Health (NSDUH), an ongoing cross-sectional survey of non-institutionalized individuals in the 50 states and District of Columbia (SAMHSA, 2013b). NSDUH is a nationally representative probability sample derived through four stages: first, census tracts were selected within each state; then, segments in each tract were selected; then dwelling units were selected, and finally, respondents were selected. Surveys were administered via computer-assisted personal interviewing conducted by an interviewer and audio computer-assisted self-interviewing (ACASI), which helps maintain privacy and confidentiality, and thus increases honest reporting. Blacks and Hispanics were oversampled to increase precision estimates. Respondents were asked about socioeconomic characteristics, arrests, and drug use.

Sampling weights were provided by NSDUH to address unit- and individual-level non-response. They were adjusted to ensure estimates are consistent with estimates provided by the US Census Bureau. Since this analysis utilized aggregated data from four cohorts (to increase sample size), weights were divided by 4 (the number of combined datasets). Further information on sampling and survey techniques can be found elsewhere (SAMHSA, 2013b). We aggregated data from all cohorts and examined data for adults, age 18 ($N=154,328$).

2.2. Demographic and Socioeconomic Variables

We examined subject sex, race (i.e., white non-Hispanic, black non-Hispanic, Hispanic, other race), and population density, which was measured in terms of metropolitan statistical areas (MSAs). We also examined employment status, educational attainment, annual family income, and marriage status. In addition, we examined whether the subject's family received public assistance and whether he or she reported having health insurance.

2.3. Arrest

Subjects were asked if they had ever been arrested and booked for breaking the law (not counting minor traffic violations). Of those who had been arrested (and booked), they were then asked how many times they had been arrested in the last 12 months. We coded these variables into 1) lifetime arrest (dichotomous), 2) arrested more than once in the last 12 months (dichotomous), and 3) a trichotomous variable indicating no recent arrests, one recent arrest or more than one recent arrest.

2.4. Cocaine Use

Subjects were asked if they had ever used any form of cocaine. They were reminded that cocaine comes in different forms such as powder, crack, freebase and coca paste. Those who said they used cocaine were asked a follow-up question about crack, which was defined as “cocaine in rock or chunk form, and not the other forms of cocaine.” We recoded lifetime cocaine use into a trichotomous variable indicating no use, powder cocaine-only use and crack use. Since use of coca paste is uncommon and freebase is generally homemade from powder cocaine, we considered non-crack use powder cocaine use. Lifetime users were also asked when they last used. We coded a similar 12-month (“recent”) use trichotomous variable derived from their indication of last use, into no use, powder cocaine-only use, and crack use. Recent users were also asked to report number of days used in the last year. We recoded these variables to separate frequency of crack use from frequency of general cocaine use.

2.5. Analyses

We first computed binary logistic regression models to examine potential unconditional and conditional associations between cocaine use and lifetime arrests. Similar models were then computed with multiple arrests as the binary outcome variable (among those who had ever been arrested). Next, we computed similar models to examine lifetime arrestees, but in a multinomial fashion, examining whether cocaine use is associated with one recent arrest or multiple recent arrests, compared to no recent arrests.

We then examined cocaine use (trichotomous variables) as dependent variables. We first examined potential correlates of lifetime powder cocaine use and lifetime crack use in comparison to no use. Unadjusted odds ratios (ORs) were computed for each covariate; then each covariate was entered simultaneously, producing adjusted ORs (AORs) and 95% confidence intervals (CIs). We then computed identical models, but with recent cocaine use as the trichotomous outcome. However, that since recent crack use was a rare outcome (<1%), results may be estimated with less precision.

Finally, among recent cocaine users, we delineated which covariates explain frequency of recent powder cocaine use and crack use. Since frequency was a skewed count distribution we used generalized negative binomial regression to determine potential unconditional and conditional associations. Incidence rate ratios (IRRs) were produced for each covariate. All analyses were weighted to account for the complex sample design and analyzed using Stata SE 13 (StataCorp, 2009), which used the Taylor series estimation methods in order to acquire accurate standard errors (Heeringa et al., 2010). This secondary data analysis was approved by the New York University Langone Medical Center Institutional Review Board.

3. RESULTS

Sample characteristics are presented in Table 1. Arrest results in Table 2 suggest that both lifetime and recent crack users were at higher risk of lifetime arrest than powder cocaine users. Similar, but less robust findings arose regarding (recent) multiple arrests; however, in the conditional model, powder cocaine use was not associated with multiple arrests. Further analysis (Table 3) suggests that risk for multiple arrests increase in relation to crack use—

especially recent use. This association, although less robust, was also found for recent powder cocaine use, but not for lifetime use.

With regard to socioeconomic correlates of lifetime cocaine use (Table 4), females, racial minorities, married subjects, and those with health insurance were consistently at lower odds for lifetime use of each form of the drug. While blacks were at particularly low odds for powder cocaine use ($AOR=0.33, p<.001$), before controlling for other factors, blacks were actually at increased risk for crack use ($OR=1.21, p<.05$). Subjects who were older, employed, resided in cities, or reported government assistance were at higher odds for use of each form of the drug. Working full-time in particular was associated with high odds for powder cocaine use ($AOR=1.88, p<.001$) and receiving government assistance in particular was associated with increased odds for crack use ($AOR=2.21, p<.001$). Medium income was also a risk factor for powder cocaine use until controlling for all other factors. Having a high school diploma or some college were associated with increased odds for lifetime powder cocaine use, but high school and college graduates were at low odds for crack use. Highest family income was associated with increased odds of powder cocaine use, but any income $> \$20,000$ was associated with reduced odds for crack use.

Table 5 presents correlates of recent use. Since the outcomes (e.g., crack use) are rare, results should be interpreted with some caution; however, the sample contained 738 recent crack users and 95% CIs were still relatively tight. Many results were similar to the models examining lifetime use, but key differences emerged. Older subjects were less likely to use powder cocaine, but more likely to use crack. Racial minorities were less likely to use powder cocaine, but blacks and those of “other” race were not less likely to use crack. Blacks were at more than twice the odds for crack use before controlling for other sociodemographics. Full-time employment increased odds for powder cocaine use, but this decreased odds for crack use. Education was not related to powder cocaine use, but higher education (particularly college education) was robustly protective against crack use. Similarly, higher income was inversely associated with crack use.

Finally, with regard to 12-month frequency of use (Table 6), older subjects and blacks reported higher rates of use of each form of the drug, and college graduates reported lower rates of use of each. Females reported higher rates of crack use ($IRR=1.60, p<.01$), but not powder cocaine. Having some college or being a college graduate were associated with lower rates of powder cocaine use, but only college graduates reported lower rates of crack use.

4. DISCUSSION

This analysis of a nationally representative sample of American adults found that 12% of adults have used powder cocaine and about 4% have used crack. This finding is significant not only due to the possible untoward effects of use on the health and well-being, but also because there is federal legislation under review that could eliminate the differential sentencing between crack and powder cocaine users that has been in effect for almost three decades. Enactment of the new legislation would substantially reduce sentencing disparities, and perhaps incarceration disparities.

We found that crack use is more strongly associated with both lifetime arrest and multiple recent arrests than powder cocaine. Although we could not deduce temporal associations, results do suggest that crack users have a relatively high likelihood of arrest, regardless of whether drug use is directly involved. If such individuals are already at high risk for (multiple) arrests, then such users may be at particularly high risk for drug possession charges.

We also found varying sociodemographic correlates of powder and crack cocaine use, some of which differ by lifetime versus recent use. Results suggest females are at lower risk of using either powder or crack cocaine compared to males, which is consistent with previous studies (Pope et al., 2011; SAMHSA, 2008). However, females tended to report higher frequency of use of each form of the drug. This is consistent with previous studies among both national and substance-using samples which suggest that despite lower rates of use, female users tend to have higher rates of dependence and comorbid conditions, and also face significant barriers to treatment, especially in rural areas (Compton et al., 2000; Chen and Kandel, 2002; Pope et al., 2011).

Examining racial differences is of particular importance given that not only are blacks historically and commonly thought to be at higher risk for crack use, but federal statistics also show that blacks experience higher rates of drug-related arrest rates and may be particularly susceptible to crack-powder cocaine sentencing disparities (Blumstein, 2003). Compared to whites, racial minorities were at low risk for powder cocaine use, and Hispanics were at low risk for crack use. Blacks were at increased risk for lifetime and recent crack use in unconditional models, but this association was lost when controlling for all other socioeconomic variables. Therefore, it appears that blacks are in fact at higher risk for crack use and associated outcomes, but this may be driven by socioeconomic factors—suggesting that SES may be a fundamental cause of racial disparities in crack use. In the conditional models for lifetime use, higher educational attainment was associated with increased likelihood of powdered cocaine use and decreased likelihood of crack use and higher income was associated with decreased likelihood of crack use. Miech et al. (2005) described an increase in the association between low educational attainment and cocaine use that began around 1990 and attributed this phenomenon to the introduction of a cheap cocaine product (i.e., crack).

Another key finding is that blacks who did use either powder cocaine or crack tended to use at higher rates. Therefore, even if blacks are less likely to ever use, those who do use may use at higher frequencies and may be more likely to be cocaine-dependent (Chen and Kandel, 2002; Chen and Anthony, 2004) and are thus more susceptible to legal consequences. Other national studies have also found that racial minority status is associated with lower odds for crack use (Kasperski et al., 2011; Palamar and Ompad, 2014). However, one must keep in mind that associations may be different for teens as our previous MTF study found that Hispanic high school seniors were consistently at higher odds for crack use, but not powder cocaine use (Palamar and Ompad, 2014).

Consistent with the MTF study, we found that residing in an MSA was associated with increased risk for powder cocaine use (Palamar and Ompad, 2014). We also found that

residing in an MSA was robustly associated with crack use, particularly recent use. With respect to adolescent users, powder cocaine use appears to be more prevalent in MSAs than crack (Johnston et al., 2012; Palamar and Ompad, 2014; Petronis and Anthony, 2003); however, prevalence of crack use should still not be underestimated in non-urban communities (Gfroerer et al., 2007; Pope et al., 2011).

Full-time employment was a risk factor for recent powder cocaine use, but this was a protective factor against crack use. This adds to previous research suggesting frequent crack users tend to be more marginalized from employment, and are less likely to have jobs (Cross et al., 2001; Palamar and Ompad, 2014). Higher income was also negatively associated with crack use. This differs from income findings from our MTF study in that higher student income increased the odds of use of each form of the drug (Palamar and Ompad, 2014). Previous studies have found that access to disposable income is often associated with cigarette use and alcohol consumption (Martin et al., 2009; Scragg et al., 2002; Zhang et al., 2008). Even though powder and crack cocaine are the same price in terms of dollars-per-pure-unit, powder cocaine is “more expensive” as it tends to be sold in grams whereas crack is more often sold in smaller unit sizes (Caulkins, 1997). With respect to adults, it is fitting that those with higher incomes would be more financially equipped to purchase powder cocaine at higher market prices. Indeed, powder cocaine has been viewed as more of an “elite” drug, sometimes associated with “glamour” and luxury (Ditton et al., 1991; Grinspoon and Bakalar, 1985; Kleiman et al., 2011). But this study confirms that crack use is negatively associated with higher income and tends to be used by a more economically marginalized segment of society.

With respect to educational attainment, results varied for powder cocaine use, but higher education tended to be strongly protective against crack use. This adds to evidence from the MTF study, which found that higher parent education consistently decreased odds for use of both powder and crack cocaine (Palamar and Ompad, 2014). It also adds to findings from another MTF study, which found that acquiring a college education decreased the risk of cocaine use at age 35 (Merline et al., 2004). However, the second MTF study did not differentiate between powder cocaine and crack. Studies have shown that there is an inverse association in the US between education and cocaine use since 1990; this is due in part to decreased cocaine use among those with higher levels of education (Chatterji, 2006; Harder and Chilcoat, 2007; Miech et al., 2005). This is consistent with the belief that more educated adults tend to engage in fewer risk behaviors (Harder and Chilcoat, 2007; Link and Phelan, 1995). Crack use among those of lower SES may reflect a misperception of risk or less of a desire to embrace behaviors that benefit health (Harder and Chilcoat, 2007). We also found that college graduates who do use either form of the drug are more likely to use at lower rates.

4.1. Limitations

This study was cross-sectional so temporality could not be inferred. NSDUH asks about “cocaine” use, and those who answer affirmatively are then asked whether they have used crack. Those who said they used cocaine, but did not use crack, were thus assumed to have used powder cocaine. NSDUH excludes homeless individuals not in shelters, active military

personnel, and residents of institutional group quarters, including hospitals and jails. Since this is a national representative sample, we should keep in mind that rates of use may be different (e.g., lower) than in urban community samples where use may be more common or clustered. We could not include poverty index because it is based on income and including it in models led to multicollinearity. Results were similar when we included poverty instead of income in models, but models including income had better fit. Finally, recent use was relatively rare so results should be viewed with some caution, but we were still able to model precise estimates.

4.2. Conclusions

In light of the current 18:1 sentencing disparity, our results suggest adults of lower SES may be at a greater risk for being imprisoned compared to their more advantaged counterparts, as they are more likely to use crack rather than powder cocaine. Our finding that racial minority adults are at low risk for crack use is somewhat inconsistent with the literature suggesting that young African American males are more likely to use crack (Beaver, 2010; Smart, 1991; Sterk et al., 2013; Wallace, 2014). However, the reader must keep in mind that while (unadjusted) rates tend to be presented in the policy literature, our multivariable models reduced confounding by SES variables such as income and educational attainment.

We did find that blacks were at higher risk for crack use until controlling for other socioeconomic factors and that blacks tend to use at higher frequencies. Thus, this “contradiction” should not diminish support for the belief that blacks are disproportionately arrested for crack offenses (DPA, 2014; Vagins and McCurdy, 2006). This suggests low SES may be a fundamental cause of crack use, but low SES *and* race/ethnicity may be fundamental causes of criminal justice consequences of crack possession. Almost a quarter of black adults live in poverty, nearly twice the national average (SAMHSA, 2010); therefore, results suggest race may actually be a confounder for crack use among individuals of lower SES, and that crack use may be more prevalent in resource-poor neighborhoods, many of which are predominantly African American. Minorities are also at increased risk of being arrested for drug possession due to “stop and frisk” policies (ACLU, 2013; Ramchand et al., 2006) and because lack of resources leads to riskier purchasing factors (e.g., buying out in the open) which place them at high risk for arrest (ACLU, 2013; Golub et al., 2007; Johnson et al., 2008).

The arguably harsh and extreme sentences for crack offenses add to concerns about overcrowding in the US system. In 2012, the Bureau of Prisons was operating at 38% above capacity and is expected to exceed 45% by 2018, and almost half (48%) of inmates in 2011 were sentenced for drug-related offenses (US GAO, 2012a). Overcrowding negatively affects prison employees as well as inmates and their families, with 14,000 children enrolled in foster care having at least one incarcerated parent (US GAO, 2011). Results suggest SES is more important for characterizing crack versus powder cocaine users than race/ethnicity. Since black individuals in the US are so much more likely to live in poverty, disproportionate numbers have been incarcerated for crack offenses. This finding is deeply relevant now as the Smarter Sentencing Act is under review. These findings could have profound implications for the incarceration of those already disadvantaged in society.

Resources may be better spent on treatment for these individuals instead of imprisonment (Hatsukami and Fischman, 1996; SAMHSA, 2013a).

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HIGHLIGHTS

Crack users were at higher risk for lifetime arrest than powder cocaine users

Racial minorities were at low risk for powder cocaine use

Blacks were not at risk for crack use when controlling for socioeconomic status

Higher education and family income were negatively associated with crack use

Crack users tend to be of lower socioeconomic status than powder cocaine users

TABLE 1Sample Characteristics, Adults in the United States, 2009–2012 ($N = 154,328$)

	<i>N</i>	%
Age		
18–25	76,118	14.8
26–34	22,652	15.8
35	55,558	69.4
Sex		
Male	72,341	48.2
Female	81,987	51.8
Race		
White	97,446	67.4
Black	19,257	11.6
Hispanic	24,182	14.3
Other	13,443	6.8
Population Density		
Non-MSA	32,453	16.1
Small MSA	54,580	30.6
Large MSA	67,295	53.3
Employment		
Not employed	51,761	35.9
Part-time	30,180	14.1
Full-time	72,387	50.0
Education		
Less than high school	24,899	14.7
High school graduate	50,453	30.3
Some college	45,295	25.8
College graduate	33,681	29.2
Family Income		
<\$20,000	40,079	18.6
\$20,000–\$49,999	53,149	32.9
\$50,000–\$74,599	23,995	16.9
>\$75,000	37,105	31.5
Married		
No	100,098	46.8
Yes	54,230	53.2
Government Assistance		
No	148,604	97.6
Yes	5,724	2.4
Health Insurance		
No	32,133	16.2
Yes	121,298	83.8

	<i>N</i>	%
Arrested in Lifetime		
No	123,517	82.0
Yes	30,345	18.0
Arrested in Last 12 Months		
No	21,708	85.0
Once	5,453	11.3
More Than Once	1,833	3.68
Lifetime Use		
None	129,896	83.9
Powder Cocaine (only)	18,480	12.3
Crack	5,885	3.8
12-Month Use		
None	149,355	98.2
Powder Cocaine (only)	3,995	1.5
Crack	738	0.4

Note. *Ns* are unweighted, percentages are weighted. *Ns* and percentages for recent (12-month) arrests are within those who reported lifetime arrest.

MSA = metropolitan statistical area.

TABLE 2
Binary Logistic Regression Models Examining Cocaine Use in Relation to Arrests in Lifetime and in the Last 12 Months

Ever Arrested	OR	95% CI	AOR	95% CI
Lifetime Use				
Powder Cocaine	4.36***	(4.12, 4.61)	4.27***	(4.02, 4.54)
Crack	13.49***	(12.45, 14.63)	9.91***	(9.01, 10.89)
12-Month Use				
Powder Cocaine	5.06***	(4.56, 5.62)	3.97***	(3.54, 4.44)
Crack	15.28***	(11.95, 19.53)	9.41***	(7.21, 12.29)
Arrested More than Once in Last 12 Months (among Lifetime Arrestees)				
Lifetime Use				
Powder Cocaine	0.79**	(0.66, 0.94)	0.99	(0.82, 1.89)
Crack	1.49***	(1.20, 1.85)	1.66***	(1.30, 2.11)
12-Month Use				
Powder Cocaine	2.75***	(2.20, 3.42)	1.94***	(1.53, 2.43)
Crack	6.49***	(4.39, 9.59)	4.65***	(2.99, 7.22)

Note. OR = odds ratio, AOR = adjusted odds ratio, CI = confidence interval. The unconditional models were only adjusted by survey year. All covariates including survey year were adjusted in conditional model. Arrests in last 12 months were only assessed among those that reported lifetime arrest so the subsample contains those who have ever been arrested. We examined recent arrests *within* the lifetime arrest sample (3.68%) because the percentage for multiple recent arrests was too small (1%) to model as an outcome in logistic regression using the full sample.

* $P < .05$,

** $P < .01$,

*** $P < .001$.

TABLE 3
Multinomial Regression Models Examining Cocaine Use in Relation to Number of Arrests (among Lifetime Arrestees) in the Last 12 Months

	One Arrest			More than One Arrest		
	OR	95% CI	AOR	95% CI	OR	95% CI
Lifetime Use						
Powder Cocaine	0.86*	(0.75, 0.99)	0.96	(0.82, 1.12)	0.77**	(0.65, 0.92)
Crack	1.12	(0.96, 1.31)	1.23*	(1.04, 1.46)	1.51***	(1.21, 1.88)
12-Month Use						
Powder Cocaine	2.20***	(1.82, 2.65)	1.33*	(1.07, 1.65)	3.11***	(2.48, 3.91)
Crack	2.93***	(1.93, 4.42)	2.34***	(1.48, 3.71)	7.89***	(5.20, 11.96)

Note. The comparison group is no arrests. OR = odds ratio, AOR = adjusted odds ratio, CI = confidence interval. The unconditional models were only adjusted by survey year. All covariates including survey year were adjusted in conditional model. We examined recent arrests *within* the lifetime arrest sample (3.68%) because the percentage for multiple recent arrests was too small (1%) to model as an outcome in logistic regression using the full sample.

* $P < .05$,

** $P < .01$,

*** $P < .001$.

TABLE 4
Multinomial Logistic Regression Models Delineating Correlates of Lifetime Powder Cocaine and Crack Use ($N = 153,366$)

	Unconditional Models			Conditional Model		
	Powder Cocaine		Crack	Powder Cocaine		Crack
	OR	95% CI	OR	95% CI	AOR	95% CI
Age						
18-25	1.00		1.00		1.00	
26-34	1.34***	(1.27, 1.41)	2.16***	(1.94, 2.41)	1.43***	(1.35, 1.52)
35	1.15***	(1.09, 1.22)	1.67***	(1.55, 1.80)	1.45***	(1.35, 1.55)
Sex						
Male	1.00		1.00		1.00	
Female	0.60***	(0.57, 0.63)	0.43***	(0.39, 0.47)	0.64***	(0.61, 0.67)
Race						
White	1.00		1.00		1.00	
Black	0.37***	(0.32, 0.42)	1.21*	(1.05, 1.39)	0.33***	(0.28, 0.37)
Hispanic	0.68***	(0.63, 0.73)	0.59***	(0.51, 0.68)	0.58***	(0.53, 0.63)
Other	0.40***	(0.35, 0.45)	0.53***	(0.44, 0.64)	0.36***	(0.32, 0.41)
Population Density						
Non-MSA	1.00		1.00		1.00	
Small MSA	1.29***	(1.19, 1.41)	1.18***	(1.06, 1.31)	1.34***	(1.23, 1.45)
Large MSA	1.39***	(1.29, 1.51)	1.01	(0.91, 1.12)	1.53***	(1.41, 1.66)
Employment						
Not employed	1.00		1.00		1.00	
Part-time	1.59***	(1.46, 1.72)	0.95	(0.86, 1.05)	1.56***	(1.42, 1.70)

	Unconditional Models				Conditional Model			
	Powder Cocaine		Crack		Powder Cocaine		Crack	
	OR	95% CI	OR	95% CI	AOR	95% CI	AOR	95% CI
Full-time	2.05***	(1.92, 2.18)	1.07	(0.98, 1.18)	1.88***	(1.76, 2.02)	1.36***	(1.23, 1.51)
Education								
Less than high school	1.00		1.00		1.00		1.00	
High school graduate	1.26***	(1.14, 1.39)	0.79***	(0.70, 0.89)	1.12*	(1.01, 1.24)	0.83**	(0.73, 0.94)
Some college	1.59***	(1.46, 1.74)	0.76	(0.68, 0.85)	1.39***	(1.26, 1.52)	0.89	(0.78, 1.01)
College graduate	1.41***	(1.29, 1.53)	0.32***	(0.28, 0.37)	1.05	(0.97, 1.15)	0.39***	(0.33, 0.46)
Family Income								
<\$20,000	1.00		1.00		1.00		1.00	
\$20,000–\$49,999	1.10**	(1.03, 1.17)	0.62***	(0.57, 0.68)	0.94	(0.88, 1.01)	0.66***	(0.61, 0.73)
\$50,000–\$74,999	1.22***	(1.14, 1.31)	0.52***	(0.45, 0.59)	1.01	(0.93, 1.10)	0.66***	(0.57, 0.77)
\$75,000	1.49***	(1.38, 1.61)	0.35***	(0.31, 0.40)	1.20***	(1.10, 1.31)	0.57***	(0.50, 0.66)
Married								
No	1.00		1.00		1.00		1.00	
Yes	0.83***	(0.79, 0.87)	0.46***	(0.42, 0.50)	0.67***	(0.63, 0.71)	0.47***	(0.43, 0.52)
Government Assistance								
No	1.00		1.00		1.00		1.00	
Yes	1.08	(0.93, 1.25)	2.57***	(2.15, 3.08)	1.58***	(1.36, 1.84)	2.21***	(1.83, 2.67)
Health Insurance								
No	1.00		1.00		1.00		1.00	
Yes	0.75***	(0.71, 0.80)	0.37***	(0.34, 0.41)	0.64***	(0.60, 0.69)	0.45***	(0.41, 0.50)

Note. The comparison group is lifetime non-users. OR = odds ratio, AOR = adjusted odds ratio, CI = confidence interval. The unconditional models were only adjusted by survey year. All covariates including survey year were adjusted in conditional model.

$P < .001$

 $P < .01$
**
 $P < .05$
*

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TABLE 5
Multinomial Logistic Regression Models Delineating Correlates of 12-Month (Recent) Powder Cocaine and Crack Use ($N = 153,197$)

	Unconditional Models			Conditional Model		
	Powder Cocaine		Crack	Powder Cocaine		Crack
	OR	95% CI	OR	95% CI	AOR	95% CI
Age						
18-25	1.00		1.00		1.00	
26-34	0.62***	(0.56, 0.70)	0.95	(0.71, 1.27)	0.79**	(0.70, 0.90) 1.65** (1.21, 2.24)
35	0.13***	(0.11, 0.15)	0.70**	(0.55, 0.88)	0.23***	(0.19, 0.27) 1.56** (1.18, 2.05)
Sex						
Male	1.00		1.00		1.00	
Female	0.43***	(0.39, 0.48)	0.48***	(0.35, 0.66)	0.47***	(0.42, 0.53) 0.43*** (0.30, 0.61)
Race						
White	1.00		1.00		1.00	
Black	0.47***	(0.35, 0.63)	2.23***	(1.67, 2.97)	0.30***	(0.23, 0.41) 1.11 (0.81, 1.52)
Hispanic	1.16*	(1.00, 1.35)	0.56**	(0.37, 0.84)	0.67***	(0.57, 0.78) 0.28*** (0.18, 0.44)
Other	0.66***	(0.53, 0.81)	0.70	(0.42, 1.15)	0.50***	(0.40, 0.63) 0.72 (0.44, 1.20)
Population Density						
Non-MSA	1.00		1.00		1.00	
Small MSA	1.76***	(1.43, 2.17)	1.44*	(1.01, 2.06)	1.70***	(1.38, 2.09) 1.77** (1.22, 2.54)
Large MSA	2.09***	(1.71, 2.55)	1.21	(0.87, 1.67)	2.13***	(1.74, 2.62) 1.67*** (1.17, 2.39)
Employment						
Not employed	1.00		1.00		1.00	
Part-time	1.65***	(1.40, 1.95)	0.67*	(0.48, 0.95)	1.09	(0.93, 1.29) 0.83 (0.59, 1.16)

	Unconditional Models				Conditional Model			
	Powder Cocaine		Crack		Powder Cocaine		Crack	
	OR	95% CI	OR	95% CI	AOR	95% CI	AOR	95% CI
Full-time	1.35***	(1.21, 1.49)	0.43***	(0.34, 0.55)	1.24**	(1.10, 1.40)	0.67**	(0.51, 0.88)
Education								
Less than high school	1.00		1.00		1.00		1.00	
High school graduate	0.85	(0.72, 1.00)	0.49***	(0.38, 0.63)	0.90	(0.76, 1.07)	0.60***	(0.46, 0.79)
Some college	1.07	(0.91, 1.27)	0.41***	(0.30, 0.58)	1.07	(0.89, 1.30)	0.59**	(0.41, 0.85)
College graduate	0.77**	(0.64, 0.93)	0.08***	(0.05, 0.13)	1.02	(0.83, 1.25)	0.15***	(0.08, 0.26)
Family Income								
<\$20,000	1.00		1.00		1.00		1.00	
\$20,000–\$49,999	0.67***	(0.59, 0.76)	0.42***	(0.33, 0.55)	0.79**	(0.69, 0.90)	0.67**	(0.50, 0.89)
\$50,000–\$74,999	0.60***	(0.50, 0.73)	0.17***	(0.11, 0.25)	0.83	(0.68, 1.03)	0.43***	(0.27, 0.68)
\$75,000	0.56***	(0.49, 0.64)	0.14***	(0.10, 0.19)	0.87	(0.74, 1.01)	0.56**	(0.37, 0.83)
Married								
No	1.00		1.00		1.00		1.00	
Yes	0.20***	(0.17, 0.23)	0.15***	(0.11, 0.21)	0.33***	(0.28, 0.40)	0.23***	(0.16, 0.33)
Government Assistance								
No	1.00		1.00		1.00		1.00	
Yes	1.64***	(1.29, 2.09)	4.37***	(2.74, 6.96)	1.39*	(1.08, 1.80)	2.32**	(1.41, 3.84)
Health Insurance								
No	1.00		1.00		1.00		1.00	
Yes	0.41***	(0.37, 0.45)	0.28***	(0.22, 0.36)	0.61***	(0.54, 0.70)	0.45***	(0.34, 0.59)

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Note. These outcomes are presented as a supplemental table because the crack outcome is very rare (<1%) and results may thus be overestimated. Therefore, the reader should pay closest attention to direction and significance more so than actual ORs. The comparison group is 12-month non-users. OR = odds ratio, AOR = adjusted odds ratio, CI = confidence interval. The unconditional models were only adjusted by survey year. All covariates including survey year were adjusted in conditional model.

* $P < .05$,
** $P < .01$,
*** $P < .001$.

Generalized Negative Binomial Regression Models Delineating Correlates of Frequency of Powder Cocaine and Crack Use in the Last 12 Months
(Among Cocaine Recent Users)

TABLE 6

	Powder Cocaine Use (N = 4,260)				Crack Use (N = 710)			
	Unadjusted IRR	95% CI	Adjusted IRR	95% CI	Unadjusted IRR	95% CI	Adjusted IRR	95% CI
<i>Age</i>								
18–25	Ref		Ref		Ref		Ref	
26–34	1.25	(0.99, 1.60)	1.36*	(1.06, 1.74)	1.37	(0.84, 2.22)	1.43	(0.88, 2.34)
35	1.50**	(1.19, 1.89)	1.39**	(1.12, 1.73)	1.78***	(1.36, 2.30)	1.43*	(1.06, 1.92)
<i>Sex</i>								
Male	Ref		Ref		Ref		Ref	
Female	0.87	(0.71, 1.07)	0.87	(0.73, 1.03)	1.50**	(1.13, 2.00)	1.60**	(1.21, 2.12)
<i>Race</i>								
White	Ref		Ref		Ref		Ref	
Black	2.61***	(2.01, 3.39)	1.85***	(1.40, 2.46)	1.86***	(1.39, 2.50)	1.84***	(1.38, 2.46)
Hispanic	1.41**	(1.10, 1.81)	1.11	(0.90, 1.37)	1.03	(0.53, 1.99)	0.91	(0.51, 1.63)
Other	0.90	(0.68, 1.19)	0.97	(0.73, 1.29)	2.01***	(1.39, 2.91)	1.85**	(1.22, 2.82)
<i>Population Density</i>								
Non-MSA	Ref		Ref		Ref		Ref	
Small MSA	0.97	(0.71, 1.33)	1.02	(0.78, 1.33)	1.38	(0.78, 2.44)	1.19	(0.71, 2.01)
Large MSA	0.96	(0.70, 1.31)	1.11	(0.85, 1.45)	1.72*	(1.05, 2.81)	1.53	(0.94, 2.50)
<i>Employment</i>								
Not employed	Ref		Ref		Ref		Ref	
Part-time	0.67**	(0.52, 0.87)	0.86	(0.65, 1.13)	1.08	(0.68, 1.70)	1.32	(0.85, 2.04)
Full-time	0.70**	(0.58, 0.86)	0.88	(0.72, 1.09)	0.77	(0.58, 1.04)	1.07	(0.76, 2.01)

		Powder Cocaine Use (N = 4,260)				Crack Use (N = 710)			
		Unadjusted IRR	95% CI	Adjusted IRR	95% CI	Unadjusted IRR	95% CI	Adjusted IRR	95% CI
Education									
Less than high school	Ref			Ref		Ref		Ref	
High school graduate	0.83		(0.66, 1.06)	0.88	(0.70, 1.11)	1.15	(0.79, 1.67)	1.12	(0.83, 1.51)
Some college	0.47***		(0.37, 0.61)	0.58***	(0.43, 0.77)	0.93	(0.62, 1.38)	0.75	(0.54, 1.04)
College graduate	0.37***		(0.25, 0.53)	0.41***	(0.29, 0.59)	0.61*	(0.39, 0.97)	0.54*	(0.34, 0.87)
Family Income									
<\$20,000	Ref			Ref		Ref		Ref	
\$20,000–\$49,999	1.08		(0.86, 1.35)	1.15	(0.91, 1.45)	0.83	(0.58, 1.21)	0.88	(0.58, 1.34)
\$50,000–\$74,999	0.69*		(0.51, 0.93)	0.79	(0.59, 1.07)	0.81	(0.49, 1.34)	0.99	(0.60, 1.64)
\$75,000	0.69*		(0.51, 0.92)	0.98	(0.73, 1.32)	0.66	(0.38, 1.14)	0.78	(0.47, 1.29)
Married									
No	Ref			Ref		Ref		Ref	
Yes	0.92		(0.70, 1.20)	0.81	(0.61, 1.07)	1.07	(0.71, 1.63)	1.03	(0.70, 1.51)
Government Assistance									
No	Ref			Ref		Ref		Ref	
Yes	1.54*		(1.08, 2.19)	1.12	(0.80, 1.57)	1.16	(0.70, 1.94)	1.12	(0.66, 1.88)
Health Insurance									
No	Ref			Ref		Ref		Ref	
Yes	0.79**		(0.67, 0.94)	0.97	(0.79, 1.17)	1.10	(0.80, 1.53)	0.97	(0.73, 1.30)

Note. IRR = incidence rate ratio, CI = confidence interval. We recomputed new frequency variables to ensure that crack frequency was no longer included in the “cocaine” variable; thus, we computed and analyzed two mutually exclusive variables—one for powder cocaine and the other for crack. The unconditional models were only adjusted by survey year. All covariates including survey year were adjusted in conditional model.

* $P < .05$,

** $P < .01$,

.100) > *P*

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