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Among long-term crack smokers, who avoids and who succumbs to cocaine addiction?

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Abstract

Crack cocaine is a highly addictive drug. To learn more about crack addiction, long-term crack smokers who had never met the DSM-IV criteria for lifetime cocaine dependence were compared with those who had. The study sample consisted of crack users (n=172) from the Dayton, Ohio, area who were interviewed periodically over 8 years. Data were collected on a range of variables including age of crack initiation, frequency of recent use, and lifetime cocaine dependence. Cocaine dependence was common with 62.8% of the sample having experienced it. There were no statistically significant differences between dependent and non-dependent users for age of crack initiation or frequency of crack use. In terms of sociodemographics, only race/ethnicity was significant, with proportionally fewer African-Americans than whites meeting the criteria for cocaine dependence. Controlling for sociodemographics, partial correlation analysis showed positive, statistically significant relationships between lifetime cocaine dependence and anti-social personality disorder, attention deficit/hyperactivity disorder, and lifetime dependence on alcohol, cannabis, amphetamine, sedative-hypnotics, and opioids. These results highlight the importance addressing race/ethnicity and comorbid disorders when developing, implementing, and evaluating interventions targeting people who use crack cocaine. Additional research is needed to better understand the role of race/ethnicity in the development of cocaine dependence resulting from crack use.

Keywords

Crack cocaine; addiction; dependence; comorbidity; race/ethnicity; substance abuse

1. Introduction

Crack cocaine is available across the United States (Substance Abuse and Mental Health Services Administration, 2007a), where small doses can often be purchased relatively inexpensively (National Institute on Drug Abuse, 2006). Crack is considered a public health problem not only in the US (Cornish and O'Brien, 1996) but also in Australia (Darke et al., 2002), Brazil (Ribeiro et al., 2004), Mexico (McKinley, 2007), Canada (Fischer et al., 2006) and Europe (Vivancos et al., 2006; Haasen et al., 2004). According to the most recent US National Survey on Drug Use and Health (Substance Abuse and Mental Health Services Administration, 2007a), more than 8.5 million people have used crack at least once in their

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lifetimes. Initiation of crack use continues. For example, there are now reports that people 50 years of age and older have begun using the drug (Johnson and Sterk, 2003). In 2006, nearly a quarter million people in the US between 12-49 years of age reported using crack for the first time (Substance Abuse and Mental Health Services Administration, 2007b). Importantly, some research suggests that household survey data may underestimate the prevalence of crack use in the US, particularly among African-Americans living in segregated neighborhoods (Fendrich et al., 1999; Richardson et al., 2003).

Crack use has been linked to a variety of cardiovascular, respiratory, neurological, and psychiatric problems (Cornish and O'Brien, 1996). Crack has high abuse and dependence liabilities, similar to those associated with injected cocaine HCl (Hatsukami and Fischman, 1996). Dependence can develop rapidly. Findings from large scale epidemiological studies have shown that more than 30 percent of people who have smoked crack experienced symptoms of cocaine dependence within 2 years of initiating use (Chen and Anthony, 2004). Results from our crack trajectories study revealed 33% of users met current cocaine dependence criteria (Falck et al., 2007). While data from these recent studies suggest that many people who move beyond experimentation with crack will develop cocaine dependency, they also suggest that some people who use the drug can do so over long periods of time without becoming addicted to it.

To learn more about crack addiction, and growing out of work on crack trajectories, we compared long-term users, i.e., people who had used the drug for a minimum of 8 years, who had never met the DSM-IV criteria necessary for a diagnosis of lifetime cocaine dependence with those who had. The following research questions guided this study: 1) How common is it for long-term users of crack to avoid cocaine dependence? 2) Are there sociodemographic differences between those who become addicted to cocaine and those who do not? 3) Do the groups differ in the age of crack use initiation or the frequency of recent use? 4) Are the groups differentially affected by comorbid psychiatric disorders?

2. Methods

2.1. Sample

Subjects were a *subset* of a community sample of 430 crack smokers from the Dayton, Ohio, area who were recruited in 1996-1997 to participate in a longitudinal, health service utilization study, and followed over an 8-year period. At baseline, participants had to: 1) be 18 years of age or older; 2) not be patients in a drug abuse treatment program in the 30 days prior to study entry; 3) have no pending criminal charges; 4) not be homeless; 5) have never injected drugs; and 6) report the recent use of crack cocaine. Recent cocaine use was verified by a positive result on a urine immunoassay for the metabolite benzoylecgonine, at a level ≥300 ng/mL. Urine testing was conducted at the time of the interview.

The baseline sample was 60.7% men and 61.6% African-American. Educationally, 38.9% of the sample had less than a high school education; 37.1% had a high school education or the equivalent, and 24% had attended college. The mean age was 38.4 years for men and 35.9 for women. At baseline, the mean years of crack use was 7.6 (SD = 4.7), with 27% of the sample reporting having used the drug for less than 5 years, 37.9% having used it for 5-9 years, and 35.1% for 10 or more years.

A targeted sampling plan, developed to increase the representativeness of the sample as compared to convenience or snowball sampling, was used to recruit participants (Carlson et al., 1994; Watters and Bernacki, 1989). Project outreach workers followed the plan to locate and engage crack users in the study. Sometimes appointments for interviews were scheduled

or other times outreach staff transported potential participants to the study's field site office, where eligibility was confirmed and interviews conducted.

In our earlier study, group-based modeling identified 3 crack cocaine trajectories among the sample's 401 people who completed at least one follow-up interview. Two of the trajectory groups were characterized by movement toward abstinence from crack, while the third group, consisting of 255 people,was characterized by continued use, i.e., it was comprised of individuals who had a very low probability (less than 5%) of reporting abstinence from crack in the 6 months before any follow-up interview over the 8-year observation period.

The focus of this study are the crack smokers (n=172) in the latter group who completed all sections of their final interview at the end of the observation period. This represents 67.5% of the continued use trajectory group as well as 59.9% of the 287 people who completed all sections of the study's final interview. There were no statistically significant differences between those in the continued use group who completed the final interview and those who did not return for the final interview in terms of age, race/ethnicity, gender, or educational status. Additional information on the follow-up process and rates is available elsewhere (Falck et al., 2007).

2.2. Data Collection

Immediately before the baseline interview, informed consent was obtained from participants following a protocol approved by the university's Institutional Review Board. Participants were then periodically engaged in structured interviews, usually at 6-month intervals, over an 8-year timeframe. Project interviewers administered questionnaires that consisted of standardized instruments as well as items developed by the authors (Siegal et al., 1998). Some follow-up interviews were audio computer self-administered (ACASI). More detail on data collection is available elsewhere (Falck et al., 2007).

2.3. Measures

Variables considered in this study included general sociodemographics, age of first crack use, and the frequency of crack use in the 30 days and 6 months prior to the final interview. In addition, the following DSM-IV disorders, assessed at the final interview with the computerized, interviewer-administered version of the Diagnostic Interview Schedule (CDIS) (Robins et al., 2000), were included: lifetime dependence on cocaine, alcohol, cannabis, amphetamine, sedative-hypnotics, and opiates, as well as antisocial personality disorder (ASPD), attention deficit/hyperactivity disorder (AD/HD), and lifetime depression.

2.4. Analysis

Chi-squares and Fisher's exact test were used to describe the differences between those who did and those who did not meet the DSM-IV criteria, including the clustering criterion, necessary for a diagnosis of lifetime cocaine dependence. Because previous research has found racial/ethnic differences in the prevalence of psychiatric disorders among substance abusing populations (Ball et al., 1995; Compton et al., 2000; Tang et al. 2007), chi-square analyses were used to explore this issue with the sample. Partial correlation analysis was used to assess the relationship between selected comorbid psychiatric disorders and lifetime cocaine dependence, controlling for age, gender, ethnicity, education, current employment, and current marital status.

3. Results

The majority of the sample, 62.8%, had experienced cocaine dependence at sometime during their drug-using careers. There were no significant differences in sociodemographics between

those who did not meet the DSM-IV criteria for lifetime cocaine dependence (n=64) and those who did (n=108), excepting race/ethnicity. Proportionally fewer African-Americans than whites fulfilled the criteria for dependence. The groups did not differ in mean age of crack initiation or frequency of crack use occurring within 6 months, or 30 days, of the final interview. Even though there were no differences in the occurrence of lifetime cannabis dependence or major depressive episode, significant differences existed between the groups for all other disorders considered, with proportionately lower rates among the non-addicted group. For example, 10.9% and 15.6% of non-addicted users compared to 31.5% and 57.4% of addicted users met the DSM-IV criteria for ASPD and alcohol dependence, respectively (Table 1).

Chi-square analyses exploring race/ethnicity and comorbidity showed significant differences for ASPD ($X^2 = 6.62$, df = 1, $p < .01$) as well as for lifetime dependence on alcohol ($X^2 = 16.94$, df = 1, $p < .0001$) and opiates ($X^2 = 9.96$, df = 1, $p < .0002$), with proportionately more whites than African-Americans experiencing these disorders.

Partial correlation analysis revealed significant, positive associations between lifetime cocaine dependence and all comorbid disorders considered,except depression. The strongest relationship was with alcohol dependence, the weakest with opioid and amphetamine dependence (Table 2).

4. Discussion

This study is the first to identify the correlates of DSM-IV lifetime cocaine dependence among a community sample of long-term crack users, the majority of whom had used the drug for a decade or longer. Although the results suggest it is possible to smoke crack for many years without becoming addicted to it, they clearly show that cocaine dependency is the most common outcome. The findings also suggest that race/ethnicity and comorbid psychiatric disorders are important indicators of who avoids and who succumbs to addiction. Interestingly, the groups did not differ in the mean age of crack initiation or the frequency of recent crack use, suggesting that duration and amount of use, while unquestionably being critically important factors in the development of cocaine addiction, are not its sole determinants.

Even though the results show that proportionately fewer African-Americans than whites had experienced cocaine dependence, the role of race/ethnicity in its development is far from clear. One possible explanation is that the influence of race/ethnicity on cocaine addiction is mediated through other psychiatric disorders. For example, there is a strong relationship between ASPD and substance abuse. Robins has noted that this is due, in part, to the overlapping symptoms of the disorders and shared risk factors. Further, she has argued that ASPD can actually cause substance use disorders (Robins, 1998). Thus, there is reason to consider ASPD a consequential factor in the development of addiction to illicit drugs like crack.

Earlier research offers additional insight into this complex issue. For example, an AIDS-oriented study of 425 people admitted to treatment facilities in St. Louis in the early 1990s found significantly lower rates of lifetime comorbid drug and non-drug disorders, including ASPD, among African-Americans than among whites (Compton et al., 2000). In a study on the typology of cocaine abusers, researchers assessed 399 users drawn from treatment and community samples in Connecticut, and found proportionately fewer African-Americans and women suffered the more severe form of cocaine dependence disorder. They also found that ASPD and alcoholism were more common among persons who experienced the more severe form of cocaine dependence (Ball et al., 1995). Although these studies demonstrate the nexus of race/ethnicity, ASPD, and drug addiction, the question persists as to why white crack users appear to be disproportionately affected by ASPD and cocaine dependence. The answer may lie in the social milieu of the crack scene.

The roots of crack use in the United States are embedded in its inner-cities (Inciardi, 1992), in neighborhoods that were and still are very largely populated by minorities, often by African-Americans, as is the case in the Dayton area. As crack cocaine became integrated into the social ecology of these neighborhoods, residents were, as a matter of course, exposed to the drug and its users. Residents did not have to engage in extraordinary efforts to obtain crack. In contrast, many white users had to venture into minority neighborhoods to secure the drug. For example, they made drive-though crack purchases, exposing themselves to myriad risks (Inciardi, 1992; Carlson and Siegal, 1991). Personality traits like impulsivity and recklessness support such behavior and also help define ASPD. In turn, these may help explain the higher rates of the disorder among white crack users. Further, if ASPD makes an individual more susceptible to drug dependence, this would help explain the higher rate of cocaine dependence among the white users in our sample, since proportionately more of them had ASPD.

Even though there were no significant differences between the dependent and non-dependent groups in terms of current marital status, education, or employment, the study sample, with an average age of 46 years, had very low levels of marriage, educational achievement, and employment. Regardless of whether these behaviors are a cause or an effect of crack use, they are reflective of disengagement from traditional social institutions, and further help explain the marginalization of crack users (Fischer and Coghlan, 2007). It is worth noting that some researchers have linked problematic drug use to the disconnect between a group's socioeconomic expectations and its ability to achieve them (Agar and Reisinger, 2001), an ongoing problem in places like Dayton where the industrial base, and the employment opportunities tied to it, have continued to decline. For a variety of reasons, this problem, sometimes called 'open marginality', can differentially impact racial and ethnic groups' drug use practices (Broz and Ouellet, 2008), and may have been operating at some level among the crack users in this study.

Attention deficit/hyperactivity disorder was considered in the analysis because there are reports in the literature suggesting people with the problemsometimes use cocaine to address it (Gawin and Ellinwood, 1988; Khantzian, 1997; Levin et al., 1998; Wilens, 2004). The 22.2% prevalence rate among the cocaine-addicted group is about 5 times greater than the rate in the non-addicted group and nearly 3 times greater than that found in the general population (Kessler et al., 2005). This finding suggests that it is not unreasonable to consider AD/HD, a disorder, like ASPD, rooted in childhood, a risk factor for cocaine dependence.

The results on alcohol dependence are similar to those of Ball and his colleagues (1995) who found higher rates of alcohol problems among cocaine abusers with the more severe form of cocaine dependency disorder. In addition, our findings on race/ethnicity and alcoholism are in line with the National Epidemiologic Survey on Alcohol and Related Conditions data showing African-Americans significantly less likely than whites to develop alcohol dependence (Hasin et al., 2007).

The partial correlation analysis results show associations between cocaine dependence and other substance use disorders as well as non-drug psychiatric disorders. These findings are consistent with a substantial literature documenting a strong relationship between drug use disorders and other comorbid psychiatric disorders (Kessler et al., 1996; Stinson et al., 2005; Hasin et al., 2005; Compton et al., 2007). Given the sample's mean age of crack use initiation (28.1 years), there is some reason to believe that the onset of symptoms of the comorbid disorders assessed preceded crack involvement. Thus, these disorders, or their symptoms, may be markers or risk factors for addiction to crack.

4.1 Limitations

At least several limitations affect the generalizibility of this study's results. First, it is not known how representative our sample is of long-term crack smokers, although in terms of age, gender, and race/ethnicity, it appears to be reasonably reflective of the current generation of users in the United States (Substance Abuse and Mental Health Services Administration, 2005; 2007a). Second, the study relies on self-reports of drug use. Although not without problems, there is good evidence to suggest such self-report data can be valid and reliable (Adair et al., 1995; Darke, 1998). Third, our research is limited in scope. Clearly, factors other than those addressed in this study play a crucial role in the development of addiction. For example, research has identified genetic risks for substance use disorders (Langbehn et al., 2003).

5. Conclusion

The findings clearly show that cocaine dependence is the rule rather than the exception among people who smoke crack for long periods of time. The results suggest that addiction to crack is more common among white users than among African-Americans. The results also show that co-occurring DSM-IV disorders, alcoholism in particular, are quite common among persons who are addicted to crack. Practically, this means that public health and drug abuse treatment programs targeting long-term crack users should be prepared to address a range of comorbid disorders, some of which may be stimulating the use of crack. Similarly, the findings indicative of marginalization highlight some of the life areas that interventions should address. The results on race/ethnicity and ASPD suggest it may be more difficult to intervene with white crack users. Finally, more research is needed to clarify the role of race/ethnicity in the development of cocaine dependence resulting from crack use. Findings from such research may well have critically important implications for future prevention and treatment efforts targeting people who smoke crack cocaine.

References

Adair EBG, Craddock SG, Miller HG, Turner CF. Assessing consistency of responses to questions on cocaine use. Addiction 1995;90:1497–1502. [PubMed: 8528035]

Agar MH, Reisinger HS. Open marginality: heroin epidemics in different groups. J Drug Issues 2001;31:729–746.

Ball SA, Carroll KM, Babor T, Rounsaville BJ. Sub-types of cocaine abusers: support for a Type A -- Type B distinction. J. Consult. Psychol 1995;63:115–124.

Broz D, Ouellet LJ. Racial and ethnic changes in heroin injection in the United States: implications for the HIV/AIDS epidemic. Drug Alcohol Depend 2008;94:221–233. [PubMed: 18242879]

Carlson RG, Siegal HA. The crack life: an ethnographic overview of crack use and sexual behavior among African-Americans in a Midwest metropolitan city. J. Psychoactive Drugs 1991;23:11–20. [PubMed: 1941363]

Carlson RG, Wang J, Siegal HA, Falck RS, Guo J. An ethnographic approach to targeted sampling: problems and solutions in AIDS prevention research among injection drug and crack-cocaine users. Hum. Org 1994;53:279–286.

Chen C-Y, Anthony JC. Epidemiological estimates of risk in the process of becoming dependent upon cocaine: cocaine hydrochloride powder versus crack cocaine. Psychopharmacology 2004;172:78–86. [PubMed: 14598014]

Compton WM, Cottler LB, Abdallah AB, Phelps DL, Spitznagel EL, Horton JC. Substance dependence and other psychiatric disorders among drug dependent subjects: race and gender correlates. Am. J. Addict 2000;9:113–125. [PubMed: 10934573]

Compton WM, Thomas YF, Stinson FS, Grant BF. Prevalence, correlates, disability and comorbidity of DSM-IV drug abuse and dependence in the United States. Arch. Gen. Psychiatry 2007;64:566–576. [PubMed: 17485608]

Cornish J, O'Brien C. Crack-cocaine abuse: an epidemic with many public health consequences. Annu. Rev. Public Health 1996;17:259–273. [PubMed: 8724227]

Darke S. Self-report among injecting drug users: a review. Drug Alcohol Depend 1998;51:253–263. [PubMed: 9787998]

Darke S, Kaye S, Topp L. Cocaine use in New South Wales, Australia 1996-2000: 5 year monitoring of trends in price, purity, availability and use from the illicit drug reporting system. Drug Alcohol Depend 2002;26:81–88. [PubMed: 12062781]

Falck RS, Wang J, Carlson RG. Crack cocaine trajectories among users in a midwestern American city. Addiction 2007;102:1421–1431. [PubMed: 17645426]

Fendrich M, Johnson TP, Sudman S, Wislar JS, Spiehler V. Validity of drug use reporting in a high-risk community sample: a comparison of cocaine and heroin survey reports with hair tests. Am. J. Epidemiol 1999;149:955–962. [PubMed: 10342805]

Fischer B, Coghlan M. Crack use in North American cities: the neglected 'epidemic'. Addiction 2007;102:1340–1341. [PubMed: 17697268]

Fischer B, Rehm J, Patra J, Kalousek K, Haydon E, Tyndall MW, El-Guebaly N. Crack across Canada: comparing crack users and crack non-users in a Canadian multi-city cohort of illicit opioid users. Addiction 2006;101:1760–1770. [PubMed: 17156175]

Gawin FH, Ellinwood EH. Cocaine and other stimulants: actions, abuse and treatment. N. Eng. J. Med 1988;318:1173–1182.

Haasen C, Prinzleve M, Zurhold H, Rehm J, Guttinger F, Fischer G. Cocaine use in Europe--a multi-centre study. Methodology and prevalence estimates. Eur. Addict. Res 2004;10:139–146. [PubMed: 15367814]

Hasin DS, Stinson FS, Ogburn E, Grant BF. Prevalence, correlates, disability and comorbidity of DSM-IV alcohol abuse and dependence in the United States: results from the National Epidemiologic Survey on Alcohol and Related Conditions. Arch Gen Psychiatry 2007;64:830–842. [PubMed: 17606817]

Hasin DS, Hatzenbueler M, Smith S, Grant BF. Co-occurring DSM-IV drug abuse in DSM-IV drug dependence: results from the National Epidemiologic Survey on Alcohol and Related Conditions. Drug Alcohol Depend 2005;80:117–123. [PubMed: 16157234]

Hatsukami DK, Fischman MW. Crack cocaine and cocaine hydrochloride: are the differences myth or reality? J. Am. Med. Assoc 1996;276:1580–1588.

Inciardi, JA. The War on Drugs II: The Continuing Epic of Heroin, Cocaine, Crack, Crime, AIDS, and Public Policy. Mayfield Publishing Company; Mountain View, CA: 1992.

Johnson WA, Sterk CE. Late-onset crack users: an emergent HIV risk group. J. Acquir. Immune Defic. Syndr 2003;33(Suppl 2):229–232.

Kessler RC, Berglund P, Demler O, Jin R, Merkinangas KR, Walters EE. Lifetime prevalence and age-of-onset distributions of DSM-IV disorders in the National Comorbidity Survey Replication. Arch. Gen. Psychiatry 2005;62:593–602. [PubMed: 15939837]

Kessler RC, Nelson CB, McGonagle KA, Edlund MJ, Frank RG, Leaf PJ. The epidemiology of co-occurring addictive and mental disorders: implications for prevention and service utilization. Am. J. Orthopsychiatry 1996;66:17–31. [PubMed: 8720638]

Khantzian EJ. The self-medication hypothesis of substance use disorders: a reconsideration and recent applications. Harv. Rev. Psychiatry 1997;4:231–244. [PubMed: 9385000]

Langbehn DR, Cadoret RJ, Caspers K, Troughton EP, Yucuis R. Genetic and environmental risk factors for the onset of drug use and problems in adoptees. Drug Alcohol Depend 2003;69:151–167. [PubMed: 12609696]

Levin FR, Evans SM, Kleber HD. Prevalence of adult attention-deficit hyperactivity disorder among cocaine abusers seeking treatment. Drug Alcohol Depend 1998;52:15–25. [PubMed: 9788002]

McKinley, JC. Drug trade, once passing by, takes root in Mexico. New York Times; New York: Oct 3. 2007

National Institute on Drug Abuse Community Epidemiology Workgroup. Epidemiologic Trends in Drug Abuse--Volume II; Proceedings of the Community Epidemiology Work Group; National Institute on Drug Abuse, Bethesda, MD. 2006;

Ribeiro M, Dunn J, Laranjeira RR, Sesso R. High mortality among young crack cocaine users in Brazil: a 5-year follow-up study. Addiction 2004;99:1133–1135. [PubMed: 15317633]

Richardson J, Fendrich M, Johnson TP. Neighborhood effects on drug reporting. Addiction 2003;98:1705–1711. [PubMed: 14651502]

Robins, LN.; Cottler, LB.; Bucholz, KK.; Compton, WB.; North, CS.; Rourke, KM. Diagnostic Interview Schedule for DSM-IV. Washington University School of Medicine; St. Louis: 2000.

Robins LN. The intimate connection between antisocial personality and substance abuse. Soc. Psychiatry Psychiatr. Epidemiol 1998;33:393–399. [PubMed: 9708027]

Siegal HA, Falck RS, Carlson RG, Wang J, Rahman AM. Health services research among crack-cocaine users: a case study from the Midwest. Am. Behavioral Scientist 1998;41:1063–1078.

Stinson FS, Grant BF, Dawson DA, Raun WA, Huang B, Saha T. Comorbidity between DSM-IV alcohol and specific drug use disorders in the United States: results from the National Epidemiologic Survey on Alcohol and Related Conditions. Drug Alcohol Depend 2005;80:105–116. [PubMed: 16157233]

Substance Abuse and Mental Health Services Administration (SAMHSA). Office of Applied Studies: Results from the 2006 National Survey on Drug Use and Health: Illicit Drug Use Tables. 2007a [accessed January 3, 2008]. http://www.oas.samhsa.gov/nsduh/2k6nsduh/tabs/2k6tabs.pdf

Substance Abuse and Mental Health Services Administration (SAMHSA). Office of Applied Studies. Results from the 2006 National Survey on Drug Use and Health: Incidence Tables. 2007b [accessed January 3, 2008]. http://www.oas.samhsa.gov/nsduh/2k6nsduh/tabs/Sect4peTabs12.pdf

Substance Abuse and Mental Health Services Administration (SAMHSA). The NSDUH Report. Cocaine Use: 2002 and 2003. Rockville, MD: 2005.

Tang Y-L, Kranzler HR, Gelernter J, Farrer LA, Cubells JF. Comorbid psychiatric diagnoses and their association with cocaine-induced psychosis in cocaine-dependent subjects. Am. J. Addictions 2007;16:343–351.

Vivancos R, Maskrey V, Rumball D, Harvey I, Holland R. Crack/cocaine use in a rural country of England. J. Public Health 2006;28:96–103.

Watters JK, Biernacki P. Targeted sampling: options for study of hidden populations. Soc. Probl 1989;36:416–430.

Wilens TEM. Attention-deficit/hyperactivity disorder and the substance use disorders: the nature of the relationship, subtypes at risk, and treatment issues. Psychiatr. Clin. N. Am 2004;27:283–301.

Table 1

Characteristics of Long-Term Crack Users (n=172)

Variables	No Cocaine Dependence (n=64)		Cocaine Dependence (n=108)		Total (n=172)	
	n	%	n	%	n	%
Sociodemographics						
Gender						
Men	36	(56.3)	66	(66.1)	102	(59.3)
Women	28	(43.8)	42	(38.9)	70	(40.7)
Ethnicity*						
White	13	(20.3)	39	(36.1)	52	(30.2)
AA	51	(79.7)	69	(63.9)	120	(69.8)
Age (Mean/SD)	46.3	(7.9)	45.8	(6.8)	46.0	(7.2)
Education						
< High School	25	(39.1)	39	(36.1)	64	(37.2)
High School	26	(40.6)	45	(41.7)	71	(41.3)
>High School	13	(20.3)	24	(22.2)	37	(21.5)
Marital Status						
Married	5	(7.8)	9	(8.3)	14	(8.1)
Unmarried	59	(92.2)	99	(91.7)	158	(91.9)
Employment						
Employed	20	(31.2)	43	(39.8)	63	(36.6)
Unemployed	19	(29.7)	31	(28.7)	50	(29.1)
Disabled	18	(28.1)	24	(22.2)	42	(24.4)
Other	7	(10.9)	10	(9.3)	17	(9.9)
Crack Use						
Initiation Age	27.7	(9.2)	28.3	(7.1)	28.1	(7.9)
Last 30 days	12.3	(9.1)	15.1	(10.8)	14.1	(10.3)
Last 6 months‡	2.8	(1.6)	3.3	(1.4)	3.1	(1.6)
DSM-IV Lifetime Disorders						
Depression	8	(12.5)	25	(23.2)	33	(19.1)
ASPD** †	7	(10.9)	34	(31.5)	41	(23.8)
AD/HD** †	3	(4.7)	24	(22.2)	27	(15.7)
Alcohol** †	10	(15.6)	62	(57.4)	72	(41.9)
Cannabis	0	(0)	19	(17.6)	19	(11.0)
Amphetamine* †	0	(0)	9	(8.3)	9	(5.2)
Sedatives** †	1	(1.6)	16	(14.8)	17	(9.9)
Opioids* †	3	(4.7)	19	(17.6)	22	(12.8)

* p<.05

** p<.01

† =Fisher's Exact Test

‡ = 6 month frequency: 0 = no use; 1 = less than 4 times a month; 2 = about 1 time a week; 3 = 2-6 times a week; 4 = about 1 time a day; 5 = 2-3 times a day about every day; 6 = 4 or more times almost every day

Table 2

Partial Correlation Coefficients for Lifetime Cocaine Dependence and Comorbid Disorders

Depression	.13
ASPD	.23**
AD/HD	.25**
Alcohol Dependence	.39***
Cannabis Dependence	.26***
Amphetamine Dependence	.16*
Sedative-Hypnotic Dependence	.20*
Opiate Dependence	.16*

* p<.05

** p<.01

*** p<.001