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Predictors of Illicit Drug Use Among Prisoners

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Abstract

Background—The United States of America currently has the highest incarceration rate in the world, and approximately 80% of incarcerated individuals have a history of illicit drug use. Despite institutional prohibitions, drug use continues in prison, and is associated with a range of negative outcomes.

Objectives—To assess the relationship between prison drug use, duration of incarceration, and a range of covariates.

Results—Most participants self-reported a history of illicit drug use (77.5%). Seven percent reportedly used drugs during the previous six months of incarceration ($n = 100$). Participants who had been incarcerated for more than a year were less likely than those incarcerated for longer than a year to report using drugs (OR = 0.50; 95% CI = 0.26–0.98). Participants aged 37–89 were less likely than younger prisoners to use drugs (OR = 0.39; 95% CI = 0.19–0.80). Heroin users were twice as likely as nonheroin users to use drugs (OR = 2.28; 95% CI = 1.04–5.03); crack cocaine users were also twice as likely as participants with no history of crack cocaine usage to report drug use (OR = 2.53; 95% CI = 1.13–5.69).

Conclusions—Correctional institutions should be used as a resource to offer evidence-based services to curb drug usage. Drug treatment programs for younger prisoners, heroin and crack cocaine users, and at the beginning of a prisoner's sentence should be considered for this population.

Keywords

Prison; drug use; incarceration

Background

There are currently over two million individuals incarcerated in the United States of America (USA) (Glaze & Herberman, 2013). Over the past several decades, the number of incarcerated individuals has increased threefold (West et al., 2010), largely due to the implementation of harsher penalties for drug-related offenses (Mauer, 2006). This “war on

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Declaration of interest

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drugs” has created an environment in which a substantial number of individuals with substance abuse problems are currently incarcerated.

Approximately 80% of prisoners have a history of illicit drug use (Mumola & Karberg, 2006), and many experience substance abuse problems (Fazel, Bains, & Doll, 2006). Despite institutional prohibitions, drug use often continues in prison (Alibu-Garcia, Hernández-Viver, Feal, & Rodríguez-Orengo, 2009; Clarke, Stein, Hanna, Sobota, & Rich, 2001; Plourde & Brochu, 2002; Rowell, Wu, Hart, Haile, & El-Bassel, 2012; Small et al., 2005). Drug use in prison is seen as a coping mechanism that helps prisoners deal with their imprisonment (Cope, 2003; Hughes & Huby, 2000), and some drug use is initiated in prison (Boys et al., 2002). The concentration of drug-using individuals may promote drug use in custody by providing opportunities for increased interaction between high-risk individuals. Drug use in prison also reportedly impairs rehabilitative goals (Baltieri, 2014) and may increase the likelihood that prisoners will be reincarcerated (Cochran, Mears, Bales, & Stewart, 2014). The aim of this study was to assess the relationship between prison drug use, duration of incarceration, and a range of covariates.

Methods

Procedures

Participants in this study were housed in a male or female maximum-security correctional institution in the New York City metropolitan area. Participants were eligible to participate in this study if they were at least 16 years of age, English-speaking, and had been incarcerated for at least six months. Participants were recruited and interviewed by trained research assistants in a private room within each correctional facility. Male participants were approached while they were in common areas while women were recruited from their cell blocks and escorted to the medical unit within the facility, where they were invited to participate in the study.

Data were collected from January 2011 through December 2013. Response rates were 80.7% for women and 93.6% for men. More detailed information about this study's procedures can be found elsewhere (Apa et al., 2012; Bai et al., 2014). The procedures for this study were approved and monitored by the institutional review boards of Columbia University Medical Center and the New York State Department of Corrections and Community Supervision. Each participant provided written informed consent, and a federal Certificate of Confidentiality was obtained.

Measures

Demographics—Participants were asked to provide their race, date of birth, gender, and highest level of education completed.

Drug use history and prison drug use—History of illicit drug use data were collected through medical chart review and extraction and face-to-face interviews. In a separate analysis, the concordance between the two sources of data was examined (Bai et al., 2014); it was determined that prisoners were more likely to report drug use during interviews as opposed to medical record reporting. Hence, for this manuscript, history of drug use was

measured by self-report. Participants were asked whether they ever used specific illicit drugs, and whether they used any of these substances within the previous six months.

Environmental factors—Participants were asked whether they had gone to the gym, recreation room, or prison yard within the last two weeks. Incarceration duration was obtained from correctional officials using administrative prison files and grouped into two categories – incarcerated in prison for less than or greater than one year. This categorization was based on previous research, suggesting that it typically takes approximately one year for prisoners to adjust to this environment (Jones & Schmid, 2000).

Statistical analysis—Analyses were conducted using SAS 9.3. Chi square tests were calculated to examine differences between participants who reportedly used drugs within the previous six months of incarceration and those who did not. Variables that were statistically significant at the $p < .05$ level, in bivariate analyses, were entered into a multivariable logistic regression model to assess the relationship between incarceration duration and a range of individual and environmental factors and prison drug use.

Results

Demographics

As Table 1 indicates, the majority of the 1,361 participants were male (56.1%). Approximately half (50.4%) were black, 22.6% were Hispanic, 20.4% were white, and 6% listed their race as other. On average, participants were 37 years old ($SD = 10.9$). Approximately 29% reported at least a college education (28.8%), 36.2% were high school-educated, and 34.2% reported having less than a high school education. On average, participants had been incarcerated for five years. All participants had been incarcerated for at least 6 months; 36.4 years was the longest incarceration period reported.

Correlates of prison drug use

Most participants reportedly had a history of illicit drug use (77.5%). Approximately 7% of the participants reported using drugs in the previous six months of incarceration ($n = 100$). Eighty-nine percent of the participants who reportedly used drugs over the previous six months used marijuana. Eleven percent used powder and/or crack cocaine, while 8% used heroin.

In univariable analysis (Table 1), prisoners between the ages of 18–36 were more likely to have used illicit drugs within six months compared to older prisoners ($P = 0.01$). Participants who had been incarcerated for less than one year were more likely to report drug use ($P = 0.001$). Participants with at least a college education were less likely to report use of illicit drugs compared to those with lower education levels ($P = 0.06$). Men were more likely to report drug use during the previous six months than women ($P = 0.04$).

Inmates with a history of use of marijuana ($P = 0.0001$), heroin ($P = 0.0029$), and crack cocaine ($P = 0.0047$) were more likely than those who did not have a history of using these substances to report using illicit drugs during the previous six months of their incarceration period. Marijuana usage was not added to the regression model due to lack of variance.

Participants who recently frequented the prison yard were more likely to use illicit drugs compared to those who did not ($P = 0.004$).

In the multivariable logistic regression model (Table 2), participants who had been incarcerated for more than 12 months were less likely than those incarcerated for longer than 12 months to report using drugs over the previous six months (OR = 0.50; 95% CI = 0.26–0.98). Participants aged 37–89 were less likely than younger prisoners to use drugs in prison over the previous six months (OR = 0.39; 95% CI = 0.19–0.80). Heroin users were twice as likely as nonheroin users to use drugs within the previous six months (OR = 2.28; 95% CI = 1.04–5.03). Participants who reported a history of crack cocaine usage were also twice as likely as participants with no history of crack cocaine usage to report drug use within the previous six months (OR = 2.53; 95% CI = 1.13–5.69).

Conclusion

Comparable to national reports (Mumola & Karberg, 2006), the vast majority of the participants in our study had a history of illicit drug use. Additionally, consistent with previous reports (Baltieri, 2014; Milloy et al., 2008), we confirmed that drug use is occurring in male and female correctional institutions. Also, similar to previous research, incarceration duration (Bales & Miller, 2012; Rowell, Wu, Hart, Haile, & El-Bassel, 2012), drug preference (Plourde & Brochu, 2002; Rowell, Wu, Hart, Haile, & El-Bassel, 2012), age (Bales & Miller, 2012; DeLisi, Trulson, Marquart, Drury, & Kosloski, 2011; Gillespie, 2005; Harer & Steffensmeier, 1996), and gender (Bales & Miller, 2012) were predictors of prison drug use. More specifically, participants who had been incarcerated for a shorter period of time, heroin users, and crack cocaine users were more likely than participants who had been incarcerated longer and users of other substances to report drug use. Younger prisoners were more likely than older prisoners to use drugs. Although gender was no longer statistically significant when added to the multivariate logistic regression model, it is likely that a larger sample size would have confirmed an effect.

Contrary to previous research in this area (Gillespie, 2005), our findings suggest that prisoners may be more likely to use illicit drugs at the beginning of their prison sentence. This is not surprising since up to 50% of prisoners reportedly used drugs immediately before or during the commission of the crime for which they were incarcerated (Mumola & Karberg, 2006). Therefore, many prisoners may still be experiencing drug withdrawal or cravings at the beginning of their sentence. Heroin and crack cocaine users in our study had a greater likelihood of continued drug usage in prison. Both substances are considered highly addictive (Termorshuizen, Krol, Prins, & van Ameijden, 2005), and persistent use is associated with serious long-term consequences (Hser, Hoffman, Grella, & Anglin, 2001) including infectious disease transmission and/or progression (Baum et al., 2009; Gyarmathy, Neaigus, Miller, Friedman, & Des Jarlais, 2002), unintentional drug overdose (Galea et al., 2003; Moller et al., 2010), and death (Termorshuizen, Krol, Prins, & van Ameijden, 2005), all of which disproportionately affect newly released prisoners (Binswanger et al., 2007; Merrall et al., 2010).

There are limitations in this study. First, respondents may have had recall problems. Secondly, since non-prescription drug use in prison is considered misconduct and punishable by officials in correctional institutions (Camp, Gaes, Langan, & Saylor, 2003), participants may have under-reported their involvement in drug misconduct to avoid detection and possible penalties. It is also possible that participants who have been incarcerated for longer periods of time, in particular, may be less willing to report misconduct because they are close to being released and may feel as though they are at risk of jeopardizing their freedom. Another possibility is that prisoners who were incarcerated longer may have adjusted to the environment, resulting in fewer infractions, an explanation that is consistent with prison misconduct literature (Cunningham & Sorenson, 2006).

Because we relied on self-reported drug use and were unable to objectively validate the response, the results should be interpreted with caution. However, previous research in this area has documented drug use in prison environments using this approach (Boys et al., 2002; Calzavara et al., 2003; Gillespie, 2005; Inciardi, Lockwood, & Quinlan, 1993; Kinner, Jenkinson, Gouillou, & Milloy, 2012; Small et al., 2005), and self-reported drug use among this sample was also shown to be more valid than medical record data in a separate analysis (Bai et al., 2014).

Unfortunately, information on route of administration was not collected during this study, making it difficult to assess the extent to which participants were engaging in injection drug use. Information on additional potential predictors of prison-based drug use such as alcohol usage, offense type, or extent of previous drug usage was also not examined in this study. Finally, these research findings may not be generalizable to other correctional populations.

In spite of these limitations, these findings illustrate the importance of developing prison-based programs to address substance use problems, especially for younger and male prisoners. Since research has shown that prisoners who undergo drug treatment during incarceration are less likely to engage in institutional misconduct (Langan & Pelisser, 2001), recidivate (Mitchell, Wilson, & MacKenzie, 2007; Welsh, 2007), and relapse into drug use postrelease from prison (Butzin, Martin, & Inciardi, 2005; Kinlock, Gordon, Schwartz, Fitzgerald, & O'Grady, 2009). Our findings are crucial for developing the most appropriate prison-based treatment and/or educational programs, and also suggest that drug-using prisoners may continue their established drug habit during incarceration. Offering evidence-based services within correctional communities to curb drug usage has great promise; prison-based opioid maintenance treatment has shown success in reducing drug use, and promoting retention in treatment (Hedrich et al., 2012). Programs offered at the beginning of an offender's sentence may be especially useful.

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Biography



Tawandra L. Rowell-Cunsolo, PhD, MA, is an Assistant Professor of Social Welfare Science in the Columbia University School of Nursing. She is interested in the role of incarceration, substance abuse, and sexual behavior in HIV acquisition and transmission in vulnerable populations.



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Glossary

Maximum-security correctional institution	Prison designed to house more serious criminal offenders
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Table 1

Bivariate table for drug use within previous six months of incarceration.

		<u>Drug use</u>		<u>No drug use</u>		<u>Total</u>		<i>p</i> -value
		<i>N</i>	%	<i>N</i>	%	<i>N</i>	%	
	Overall	100	7.35	1261	92.65	1361	100	
Age								0.01
	18–30	39	39	347	27.5	386	28.4	
	31–45	43	43	522	41.4	565	41.5	
	46–89	13	13	302	23.9	315	23.1	
Length of incarceration								0.0012
	Less than 12 months	51	51	440	34.9	491	36.1	
	More than 12 months	49	49	821	65.1	870	63.9	
Education								0.06
	College	20	20	372	29.5	392	28.8	
	Highsch/GED	46	46	447	35.4	493	36.2	
	Less than HS	34	34	431	34.2	465	34.2	
Gender								0.04
	Men	66	66	699	55.4	765	56.2	
	Women	34	34	562	44.6	596	43.8	
Race								0.76
	Black	53	53	633	50.2	686	50.4	
	Hispanic	18	18	289	22.9	307	22.6	
	White	22	22	256	20.3	278	20.4	
	Other	7	7	83	6.1	90	6.6	
Marijuana use history ^a								0.0001
	Yes	98	98	907	71.9	1005	73.8	
	No	2	2	354	28.1	356	26.2	
Speed use history ^a								0.57
	Yes	11	11	117	9.3	128	9.4	
	No	89	89	1144	90.7	1233	90.6	
Cocaine use history ^a								0.16
	Yes	37	37	383	30.4	420	30.9	
	No	63	63	878	69.6	941	69.1	
Heroin use history ^a								0.0029
	Yes	24	24	167	13.2	191	14.0	
	No	76	76	1094	86.8	1170	86.0	
Crack use history ^a								0.0047
	Yes	28	28	212	16.8	240	17.6	
	No	72	72	1049	83.2	1121	82.4	
Gym								0.89
	Yes	42	42	521	41.3	563	41.4	

		<u>Drug use</u>		<u>No drug use</u>		<u>Total</u>		<i>p</i> -value
		<i>N</i>	%	<i>N</i>	%	<i>N</i>	%	
Yard	No	58	58	740	58.7	798	58.6	0.0041
	Yes	81	81	846	67.1	927	68.1	
Rec	No	19	19	415	32.9	434	31.9	0.22
	Yes	31	31	547	43.4	578	42.5	
	No	14	14	165	13.1	179	13.2	

^aThese drugs were reportedly used prior to incarceration.

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Table 2

Odds ratios and 95% confidence intervals for predictors of prison drug use during previous six months of incarceration.

Prison time				
	Less than 12 months	1.00	Reference (CI)	
	More than 12 months	0.55	0.28	1.09
Gender				
	Women	1.00	Reference (CI)	
	Men	2.14	1.03	4.46
Age				
	18–30	1.00	Reference (CI)	
	31–45	0.40	0.19	0.86
	46–89	0.30	0.11	0.83
Yard				
	No	1.00	Reference (CI)	
	Yes	1.67	0.80	3.50
Heroin use history ^a				
	No	1.00	Reference (CI)	
	Yes	2.75	1.19	6.38
Crack use history ^a				
	No	1.00	Reference (CI)	
	Yes	2.09	0.86	4.91

^aThese drugs were reportedly used prior to incarceration.