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Frequent Drug Use and Negative Employment Outcomes among the Criminally Active

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Abstract

Background: Employment is a central component of economic independence and is widely viewed as an essential element of social control. Whether frequent drug use reduces the likelihood of employment or obstructs hours worked, wages, and job commitment is therefore an important question about which there remains uncertainty.

Methods: We improve on shortcomings of prior research through a monthly within-person analysis of a population at high-risk of both drug use and poor employment outcomes. We present multilevel models of the 18 months spent on the street preceding the arrest that led to incarceration in minimum/medium security facilities in Ohio from a random sample of 250 adult male inmates interviewed during the outset of a prison spell.

Results: The analysis reveals consistently strong, negative effects of frequent drug use on employment, hours worked, and wages in the month following frequent drug use, including marijuana, cocaine, heroin, and prescription opioids. As well, frequent drug use (with the exception of marijuana) undermines job commitment during the months that participants are employed.

Conclusions: The consequences of frequent drug use for future employment are consistently negative within this criminal justice sample. Results suggest that lower levels of drug use may improve the success of post-release employment programs. In a context of increasing concern over rising opioid and heroin, but also cocaine and marijuana abuse, the findings suggest a renewed focus on and perhaps expansion of evidence-based drug treatment among populations embedded within the criminal justice system, particularly if employment constrains criminal behavior.

Keywords

Employment; Job Commitment; Life Course; Criminal Justice

1. Introduction

Employment is a fundamental element of social control, providing a daily routine and expectations regarding performance and productivity. Whether illicit substance use disrupts that process and is associated with negative outcomes is therefore a critical social, economic, and criminal justice question, with implications for drug policy. Although the importance of the issue is widely recognized, the strength and direction of the relationship remains unclear. Early research often reported that drug use is unrelated to employment outcomes (French, Zarkin, & Dunlap, 1998; Kandel, Mossel, & Kaestner, 1987; Zarkin, Mroz, Bray, & French, 1998) and, in some instances, that drug use is associated with higher wages (Gill & Michaels, 1992; Kaestner, 1991; Register & Williams, 1992).

In contrast, research conducted post-2000 reveals, more often than not, that drug use is associated with poor employment outcomes. Huang and colleagues (Huang, Evans, Hara, Weiss, & Hser, 2011) find that use of heroin and cocaine as well as higher frequency use is predictive of membership in a low-employment trajectory group through middle adulthood. At ages 23-25, the low-employment trajectory group was employed in approximately 21 of 52 workweeks, followed by a rapid decline to 10 or fewer by age 40. As well, DeSimone (DeSimone, 2002), adopting a sophisticated econometric model that addresses simultaneity, reports a negative relationship between illicit drug use, employment, and labor force participation (also see Alexandre & French, 2004; Arria et al., 2013; French, Roebuck, & Alexandre, 2001; French et al., 1998; Kandel & Yamaguchi, 1987; MacDonald & Pudney, 2000; Uggen & Thompson, 2003). Although the general trend suggests that drug use is very rarely beneficial to employment and is sometimes a significant impediment, the literature remains, in many ways, unsettled.

Within criminological research, strong bonds to pro-social institutions are viewed as a critical constraint on criminal behavior (Hirschi, 1969; Laub & Sampson, 2003). While the majority of this research has considered whether a high quality bond to work reduces criminal involvement, an emerging body of research has begun to examine the factors that impede the formation of a bond with work. In particular, this line of research focuses on the intense stigma of a criminal record and its implications for employment among criminal offenders (Pager, 2007; Uggen, Vuolo, Lageson, Ruhland, & Whitham, 2014). Irrespective of criminal record, criminal justice populations often lack human and social capital needed for successful employment (Bushway & Apel, 2012). Avoiding substance use is also critical. Recently released prisoners are less likely to earn legitimate income during periods of heroin and cocaine use (Uggen & Thompson, 2003). Other substance use research has similarly utilized prisoner samples (Binswanger, Blatchford, Yamashita, Mueller, & Stern, 2014; Degenhardt et al., 2015; Gordon et al., 2014; Scott & Dennis, 2012; Wickersham, Zahari, Azar, Kamarulzaman, & Altice, 2013; Winter et al., 2015, 2016); however, few studies of criminal justice populations have examined the link between drug use and employment (Augutis, Rosenberg, & Hillborg, 2015; DeBeck et al., 2007; Holtyn et al., 2015).

There are compelling methodological reasons to focus on high-risk groups as well. First, the most common approach to studying the relationship between illicit drug use and employment is prospective, state, regional, or national sampling of the general population

with yearly or longer follow-up intervals (e.g., National Longitudinal Survey of Youth [NLSY], 1997) (Gill & Michaels, 1992; Register & Williams, 1992). Although that strategy is central to understanding the impact of illicit drugs on transitions from school to work, the effects of frequent drug use could be obscured or even missed by longer time lags between interviews (e.g., one year or longer) (French et al., 2001). Frequent use of any drug may interfere with cognitive and social functioning relatively quickly, and thus may plausibly forestall employment and reduce hours worked and income by the *next* month if not sooner. In the analysis that follows, we examine short-term consequences of frequent drug use.

Second, use of drugs other than marijuana, such as powder or crack cocaine and heroin, is rare in the general population. Studies of the general population are thus ill suited to examine substances other than alcohol and marijuana, because drugs such as cocaine or heroin are used with such infrequency as to provide less variability on which to test associations. According to the NLSY97, by young adulthood less than 1% of the general population in the U.S. uses what they refer to as “hard” drugs (Bureau of Labor Statistics, 1997-2013). Further, the term “hard” drug use refers to very broad categories, and is usually defined as any drug other than marijuana. As such, it is difficult to discern specific patterns. The Arrestee Drug Abuse-Monitoring (ADAM) program, in contrast, indicates that about 60% of arrestees in 9 of the 10 cities under surveillance tested positive for use of at least one drug (including heroin, cocaine, and opioids) in the period preceding arrest (Office of National Drug Control Policy, 2009). As well, measurement of employment in prior research does not assess the strength of the social bond between the employee and employer. If drug use erodes job commitment, then employment stability and longer-term labor market participation may be jeopardized (Hyggen, 2012).

In what follows, we examine the association between substance use and work outcomes among a criminal justice involved sample. We improve on shortcomings of prior research through a monthly within-person analysis of a population at high-risk of both drug use and poor employment outcomes. The monthly collection enables an examination of short-term changes in employment outcomes that result from substance use, while the within-person analysis permits the ability to make conclusions about effects of changes for a given individual. This sample allows us to determine the consequences of substances that are rarely examined in studies of the general population due to their low base rates. As well, we move beyond a dichotomous conception of employment (i.e., employed/not employed) and examine outcomes that are sensitive to the quality of the bond to work (i.e. job commitment). Based on the literature reviewed, we expect that a given individual’s employment outcomes will be negatively affected by a pattern of frequent drug use.

2. Methods

2.1. Data

2.1.1. Sample and Participants.—We analyze a sample comprised of criminal justice involved participants that, as a group, abuse a variety of illicit drugs and exhibit variable attachment to the labor market. The data are drawn from interviews with 250 prison inmates using a life history calendar. The data set was originally collected for the purposes of studying the reliability of the life event calendar method with respect to documenting self-

reported drug use and criminal behavior (Sutton, Bellair, Kowalski, Light, & Hutcherson, 2011), but the instrument was designed to be eclectic to facilitate studying a variety of behaviors relevant to theory and policy, such as the determinants of self-reported criminal behavior, the extent and nature of prisoner's personal networks, and more.

Participants were randomly selected from minimum/medium Ohio Department of Rehabilitation and Correction (ODRC) state prisons during 2005-2007 (Sutton et al., 2011). Approximately 70% of the ODRC prison population is comprised of minimum/medium security prisoners. The interviews were spread across four institutions (Madison, London, Southeastern, and Richland) to ensure broad geographical representation. The sampling frame is comprised of 18 to 32 year old males admitted to ODRC up to one year prior to recruitment. This age range was selected because 1) it is a period of peak offending and drug use based on the age-crime curve (Hirschi & Gottfredson, 1983), and 2) we plan to re-interview participants at a later point in time to study the process of desistance.

Prisons are dynamic institutions with new inmates arriving and departing weekly. To achieve a random sample, "consecutive sampling" was employed beginning with the most recently admitted inmates. Consecutive sampling is a common strategy in prison research (Fazel, Bains, & Doll, 2006) due to the random temporal flow of inmates into prison. Two hundred and fifty out of 468 prisoners drawn from the sampling frame provided written consent to be interviewed, yielding a 53% response rate, with no missing data for the variables included in the models below. The sample is virtually identical to subjects that refused to participate (n=218) and the sampling frame (n=1789) on race, age at admission, and prior incarceration.

2.1.2. Data Collection Procedures.—Small groups of inmates drawn from the sampling frame were issued passes to meet with project staff. The interviews were conducted in small rooms used for meetings between prisoners and lawyers or for classroom purposes. Correctional officers were not present in the room. Prisoners were informed of the focus on drug use, criminal behavior, and life history, that participation was voluntary, and that Ohio state law prohibits compensating prisoners for participation. Informed consent (written) was obtained prior to the interview, including a discussion of subject's rights and confidentiality procedures. All procedures were approved by the university's Institutional Review Board (IRB) and ODRC's Human Subjects Review Committee. Participant's confidentiality is protected by a Certificate of Confidentiality from the U.S. National Institutes of Health.

The data reflect self-reported behavior during each of the 18 months preceding the arrest that led to prison admission. About 33% of the sample was previously incarcerated in state prison prior to the 18-month period. The months surveyed therefore reflect a period of reentry for those participants. For the others, it reflects a high-risk period of active drug use. The interviews were conducted in prison, but, during the reference period studied, subjects did not know they would eventually be incarcerated. The instrument was extensively pre-tested for roughly six months by the study interviewers. After the consent form was administered, subjects were asked to identify the month in which they were arrested for the offense that led to their incarceration. The month immediately prior was designated month eighteen, with the calendar spanning backwards to month one. Next, a series of easy to recall

questions regarding life events were asked including but not limited to birthdates, residential addresses, anniversaries, childbirths, and school attendance. When combined with markers for holidays, those items create a visual map to facilitate recall of the timing of drug use. For a subset of questionnaire items, including drug use and employment, subjects were asked whether there were changes in their circumstances during the preceding 18 months. For other topics, such as measurement of self-control, the frame of reference was the entire eighteen-month calendar period. Subjects identified months during the calendar period when incarcerated or in residential treatment. Those months were blocked off to avoid inadvertently entering data during those months (approximately 15% of the street-months), resulting in a final sample of 3,840 street-months (out of 4,500).

2.2. Dependent Variables

Employment is a dummy variable indicating if a respondent is employed in a given month. *Hours* is a continuous measure of the number of hours worked in a typical workweek during the month. *Income* reflects monthly income in dollars. *Job Commitment* assesses the strength of the bond between the respondent and employer along a five-point continuum ranging from 1 (I hated the job) to 5 (I was very committed to the job).

2.3. Independent Variables

Drug use is measured using dummy variables created for each type of drug, and reflect weekly or more frequent usage in each month. Measures capture use of *marijuana*, *cocaine* (including powder or crack cocaine), *heroin*, and *other drugs*, which includes opioids like oxycodone or vicodin, and prescription stimulants like ritalin, or, in very few cases, “huffing” fumes. We also create a broad category that subsumes the effects of all *drug use excluding marijuana*. This allows us to also include usage of methamphetamines, which, considered separately, is used too infrequently to model reliably among this sample. The self-reported drug use analyzed is reliable by social science standards, although it is impacted to some extent by recall bias, including recollection of drug use that occurs less frequently (Bellair & Sutton, 2017).

2.4. Control Variables

Race is reflected by a set of dummy variables distinguishing *African American* and *other* race subjects from White respondents. *Age* and *education* are measured in years. *Married* is a dichotomous indicator of whether a respondent is married. *Low self-control* is a dummy variable reflecting whether subjects score in roughly the upper quartile of a six-item principal components factor scale combining: (1) I stop and think about long term consequences before I act, (2) I stop and think before acting in the spur of the moment, (3) Security is more important to me than excitement and adventure, (4) I seem to have more energy and a greater need for activity than most other people my age, (5) I lose my temper easily, and (6) There are times I just can't sit still. Prior to forming the scale, the response set for each item (strongly disagree, disagree, agree, strongly agree) was recoded such that higher scores reflect low self-control. Participants, with a small handful of exceptions, are employed in blue-collar occupations such as construction, lawn care, food service, and manufacturing. We initially included those job sectors (as a set of dummy variables) in the models as controls, as others have (Kandel & Yamaguchi, 1987), but they were not

significant and did not alter the findings. We therefore opted for parsimony and excluded them.

2.5. Analysis

Our data structure consists of monthly observations nested within individuals ($n=3,840$). Thus, we utilize mixed effects models for panel data (also known as multilevel, hierarchical, and panel random effects models). An advantage of the longitudinal data is the ability to model both between-person and within-person effects of substance use. The between-person effect is computed by taking an individual-level average for months using a particular drug, and reflects the proportion of months in which the drug was consumed. The within-person effect is group mean centered within each person, where the use of a drug in a particular month (i.e. 0 or 1) is differenced from that person's average use across the time period (i.e., from the between-person mean). Thus, the between-person effect represents the effect on employment outcomes for an individual who, on average, is one unit higher on substance use over the entire observation period (e.g. does higher average drug use result in different odds of employment). The within-person effect represents the effect of a one-unit change in substance use for an individual in a given month (e.g. is the likelihood of employment on average lower in the month following frequent drug use). The analysis focuses on within-individual effects: do monthly changes in drug use over time affect a given individual's employment outcomes?

We estimate separate models for each drug use predictor, with all control variables described above and below included in each model. Thus, for instance, the between- and within-individual coefficients corresponding with weekly marijuana use in the first column of Table 2 capture the effects of marijuana use net of controls, but no additional drug use measures are included in that model. Each model includes a lagged indicator of the dependent variable (i.e., from the previous month) to account for within-individual continuity in employment outcomes. In addition, drug use predictors are lagged by one month in order to establish temporal order. An exception is job commitment, for which the impact of drug use is strongest when use occurs during the same month in which an individual is employed. In that case, we present the contemporaneous findings. As is the case for all multilevel models, the model includes an individual-level random effect, representing each individual's deviation from the overall mean on the outcome, net of the predictors, which helps control for the effect of time stable, individual-level propensities on the outcome. For continuous outcomes (commitment, hours, income), the model also includes a person level error term. Because employment is dichotomous, that model is fit using the logit link and odds ratios are presented. Due to space limitations, coefficients reflecting the effect of the control variables from models that examine weekly use of drugs other than marijuana are presented in Table 2, but the pattern of coefficients and statistical significance of the controls does not vary based on the specific drug type examined.

3. Results

3.1. Descriptive Statistics

Descriptive statistics are displayed in Table 1. Among our employment outcomes, participants were employed during roughly 62% of street-months. Hours worked per week ranged from 0 to 102, with a mean of 28.44 hours. The average individual earned about \$1,521 per month. On a five point scale, mean job commitment was 2.58, indicating moderate job commitment. For our key independent variables of weekly substance use, marijuana use occurred in about 63% of street-months, cocaine use in 16%, heroin use in 5%, and “other” drug use in 22%. Finally, any drug use excluding marijuana occurred in 36% of street-months. Turning to our control variables, approximately 44% of the sample was African American, and about 8% were “other” race (about 48% were White). The mean age is 24.74 and ranges from 18-33 (the oldest subject was 32 years old when selected for inclusion). About 12% of the sample was married, and about 28% are classified as exhibiting low self-control. Education ranged from 3 to 18 with a mean of 11.11 years.

3.2. Mixed Effects Panel Models

Table 2 presents the results of the mixed effects models. Overall, the findings indicate strong support for the hypothesis that frequent drug use produces negative employment outcomes over time. We begin with the impact of weekly use of a variety of drugs on the odds an individual is employed in a subsequent month. The impact of frequent marijuana use appears to be delimited to the dichotomous employment outcome, with no effects observed on hours, income, or job commitment. In the month after using marijuana on a weekly basis, an individual is 82% less likely to be employed, controlling for the other variables in the model (i.e., $1 - .182 = .818$) ($p < .05$). A similar pattern is observed for powder/crack cocaine and “other drug” use, with weekly usage reducing the likelihood of employment by roughly 81% and 90%, respectively ($p < .05$). Frequent use of any substance other than marijuana produces the most robust association ($p < .01$) leading to a 92% reduction in the odds of being employed in a subsequent month. Clearly, weekly use of drugs other than marijuana is more pronounced within this sample than in the general population, and the consequences for employment appear to be severe. The effect of frequent drug use on employment may reflect that participants are denied employment due to a positive drug test, avoid work in the month following frequent use due to anticipation of drug testing, or succumb to the physiological consequences of frequent use (i.e., fatigue, withdrawal, lack of motivation).

We next turn to the models for hours worked and income. Relationships are evident for weekly use of “other” drugs, which includes opioids and stimulants, and for use of drugs other than marijuana. Both reduce the number of hours worked by over 5 hours in the typical workweek ($p < .01$). Turning to income, weekly heroin use is most consequential, with those engaged in frequent use forgoing over \$250 of legal income in a typical month ($p < .05$).

The final model assesses the effect of weekly drug use on job commitment, the latter of which is reflective of the strength of the employee’s perceived bond between himself and his employer. Recall that in contrast to the other models, findings presented reflect the effect of weekly drug use on job commitment during the same month. Similar to the results for other

employment outcomes, frequent drug use impairs participants' commitment to their job. Effects are strong for those who frequently use heroin ($p < .01$), other drugs (opioid and stimulant medications) ($p < .001$), and any drug other than marijuana ($p < .001$). Furthermore, there are also significant, negative effects associated with cocaine use ($p < .05$). Clearly, individuals are more committed to their job when they are not engaged in a pattern of frequent use of drugs (excluding marijuana).

With the exception of the lagged dependent variable, which is a strong predictor in each model ($p < .001$), the effects of control variables are largely non-significant. An exception is that relative to Whites, African American participants have significantly lower odds of holding employment and are likely to work fewer hours. Importantly, it is notable that the patterns of significant findings in all models are robust to the inclusion of a lagged dependent variable, group mean centering of the independent variable (i.e., drug use), and several control variables as predictors.

4. Discussion

In a context of rising opioid, heroin, cocaine, and marijuana abuse (SAMHSA 2016), documenting the influence of frequent drug use on employment outcomes is central to understanding its economic toll. Addressing two shortcomings of prior research, we utilize monthly self-reports to assess shorter-term consequences and examine frequent drug use among a policy relevant, criminal justice sample. The analysis reveals consistent and strong, negative effects of frequent drug use on each employment outcome. Notably, relative to the other categories, frequent use of drugs other than marijuana, especially "other drug use" (which includes prescription opioids) and to a lesser extent heroin, consistently undermines employment outcomes, reducing the likelihood of employment, hours, and income in the month following use, and job commitment during the month in which participants are using. This finding is particularly poignant given the opioid and heroin crisis that has evolved across many states, especially Ohio (Paulozzi, 2012). However, marijuana use is less consistently associated with employment outcomes.

Many U.S. states have or are proposing to increase diversion of low-level offenders and to increase substance use treatment within prisons. Our results underscore the importance of addressing substance abuse for improving employment outcomes. Criminologists have identified work as central to desistance, as strong bonds to work render criminal activity less attractive (Laub & Sampson, 2003). We find that frequent substance use inhibits employment. Addressing a component of employment lacking in past research, we found a robust association of weekly drug use to lower job commitment, a critical component to forming a meaningful bond to employment (Hirschi, 1969). Thus, high-risk individuals who consume drugs frequently will less often form bonds that could reduce further offending.

Evidence based practices are increasingly relied on to address those issues, and are recommended programming among criminal justice populations with drug abuse issues (for a review of literature on drug treatment among criminal justice populations, see Prendergast, 2009). Several approaches are known to be effective. Addressing substance abuse and addictions using case management or kindred approaches while also addressing

“criminogenic needs” such as employment readiness and training or criminal thinking is critical. Substance use treatment that is coordinated (i.e., managed care) across criminal justice and treatment agencies is most effective. For instance, when criminal justice staff cooperate and work in conjunction with substance abuse treatment staff, substance use relapse and subsequent recidivism outcomes improve (Taxman, 1998). As well, continuity of care in the community, or “aftercare” programming, is important for those with the most severe afflictions upon release from correctional confinement (Kinlock et al., 2007; Wickersham et al., 2013). Given the strong relationship between frequent drug use and employment outcomes, there are implications to improve post-release employment programs, which have a mixed record at best (Bushway & Apel, 2012; Visher, Winterfield, & Coggeshall, 2005). The results suggest that substance use prevention and treatment should be considered a central element of employment programs, and perhaps even that frequent (i.e., weekly) drug use be considered a disqualifier for participation, at least until drug use is brought under control through provided treatment.

4.1. Limitations

We recognize that our study has limitations. First, our results are not generalizable to the population as a whole, but rather to a criminal justice population. While a limitation, this particular population is policy relevant given the overlap between substance use and criminal involvement. Second, the measures of both substance use and employment were based on self-reports across an 18-month window, which could be subject to social desirability and recall biases. We note, however, that the self-reports generated via our life history calendar have been shown to be both valid and reliable (Sutton et al., 2011). Third, patterns of substance use have changed over the last decade. In particular, abuse of prescription opioids and heroin has increased generally, and likely among criminal justice involved populations as well. However, research indicates consistently high rates of drug use among criminal justice populations across several decades (Mumola and Karberg, 2006). Thus, while the substance of choice may have changed, it is reasonable to assume that the patterns of regular drug use revealed by our interviews reflect a relatively stable trend that may transcend the period of data collection. Similarly, recent trends in legalization are unlikely to affect our findings given the mostly non-significant findings for marijuana, with the exception of employment status. While marijuana legalization may mean that some employers are less likely to use this substance in hiring and firing decisions in certain states, we still anticipate that frequent marijuana use would affect employee productivity in a manner as to be negatively associated with employment status.

Finally, readers will also note that the data collection preceded the Great Recession, which produced severe damage to the U.S. economy and resulted in the loss of several million jobs and a large spike in unemployment. We might consider how this change would alter our results. Clearly, the economic outcomes we examined were negatively affected, with employers, some of who were perhaps not completely comfortable with but willing to hire individuals with a criminal history when unemployment rates were low, likely becoming more discriminating during the recession. Substance use is less straightforward. Those in economically turbulent scenarios may decrease substance use as a response to reduced resources for an expensive habit. If both the economic outcomes and substance use decrease

proportionately, we would likely uncover the same patterns as those found here. On the other hand, economic turbulence could lead to stable or increasing substance use (see Mumola & Karberg, 2006), as individuals experience the strain of unemployment or reduced wages and lose the important bond with this institution. If economic outcomes are poorer and substance use is increasing, the negative relationship between drug use and employment would likely strengthen. In this case, our study provides more conservative estimates of the relationship between drug use and employment than would be the case if the data were collected during or in the aftermath of the Great Recession.

Since 2009, the economy has partially, but not fully recovered. In particular, high- and middle-wage jobs have not recovered to their pre-recession levels. In contrast, creation of new low-wage jobs, the type of employment that the current sample holds (with just one exception), has accelerated and dominated new job creation since the recession. Thus, with this low-wage sector recovery, we anticipate that the findings here will hold as the economy returns to its pre-recession productivity. Still, we advocate studies that can document precisely how drug use among criminal justice populations impacts their employment patterns during recessionary periods.

4.2. Conclusions

Our results demonstrate an association between substance use and employment outcomes among a criminal justice involved sample. In addition to overcoming many shortcomings of past studies, our modeling approach of within-person change allows for stronger conclusions regarding the immediate impact of substance use on employment, a critical bond recognized in the literature for its contribution to desistance. Yet, success in connecting the criminally involved to meaningful employment in ways that reduce recidivism has remained elusive. Our study, which includes a period of individuals' lives where many experience contact throughout the various components of the criminal justice system, shows that substance use must be considered central to programs that link high-risk individuals to employment opportunities.

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Table 1.

Descriptive Statistics

<u>Variables (Street Months)</u>	<u>Mean or Percentage (St. Dev)</u>
Total Street Months Employed	61.95%
Hours Worked Per Week	28.44 (25.70)
Monthly Income	1521.723 (1972.856)
Job Commitment	2.58 (2.17)
Weekly Marijuana Use	63.33%
Weekly Powder/Crack Use	15.72%
Weekly Heroin Use	4.95%
Weekly Other Drug Use	21.50%
Weekly Drug Use Excluding Marijuana	36.36%
N of cases	3,840 street months
<u>Variables (Person)</u>	
Black	43.70%
Other	7.57%
Age	24.78 (3.93)
Married	12.42%
Low Self-Control	27.82%
Years of Education	11.11 (1.88)
N of cases	250

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Table 2.

Between and Within Effects of Weekly Drug Use

	Employment ^a		Hours ^a	Income ^a	Job Commitment ^b
	Log-Odds (SE)	OR	Coefficient (SE)	Coefficient (SE)	Coefficient (SE)
Weekly Marijuana Use					
Between	-.162 (.201)	0.850	-.489 (.312)	-27.606 (15.404)	-.174 (.118)
Within	-1.703* (.667)	0.182	-2.068 (1.114)	-40.561 (54.078)	.066 (.059)
Weekly Powder/Crack Cocaine Use					
Between	-.440 (.279)	0.644	-.565 (.439)	9.004 (21.220)	-.317* (.162)
Within	-1.636* (.798)	0.195	-2.532 (1.476)	-126.902 (71.633)	-.141* (.069)
Weekly Heroin Use					
Between	-.593 (.425)	0.553	-.320 (.710)	10.831 (34.601)	.091 (.250)
Within	-1.746 (1.062)	0.174	-4.293 (2.300)	-257.292* (111.558)	-.465** (.152)
Weekly Other Drug Use					
Between	-.026 (.236)	0.974	.047 (.366)	-6.357 (17.812)	-.106 (.133)
Within	-2.301* (1.078)	0.100	-5.877** (2.164)	-111.378 (104.989)	-.572*** (.130)
Weekly Drug Use Excluding Marijuana					
Between	-.368 (.219)	0.692	-.427 (.333)	-2.887 (16.060)	-.187 (.118)
Within	-2.507** (.771)	0.082	-5.114** (1.626)	-141.088 (78.999)	-.355*** (.095)
Controls ^c					
Black	-.677** (.219)	0.508	-1.021** (.346)	-14.178 (16.289)	.074 (.123)
Other	-.240 (.366)	0.787	-.215 (.564)	4.133 (27.330)	.015 (.216)
Age	.012 (.025)	1.012	.015 (.038)	.779 (1.869)	.010 (.014)
Married	.233 (.295)	1.262	.767 (.454)	2.783 (21.973)	-.137 (.075)
Low Self Control	.043 (.226)	1.044	.068 (.341)	-2.803 (16.548)	-.040 (.124)
Years of Education	.065 (.049)	1.067	.065 (.076)	4.720 (3.717)	-.025 (.030)

Note:

*
 $p < .05$ **
 $p < .01$ ***
 $p < .001$.

Two-tailed tests.

^aWithin-individual variables reflecting the effect of each drug type are measured *one month prior* to the dependent variable.^bThe within-individual variables reflecting the effect of each drug type are measured in the *same month* as the dependent variable.^cFor demonstration purposes, the controls shown are from the weekly drug use excluding marijuana model. All models also contain a lagged version of the dependent variable.