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Income Generation in Recovering Heroin Users: A Comparative Analysis of Legal and Illegal Earnings

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Abstract

Research has shown employment to be a central mediator to sustained recovery and community reentry for substance abusers; however, heroin users have lower employment rates and report lower mean incomes than other drug users. The authors of the present study assessed income generating behaviors of substance users recruited from substance abuse treatment facilities (N=247). Heroin users had higher mean incomes from illegal sources. Further, logistic regression analysis found heroin use to increase the likelihood of engagement in illegal income generating behaviors. As these results increase the likelihood of involvement in the criminal justice system, the implications for heroin specific treatment and rehabilitation are discussed.

Keywords

heroin; illegal income; employment; addiction recovery; logistic regression

Heroin addiction is a formidable social problem, devastating to the user with burgeoning consequences that reach society as a whole. The ramifications are significant, and the economic components of heroin abuse require attention (Mark, Woody, Juday, & Kleber, 2001). Of the total drug using population, approximately 289,000 individuals are heroin users (National Survey on Drug Use and Health [NSDUH], 2013). Recent studies have found that heroin and opiate related overdoses have increased in the United States exponentially over the last 20 years (Degenhardt, Bucello, Mathers, Briegleb, Hickman, & McLaren, 2011; Unick, Rosenblum, Mars, & Ciccarone, 2014). With the number of heroin related deaths rising each year (Wakeman, Bowman, McKenzie, Jeronimo, & Rich, 2009), it is important to focus on the characteristics of these users and their environments in order to develop culturally sensitive efforts to intervene and reintegrate them into mainstream society.

Levy and Anderson (2005) used a life course model to explore the gradual embedding of heroin users within a drug lifestyle, leading to increased marginalization, and decreased possibility of abstinence. This study illustrates how social routines like illegal income generating activities and drug-use behavior (i.e. cooking, injecting, and smoking rituals) are a key route to social marginality, as well as a means of enduring it. They view addiction along a continuum of the use of the drug itself, and the lifestyle that accompanies and sustains the drug use.

A critical route to the marginalization of substance abusers is unemployment, as unemployed heroin users indicate that their primary source of income is from illegal means (Koo, Chitwood, & Sanchez, 2007). In their study, Koo, Chitwood, and Sanchez (2007) recruited 488 street heroin users to determine their employment characteristics. Among their sample, 122 were employed in low-level occupations or unskilled jobs, while 366 participants were unemployed. Likelihood of employment was not affected by participant age, gender, or ethnicity. Roddy, Steinmiller, and Greenwald (2011) examined the average income from various sources of 109 people who were heroin dependent. Nearly half, or 43.8%, of the reported average incomes of the participants was obtained through illegal means. Further, heroin users continued to generate income illegally, even when they had income coming from legal sources.

Accordingly, studies have focused on employment as a central mediator to sustained abstinence (Melvin, Davis, & Koch, 2012), and employment has been viewed as an important factor in the successful rehabilitation of individuals with heroin dependencies in treatment programs (Platt & Metager, 1987). However, the rate of unemployment amongst heroin users is high in comparison to their employment rates (Koo, Chitwood, & Sanchez, 2007). It is estimated that 34.1% of heroin users are unemployed due to their heroin use, with an approximate 81,000 people incarcerated as a result of heroin possession (Mark, Woody, Juday, & Kleber, 2001). This high number of users then encounter multiple obstacles in regards to gaining and retaining employment. These can be internal (i.e. lack of job-searching resources, lack of criminal history disclosure efficacy, absence of marketable skills, lack of education) (Waghorn, Chant, & King, 2005; Browne, 1989) and external (i.e. scarcity of low-level jobs, stigma against felons and those in recovery, lack of social support) (Pager, Western & Sugie, 2009; Uggen, 2000) and act as barriers to those in recovery from gaining long-term employment. Moreover, the recent recession has had consequential economic and workforce effects in our communities (Oreopoulos, Wachter, & Heisz, 2012), making it even more difficult for at-risk individuals to obtain employment. Finally, clinically based first-order approaches to heroin and opiate dependency like methadone maintenance and 12-step treatment have failed to reduce the population of users in the United States (Burgois, 2000).

Prior studies on active heroin users reported that individuals who use heroin have high prevalence of illegal income generating behaviors (Draus, Roddy, & Greenwald, 2010; Kelly et al., 2009; Maher, Dixon, Hall, & Lynskey, 2002; Thompson & Uggen, 2012; Woody et al., 1983). Though the microeconomics of active heroin users has been studied, there is a dearth of literature regarding the comparison of recovering heroin users to other recovering drug users and their income generating behaviors. This presents a need to

determine the income earning activities of recovering heroin users with a comparative focus on illegal and legal income with the intent of connecting variable patterns of income generation with economic disadvantage and heroin use. We hypothesized that, while controlling for gender, race, marital status, education, number of people who depend on you for financial support, and number of days spent in a controlled environment, heroin use would strengthen the likelihood of having earned illegal income in the last 30 days over all other independent variables. Additionally, we hypothesized non-heroin use would increase the likelihood of employment while controlling for gender, race, marital status, number of people who depend on you for financial support, and number of days spent in a controlled environment.

The results gained from this study will have important implications for increasing awareness of the problems heroin users face as they try to achieve positive recovery outcomes. Heroin users have specific treatment needs as a subpopulation of drug users, and employment services may be especially useful for this population. Differentiating different types of drug users is important so that we can address the needs of these individuals appropriately rather than overgeneralizing the drug using population. Without such awareness we will have difficulty developing policy and institutional initiatives specific to the issues that heroin users face. For this reason, this study uses a sample of heroin compared to other drug users in early recovery to examine their income generating behaviors with the goal of delineating behavioral economic factors that are associated with heroin use and, thus, may strengthen efforts that focus on aftercare models for heroin users. Finally, we suggest how policy and practice might be informed by a more refined, economically informed and community focused understanding of the relationship between heroin use and economic climates.

Methods

Procedures

This investigation was part of a larger, NIH funded longitudinal study on aftercare treatment models. A total of 270 adults (224 men, 46 women) participated in the study, which was approved by DePaul University Institutional Review Board. Participants were treated ethically and responsibly. The parent study interviewed participants at 5 waves over a 2-year period. Recruitment began in March of 2008 and continued through May of 2011. Participants eligible for inclusion were over the age of 18, recovering from alcohol and drug dependence, and had been released from prison or jail within the past 24 months. Ninety-three percent of the participants ($n = 251$) were recruited from inpatient treatment facilities where they were receiving inpatient services. For the secondary analysis that is the subject of this paper, we used baseline data for 247 of the 251 participants that were recruited from the inpatient treatment facilities. We eliminated 4 of the 251 participants for this analysis who did not indicate what substances they used. Participants had been receiving inpatient or detox services with stays ranging from 3-28 days in facilities in the Chicagoland area. After informed consent was given, all participants completed interviews before or on the last day of their treatment program. Interviews were given by trained staff, and they lasted about 60 minutes. Afterwards, participants received \$40 for their participation in the study.

Materials

ASI-lite—Specific data was analyzed from a modified version of the 5th edition Addiction Severity Index Lite-CF (ASI-lite) created by McLellan, Kushner, Metzger, Peters, Smith, Grissom et al. in 1992; which is a reliable (Cronbach’s alpha ranged from 0.46 to 0.93) and valid (correlations between ASI severity and composite range from 0.03 to 0.90) structured interview that examines an individual’s development in treatment from substance abuse (Makela, 2004). The ASI-lite variables that were used for this analysis were: number of people who depend on you for financial support, and number of days living in a controlled environment in the last 6 months. Additionally, The two dependent variables in our analysis, 30- day legal employment income, and 30-day illegal income, were also taken from the ASI-lite.

Demographic Variables—Analyses were conducted using questions regarding demographics (gender, ethnicity, age) education, criminal history, drug of choice, and sources of income over a 30-day period. The drug of choice variable (i.e. “What is your Drug of Choice”) was used as an independent variable in both of our analysis (see *Analysis* section).

Data Analysis

This study sample dichotomized the participants by primary substance of use, with individuals indicating they were primary heroin users (n=115, coded “1”) and all other drug users (n=132, coded “0”). We identified the primary substance of use of the participants through the question “what is your drug of choice.” We also used two binary 30-day income variables (i.e. 30- day legal employment income, 30-day illegal income, coded 0=NO, 1=YES). In order to test the first hypothesis, we used a logistic model to explain the likelihood of an individual to have earned illegal income in the last 30-days based on their drug of choice (heroin, non-heroin) while controlling for gender, race, marital status, education, number of days in a controlled environment, and number of people who depend on you for financial support. To test the second hypothesis, we used a logistic model to explain the likelihood of an individual having legal employment in the last 30 days based on the binary heroin/non-heroin variable, while controlling for gender, race, marital status, education, number of days in a controlled environment, and number of people who depend on you for financial support.

Results

Participant Characteristics

There were 44 females, and 203 males. The sample was 73.3% African American, 22.3% Caucasian, 3.2% Hispanic, and 1.21% Other. The reported average number of prior convictions was 6.48 (SD = 14.29). Participants reported being treated for drug abuse with an average of 3 times over their lifetime (SD = 3.5). There were 115 (46.6%) primary heroin users in our sample and 132 other drug users. Of the other drug users, 38 (15.4%) were alcohol users, 78 (31.6%) were crack/cocaine users, 14 (5.7%) were primary marijuana users, 1 (0.4%) was a methamphetamine user, and 1 (0.4%) was a primary hallucinogens user. Heroin users reported higher mean days of drug use in the last 30 days (12.46) as

compared to all other drug users (5.16). There were 88 (76.5%) heroin users who reported earning income legally (through employment, unemployment compensation, welfare, pensions, and family and friends) and 19 (15.2%) who reported earning income illegally. For other drug users 110 (83.3%) reported earning income legally and 5 (3.79%) reported earning income illegally, though these were not mutually exclusive categories. Table 1 presents overall means and standard deviations for selected demographic responses of the two groups (heroin users, other drug users). No statistically significant differences emerged in terms of race, gender, marital status, or education.

Income Distribution

Figure 1 illustrates the sources and amounts of past 30-day income and percent of total income amounts for heroin users and other drug users. Heroin users reported a significantly greater amount of income obtained through illegal means ($p < .05$), with 32% (\$111) of their mean income versus 6% (\$23) for all other drug users. There was also a significant mean difference in money obtained through employment ($p < .05$). All other drug users reported 28% (\$109) of their monthly income came from employment, while only 9% (\$31) was reported from heroin users. Table 4 presents these results.

Logistic Regression Results

The first logistic regression was conducted to examine the likelihood of having illegal income in the last 30 days based on primary drug of choice, while controlling for gender, race, marital status, education, number of days in a controlled environment, and number of people who depend on you for financial support. Being a primary heroin user significantly increased the likelihood of having earned illegal income in the last 30 days ($X^2 = 22.07$, $df = 7$, $N=247$, $p < .01$, $OR = 5.2$). Table 2 presents the odds ratios, which suggest an individual is 5.2 times more likely to have earned illegal income in the last 30 days if he or she is a heroin user.

A second logistic regression was conducted to assess whether being a heroin user significantly decreased the likelihood of being employed while controlling for gender, race, marital status, education, number of days in a controlled environment, and number of people who depend on you for financial support. Being a heroin user use did significantly decrease the likelihood of employment ($X^2 = 11.22$, $df = 7$, $N=247$, $p < .05$, $OR = .36$). Table 3 presents the odds ratios, which suggest that the odds of being employed are decreased by 64% if an individual is a heroin user.

Discussion

Our findings support extant literature on the characteristics of heroin users. Heroin users, though demographically similar to other drug users, are significantly more likely to engage in illegal income generating activities, and have significantly higher means of illegal income. Additionally, heroin users are less likely to be employed, and report significantly lower mean employment income than non-heroin users.

This study highlights a specific area that future interventions should address regarding aftercare models for heroin users. It is not coincidental that addressing the same issue is also

paramount in terms of prevention efforts for at-risk populations to prevent heroin use and subsequent incarceration, and given the rising death toll in opiate related overdoses (Webster, Cochella, Dasgupta, Fakata, Fine, Fishman, & Wakeland, 2011), potential overdose and death of these users. As lack of employment increases the likelihood of heroin abuse, it seems evident that treatment efforts should integrate employment services within a continuum of care. Further, as illegal activity is a predictor of relapse in recovering populations (Thompson & Uggen, 2012), aftercare models should provide employment services to negate the engagement in illegal activities for income generating purposes. As the amount of illegal income generating behaviors in all drug users of this study is disconcerting, these recommendations extend beyond heroin users to the entire population of individuals struggling with substance abuse problems.

While the findings herein reaffirm the current knowledge of heroin users, it is important to consider the limitations of the study. As the data used was self-reported, there is always the risk of report inaccuracy. Further, as a requirement for this study was recent justice system involvement, fear of stigma or prosecution could have caused underreporting of illegal activity. However, though we were not able to corroborate these answers, there is consistency between the responses to general questions (i.e. are you employed) and specific responses regarding income generation amounts and sources in the ASI-lite. Next, we were limited in our variables regarding the specifics of illegal income generation. It would have been helpful to be able to partition types of illegal income generating activities within the illegal category. However, any illegal income generating activity is predictive of justice system involvement, especially considering evidence showing consistency between pre and post incarceration illegal income generating patterns (Travis, 2005; Visher & Travis, 2003). Further, we were unable to specifically control for the number of days spent in treatment in the last month due to a lack of data. This is important because the dependent variables in our study asks if participants have been employed, or earned money illegally in the last 30 days. However, we were able to control for the number of days in a controlled environment in the last 6 months, which is inclusive of the last 30 days, and the treatment setting the participants were recruited from. Also, our dependent variables are binary, and only indicate if a participant had any income from that category in the last 30 days, rather than the number of days engaged in such activities. Finally, as the sample was recruited from treatment facilities in the greater Chicagoland area, these results may not be representative of the national population.

Employing individuals in recovery aids them in sustained abstinence, community involvement, and community reentry (Jason & DiGangi, 2009). It decreases involvement with the justice system (Tripodi, Kim, & Bender, 2010), and enhances the quality of life for the individual, while bringing down the cost to society that drug abuse causes (LoSasso, Byro, Jason, Ferrari, & Olsen, 2012). Still, given the evidence of the benefits of employment on recovery outcomes, service providers fail to integrate employment services as a central fixture of their programs. Although some programs do offer such services, most do not as a permanent fixture of their treatment. While employment interventions with substance abusers and ex-offenders have shown promising outcomes (Ashley, Marsden, & Brady, 2003), it is evident that logistical, macro and micro economical, and clinical restraints

prevent treatment facilities from offering employment services to their recovering clients (McLellan, Grissom, Zanis, Randall, Brill, & O'Brien, 1997).

Making employment services a prominent part of recovery and aftercare models requires a more comprehensive approach than the piecemeal offerings that are common in substance abuse service systems today. Stable, long-term, and gainful employment with private employers is needed to replace the temporary, low-wage jobs that are so often offered. In addition, it is imperative that prison-based efforts on enhancing employment skills of inmates' are implemented prior to release. Our study shows that individuals who were marginally employed continued to engage in illegal activities, irrespective of their substance of use. As this is a treatment seeking sample, we infer that behavioral patterns of income generation persist in early recovery, indicating that there is a clear barrier to employment for individuals even as they attempt to turn their lives around.

Through this study we hope to increase knowledge of the difficulties that drug users, particularly heroin users, face as they struggle to reintegrate into the community. Clearly, these barriers to reentry are far reaching; a tangled web of failures in social policy, the criminal justice system, and the harsh economic climate. By identifying a targeted risk behavior, we have aimed to provide evidence to support change in treatment and aftercare models to include comprehensive employment services to increase positive recovery outcomes.

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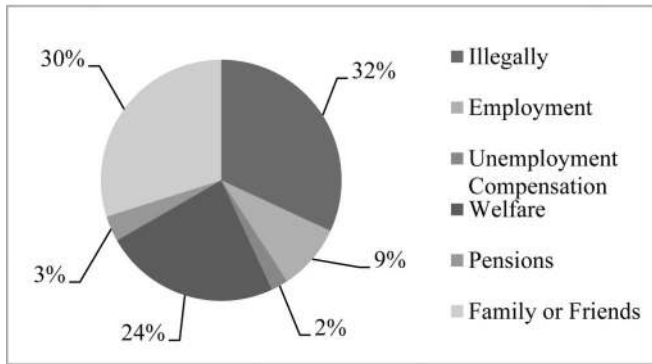
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Heroin Users
(N=115)



Non-Heroin Users
(N=132)

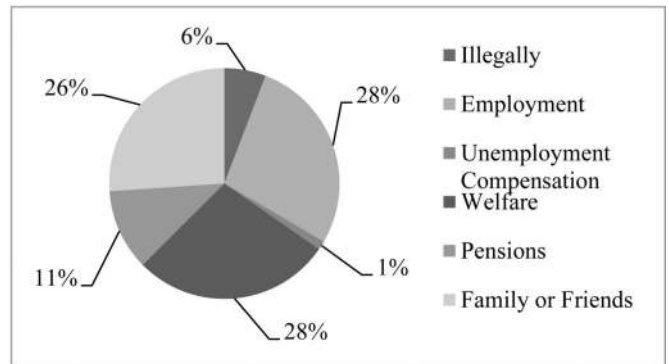


Figure 1. Income Category (%)
Past 30 day percent of total 30 day income for each sample (Heroin Users (N=115), Non-Heroin Users (N=132)).

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Table 1

Socio-demographic variables of participants at baseline (ASI, Demographic Questionnaire)

	Total Sample (N=247)	Heroin Users (N=115)	Non-Heroin Users (N=132)
	<i>M (SD)</i>		
Age	40.34 (9.50)	40.62 (9.94)	40.11 (9.13)
Education (years) ^a	10.91 (1.94)	10.95 (1.75)	10.87 (2.09)
Number of convictions (lifetime) ^b	6.48 (14.29)	7.10 (19.72)	5.94 (6.75)
Number Days Controlled Setting (6 months) ^c	100.42 (69.97)	90.63 (70.67)	109.09 (68.61)
Days Drug/Alcohol Use (past 30 days)	8.56 (16.33)	12.46 (19.47)	5.16 (12.07)
	<i>% (n)</i>		
Race/Ethnicity			
Black/African American	73.3 (181)	67.8 (78)	78.0 (103)
White/Caucasian	22.3 (55)	28.7 (33)	16.7 (22)
Hispanic/Latino	3.2 (8)	3.5 (4)	3.0 (4)
Other	1.2 (3)	0.0 (0)	2.3 (3)
Gender			
Male	82.2 (203)	80.9 (93)	83.3 (110)
Female	17.8 (44)	19.1 (22)	16.7 (22)
Currently on Probation/Parole ^d			
Yes	215 (88.5)	102 (90.3)	113 (86.9)
No	28 (11.5)	11 (9.7)	17 (13.1)
Marital Status ^e			
Married	6.6 (16)	8.9 (10)	4.6 (6)
Remarried	0.4 (1)	0.9 (1)	0.0 (0)
Widowed	2.5 (6)	1.8 (2)	3.1 (4)
Separated	5.8 (14)	7.1 (8)	4.6 (6)
Divorced	10.3 (25)	11.6 (13)	9.2 (12)
Never Married	74.5 (181)	69.6 (78)	78.6 (103)

^a 5 missing responses^b 27 missing responses^c 2 missing responses^d 4 missing responses^e 11 missing responses

Table 2

Logistic Regression:30-Day Illegal Income

Variable	β	SE	Odds Ratio	p
Race	-.90	.63	.40	.15
Gender	-.28	.57	.75	.62
Education	-.12	.10	.88	.20
Marital Status	-.03	.16	.99	.98
Number of People Depend on you for Financial Support	-.25	.36	.77	.48
Number of Days in Controlled Setting (6 Months)	-.01	.01	.99	.30
Heroin User	1.65	.56	5.20	.003*
Constant	-.72	1.38	.59	.59

* p<.01

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Table 3

Logistic Regression: 30-day Legal Employment Income

Variable	β	SE	Odds Ratio	p
Race	-.21	.52	.80	.67
Gender	-1.24	.78	.29	.11
Education	.15	.12	1.16	.21
Marital Status	-.08	.16	.92	.61
Number of People Depend on you for Financial Support	-.49	.49	.61	.32
Number of Days in Controlled Setting (6 months)	-.00	.04	.99	.32
Heroin User	-1.06	.46	.36	.02*
Constant	-2.23	1.72	.11	.19

*p<.05

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Table 4

Mean Test: Baseline 30 day income variables

	Heroin User		Non-Heroin User		Statistical significance
	Mean (SD)		Mean (SD)		
Employment	31.1 (133.7)		108.8 (322.2)		*
Unemployment	8.1 (83.9)		4.7 (52.3)		
Welfare	82.4 (106.4)		109.9 (126.9)		
Pensions	11.7 (88.7)		45.4 (284.1)		
Family and friends	104.2 (404.6)		102.8 (613.7)		
Illegally	110.9 (447.4)		23.6 (140.3)		*

* $p < .05$