

Housing Experiences among Opioid-Dependent, Criminal Justice-Involved Individuals in Washington, D.C.

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Abstract Residential mobility and type of housing contributes to an individual's likelihood and frequency of drug/alcohol use and committing criminal offenses. Little research has focused simultaneously on the influence of housing status on the use of drugs and criminal behavior. The present study examines how residential mobility (transitions in housing) and recent housing stability (prior 30 days) correlates with self-reported criminal activity and drug/alcohol use among a sample of 504 addicted, treatment-seeking opioid users with a history of criminal justice involvement. Findings suggest that those with a greater number of housing transitions were considerably less likely to self-report criminal activity, and criminal

involvement was highest among those who were chronically homeless. Residential mobility was unassociated with days of drug and alcohol use; however, residing in regulated housing (halfway houses and homeless shelters) was associated with a decreased frequency of substance use. The finding that residing at sober-living housing facilities with regulations governing behavior (regulated housing) was associated with a lower likelihood of illicit substance use may suggest that regulated housing settings may influence behavior. Further research in this area should explore how social networks and other related variables moderate the effects of housing type and mobility on crime and substance use.

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Introduction

The housing status of criminal justice-involved individuals is related to pathways of offending, higher rates of substance use, and other high-risk behaviors [13, 14, 19, 31]. There is evidence to suggest that housing assistance programs and establishing immediate and independent housing plays a critical role in positive structural changes in the lives of justice-involved individuals, such as helping to build supportive social relationships and obtain desirable emotional outcomes [17]. Existing studies on housing-related factors that affect criminal behavior and substance use have two noteworthy limitations. First, the relation

between housing stability and substance use tends to be studied apart from criminal behavior. A compelling reason to examine both concurrently is that drug use and crime are often aligned and are often inter-related behaviors [21]. Evaluation of these behaviors separately results in a divergent body of research, dissimilar gaps in knowledge, and a failure to provide a multidimensional approach to address the problems associated with drug use and criminal behavior. For example, studies in criminology overwhelmingly focus on neighborhood-level factors that influence housing stability instead of individual-level factors that interact with neighborhood factors. It is also unclear whether the knowledge derived from the substance use literature concerning individual-level housing situations is directly applicable to justice-involved populations. Second, studies do not systematically assess differences in behavior because of various housing situations. There is a need to extend the literature by studying the association between substance use and criminal offending by type of housing stability (e.g., permanent versus temporary housing, residences with housing regulations versus those without).

Factors that have a strong influence on criminal behavior include neighborhood characteristics (e.g., poverty, collective efficacy) of the individual [23, 27], housing tenure [2], and concentration of public housing [8]. For substance use, other factors exist such as homelessness [20], transient lifestyle [5, 28], undesirable community characteristics [24], and availability of drugs in the residential area [29]. These factors are similar, but the degree to which they affect these potentially inter-related outcomes is unknown. In the case of HIV, unstable housing (transitions from being housed to unstably housed or frank homelessness) for released jail detainees is common and is associated with poor HIV treatment outcomes, including poor retention in care, suboptimal adherence, and lack of viral suppression [3, 31].

The aim of the present study is to begin to examine how housing status is simultaneously related to substance use and criminal behavior. The current research examines drug and alcohol consumption and criminal involvement related to residential mobility and housing type during a 30-day period for treatment-seeking, opioid-dependent individuals.

Materials and Methods

The sample includes 504 opioid-dependent adults who underwent eligibility screening for a randomized

clinical trial on buprenorphine/naloxone (Suboxone®) treatment in Washington, D.C. from February 2012 to March 2014. Trial eligibility criteria included the following: (1) DSM-V criteria for opioid-dependence, (2) age ≥ 18 years, (3) able to provide informed consent, (4) able to understand English, (5) have medical entitlements in Washington, D.C., and (6) currently not taking pain medication for a chronic health condition or receiving medication-assisted treatment for opioid dependence (i.e., Suboxone or methadone dosed at >30 mg). All participants underwent point-of-care HIV counseling with confirmatory testing. Recruitment efforts specifically sought justice-involved individuals. The study is registered at www.clinicaltrials.gov (NCT01550341). The Office of Human Research Protections (OHRP) at the Department of Health and Human Services provided additional protections and a Certificate of Confidentiality was obtained from the National Institutes of Health.

Key Measures

Definitions of Criminal Offending, Drug Use, and Quantity of Alcohol Consumed

In addition to sociodemographics, participants completed life history event calendars using a 30-day timeline followback (TLFB) instrument to collect data on high-risk behaviors, criminal offenses, treatment experiences, and periods of incarceration, modeled after the event calendar approach [10, 25]. A drug use day is defined as any day the participant self-reports illicit substance use, excluding cannabis use. Criminal activities were self-reported and included the number of criminal offending days (excluding illicit substance use), possession of drug paraphernalia, and technical violations of their probation sentence. This same definition was used to create a second measure of crime days, but drug purchases were excluded from the tally since this was the only type of offense many active drug users in the sample were reporting. Participants retrospectively estimated their daily alcohol consumption in standard drinks per day, whereby one standard drink is equivalent to 12 oz of beer, 5 oz of wine, or 1.5 oz of hard liquor. These 30-day estimates were standardized due to minor variations in reporting times [30].

Housing Status

Although measures of housing status vary widely in the literature [1, 15], two standard ways to measure housing

status are housing type and residential mobility (described below). The 30-day life history event calendars were used to assess transition in housing status and by type of housing: stable housing (residing at their home or in a friend/relative's home), regulated transitional housing (homeless shelter or halfway house), homelessness (on streets/abandoned building), or institutional housing (drug treatment facility or jail/prison).

Housing Type

The number of days a participant spent in each housing type over the prior month was tallied. A participant was considered to live in regulated transitional housing if temporary or transitional housing in the community had rules and guidelines governing behavior, such as a homeless shelter and halfway house. Types of stable housing included a permanent or non-transitional housing environment, such as their home or a residence of a relative or family. Homelessness was defined as residing on the streets or in an abandoned building without having an address. Residing in a jail, prison, or inpatient treatment was classified as institutional housing. Participants were categorized by primary residence over the prior 30 days, which is the location they resided at during at least 15 days of the time period. For instance, an individual who self-reports that they resided at their relative's house the first 18 days of the month and then resided at a halfway house the following 12 days is categorized as a relative's house being their primary residence.

Residential Mobility

Residential mobility is defined as the frequency with which individuals change their residence [16, 26]. For the purpose of the present study, it is conceptualized as the number of residential moves that an individual experienced in the month before the current assessment. For example, an individual who self-reports that they resided at their relatives' house the first 18 days of the month and then resided at a halfway house the following 12 days had one residential transition over the study period. Stable housing is having a residence that is a home, apartment, or permanent location.

Control Variables

The subsequent multivariate analyses controlled for HIV status and the number of days participating in

treatment sessions over the prior 30 days (self-help, outpatient, or inpatient treatment).

Analytical Plan

The dependent variables for the present study were (1) the quantity of alcohol consumed, (2) the number of illicit drug use days, (3) the number of days engaged in criminal activity to include buying illicit drugs, and (4) the number of days engaged in criminal activity exclusive of buying illicit drugs over the prior 30-day period. Bivariate comparisons were first conducted between primary residence and each dependent variable. Analysis of variance (ANOVA) between groups was conducted to compare criminal activity and alcohol/drug use by the participant's housing type for the prior 30 days. Independent *t* tests were conducted to examine differences in the dependent variables by residential mobility. Participants were classified as (1) having no change in housing situation or (2) having at least one change in the prior 30 days. Last, the relation between housing status and each of the dependent variables were examined using negative binomial (for quantity of alcohol use variable only) and ordinary least squares (OLS) regression using Huber-White-Sandwich robust standard errors [12]. These analyses were conducted in Stata 12.0 using the *nbreg* and *regress* command with the *robust* option. A negative binomial regression model was conducted because responses on the quantity of alcohol consumed variable followed a negative binomial distribution, while the other dependent variables were more normally distributed. The robust estimator for the OLS regression provides a consistent estimate of covariance, even when the specification of the variance and link functions is incorrect [11], and is appropriate in situations with minor departures from normality.

Results

Description of Study Sample

As shown in Table 1, most of the 504 participants were over 50 years ($M = 51.7$ years, $SD = 7.7$), African-American (98%), male (78%), and unmarried (73%). While 52% were currently under community supervision (on probation, parole, or pre-trial release services), 15% were currently awaiting charges, trial, or sentencing, and the mean number of previous criminal

Table 1 Description of study sample

Demographics	Valid <i>n</i>	Range	Mean	(SD)
Age	499	21–68	51.7	(7.7)
Years of education	463	2–18	11.6	(1.9)
Number of times convicted for offenses	462	0–99	8.6	(19.4)
Number of years of heroin use	463	0–54	23.2	(12.7)
Recent number of days of heroin use (prior 30 days)	463	0–30	20.8	(11.1)
Times treated for psychological problems				
Hospital or inpatient setting	461	0–60	1.3	(5.2)
Outpatient/private patient	461	0–55	2.3	(7.3)
Addiction treatment days (prior 30 days)	504	0–30	3.9	(7.4)
	Valid <i>n</i>	Percent		
African-American	464	98		
Male	502	78		
Not married	462	73		
Valid driver's license	463	26		
Currently under criminal justice supervision	463	52		
Presently awaiting charges, trial, or sentence	462	14		
HIV positive	501	7		

convictions was 8.6 times (SD = 19.4). One month before the interview, participants spent an average of 0.4 days (SD = 2.5) incarcerated and 0.3 days (SD = 2.5) in alcohol/drug treatment facility. Overall, participants were primarily long-term heroin users (M = 23.2, SD = 12.8 years) and regularly used heroin for a mean of 20.8 days (SD = 11.1) in the prior 30 days. HIV prevalence was 7.0%. The sample had a mean of 34.2 standard alcoholic drinks (SD = 59.9) consumed over the study period and engaged in an average of 23.9 days (SD = 9.9) of illicit drug use and 24.1 days (SD = 9.8) of marijuana use. The sample had a mean of 21.2 overall crime days (SD = 11.3), and a mean of 6.2 days (SD = 11.0) when drug purchases were excluded from criminal activity. The distribution by crime types is as follows: 25% property offenses, 1% crimes against person, 48% drug-related, and 26% other (e.g., prostitution, weapons offenses, selling cigarettes).

Housing Status

Housing status during the prior 30 days is described in Table 2. Approximately 11.3% of participants had at least one transition in housing during the prior month: the number of residential transitions for the study sample over the prior month ranged from 0 to 18 transitions,

with a mean of 0.4 (SD = 1.8). Participants in the sample stayed an average of 4.8 days (SD = 10.7) in regulated transitional housing during the prior 30-day period. The most common type of primary housing was staying at home ($n = 267$) or a relative's house ($n = 66$), residing an average of 15.7 days (SD = 14.8) and 4.8 days (SD = 10.7) at these locations, respectively; these are referred to as stable housing. Few participants report living on the streets ($n = 10$) or in a shelter ($n = 13$) as their primary residence, with the average number of days residing at either being 0.6 (SD = 3.9) and 0.8 (SD = 4.7), respectively. There was a total of 205 residential transitions among 57 unstably housed participants: 57.1% of these transitions were from one stable housing condition to another stable condition, 8.8% of transitions were from stable housing to regulated transitional housing, 8.3% of transitions were from regulated transitional housing to stable housing, and 10.7% of transitions were from institutional housing to stable housing.

Criminal Behavior and Drug/Alcohol Use by Housing Situation

Table 3 presents the ANOVA results that compare quantity of alcohol consumed, crime days, and drug use days

Table 2 Description of recent housing status in prior 30 days ($n = 504$).

Housing characteristic	Range	Mean	(SD)
Number of residential transitions	0–18	0.4	(1.8)
Number of days in regulated housing	0–30	4.8	(10.7)
Number of days in institutional housing	0–30	0.8	(3.7)
Number of days resided by housing type			
Home	0–30	15.7	(14.8)
Relative	0–30	4.8	(107.0)
Friends	0–30	3.3	(9.0)
Halfway	0–30	4.0	(10.0)
Shelter	0–30	0.8	(4.7)
Homeless	0–30	0.6	(3.9)
Jail/prison	0–30	0.4	(2.5)
Treatment facility	0–30	0.3	(2.5)
			Percent
Had at least one residential transition			11.3
Description of each residential transition ($n = 205$ transitions in sample)			
Transition from stable housing to stable housing			57.1
Transition from stable housing to regulated housing			8.8
Transition from stable housing to institutional housing			4.9
Transition from stable housing to homelessness			2.4
Transition from regulated housing to stable housing			8.3
Transition from regulated housing to institutional housing			0.5
Transition from regulated housing to homelessness			1.0
Transition from institutional housing to institutional housing			0.5
Transition from institutional housing to stable housing			10.7
Transition from institutional housing to regulated housing			2.0
Transition from institutional housing to homelessness			0.5
Transition from homelessness to stable housing			2.4
Transition from homelessness to regulated housing			1.0

 $n = 504$

by primary residence in the prior 30 days. While participants drank slightly higher quantities of alcohol if they resided at a shelter ($M = 51.7$; $SD = 75.4$) or at a halfway house ($M = 40.4$; $SD = 58.3$) than other types of housing, differences between housing situation and quantity of alcohol consumed were not statistically significant ($F = 1.035$; $p = \text{n.s.}$). Significant differences were noted in the number of drug use days by housing situation ($F = 8.362$; $p \leq .001$), and remained significant even when institutional housing is excluded from the analyses ($F = 2.303$; $p \leq .05$). Participants reported the highest number of drug

use days while homeless ($M = 28.3$; $SD = 4.7$) or at home ($M = 25.3$; $SD = 8.9$) rather than in regulated housing situations.

There were significant differences in the number of overall crime days by housing situation only when institutionalized housing is included in the analysis ($F = 3.850$; $p \leq .001$). Participants were most likely to self-report days of criminal involvement on days they resided on the streets ($M = 24.1$; $SD = 9.3$) and least likely when staying at shelter ($M = 19.2$; $SD = 10.53$) or institutional housing ($M = 7.0$; $SD = 5.9$). When drug buys are excluded from the crime days measure, significant differences remain in the number of crime days.

Table 3 Criminal behavior, substance abuse, and quantity of alcohol consumed by primary residence

Outcome by primary residence ^a		Number	M	(SD)	Range	<i>F</i> ^{b,c}
Quantity of alcohol consumed in standard drinks ^d	Home	267	36.6	(65.4)	0–480	1.035
	Friends	54	19.4	(32.0)	0–180	1.260
	Halfway	66	40.4	(58.3)	0–240	
	Relative	79	30.0	(50.8)	0–300	
	Homeless	10	22.0	(29.1)	0–82	
	Shelter	13	51.7	(79.4)	0–180	
	Institutional	12	31.5	(80.3)	0–280	
	Total	501	34.0	(59.9)	0–480	
Illicit drug use days ^e	Home	266	25.3	(8.9)	0–30	8.362***
	Friends	54	23.9	(10.5)	1–30	2.303*
	Halfway	66	21.9	(11.4)	0–30	
	Relative	79	24.1	(9.8)	0–30	
	Homeless	10	28.3	(4.7)	15–30	
	Shelter	13	19.9	(10.7)	3–30	
	Institutional	12	7.1	(5.8)	0–17	
	Total	500	24.0	(10.0)	0–30	
Crime days including drug buys	Home	267	22.2	(11.1)	0–30	3.850***
	Friends	54	21.2	(11.1)	0–30	0.626
	Halfway	66	20.7	(12.0)	0–30	
	Relative	79	20.4	(11.4)	0–30	
	Homeless	10	24.1	(9.3)	3–30	
	Shelter	13	19.2	(10.5)	0–30	
	Institutional	12	7.0	(5.9)	0–17	
	Total	501	21.2	(11.3)	0–30	
Crime days without buying drugs	Home	267	4.5	(9.6)	0–30	4.063***
	Friends	54	8.6	(12.2)	0–30	4.736***
	Halfway	66	9.1	(13.3)	0–30	
	Relative	79	7.5	(11.8)	0–30	
	Homeless	10	16.2	(12.6)	0–30	
	Shelter	13	4.6	(11.3)	0–30	
	Institutional	12	4.4	(6.4)	0–17	
	Total	501	6.2	(11.1)	0–30	

Three clients were excluded from the ANOVAs because their primary residence for the prior 30 days was spent at more than one location (e.g., 15 days at one location and 15 days at another). Self-reported illicit drug use days were missing for one client. This study finds no notable differences when comparing results when marijuana use is included in this measure versus when it is excluded

* $p \leq .05$; *** $p \leq .001$

^a Participants were categorized by primary residence over the prior 30 days, which is the location they resided at during at least 15 days of the time period

^b *F* value with institutional housing

^c *F* value without institutional housing

^d One standard drink is equivalent to 12 oz of beer, 5 oz of wine, or 1.5 oz of hard liquor

^e Marijuana use in the sample was low and not included in the illicit drug use measure

Those whom are homeless are significantly more likely (M = 16.2; SD = 12.6), followed by those residing in a halfway house (M = 9.1; SD = 13.3).

Differences in Criminal Behavior and Drug/Alcohol Use by Residential Transitions

Table 4 presents differences in crime days, drug use days, and quantity of alcohol consumed in the prior 30 days by whether the participant had a change in housing status. Participants were more likely to report criminal activity (21.8 versus 16.4 days; $t = 3.43$; $p \leq .001$) and illicit drug use (24.5 versus 19.0 days; $t = 3.68$; $p \leq .001$) if they had no change in housing type. No significant differences exist in quantity of alcohol consumed between those who are residentially mobile versus those who are not ($t = -0.43$; $p = \text{n.s.}$).

Housing Type as a Correlate of Crime Days and Drug/Alcohol Use

Regression models that examine how housing status is associated with the variables of interest (while controlling for participant demographics) are presented in Table 5. The first model correlates the quantity of alcohol consumed. Neither the number of residential transitions in housing type (Coeff = 0.051; $p = \text{n.s.}$) nor days of regulated transitional housing (Coeff = 0.008; $p = \text{n.s.}$) in the prior 30 days were associated with the quantity of alcohol consumed during the period. Women, however, consumed lower quantities of alcohol (Coeff = -0.529 ; $p \leq .05$). The number of alcohol use days was statistically significant in the model, whereby each treatment session attended corresponded to a 0.95 decrease in standard drinks (Coeff = -0.044 ; $p \leq .001$).

The second regression model examines the number of illicit drug use days. Residing in regulated transitional housing was related to fewer days of illicit drug use ($B = -0.105$; $p \leq .05$). For every additional day spent in a halfway house or shelter, participants experience a 0.11-day increase in drug use days ($p \leq .05$). As expected, those who resided in a drug treatment or correctional facility tended to have a lower frequency of drug use ($B = -0.774$; $p \leq .001$), as did those individuals who attended treatment sessions in the prior 30 days ($B = -0.320$; $p \leq .001$). The number of residential transitions ($B = -0.094$; $p = \text{n.s.}$) and homelessness ($B = 0.100$; $p = \text{n.s.}$) was unassociated with drug use.

The third model presented in Table 5 examined the influence of housing status on the number of overall self-reported crime days. As with alcohol use, residential transitions and days residing in regulated transitional housing were unrelated to the number of self-reported crime days. Those who resided in an institution (e.g., jail, drug treatment facility) ($B = -0.573$; $p \leq .001$) or attended treatment sessions ($B = -0.426$; $p \leq .001$) in the prior 30 days reported significantly fewer crime days, as did women ($B = -2.567$; $p \leq .05$).

The fourth model examined the influence of housing status on the number of crime days, while excluding drug purchases. Participants with a higher number of residential transitions were less likely to be criminally involved; there is a corresponding 0.47-day decline in non-drug-buy-related crime days for each additional residential transition ($p \leq .001$). Homelessness was associated with a higher incidence of non-drug-buy-related crime days ($B = 0.385$; $p \leq .01$). Also, those who attended treatment sessions ($B = -0.190$; $p \leq .001$) tended to engage in non-drug-buy-related criminal behavior less frequently.

Table 4 Criminal behavior, substance abuse, and quantity of alcohol consumed by residential mobility in the prior 30 days.

Residential mobility ^a	<i>n</i>	Alcohol quantity ^b		Drug use days		Crime days (with buying drugs)		Crime days (excluding buying drugs)	
		Mean	(SD)	Mean	(SD)	Mean	(SD)	Mean	(SD)
No Change	447	33.7	(59.5)	24.5	(9.6)	21.8	(11.3)	6.4	(11.3)
At least one change	57	37.4	(62.8)	19.0	(11.0)	16.4	(10.5)	4.7	(8.5)
<i>t</i> value		-0.43		3.68***		3.43***		1.37	
<i>df</i>		502		83		502		83	

SD standard deviation; *df* degrees of freedom

*** $p \leq .001$

^a Participants were classified in this analysis as either having no change in housing situation or having at least one change in the prior 30 days

^b Standard drinks consumed in 30 days, whereby one standard drink is equivalent to 12 oz of beer, 5 oz of wine, or 1.5 oz of hard liquor

Table 5 Influence of housing stability and residential mobility on quantity of alcohol consumed, drug use days, and crime days in the prior 30 days ($n = 502$).

	Alcohol quantity ^a		Drug days		Crime days		Crime days without buying drugs	
	Coeff.	(Std error)	<i>B</i>	(Std error)	<i>B</i>	(Std error)	<i>B</i>	(Std error)
Number of residential transitions	0.051	(0.059)	-0.094	(0.183)	-0.367	(0.258)	-0.467***	(0.125)
Days of homelessness	-0.014	(0.026)	0.100	(0.048)	0.062	(0.104)	0.385**	(0.134)
Days of regulated housing	0.008	(0.010)	-0.105*	(0.042)	-0.040	(0.044)	0.091	(0.053)
Days of institutional housing	-0.016	(0.032)	-0.774***	(0.092)	-0.573***	(0.092)	-0.063	(0.074)
Age	-0.020	(0.015)	-0.058	(0.056)	-0.042	(0.070)	-0.082	(0.068)
Female	-0.529*	(0.254)	-0.956	(1.082)	-2.567	(1.213)	-0.986	(1.172)
HIV positive	-0.199	(0.387)	-2.361	(1.887)	-2.616	(2.030)	-0.779	(1.914)
Treatment days	-0.044***	(0.014)	-0.320***	(0.070)	-0.426***	(0.068)	-0.190*	(0.048)
Constant	2.650***	(0.794)	29.653***	(2.90)	26.461***	(3.729)	10.937***	(3.619)
<i>F</i>			17.27***		14.19***		4.724***	
<i>R</i> ²	0.01		0.17		0.14		0.05	
Chi ²	18.56***							
Log likelihood	-1837.56							

Regression results were similar when marijuana use was excluded from the drug use days variable, with the same independent variables being statistically significant; * $p \leq .05$; ** $p \leq .01$; *** $p \leq .001$

^aStandard drinks consumed in 30 days, whereby one standard drink is equivalent to 12 oz of beer, 5 oz of wine, or 1.5 oz of hard liquor

Discussion

The present study suggests that both residential change (transition) and type of residential housing is significantly correlated with crime and substance use (alcohol/drugs) for a group of long-term, opioid-dependent individuals. This study is unique in that it examines the complex and synergistic relationship between substance use, criminal activity, and housing among treatment-seeking, opioid-dependent individuals in Washington, D.C.—home to one of the most volatile HIV epidemics in the USA. While this sample mostly had stable housing, 11% experienced marked transitions in their housing residence over a 30-day window.

The relationship between housing status, criminal activity, and substance use was complex. For example, opioid-dependent individuals with stable housing were considerably more likely to self-report criminal activity. Individuals who were homeless (residing on streets) reported more crime days (excluding drug purchases). Those who resided in regulated transitional housing (halfway houses and homeless shelters) reported fewer drug use days. Residential mobility was unassociated with the number of days that participants used drugs and alcohol.

Findings here suggest that participants who were more residentially mobile had a lower likelihood of criminal involvement. While it might be expected that the unstably housed group would be more criminally active, the use of sober-living housing may contribute to reducing drug use behaviors by opioid-dependent individuals. Higher rates of crime were found among those with fewer residential transitions, where existing social supports and stable housing may affect the engagement in criminal behavior to obtain money [7]. Alternatively, those who are transitioning through various types of housing, as noted by Matthew Desmond, may spend an inordinate amount of time creating new and dissolving old ties (i.e., disposable ties) with individuals just for survival and have less time for procuring and using drugs [6]. As Rydberg et al. note, “the lack of stability and structure may strain relationships” (p. 437) [22]. It also affords these individuals greater flexibility in how they spend their free time. Further research in this area needs to explore how social ties moderate the effects of housing stability and mobility on crime and substance use.

Another study finding was that residing in regulated transitional housing had a lower frequency of illicit substance use. Halfway houses and homeless shelters,

which often require abstinence, may serve to regulate behavior to some extent, apart from social ties and networks. While these facilities may influence only illegal behavior (substance use), the use of these facilities did not affect alcohol consumption, a legal substance, which occurs at a moderate to high rate among some study subjects. It is unknown whether housing situations that impose restrictions on behavior would be as successful if they did not have such a requirement. To further understand this relation, it may be important in future research to differentiate outcomes between those who are frankly homeless and without a place to live (e.g., on the street, in a park/empty building, or other public space) versus those residing in a homeless shelter. Even though an individual may be “homeless” by definition, it may be appropriate to consider residing in a homeless shelter or other regulated housing as a type of stable housing, even if transitional. Accordingly, this finding is also consistent with studies documenting that harm reduction efforts by homeless shelters are related to substance use [18], as well as transitions to stable housing [31], which are closely associated with improved health-related outcomes, such as a reduction in the use of alcohol and illicit drugs, drug addiction severity, and improvements in mental health. It was also found that those residing in regulated transitional housing were significantly more likely to live with someone who has an alcohol problem or live with someone who abused drugs in the last 30 days. Again, this may suggest that the relationship between the person and with whom they reside is important since those residing in regulated transitional housing may be living with strangers or acquaintances rather than someone they spend their free time with.

Limitations of Study

The study findings should be recognized in light of its limitations. This study population is unique in that it is opioid-dependent with use behaviors that span nearly the majority of their adult lives. This population highlights socioeconomic differences, for instance, between transient and non-transient individuals [9]. The extent to which housing status affects individual characteristics versus the differential selection of individuals into certain housing situations may lead to simultaneity bias: what causes what? However, a compelling argument for housing situation affecting behavior (rather than it being due to selection bias) is demonstrated by randomized

trials showing that changes in housing have positive impact on reducing substance use and other undesirable behaviors [4]. Last, the conclusions drawn from the study sample may not be generalizable to the entire long-term, opioid-dependent population.

Conclusions

The present study sheds light on the inadequacy of the existing research on the nexus of crime-substance abuse and housing. Our findings demonstrate that differences exist in rates of crime and alcohol/substance abuse by housing status but it opens the door for many questions about housing-related stability. Future research in this area should incorporate the evaluation of multiple individual outcomes and examine how a wide array of housing situations and transitions affects these behaviors. Third, while this study began to explore differences in various types of housing, a better understanding of how differential selection affects housing situation is needed. Future studies should incorporate housing status measures that encapsulate both housing mobility *and* housing type to further our knowledge in this area. The use of these measures may assist in developing and implementing housing interventions that affect both crime behavior and substance use.

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