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### Authors

Nyamathi, Adeline  
Salem, Benissa E  
Farabee, David  
[et al.](#)

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## Correlates of Heroin and Methamphetamine Use among Homeless Male Ex-Jail and Prison Offenders

**Adeline Nyamathi, ANP, PhD., FAAN,**

University of California, Los Angeles, School of Nursing

**Benissa E. Salem, RN, MSN, PhD,**

University of California, Los Angeles, School of Nursing

**David Farabee, PhD,**

University of California, Los Angeles, Integrated Substance Abuse Program

**Elizabeth Hall, PhD,**

University of California, Los Angeles, Integrated Substance Abuse Program

**Sheldon Zhang, PhD,**

San Diego State University, San Diego, Department of Sociology

**Mary Marfisee, MD,**

University of California, Los Angeles, School of Nursing

**Farinaz Khalilifard, MA, MFT,**

University of California, Los Angeles, School of Nursing

**Stefanie Musto, and**

University of Albany, Mark Faucette, RAS, CSAC, Amity Foundation

**Barbara Leake, PhD**

University of California, Los Angeles, School of Nursing

### Abstract

Homeless men exiting California State jails and prisons are a heterogeneous community with varied childhood, incarceration and drug use histories. This cross-sectional study assessed whether homeless men who were discharged from either jail or prison into a residential substance abuse treatment program, differed in terms of methamphetamine and heroin use. This study utilized baseline data collected on 540 recently paroled men randomized to one of three programs that assessed the impact of a peer coaching intervention on subsequent drug use and re-incarceration. We found that younger ex-offenders exiting prisons and jails were more likely to have used methamphetamine alone, whereas African American ex-offenders were less likely to have used methamphetamine alone when compared to other ethnic groups. Further, ex-offenders exiting jails and self-reporting use of heroin only at baseline were significantly more likely than their counterparts to have been removed from home before age 18. For men exiting jails, there was an

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Corresponding Author, Adeline Nyamathi, ANP, PhD., FAAN, University of California, Los Angeles, School of Nursing, 700 Tiverton Avenue, Los Angeles, CA 90095-1702, anyamath@sonnet.ucla.edu.

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association between lower self-esteem and having used methamphetamine but not heroin. However, having used both heroin and methamphetamine was associated with both violent crime and cognitive problems in both jail and prison samples. Our findings showcase the need to understand unique correlates of both heroin and methamphetamine as they relate to jail and prison populations.

### Keywords

jail; prison; homeless; men

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## INTRODUCTION

In the United States (US), there are over 1.5 million men and women behind bars (Carson & Golinelli, 2013) and 744,524 in county and city jails (Minton, 2012). In California alone, over 200,000 persons are imprisoned (California Department of Corrections and Rehabilitation, 2012). While the terms jail and prison have often been used interchangeably, they engender different consequences for those who were incarcerated. While prison sentences are generally stays of one year or longer for felons, sentenced offenders, and those awaiting transportation or extradition (West, Sabol, & Greenman, 2010), jails are often a holding ground for persons awaiting court action, and are sentences of shorter duration (Cosima, 2012; Garner & Black, 2011). However, type of facility that ex-offenders are released from may be related to important factors that may differentially impact ex-offenders in terms of loss of social support, poor coping responses, and familial and housing instability. Type of drug used prior to incarceration may likewise play a role in long-term outcomes, as methamphetamine and heroin, for example, are the most serious drugs in terms of health consequences, and ongoing use and recidivism.

Currently, the rate of recidivism among California felons is out of control, with nearly 65% for all felons released over a three year period back in prison (California Department of Corrections and Rehabilitation, 2011). As drug dependence increases the propensity of reconviction (Huebner, Varano, & Bynum, 2007), having a history of drug use (either single or poly drug use) prior to their offense, along with a lack of resources, especially housing, and family support, may enable a greater understanding of differential needs of ex-offenders. Type of facility, which generally relates to time incarcerated, may likewise relate to long-term outcomes of parolees. Such understanding will inform culturally-sensitive interventions designed to reduce recidivism by targeting drug abuse and dependence, and inform policy related to differential treatment plans for male ex-offenders targeted based on a thorough needs assessment. The purpose of this paper is to highlight differences between men who had been discharged from jails versus prisons and did not have a home to return to, and whether methamphetamine and heroin were used singly versus together prior to incarceration.

### Theoretically-Guided Variables of Interest

The selection of differential factors which may impact parolees has been guided by the Comprehensive Health Seeking and Coping Paradigm (CHSCP) (Nyamathi, 1989). Over the

years, the CHSCP has guided studies on HIV and hepatitis risk, and health outcomes among drug-abusing and homeless adults (Nyamathi et al., 2007; Nyamathi, Hudson, Greengold, & Leake, 2012; Nyamathi, Stein, Dixon, Longshore, & Galaif, 2003; Stein & Nyamathi, 2004) and among ex-offenders (Nyamathi et al., in press). In this framework, an inclusion of antecedent factors such as type of facility incarcerated (jail vs prison), type of drug used and whether single or poly drug pattern, age, education, and mental health history) were of interest in our study. Drug use is a continuing challenge among those who have been incarcerated. Among homeless men on parole, frequently used drugs included crack (91%), cocaine (65%), hallucinogens (48%), methamphetamine (49%) and heroin (38%) (Nyamathi et al., 2011). Among jail inmates, at the time of the offense, drug use at time of offense has ranged from approximately 28.8% to 35.6% (James, 2004; Wilson, 2000), whereas among state and federal prison inmates, this statistic ranged from 26% to 32% (Mumola & Karberg, 2006).

Drug use patterns are also known to differ based on race. Among jail inmates, alcohol or drugs were used more frequently by Whites, followed by Blacks and Hispanics (58.8% vs. 43.2% vs. 44.2%) (James, 2004). Among Federal prisoners, methamphetamine was more likely to be used by Whites compared to Blacks, Hispanics and Other (29.4% vs 0.7% vs. 5.1% vs. 14.4%) (Mumola & Karberg, 2006). Among homeless persons, recently discharged parolees appear to be younger and less educated than past parolees or those never imprisoned (Hudson et al., 2011).

High rates of mental illness have likewise been reported among parolees (McGuire & Rosenheck, 2004). Local jail inmates have a higher percentage of mental health problems as compared to state and federal prisoners (64% vs. 56% vs 45%) (James & Glaze, 2006). Among those diagnosed with a mental health problem in both jails and prisons, the most frequently used drugs included marijuana, followed by cocaine/crack and methamphetamine (James & Glaze, 2006). The propensity for drug use may also be increased by gang membership, as 37% of a young incarcerated sample reported gang membership; with gang membership higher among those with new convictions (Huebner et al., 2007).

Mediating variables have included social support, self-esteem and gang membership. Among homeless male homeless parolees, lack of social support is common as long periods of incarceration are particularly likely among parolees exiting prison. Lack of social support has been associated with increased drug use, high-risk sexual practices and reincarceration (Seal, Eldrige, Kacanek, Binson, & Macgowan, 2007). Gang relationships may also flourish. Positive personal attributes such as self-esteem are also associated with health-promoting behaviors, adaptive coping, and less emotional distress amongst homeless and paroled adults (Harzke, Ross, & Scott, 2006; Nyamathi, Leake, Keenan, & Gelberg, 2000; Nyamathi, Stein, & Swanson, 2000; Seal et al., 2007). Low self-worth and limited self-confidence have been associated with drug relapse among cocaine and methamphetamine use with criminal justice system involvement (Semple, Zians, Strathdee, & Patterson, 2008). Moreover, lack of positive coping skills often leads to resumption of high-risk behaviors, e.g., injection drug use and reincarceration (Haney, 2003; Marlow, 2007).

Childhood, familial and other life stressors may likewise be a ground for initiating drug use and during the post release period, continuing the cycle of criminal behavior. Unhealthy and inadequate coping strategies used to deal with stress may lead to criminality, homelessness and recidivism. For those behind bars, the need to adapt to the environment often requires different coping mechanisms, one of which may be self-medication. In one study among young adult and juvenile offenders (N=203), emotional, avoidant and detached coping methods were frequently utilized (Ireland, Boustead, & Ireland, 2005). Moreover, the likelihood of recidivating may be high when ex-offenders cope by craving substances when feeling overwhelmed and unable to manage challenges they experienced.

## **METHOD**

### **Design**

This cross-sectional study utilized baseline data collected on 540 recently paroled men participating in a randomized trial designed to assess the impact of a peer coaching intervention on subsequent drug use and re-incarceration. Baseline data collected from these ex-offenders recently released from California jails and prisons were analyzed to describe and understand correlates of drug use in each of two groups. The study was approved by the Institutional Human Subjects Protection Committee.

### **Sample and Site**

Parolees were recruited from a residential drug treatment (RDT) program if they met the following criteria: a) had been released from prisons and jails and entered the participating (RDT facility within a six-month period since release; b) had a history of drug use within the past 12 months prior to their incarceration; c) were 18-64 years of age; and d) identified themselves as homeless on their prison or jail exit form. In total, 585 parolees were screened; 22 left the residential drug treatment program prior to enrollment and 23 were ineligible based on screening criteria of age, history of drug use or period of time since paroled. Data were collected from February 2010 to January 2013.

### **Procedure**

Research staff worked closely with RDT directors and staff to facilitate seamless study implementation. Once informed consent had been approved, parolees were informed about the study by means of flyers posted in the RDT facility. In addition, research staff frequented the facility and provided information, both in group sessions and privately one-on-one with parolees who expressed interest in participating in the study. After interest was expressed and information provided, informed consent was sought for administration of a brief screener that assessed eligibility for the study. Once determined eligible, a second informed consent was provided with full details of the study. A structured questionnaire was then administered by the research staff to all interested and eligible parolees. All respondents who had completed the baseline questionnaire received \$20.

### **Instruments**

Sociodemographic questions elicited information on date of birth, race/ethnicity, educational status, marital status, children, living arrangement in the six months before the most recent

incarceration, childhood family relationship and time lived outside the home, history and type of arrests, current and lifetime gang affiliation, parental history of substance abuse treatment; and general health using a 5-point scale ranging from 1) poor to 5) excellent. Level of custody, ranging from 1-4 which depicts the security level of the prison yard, was determined by self-report by the participant.

Coping behaviors were assessed using six subscales of the Brief Cope (Carver, 1997). The six two-item subscales were: self-blame coping (reliability in this study .63), denial coping (reliability .64), disengagement coping (reliability .71), planning coping (reliability .72), instrumental support coping (reliability .77), and religious coping (reliability .78). Sample items are “I blame myself for things that happen”, “I refuse to believe that it is happening”, “I give up trying to deal with it”, “I think hard about what steps to take”, “I get help and advice from other people”, and “I pray or meditate”, respectively. Reliabilities for all six subscales exceeded the .5 level recommended by (Nunnally, 1978) for group comparisons. A 4-point Likert scale was used to rate the 12 items with options ranging from “not at all” to “a lot.” Mean-item scales were formed for analysis.

Childhood Family Relationships were assessed by items from a Texas Christian University (TCU) instrument asking about closeness of family (measured on a 5-point Likert scale ranging from “very close” to “not close at all”) (Simpson & Chatham, 1995). Respondents were also asked whether they had been raised in a two-parent family and whether their mother and father had been treated for alcohol problems and for drug problems.

Men were considered to have a history of violent crime if they reported having been convicted for assault/aggravated assault/battery, kidnapping/hostage taking, terrorist threats/acts, homicide/manslaughter/attempted homicide or rape/aggravated assault involving a minor.

Social Support was measured by the Medical Outcomes Study (MOS) Social Support Survey (Sherbourne & Stewart, 1991). This 18-item scale includes 4 subscales: emotional support (8 items, reliability in this sample .95), tangible support (3 items, reliability .88), positive support (3 items, reliability .89) and affective support (3 items, reliability .90). Items had a 5-point Likert scale response options ranging from 1) “none of the time” to 5) “all of the time”. Responses were summed for subscale formation with higher scores indicating more support. Respondents were also asked how many close friends they had outside of prison.

Self-Esteem was measured using the revised 23-item Self-Esteem Inventory (SEI) (Coopersmith, 1967). Internal consistency in this study, as measured by Cronbach’s alpha, was .80. Adolescent Self-esteem was assessed by an item asking respondents how they felt about themselves as teenagers. Responses on a 5-point Likert scale ranged from 1) “liked yourself a great deal” to 5) “disliked yourself a great deal”.

Cognitive problems were measured by asking if they ever experienced “trouble understanding, concentrating or remembering?” The question was followed by a “yes/no” response.

Depressive symptoms were measured by a 10-item short form of the Center for Epidemiological Studies Depression (CES-D) scale (Radloff, 1977) assessed previously among homeless populations (Nyamathi, Christiani, Nahid, Gregerson, & Leake, 2006; Nyamathi et al., 2008). The 10-item self-report CES-D scale measures the frequency of 10 depressive symptoms in the past week on a 4-point response scale from 1) "Rarely or none of the time" (Less than 1 day) to 2) "All of the time" (5-7 days). Scale scores ranged from 0 to 30 (internal reliability of the scale was .80). The higher the CES-D scale score, the greater the severity of the symptoms. Participants are said to be experiencing high level of depressive symptomology if they score 10 or higher on the CES-D scale. For this study, the continuous version was used; the item "self-reported depression" was measured as a yes/no question asked of participants.

Drug and alcohol use behaviors six months prior to the recent incarceration were measured by a modified Texas Christian University (TCU) Drug History form (Simpson & Chatham, 1995). This questionnaire has been tested with men and women with a history of drug addiction and homelessness. The modified form recorded the frequency of use of alcohol, tobacco and 7 drugs and selected combinations of drugs used by injection and orally during a six-month period before the last incarceration and also elicited information about lifetime use. Favorable results regarding the reliability and validity of data collected in this format have been reported by Anglin et al. (1996).

### Data Analysis

Frequencies and percents or means and standard deviations were used to describe the sample measures and continuous variables were checked for normality. Information on use of various substances were provided by means of descriptive analysis. The jail and prison samples were compared on socio-demographic characteristics and other potential correlates of lifetime methamphetamine and heroin use with chi-square tests or two-sample t and Wilcoxon tests, depending on underlying distributions. The coping subscales were dichotomized by their medians for analysis due to their highly skewed distributions. Chi-square or two-sample t and Wilcoxon tests were also used to assess associations with lifetime methamphetamine and heroin use within each sample. Use of these two drugs was subdivided into dual use of both drugs and use of each drug in the absence of the other to better understand their use by men in this study. Once associations between separate and dual use of methamphetamine and heroin and sample measures had been assessed among the jail and prison samples, three stepwise backward logistic regression analyses were conducted for each sample. Predictors in the models were associated with the outcome at the .10 level in preliminary analyses; the retention level was .10. For each sample, the final models for methamphetamine and heroin use separately and for dual use were examined for multi-collinearity; goodness of fit was assessed with the Hosmer-Lemeshow test.

## RESULTS

The sample included 540 parolees with a mean age of 40 years (SD 10.5) and 11.5 years of education (SD 1.6), with men exiting jails significantly younger than their prison counterparts. Most participants were either African American (46%) or Latino (32%), never

married (66%) and 62% reported fathering children. Participants released from jails were less likely to be African American, more likely to be Latino or White, and more likely to be currently involved in gangs as compared to their out-of-prison counterparts.

Lifetime gang membership was similar for other prison and jail ex-offenders (49% vs. 55%, respectively). Depressive symptoms did not differ between groups. Over two-thirds had committed violent crimes. Discharge custody level for these participants was predominantly level 1 (39%), followed by levels 2 and 3 (30% and 21%, respectively). Living on the streets before incarceration was reported nearly equally by those from prisons and jails and by about a quarter of all participants, and almost 40% reported cognitive problems. One in four men reported being in fair or poor health (see Table 1).

When childhood family structure was assessed, over 40% reported having a very close family; yet over half reported that they were removed from their homes and put into a group living situation, including juvenile hall. In cases where participants knew parental history of substance abuse treatment, prevalence of parental history of treatment was low but equally distributed by parent and by group.

No differences were found between the prison and jail samples with respect to self-esteem, the six coping scales or the four social support scales. However, some differences in associations with lifetime methamphetamine and heroin use were found for the two samples. For men discharged from prison, use of methamphetamine but not heroin was associated with positive social support and not having lived on the street six months prior to incarceration ( $p < .01$ ), whereas for those discharged from jail, use of methamphetamine alone was related to lower self-esteem and religious coping ( $p < .01$ ) and mothers not having been treated for substance abuse ( $p < .05$ ). For both samples, use of methamphetamine alone was associated with younger age and not being African American ( $p < .001$ ). Similarly, use of heroin, but not methamphetamine, was associated with older age in both samples ( $p < .001$ ), but among those released from jails, it was also associated with being married or divorced ( $p < .001$ ), as well as lifetime cognitive problems, having had a very close childhood family and having been removed from home to live in group care as a child ( $p < .05$ ).

For the prison sample, use of both methamphetamine and heroin was associated with lower levels of tangible, emotional, affective and positive social support and higher disengagement coping ( $p < .01$ ). It was also related to having lived on the street prior to incarceration and lower levels of religious and planning coping ( $p < .05$ ). In contrast, for the jail sample, lifetime use of both methamphetamine and heroin was associated with current gang membership, having been removed from home in childhood and lower instrumental coping ( $p < .05$ ). For both samples, dual use of methamphetamine and heroin was associated with not being African American ( $p < .001$ ), as well as commission of a violent crime, lifetime cognitive problems and not coming from a very close family ( $p < .01$ ; data not shown).

### **Substance Use by Men Exiting Prison and Jails**

Lifetime alcohol use was pervasive among participants; moreover, about three-quarters of men exiting either prisons or jails reported use of alcohol within the last six months prior to



incarceration (Table 2). Similarly, lifetime marijuana use was pervasive, and almost two-thirds reported use of marijuana in the same six month period. Lifetime use of crack, methamphetamine and hallucinogens ranged from 43% to 63% and was somewhat reduced when use over the last six months prior to the most recent incarceration was considered. There were significant differences with lifetime methamphetamine and heroin use, as well as methamphetamine use in the last six months, when the jail and prison samples group were compared. There were also significant differences between prison and jail populations and use of methamphetamine only at 6 months and methamphetamine and heroin ever. These differences resulted from a higher prevalence of dual heroin and methamphetamine use in the jail sample than the prison sample (31% and 20%, respectively). In a supplemental logistic regression analysis controlling for age, the jail vs. prison differences persisted (data not shown).

### **Logistic Regression for Ever Used Methamphetamine but not Heroin**

Among men exiting both prisons and jails, being of younger age and non-African American ethnicity was associated with lifetime methamphetamine but not heroin use (Table 3). Positive social support was also associated with lifetime methamphetamine use only for men exiting prisons. For men exiting jails, methamphetamine but not heroin use was also associated with lower self-esteem and not reporting having been removed from home and placed in juvenile hall or another group facility during childhood, primarily as a result of problems with the law, and to a lesser degree, emotional, behavioral, or learning problems.

### **Logistic Regression for Ever Used Heroin but not Methamphetamine**

Men exiting both prisons and jails were more likely to have used heroin but not methamphetamine if they were older. Moreover, among men discharged from jails, heroin but not methamphetamine use was associated with being married or divorced, having been raised in a close knit family, not having cognitive problems, and having been removed from their homes during childhood (Table 4).

### **Logistic Regression for Ever Used Heroin and Methamphetamine**

Among men exiting both prison and jail, those who had used both methamphetamine and heroin were more likely to be non-African American, have committed a violent crime and have experienced cognitive problems (Table 5). For men exiting prison, higher reported use of disengagement coping and having lived on the street before incarceration were also associated with having used both methamphetamine and heroin. For men exiting jail, strong trends were found for having been removed from home during childhood and a lower level of planning coping to be associated with dual use of methamphetamine and heroin.

## **DISCUSSION**

The period of reentry for homeless men on parole is punctuated with historical substance-related problems, as well as personal and familial reunification difficulties, and reintegration barriers. Our findings suggest that illicit drugs, such as methamphetamine and heroin are of major concern for populations exiting custody and being placed under community supervision; yet, most residential drug treatment (RDT) programs may not provide tailored

services based on specific types of drugs used. We found that among those exiting both jail and prison, depending on the pattern of methamphetamine and heroin use prior to their last incarceration, age, ethnicity, marital status, type of crime, cognitive difficulties, childhood familial closeness, having been removed from home during childhood, having lived on the street prior to incarceration, self-esteem and various aspects of coping and social support were related to use of these serious drugs.

Known as a highly addictive drug and one of the most common stimulants, methamphetamine is often used by homeless youth (Hudson & Nandy, 2012) and those with street involvement (Marshall et al., 2012). Our findings similarly indicate that younger ex-offenders exiting prisons and jails were more likely to have used methamphetamine in the absence of heroin; moreover, African Americans were less likely to have used methamphetamine alone when compared to other ethnic groups. Our study also revealed that homeless men who were exiting jails and self-reporting use of heroin at baseline were significantly more likely than their counterparts exiting prison to report having been removed from home before age 18, primarily due to problems with the law. The reasons for this are unclear; yet, this trend for higher risk youth coming out of jails is important for drug counselors to appreciate.

Our findings further indicate that for men exiting jails, there was an association between lower self-esteem and having used methamphetamine but not heroin. Some authors contend that there is a relationship between lower self-esteem and drug use (Hudson et al., 2009). Others have found that homeless adults with lower self-esteem were more likely to report greater use of negative coping and greater alcohol use (Stein, Dixon, & Nyamathi, 2008). For men exiting prison, positive social support was associated with lifetime methamphetamine use in the absence of heroin. This finding is important and points to the need to encourage healthy peer networks; in particular, peers may enable drug use and drug seeking. RDT sites need to focus on the importance of healthy relationships devoid of drug use.

Having used both heroin and methamphetamine was associated with violent crime in both jail and prison samples. Having used both drugs may be considered a dual risk, versus one drug alone, and may provide insight into higher risk behaviors of individuals who partake of both. While methamphetamine is considered a stimulant and speeds up body functions, eliciting aggressive tendencies, heroin is a downer and likely to elicit relaxation. In a study among methamphetamine (N=118), heroin users (N=161) and both (N=121), those using methamphetamine regularly were more likely to have committed a violent crime in the last 12 months when compared to heroin users (Darke, Torok, Kaye, Ross, & McKetin, 2010). However, after a violent act occurs, individuals may feel the need to relax; thus, using heroin may be a means to elicit calm, and can be used as a coping mechanism. Using both illicit drugs may be considered a dual risk, versus one drug alone, and may provide insight into higher risk behaviors of individuals who partake of both.

Cognitive problems were also a significant issue for those exiting jail and prison who had used use both methamphetamine and heroin. Methamphetamine use has been linked to prospective memory problems (Rendell, Mazur, & Henry, 2009), along with Parkinson's

disease (Callaghan, Cunningham, Sykes, & Kish, 2012). On the other hand, nerve involvement, such as transverse myelitis and peripheral nerve and muscle disorders may be outcomes of heroin addiction (Richter & Baden, 1969). For those exiting criminal institutions, these findings point to the need for more accurate health assessment, in an effort to manage health conditions and educate this population regarding the long-term effects of types of drugs used.

In our sample, coping did not play a major role in the final models; however, drug counselors may need to pay attention to disengagement coping among ex-prisoners and encourage more planning coping among ex-jail inmates due to relationships with dual use of methamphetamine and heroin. Disengagement form of coping may point to individuals whose reality and way of dealing with the world become very insular and awareness of social norms and right and wrong is impaired; thus increasing the likelihood of committing crimes that result in prison sentences. Awareness of an ex-offender's coping styles can inform interventions aimed at improving coping style and enhancing social engagement with positive role models. Moreover, there may be a need to focus on the nature of the positive social support networks of ex-prisoners as among this group, positive social support was found to be associated with lifetime methamphetamine use only.

Finally, coming from a very close family was associated with heroin use only among the jail sample. While these findings are unique and unclear of the justification for these findings, counselors may need to better understand drug use and other problems faced by these families.

## Conclusions

The US leads the world in terms of incarceration. The stratifying impact of the penal population on the larger society has prompted much debate on responding policies to those who are released from incarceration facilities. Homeless men on parole have unique challenges as they attempt to reintegrate into communities after exiting jails and prisons. Use of homogenous services by groups with differing needs may lead to unmet needs and subsequently increase the likelihood of recidivism. Our findings indicate that while there are many similarities for men exiting prisons and jails, there are some differences related to age, ethnicity, and types and patterns of drug use.

Without doubt, for both individuals exiting jails and prisons, therapeutic communities are an essential resource. However, for service providers, this study indicates that differences exist between the prisons and jail samples related to age, race/ethnicity, use of methamphetamine and heroin, gang membership, and correlates of use of these drugs singly and together. While providing temporary basic necessities, such as food and housing, drug treatment programs and needs-based case management is imperative to prevent further or ongoing homelessness and end the cycle of recidivism; it is equally important that when servicing this community, types of drugs used, and coping typology need to be taken into consideration. For practitioners, several recommendations need to be taken into account. First, upon intake, it is important that information obtained include age, race/ethnicity, use of methamphetamine and heroin, and gang membership and such information inform

targeted needed services. Second, therapeutic communities should institute programs which target these differences and provide adequate linkage and care as it relates to these differences. Upon development of these programs, future research is needed to test these models to determine cost effectiveness, efficacy, reduction of drug use and recidivism.

In our sample poly drug abusers differed from mono drug abusers in terms of age, race/ethnicity and coping patterns. Among this population, it still remains to be seen that patterns of lifetime drug use, selection trends of types of drugs used, and life stressors affect the choice to use one or more drugs. It may also be imperative to ask which drugs are used first and which kinds of acts are sandwiched between different drugs used. Since this study was unable to assess length of time participants served in jails or prisons, researchers also need to assess time incarcerated on predictors of drug choice. This information may explain how ex-offenders cope with criminality. Future research should seek to understand drug choice and patterns of criminality.

It is likewise important to assist homeless men on parole with learning different coping methods, avoiding drug triggers and obtaining resources for successful reintegration. In addition, it may be imperative for RDT sites to partner with nurses and provide comprehensive health assessments in order to address physical and mental health needs as they relate to chronic illicit drug use. Future research should focus on testing models which incorporate evidence-based strategies for preventing drug use, such as instituting Screening, Brief Intervention, and Referral to Treatment (SBIRT) in order to identify opportunities for early intervention among drug users.

This study identified differences among these prison and jail subgroups that can inform the design of comprehensive interventions focusing on specialized services, including coping (planning and disengagement), cognitive difficulties, violent behaviors and risk factors for drug relapse and recidivism or continued homelessness. However, without adequate funding streams, it is not possible for RDT facilities to develop such programs and provide targeted interventions for groups which have these differences. Thus, policy makers need to bridge research and implications for policy in order to improve outcomes for this population.

### Limitations

This study used a cross-sectional design, which does not allow for causal inferences. Findings are further limited to a convenience sample in Los Angeles and thus cannot be generalized to homeless paroled populations in other geographic areas. Further, the findings are confined to homeless men and cannot be generalized to other male parolees who are not homeless or to homeless women on parole in Los Angeles or elsewhere. Furthermore, this study was unable to assess length of time participants' served in jails and prisons which may have impacted study findings. Nevertheless, the study is important; in particular, California is home to thousands of incarcerated persons, many prisoners are homeless after discharge, drug involvement in crime and high recidivism are faced consistently across the country.

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**Table 1**

## Sample Characteristics

Measure	Discharge Location					
	Prison (n=260)		Jail (n=280)		Overall (N=540)	
	Mean	SD	Mean	SD	Mean	SD
<b>Age</b>	<b>41.3</b>	<b>10.1</b>	<b>38.8</b>	<b>10.7**</b>	<b>40.0</b>	<b>10.5</b>
<b>Education</b>	<b>11.6</b>	<b>1.7</b>	<b>11.4</b>	<b>1.6</b>	<b>11.5</b>	<b>1.6</b>
	N	%	N	%	N	%
Race/Ethnicity:				**		
African American	141	54.2	110	39.3	251	46.5
Latino	70	26.9	102	36.4	172	31.9
White	36	13.9	53	18.9	89	16.5
Other	14	5.4	15	5.4	29	5.4
Marital Status:						
Never Married	170	65.6	189	67.5	359	66.6
Married	20	7.7	23	8.2	43	8.0
Separated	14	5.4	23	8.2	37	6.9
Divorced	44	17.0	30	10.7	74	13.7
Other	11	4.3	15	5.4	26	4.8
Any Children	161	62.4	175	62.5	336	62.5
Lived on Street <sup>a</sup>	65	25.0	64	22.9	129	23.9
Fair/Poor Health <sup>b</sup>	63	24.4	75	26.9	138	25.7
Cognitive Problems <sup>c</sup>	97	37.3	108	38.6	205	38.0
Custody Level:						
1	98	37.8	114	41.0	212	39.3
2	80	30.9	81	29.1	161	29.8
3	53	20.5	59	21.2	112	20.7
4	28	10.8	24	8.6	52	9.6
Mother Treated for Substance Use	28	10.8	30	10.7	58	10.7
Father Treated for Substance Use	32	12.3	33	11.8	65	12.0
Ever in a Gang	127	49.0	155	55.4	282	52.2
Currently in a Gang	42	16.2	68	24.3*	110	20.4
Violent Crime <sup>d</sup>	184	70.8	191	68.2	375	69.4
<b>Childhood</b>						
Very Close Family <sup>e</sup>	106	40.8	122	43.6	228	42.2
Removed from Home <sup>f</sup>	139	53.5	172	61.4	311	57.6

<sup>a</sup> primary residence in the six months before most recent incarceration



*b* versus good/very good/excellent

*c* trouble understanding, concentrating or remembering in lifetime

*d* self-reported conviction of a violent crime in lifetime

*e* childhood family very close

*f* put in juvenile hall or other group care facility in childhood primarily because of trouble with the law

\*  $p < .05$  for chi-square test comparing prison and jail samples

\*\*  $p < .01$  for chi-square or t test comparing prison and jail samples

Table 2

Substance Use<sup>a</sup> (n = 540)

Measure	Recruited from			
	Prison (n=260)		Jail (n=280)	
	N	%	N	%
Substance				
Alcohol, Ever	239	92.3	255	92.1
Alcohol, 6 mos	202	77.7	215	76.8
Binge Drinking, Ever	129	49.8	131	47.3
Binge Drinking, 6 mos	103	39.6	109	38.9
Marijuana, ever	212	81.9	243	87.7
Marijuana, 6 mos	162	62.3	184	65.7
Crack, ever	164	63.3	172	62.1
Crack, 6 mos	114	43.8	97	34.6*
Cocaine, ever	147	56.8	162	58.5
Cocaine, 6 mos	76	29.2	62	22.1
Hallucinogens, Ever	110	42.5	127	45.9
Hallucinogens, 6 mos	39	15.0	27	9.6
Inhalents, Ever	38	14.7	56	20.2
Inhalents, 6 Mos	7	2.7	7	2.5
Methamphetamine, Ever	110	42.5	164	59.2***
Methamphetamine, 6 mos	81	31.2	128	45.7***
Methamphetamine Only <sup>b</sup> , Ever	57	21.9	76	27.1
Methamphetamine Only, 6 mos	59	22.7	99	35.4**
Heroin Only <sup>c</sup> , Ever	28	10.8	24	8.6
Heroin Only, 6 mos	25	9.6	20	7.1
Methamphetamine and Heroin, Ever	53	20.4	88	31.4**
Methamphetamine and Heroin, 6 mos	22	8.5	29	10.4

<sup>a</sup> Lifetime and six months before most recent incarceration

<sup>b</sup> Use of methamphetamine but not heroin

<sup>c</sup> Use of heroin but not methamphetamine

\* p < .05 for chi-square test comparing prison and jail samples

\*\* p < .01 for chi-square test comparing prison and jail samples

\*\*\* p < .001 for chi-square test comparing prison and jail samples

**Table 3**

Logistic Regression for Ever Used Methamphetamine but not Heroin

Variable	Discharged from Prison (n=260)			Discharged from Jail (n=280)		
	Beta	S.E.	p value	Beta	S.E.	p value
Age	-0.092	.02	.001	-0.050	.02	.002
African-American (vs. Other)	-0.978	.36	.006	-1.873	.41	.001
Positive <sup>a</sup> Social Support	0.154	.05	.004			
Self-Esteem <sup>b</sup>				-0.129	.04	.001
Removed from Parents <sup>c</sup>				-0.675	.32	.033
Mother Treated <sup>d</sup> for Substance Use				-1.222	.67	.067

<sup>a</sup> positive social support subscale from MOS study

<sup>b</sup> self-esteem as measured by Coopersmith instrument

<sup>c</sup> spent time in a group facility in childhood, primarily due to being in trouble with the law

<sup>d</sup> mother treated for alcohol and/or drug use

**Table 4**

Logistic Regression for Ever Used Heroin but not Methamphetamine

Variable	Discharged from Prison (n=260)			Discharged from Jail (n=280)		
	Beta	S.E.	p value	Beta	S.E.	p value
Age	0.094	.03	.001	0.113	.03	.001
Married/Divorced				1.445	.55	.009
Lived on Street <sup>a</sup>				1.008	.57	.079
Cognitive Problems				-1.623	.64	.011
Very Close Family				1.687	.59	.004
Removed from Parents				1.599	.65	.014

<sup>a</sup> primary residence in the six months before most recent incarceration

**Table 5**

## Logistic Regression for Ever Used Heroin and Methamphetamine

Variable	Discharged from Prison (n=260)			Discharged from Jail (n=280)		
	Beta	S.E.	p value	Beta	S.E.	p value
African-American (vs. other)	-1.727	.39	.001	-2.026	.37	.001
Violence <sup>a</sup>	1.541	.57	.007	0.764	.34	.025
Cognitive Problems <sup>b</sup>	0.697	.35	.047	0.910	.29	.002
Disengagement <sup>c</sup> Coping – high	0.751	.36	.035			
Lived on Street <sup>d</sup>	0.782	.39	.044			
Planning <sup>e</sup> Coping – high				-0.535	.30	.070
Ever in a Gang				-0.580	.30	.055

<sup>a</sup> convicted of a violent crime in lifetime

<sup>b</sup> trouble understanding, concentrating or remembering in lifetime

<sup>c</sup> upper median on Brief Carver Disengagement Coping subscale

<sup>d</sup> primary residence in the six months before most recent incarceration

<sup>e</sup> upper median on Brief Carver Planning Coping subscale