Title

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Journal

Criminal Justice and Behavior, 45(7)

ISSN

0093-8548

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Publication Date

2018-07-01

DOI

10.1177/0093854818771111

Peer reviewed

HHS Public Access

Author manuscript

Crim Justice Behav. Author manuscript; available in PMC 2019 July 01.

Published in final edited form as:

Crim Justice Behav. 2018 July ; 45(7): 969–983. doi:10.1177/0093854818771111.

Correlates of Treatment Readiness among Formerly Incarcerated Homeless Women

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Abstract

Treatment readiness is a key predictor of drug treatment completion, rearrest, and recidivism during community reentry; however, limited data exists among homeless, female ex-offenders (HFOs). The purpose of this study was to present baseline data from a randomized controlled trial of 130 HFOs who had been released from jail or prison. Over half (60.8%) of HFOs had a treatment readiness score of ≥ 40 (n = 79, μ = 40.2, SD = 8.72). Bivariate analyses revealed that methamphetamine use, psychological well-being, and high emotional support were positively associated with treatment readiness. On the other hand, depressive symptomology and depression/anxiety scores were negatively associated with the treatment readiness score. Multiple linear regression revealed that depressive symptomology was negatively associated with treatment readiness (β = −0.377; p = .001). Further analyses revealed that the effect of emotional support on treatment readiness was mediated by depressive symptomatology.

Keywords

Treatment readiness; homeless; women; substance use; incarceration; reentry

INTRODUCTION

In the past decade, there have been an increasing number of female offenders in the United States (US) criminal justice system (Ahmed, Angel, Martell, Pyne, & Keenan, 2016). In total, nearly 6.7 million adults are under correctional supervision and over 1.25 million are women (Kaeble & Glaze, 2016). Female offenders with a history of homelessness are at high risk for drug use and relapse (Nyamathi, Srivastava, et al., 2016). which can lead to ongoing arrests, convictions, and incarceration.

Treatment readiness is multidimensional concept encompassing both internal (person) and external (context) elements (Ward, Day, Howells, Birgden, 2004). To increase the likelihood of successful treatment completion, individuals need to be treatment ready, motivated, and engaged with the treatment program components (Mossière & Serin, 2014; Ward et al., 2004). The importance of treatment readiness cannot be underestimated; for many professionals working with criminal justice-involved women, it is challenging to work with

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those who lack motivation, are non-adherent, or are treatment-resistant (Wong, Gordon, & Gu, 2007).

Being able to define and operationalize treatment readiness can help to focus and inform academicians and providers on areas of need to mitigate recidivism. However, there is a lack of consensus regarding measuring treatment readiness due to the lack of a solid theoretical model and the fact that models focus on different key constructs which ultimately influence the measurement (Mossière & Serin, 2014).

Application of Comprehensive Health Seeking and Coping Paradigm (CHSCP) to Treatment Readiness among Formerly Incarcerated, Homeless Women during Reentry

Treatment readiness among formerly incarcerated, homeless women during reentry is not well understood and will be explored using an empirically tested model known as the Comprehensive Health Seeking and Coping Paradigm (CHSCP; Nyamathi, 1989). Developed nearly 25 years ago, the CHSCP model (Nyamathi, 1989) is based on the Lazarus Schema of Coping and Adaptation (Lazarus & Folkman, 1984) and the Schlotfeldt Health Seeking and Coping Paradigm (Schlotfeldt, 1981). The CHSCP has been well utilized by the authors for decades and has been tested with homeless populations who have participated in intervention programs designed to enhance HAV/HBV vaccination treatment compliance (Nyamathi et al., 2015), and reduce drug and alcohol use (Nyamathi, Zhang, et al., 2016).

Based on the CHSCP (Nyamathi, 1989), a number of factors may be considered as they impact treatment readiness. In particular, these include sociodemographic, social, behavioral, and psychological factors. Sociodemographic factors included age, race/ethnicity, education, and history of incarceration. Social factors encompassed social support from family, friends, and health care professionals; all of which may provide encouragement for treatment continuation (Litt, Kadden, Tennen, & Kabela-Cormier, 2016) as well as empathy, and strengthening positive coping strategies (Fitzpatrick, 2016). Behavioral and psychological factors included mental health status and substance use. These factors are proposed to impact treatment readiness.

Other theoretical models and frameworks that relate to treatment readiness include the Transtheoretical Stages of Behavior Change (TTM; Prochaska & DiClemente, 1982) and the Multifactor Offender Readiness Model (MORM) (Mossière & Serin, 2014). While the TTM benefits include its stepwise change model (Prochaska & DiClemente, 1982), change does not occur in a linear process and may not be flexible to change (Drieschner, Lammers & van der Staak, 2004). The MORM is another framework which came later and may be helpful in understanding key conditions for treatment engagement readiness, as they include both the internal (i.e., cognitive, affective, volitional, behavioral, and identity) and external (i.e., circumstances, location, opportunity, resources, support, program, and timing) readiness conditions that may influence program engagement, participation, and subsequent attrition (Ward et al., 2004).

The CHSCP, a multidimensional framework, has some similarities with these models in that they broadly consider factors which influence behavior change which may include internal components and health goals of the client. However, key differences between the CHSCP as

compared with other models is that nursing goals and strategies are integrated to improve immediate and long-term health outcomes.

Challenges Experienced by Justice-Involved Women during Reentry

Justice-involved women face a number of individual-level, program-level, and systems-level challenges during reentry. Prior to this current exploratory analysis, formative work utilized qualitative methods to understand challenges women experienced during reentry ($N = 14$) (Salem, Nyamathi, Idemundia, Slaughter, & Ames, 2013). Formerly incarcerated, homeless women shared healthcare challenges, knowledge deficits, and barriers in moving forward in life (Salem et al., 2013). Healthcare challenges include inability to obtain mental and oral health care, and women's healthcare including prenatal care and sexually transmitted infection (STI) testing (i.e., chlamydia and HIV; Salem et al., 2013). Women also shared the difficulties related to not being able to find gainful employment due to having a felony record (Salem et al., 2013).

Building upon this study, another qualitative study was conducted to understand perspectives of formerly incarcerated, homeless women residing in an RDT program (Nyamathi, Srivastava, et al., 2016). These women shared several factors associated with first drug use which included curiosity, negative life circumstances, and personal choices (Nyamathi, Srivastava, et al., 2016). Relatedly, some factors involved in reported relapse included desire to numb pain and challenging life experiences; other women discussed the lack of resources (Nyamathi, Srivastava, et al., 2016). Informed by previous research, the current study delves deeper into challenges experienced by formerly incarcerated, homeless women during reentry, and how these factors influence treatment readiness and contribute to recidivism.

Contributing Factors Associated with Treatment Readiness

Both intrinsic and extrinsic factors may predict successful outcomes in substance abuse treatment adherence and retention (Burlew, Montgomery, Kosinski, & Forcehimes, 2013). For women who successfully enter RDT, lack of treatment readiness may negate any benefits of receiving drug treatment or result in early departure from RDT or outpatient drug treatment program. Readiness to make changes in one's life after experiencing incarceration or drug treatment is closely related to treatment readiness. Among male and female probationers with substance use problems, those who showed a higher tendency to attend drug treatment sessions were African-Americans and Latinos, were older, had lived primarily in an institution in the past 30 days, and were unemployed (Roque & Lurigio, 2009). In the CHSCP model, these individual-level variables such as race/ethnicity and age are taken into account.

In a young population of drug users, characteristics associated with readiness to change included self-efficacy, problem recognition, realistic understanding of the negative consequences of drug use, and motivation to achieve promising goals (Becan, Knight, Crawley, Joe, & Flynn, 2015; Carroll, Ashman, Bower, & Hemingway, 2013). For homeless women in particular, participating in a 12-step substance use program, and having experienced negative sequelae of using substances was a significant motivator to reduce substance use (Upshur et al., 2014). Among individuals going through outpatient alcohol

and drug treatment, greater attendance in group sessions was correlated with higher readiness to change (Zemore, 2012). In the CHSCP model, drug and alcohol use, along with treatment readiness are applied.

While research that directly identifies factors that contribute to treatment readiness in female offenders is severely lacking, it is thought that gender differences in treatment program completion may stem from gender norms (Fiorentine, Anglin, Gil-Rivas, & Taylor, 1997). More specifically, these authors explain the reason women in RDT participate more in group sessions as compared to their male counterparts may be based on gender preferences for greater help-seeking, strength, and control than men in drug treatment.

For women, predictors of failure to complete substance use treatment include having a low employment score and a drug dependence diagnosis, while predictors for men included having psychiatric diagnoses, being a Medicaid recipient, and why they entered treatment (Green, Polen, Dickinson, Lynch, & Bennett, 2002). In another study, women with lower self-esteem, poor coping strategies, and those who lacked social and financial support, and access to services experienced more challenges with recovery from drugs (Yang et al., 2015) than did those without these characteristics. In the CHSCP model, self-esteem, social support, and coping are considered as variables that might impact outcomes.

Psychological factors that may affect treatment readiness include depression. An association exists in the literature among depression and hopelessness (Hendriks et al., 2014) and avoidance behaviors (Moulds, Kandris, Starr, & Wong, 2007; Ottenbreit, Dobson, & Quigley, 2014). Conversely, decrease in drug use may also be associated decrease in depression (Jaffe et al., 2007).

Finally, another important concept to consider is self-efficacy, defined as the belief in the ability to make desired changes (Bandura, 1977; Kadden & Litt, 2011) which is a related, but distinct concept from treatment readiness. Self-efficacy may be positively related to treatment readiness and can affect substance use and recidivism. In particular, self-efficacy has been shown to predict alcohol and drugs consumption (Kadden & Litt, 2011).

Purpose

Given the relationship between treatment readiness prior to program entrance and drop-out, it is important to assess formerly incarcerated homeless women's treatment readiness and its impact on drug and alcohol abstinence. Few investigators have assessed treatment readiness within this vulnerable population. Therefore, the purpose of this study is to assess correlates of treatment readiness among formerly incarcerated, homeless women to integrate these findings into a future intervention.

METHODS

Sampling Procedure

This cross-sectional study was an analysis of baseline data from a clinical trial in which 130 homeless female offenders (HFOs) were randomized into one of two behavioral interventions. Participants were recruited from four community-based sites in Los Angeles

(LA) and Pomona, California. Three were RDT facilities and one was a homeless drop-in site. The RDT facilities were structured therapeutic communities which focused on reducing substance use and preparing residents for reentry. The residents generally stayed up to six months and many voluntarily selected the RDT than a longer period of incarceration. The three homeless facilities were focused on addressing basic needs for homeless women and offered services that included meals, showers, social services, and case management.

Eligible women included those who were: a) 18–65 years of age; b) homeless when released from jails or prisons; and c) had a history of drug or alcohol use. Exclusion criteria included: a) speaking languages other than English; or b) exhibiting active psychotic symptoms. Baseline data were collected from February 2015 to May 2016. The majority of the women from the drug treatment programs had been enrolled in the drug treatment programs for the 2–3 months before data collection was conducted. Study participation was completely voluntary. In total, 176 HFOs were screened; 46 were ineligible based on screening criteria of age, history of drug use or time since paroled; and one participant's data was not usable. The total sample was 130 participants. The study was approved by the UCLA Institutional Human Subjects Protection Committee.

Participant Characteristics

Table 1 depicts the baseline characteristics of the 130 HFOs. The mean age was 38.9 (SD = 11.4) years. The majority were Black or Latino (80.8%); 70.0% had 12 years or higher levels of education, and the majority (83.1%) were unemployed. Over half (54.6%) of participants were incarcerated in prison (vs. jail only). Over a quarter (26.8%) was incarcerated in jail or prison five or more times. The mean score for treatment readiness was 40.24 (SD = 8.72) and over half (60.8%) of HFOs scored ≥ 40 (n = 79, μ = 40.2, SD = 8.72).

Table 2 depicts self-reported substance use. The most commonly reported substances used during the six months prior to the interview were alcohol (41.5%), marijuana (36.2%), and methamphetamine (31.5%). Less than a quarter (20.8%) reported previous six-month history of crack and cocaine use (17.7%), respectively.

Study Procedures

Potential participants were informed of the study by approved posted flyers. After weekly informational sessions were delivered by the trained research staff, interested persons met individually with the research staff to receive detailed information in a private location about the study. Written informed consent was obtained for interested residents to allow screening for eligibility by means of a two-minute survey. Among those eligible, a second informed consent was provided, followed by the administration of a 45-minute baseline questionnaire. Participants were offered short breaks during the questionnaire administration to reduce respondent fatigue. Research staff who recruited participants and administered questionnaires were not involved in providing the intervention. Remuneration was provided in the amount of $18 for the initial screening and the baseline survey.

Based upon responses to the questionnaire, participants were randomized into one of two groups (i.e., the DBT or HP program). A computer program performed URN Randomization (UR) to balance participant characteristics (e.g., age, risk of recidivism) which were

expected to influence outcomes of the two programs. Based on group assignment, participants were provided a part 2 informed consent for either program. Thereafter, informed consent was obtained and participants were given an appointment for a starting period which continued over a six-week period. Participants randomized to either program were assigned a peer coach and asked to meet once a week for up to six weeks.

The DBT program group sessions were 45 minutes and provided by a nurse and peer coach. Participants were also invited to meet one-on-one with the nurse or peer coach for 20 minutes to discuss content related to the group program. Participants assigned to the HP group attended up to 20-minute group sessions over a six-week period provided by a separate nurse or PC. The HP participants also met one-on-one with a research staff RN or PC for up to 20 minutes.

Measures

Guided by the CHSCP, variables were selected which were hypothesized to influence treatment readiness. Sociodemographic questions elicited information on age, race/ethnicity, employment, and education status in the six months before the most recent incarceration. Incarceration history was assessed based on being on parole or probation, number of times in prison or jail, and time in months since last incarceration.

Independent Variables

Substance use was measured within the last 6 months prior to the last incarceration using the Texas Christian University (TCU) Drug History form (Institute of Behavioral Research, 2007). Drug use responses were coded as “yes” or ”no” as to whether the respondent reported use of marijuana, crack, methamphetamine, amphetamine, and tranquilizers. Next, **alcohol use** within the last six months prior to their last incarceration was assessed using the TCU Drug History form (Institute of Behavioral Research, 2007). Any alcohol use was assessed using “yes” or “no” response.

Depressive symptoms were assessed using a 10-item Center for Epidemiological Studies Depression (CES-D) scale, short version (Andresen, Malmgren, Carter, & Patrick, 1994). This scale measured the frequency of depressive symptoms in the past week on a 4-point response scale from “rarely or none of the time (less than 1 day), some of the time (3–4 days), occasionally or a moderate amount of the time (3–4 days), and most of the time (5–7 days)” and were scored from 0 to 3, respectively. Scores were summed and ranged from 0 – 30 with two items in the scale being reverse coded. A score of 10 or greater was considered to reflect depressive symptomology. In this study sample, depressive symptomology had an internal consistency reliability coefficient of .82.

Social support was assessed using four subscales from the 19-item Medical Outcomes Study (MOS) Social Support Survey which assessed: Emotional/Informational support (eight items, α = .96); Tangible support (four items, α = .92); Positive support (three items, α = .94); and Affectionate support (three items, α = .91) (Sherbourne & Stewart, 1991). Items had a 5-point Likert scale response options ranging from “none of the time” to “all of the time”. A higher score indicates more support.

Mental Health Index (MHI) was assessed using a 5-item index (Stewart, Hays, & Ware, 1988). This index measured depression, anxiety, and psychologic well-being during the past month. Responses were scored on a 6-point scale from “all of the time” to “none of the time” with numeric score ranged from 1 to 6, respectively. A sample question included “How often, during the past month, have you felt so down in the dumps that nothing could cheer you up?” In this study, the cronbach’s α was .87. Item scores were summed after reverse coding the score on some of the questions and then linearly transformed to a 0 to 100 range, with higher values indicated better emotional well-being.

Dependent Variable

Treatment readiness was assessed using a 8-item TCU CJ Client Evaluation of Self and Treatment (CJ CEST), using a five-point Likert scale, which measured current treatment readiness (Joe, Broome, Rowan-Szal, & Simpson, 2002; Institute of Behavioral Research, 2005). A sample item included “This treatment program can really help you.” Treatment readiness has an internal consistency reliability coefficient of .75 (Joe et al., 2002). Answers to items were averaged and then multiplied by 10. Scores ranged from 10 to 50, with scores above 30 (higher scored indicate stronger agreement) and those below 30 indicative of stronger treatment readiness disagreement. In this sample, treatment readiness had an internal consistency reliability coefficient of .80.

Data Analysis

Bivariate associations between participant characteristics and the treatment readiness score were assessed using one-way analysis of variance for categorical variables and the Pearson’s correlation coefficient for continuous variables. Multiple linear regression models were fitted with treatment readiness score as the dependent variable. Independent variables were selected based on our theoretical framework, regardless of bivariate correlations, including variables for mental health, drug use, and social support. The base model included age, race/ethnicity, and time since last exit from jail or prison as independent variables. Employment status was not considered for inclusion in the model as very few of our participants were employed.

Constructs corresponding to mental health (Depressive Symptomology and Mental Health Index), drug use, and social support were sequentially added to the base model. Linearity and homoscedasticity assumptions were assessed by visually examining plots of model residuals versus predicted values (Afifi, May, & Clark, 2003). Normal quantile plots were used to assess normality of the residuals. Three observations from the final model were identified as influential observations based on Cook’s distance estimates. Removing these observations did not change the conclusions and, thus, they were retained in the analysis dataset.

RESULTS

Bivariate Analyses

Table 3 depicts bivariate analysis of factors associated with treatment readiness scores. Significant correlates of treatment readiness score were emotional support ($p = .049$) and

mental health ($p = .027$). A significant, negative relationship was found between treatment readiness and depressive symptomology ($p = .001$).

Multiple Linear Regression

Table 4 depicts results of multiple linear regression analysis. In Model 1 (base model), no evidence of correlation was found between treatment readiness and age, racial/ethnic categories, or time since last exit from jail or prison. Mental health and depressive symptomology were initially considered for Model 2, but due to high levels of multicollinearity between these two variables (Pearson's $r = -.663$), mental health index was dropped from the model. A statistically significant negative correlation was found between treatment readiness and depressive symptomology when added to Model 1 ($\beta = 0.373$; $p = .002$; Model 2). Depressive symptomology remained negatively correlated with treatment readiness after controlling for any drug use (Model 3) and any drug use and emotional support (Model 4).

No independent correlation was found between treatment readiness and any drug use or emotional support after controlling for depressive symptomology. Inserting variables for the use of each specific drug into the model instead of the composite "any drug use" variable did not change our findings.

Mediational Analysis

In post hoc analysis, we tested the hypothesis that social support may be associated with reduced depressive symptomology and indirectly affect treatment readiness. We therefore performed mediation analysis to explore the indirect effect of emotional support on treatment readiness through depressive symptomatology (i.e., emotional support increases treatment readiness by reducing depression). Mediation analysis demonstrated that: 1) emotional support score was associated with a decrease in depressive symptomology ($\beta = -1.440$; $p = .004$); 2) emotional support score was associated with an increase in the treatment readiness score ($\beta = 1.351$; $p = .049$); and 3) depressive symptomology remained negatively associated with the treatment readiness score ($\beta = -0.339$; $p = .005$) in the regression model after controlling for the emotional support score ($\beta = 0.862$; $p = .209$) (Baron & Kenny, 1986). The reduced β for the emotional support score in model 3 suggested that 36% of the total effect of the emotional support score on the treatment readiness score was through an indirect effect by depressive symptomology.

DISCUSSION

This cross-sectional study found a relatively high level of treatment readiness among HFOs exiting jails and prisons, many of whom were enrolled in a RDT program. Our findings revealed that the treatment readiness score was high in our population and that depressive symptomatology was significantly negatively correlated with treatment readiness. In the bivariate model, factors associated with treatment readiness were methamphetamine use, psychological well-being, and emotional support. These factors were further supported by the CHSCP guiding the study (Nyamathi, 1989). Insight gained from our data can assist in the formulation of theoretically-guided treatment approaches aimed at addressing the

psychosocial challenges experienced by HFOs. Such tailored approaches may be tested for impact on increasing this especially vulnerable group's readiness to commit to substance abuse treatment.

The finding that depressive symptomatology was independently associated with treatment readiness is noteworthy as half of all participants reported scores of high levels of depressive symptomatology. This finding is also consistent with the theoretical premise and literature demonstrating a higher prevalence of depression among both homeless individuals (Lebrun-Harris et al., 2013; Strehlau, Torchalla, Kathy, Schuetz, & Krausz, 2012) and female parolees (Bloom & Covington, 2008). Substandard living conditions as well as resource scarcity associated with homelessness may make HFOs more susceptible to depression than their housed counterparts. However, more research is needed to examine housing support interventions that may begin shortly after HFOs enter their communities. In fact, there is a critical need for mental health screening, treatment, and referral into care to increase treatment readiness in this population during reentry.

The proclivity of depressed persons to avoid fearful and/or challenging situations, such as getting off drugs, may potentially contribute to low treatment readiness. Furthermore, for homeless women who have had a recent history of incarceration, being faced with many barriers to improving their life may further promote a feeling of hopelessness and use of avoidant behaviors.

Our mediation analysis revealed that depression secondary to poor emotional support was negatively associated with treatment readiness. Unstable residence, inconsistent means of communication, higher prevalence of trauma, and family discordance and separation among the homeless (Narayan et al., 2016) and incarcerated (Messina & Grella, 2006), may contribute to perceived low emotional support, subsequent depressive symptomatology, and lack of readiness to fully engage in treatment.

In our study, high emotional support scores revealed a strong correlation with treatment readiness. This is consistent with findings among a community sample (N = 193) comprised primarily of women with elevated depressive symptoms, in which fewer and less satisfying social supports correlated strongly with higher avoidance and rumination, as well as greater social and work/school impairment (Kanter, Rusch, Busch, & Sedivy, 2009). Social support is often lacking in the lives of HFOs who experience ostracism from their communities and whose familial relationships are often conflict-ridden. Future interventions should consider methods of bolstering emotional support and reducing depression for HFOs to enhance readiness to commit to drug treatment programs.

In bivariate analysis, high scores on psychological well-being were correlated with treatment readiness. Mental illness poses a particular challenge to readiness for and pursuit of behavioral changes. Mental illness disorders characterized by lack of insight and poor reality testing may disrupt one's cognitive abilities to identify a need for change, conceptualize strategies for effecting change, and sustain change-making behaviors. For HFOs with mental illness, managing symptoms may take precedence over or need to be co-occurring with drug treatment. Alternatively, as substance abuse may ameliorate the distress of mental illness,

thus compromising treatment readiness, immediate screening and treatment is critical as the women enter drug treatment programs.

Drug treatment programs targeted to female offenders have demonstrated effectiveness in reducing substance use (Hall, Prendergast, Wellisch, Patten, & Cao, 2004; Pelissier et al., 2001; Sacks, McKendrick, & Hamilton, 2012). However, when there is a lack of readiness, HFOs may compromise their chances of remission and recovery. Substance use is a public health epidemic, with profound social, economic, and health consequences for individuals and society at large (Degenhardt & Hall, 2012). Our findings highlight the fact that simply improving access to RDT programs is likely insufficient, and that enhancing treatment readiness may better equip this population with a greater chance of recovery.

We also found a negative association between depression and treatment readiness among HFOs. Based on our findings, focused interventions to address depressive symptoms with further assessment and screening may improve treatment success. Further, it is possible that the discontinuity of treatment between institutions and reentry may influence mental health seeking (Wang et al., 2010). One solution-oriented approach is to initiate a transitions clinic (Wang et al., 2010) which can help address depressive symptoms utilizing mindfulness-based, cognitive-behavioral therapy (MBCBT) (Chiesa, Mandelli, & Serretti, 2012; Shawyer, Enticott, Ozmen, Inder, & Meadows, 2016; Teasdale et al., 2000). However, depressive symptoms need to be understood within the cultural and ethnic lens of this population. Formative work is needed to fully understand the viewpoints of depression and strategies to deal with depression, establishing linkage into care, and improve emotional support which could ultimately improve treatment success and community reentry.

Study Limitations

Several limitations are important to discuss which include the following: first, our cross-sectional study design precludes causal inferences between dependent and independent variables; however, it seems more likely that depression affects treatment readiness than the reverse. Second, the results of the meditational analysis should be interpreted cautiously given the cross-sectional study design. Third, the possible attenuation of correlation due to scaling is important to mention. Likewise, while our findings are suggestive of mediation, longitudinal studies are needed to elucidate this relationship. Additionally, this sample is focused solely on homeless women involved in the criminal justice system; thus, this focus may result in distinct social and occupational barriers compared to male offenders or female non-offending counterparts. Last, the small sample size and focus on western United States may further limit the generalizability of our data to other populations is limited.

Conclusions

In conclusion, we found a negative association between depression and treatment readiness among HFOs. Based on our findings, focused interventions to address depressive symptoms with further assessment and screening may improve treatment success. Further, it is possible that the discontinuity of treatment between institutions and reentry may influence mental health seeking (Wang et al., 2010). One solution-oriented approach is to initiate a transitions clinic (Wang et al., 2010) which can help address depressive symptoms utilizing

mindfulness-based, cognitive-behavioral therapy (MBCBT) (Chiesa, Mandelli, & Serretti, 2012; Shawyer, Enticott, Ozmen, Inder, & Meadows, 2016; Teasdale et al., 2000). However, depressive symptoms need to be understood within the cultural and ethnic lens of this population. Formative work is needed to fully understand the viewpoints of depression and strategies to deal with depression, establishing linkage into care, and improve emotional support which could ultimately improve treatment success and community reentry. Insight gained from our data can assist in the formulation of tailored and targeted treatment approaches aimed at addressing the psychosocial challenges experienced by HFOs.

Acknowledgments

This study is supported by the National Institute on Drug Abuse (NIDA) through Grant R345R34DA035409; NIAID through Grant K01AI118559; and the National Center for Advancing Translational Sciences (NCATS), National Institutes of Health (NIH), through Grant UL1TR001881 (Harris et al., 2009).

Biographies

Adeline M. Nyamathi is the founding dean and distinguished professor at Sue & Bill Gross School of Nursing, UC Irvine. Dr. Nyamathi has led a team of multidisciplinary investigators as Principal Investigator of nine NIH-funded RO1s, as well as a number of other NIH grants, funded by NIDA, NIAAA, and NICHD. She has over 30 years of experience implementing community-based participatory research (CBPR) among disenfranchised and hidden populations.

Benissa E. Salem is an adjunct assistant professor at UCLA School of Nursing. Her research focuses on reduction of drug use and risky behaviors among aging homeless at risk for HIV and other infectious diseases.

Maria Ekstrand is a professor at UCSD School of Medicine. She has expertise in clinical psychology, intervention development, and is a co-investigator with Dr. Nyamathi on this study.

Kartik Yadav is a research director at UC Irvine. He was responsible for coordinating the study.

Yen Le is a research nurse at UCLA. She was involved in providing the intervention.

Tanya Oleskowicz was a former nursing student at UCLA and was involved in writing the introduction to the paper.

Sanghyuk S. Shin is Assistant Professor at UC Irvine Sue & Bill Gross School of Nursing. He has expertise in epidemiology and biostatistics.

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Table 1

Sociodemographic Characteristics of Sample ($N = 130$)

	Mean (*SD*)	**Range**
Variable		
Age in years	38.9 (11.4)	19 – 64
Treatment Readiness	40–24 (8.72)	11.25 – 50
	N	*%*
Race/Ethnicity		
White	18	13.8%
Black	53	40.8%
Latino	52	40.0%
Other	7	5.4%
Employment status		
Unemployed	108	83.1%
Employed	22	16.9%
Education		
< 12 years	39	30.0%
≥ 12 years or GED	53	40.8%
Some college/Vocational	28	21.5%
College Graduate	10	7.7%
Recruitment site		
Residential drug treatment	109	83.8%
Homeless shelter	21	16.2%
Currently on parole		
No	116	89.2%
Yes	14	10.8%
Number of times in prison*		
One Time	28	39.4%
2–4 Times	24	23.8%
5 or More Times	19	26.8%

Table 2

Behavioral, Social and Emotional Factors of Sample ($N = 130$)

	N	*%*
Substance Use		
Crack use, past 6 months	27	20.8%
Cocaine use, past 6 months	23	17.7%
Heroin use, past 6 months	8	6.2%
Methamphetamine use, past 6 months	41	31.5%
Alcohol use, past 6 months	54	41.5%
Social Support		
Emotional/Informational support	3.44 (1.06)	1 – 5
Tangible support	3.41 (1.12)	1 – 5
Affectionate support	3.42 (1.22)	1 – 5
Positive Social Interaction	3.49 (1.34)	1 – 5
Mental Health Index (MHI)	3.47 (1.21)	1 – 5
CES-D Depressive Symptomatology	67.82 (22.77)	8 – 100
Depression (CES-D ≥10)	58	44.6%

Table 3

Factors Associated With Treatment Readiness Score in Bivariate Analysis ($N = 130$)

	Mean (*SD*)	Pearson's *r*	*p*
Age in years		−.083	.349
Race/Ethnicity			.409
White	38.75 (10.83)		
Black	39.62 (8.14)		
Latino	40.77 (8.91)		
Other	44.82 (4.3)		
Education			
< 12 years	40.24 (9.31)		.766
12 years or GED	40.18 (8.17)		
Some college or Vocational school	39.42 (9.67)		
College graduate	42.88 (6.95)		
Months since last prison/jail exit		−.108	.223
Recruitment site			
Residential drug treatment	40.55 (8.79)		.356
Homeless shelter	38.62 (8.38)		
Alcohol use, past 6 months			
No	39.75 (8.92)		.453
Yes	40.92 (8.47)		
Marijuana use, past 6 months			
No	39.65 (9.22)		.311
Yes	41.27 (7.76)		
Crack use, past 6 months			
No	40.27 (8.84)		.933
Yes	40.11 (8.44)		
Cocaine use, past 6 months			
No	39.76 (8.84)		.178
Yes	42.47 (7.94)		
Heroin use, past 6 months			
No	40.11 (8.85)		.516
Yes	42.19 (6.71)		
Methamphetamine use, past 6 months			
No	39.46 (8.33)		.133
Yes	41.93 (9.4)		
MOS Overall Support		.096	.279
Emotional Support		.173	.049
Tangible Support		.03	.733
Affectionate Support		.054	.544
Depressive Symptomology		−.287	.001
Depressive Symptomology ≥ 10			

	Mean (*SD*)	Pearson's *r*	*p*
No	41.95 (8.23)		.012
Yes	38.11 (8.92)		
Mental Health Index		.220	.027

Table 4

Multiple Linear Regression of Treatment Readiness (N = 130)

	Model 1		Model 2		Model 3		Model 4	
Variable	***β***	***p***	***β***	***p***	***B***	***p***	***β***	***p***
Age	−0.017	.832	−0.039	.623	−0.038	.630	−0.032	.688
Race/Ethnicity (Reference: White)								
Black	1.243	.613	1.906	.425	1.868	.439	1.733	.474
Latina	1.894	.435	1.668	.477	1.660	.481	1.445	.542
Other	5.793	.143	4.400	.253	4.379	.257	4.166	.283
Months since last prison/jail exit	−0.557	.654	−0.286	.812	−0.299	.805	−0.398	.744
Depressive Symptomology			−0.373	.002	−0.374	.002	−0.346	.007
Any drug use, past 6 months					0.217	.889	0.156	.920
Emotional Support Score							0.596	.410
Model statistics								
Adjusted R-squared:	.015		.0510		.043		.041	
F statistic	0.611 (*df* 5, 123)		2.147 (*df* 6, 122)		1.829 (*df* 7, 121)		1.681 (*df* 8, 120)	
Model *p*	.692		.053		.088		.110	