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Motivation Among Ex-Offenders Exiting Treatment: The Role of Abstinence Self-Efficacy

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Abstract

The relationships between motivation, treatment readiness, and abstinence self-efficacy were examined among a sample of ex-offenders exiting inpatient treatment for substance use disorders. Hierarchical linear regression was conducted to examine changes in participants' motivation levels in relation to abstinence self-efficacy beyond what would be expected from treatment readiness and substance use. Abstinence self-efficacy predicted significant decreases in motivation whereas treatment readiness and substance use predicted significant increases. However, there was not a significant relationship between abstinence self-efficacy and treatment readiness. Findings suggest that motivation for change among persons with substance use disorders is related to their self-efficacy for ongoing abstinence.

Keywords

motivation; treatment readiness; abstinence self-efficacy; substance use; ex-offenders

Motivation is an important catalyst for persons recovering from substance use disorders, and it is conceptualized as referring to the personal considerations, commitments, reasons, and intentions that move individuals to perform certain behaviors (DiClemente, Schlundt, & Gemmell, 2004). High levels of motivation upon entering therapeutic community treatment have been related to improved treatment outcomes including decreased incarceration (De Leon, Melnick, Cao, & Wexler, 2006) and increased treatment retention (Soyez, De Leon,

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Broekaert, & Rosseel, 2006). However, motivation for changing behaviors associated with substance use is not the same as treatment readiness.

Treatment readiness among persons with substance use disorders is conceptualized as one's perception of the need for professional help in order to facilitate such change (De Leon & Jainchill, 1986; DiClemente et al., 2004), and research among persons with substance use disorders receiving therapeutic community treatment has shown motivation and treatment readiness as being separate factors related to treatment retention (De Leon, Melnick, Kressel, & Jainchill, 1994; De Leon, Melnick, & Kressel, 1997). Being motivated to change differs from having a readiness for treatment in that the former consists of intentional behavior toward change (DiClemente et al.) whereas the latter involves a willingness to accept professional help (De Leon & Jainchill, 1986).

It is plausible to suspect motivation and treatment readiness are intrapersonal resources (i.e., resources occurring within the individual's mind) related to recovery outcomes other than remaining in treatment. However, there is a gap in the literature as to whether motivation and treatment readiness are separate factors related to recovery outcomes among persons receiving treatment for substance use disorders who are not in therapeutic communities.

Although many investigations have been grounded in the Transtheoretical Model of change (DiClemente & Prochaska, 1998; Prochaska & DiClemente, 1984), motivation for recovery from substance use disorders has been conceptualized in various ways. Some researchers have assessed readiness to change (Abar, Baumann, Roenbaum, Boyer, & Boudreaux, 2012, Burlew, Montgomery, Kosinski, & Forcehimes, 2013), readiness to change and readiness to seek help (Freyer-Adam et al., 2009), and treatment resistance apart from treatment readiness (Longshore & Teruya, 2006) in examining motivation for recovery. However, Zenmore and Ajzen (2014) contend most instruments used in assessing motivation essentially measure treatment readiness, and little is known regarding the extent that both motivation and treatment readiness are related to other important outcomes aside from treatment retention and re-incarceration. Furthermore, there is reason to believe motivation and treatment readiness are related to other intrapersonal resources associated with recovery, such as abstinence self-efficacy.

Abstinence self-efficacy is an intrapersonal resource that has been conceptualized the extent one is confident in effectively engaging in behaviors to maintain abstinence, based on Bandura's (1997) cognitive-behavior self-efficacy theory. Abstinence self-efficacy is regarded as a crucial intrapersonal resource for relapse prevention (Marlatt & Gordon, 1985) that can help persons recovering from substance use disorders cope with high-risk situations (Annis & Davis, 1991). Abstinence self-efficacy has been found to predict future abstinence in clinical investigations (Chavarria, Stevens, Jason, & Ferrari, 2012; Greenfield et al., 2000; Johnson, Finney, & Moos, 2006), with decreased alcohol consumption at 16 years follow-up in one investigation (Moos & Moos, 2007). However, we are unaware of research that has examined abstinence self-efficacy in relation to treatment readiness, and few investigations suggest the relationship between motivation and abstinence self-efficacy is not well understood.

For instance, motivation and abstinence self-efficacy were both found to predict favorable abstinence outcomes at 3 months in a sample of young adults with substance use disorders (Kelly, Urbanoski, Hoeppner, & Slaymaker, 2012), suggesting a relationship between these two resources. However, other research evidence is mixed. On the one hand, motivation was found to be positively related to abstinence self-efficacy among persons attempting to quit smoking (Castro et al., 2014), while on the other hand, brief motivational interventions were not found to increase abstinence self-efficacy among persons with alcohol use disorders (Romo et al., 2009). There is a need to examine the relationships between these recovery resources among persons with substance used disorders to better understand intrapersonal dynamics of recovery-related change. Examining the role of abstinence self-efficacy in relation to motivation and treatment readiness would extend our knowledge of change among persons recovering from substance use disorders.

The present investigation was conducted to address several research questions. For instance, is the relationship between motivation and treatment readiness significant among persons with substance use disorders and criminal justice involvement histories who are receiving traditional inpatient treatment, consistent with research that has examined this relationship among similar persons engaged in therapeutic communities? Likewise, is this relationship evident upon treatment completion, as opposed to treatment entry when most investigations have examined this relationship? Do motivation and treatment readiness relate to other intrapersonal resources such as abstinence self-efficacy which has been demonstrated to promote recovery outcomes across a number of settings with various populations of persons with substance use disorders? The present investigation was conducted to answer these questions in hopes of extending our knowledge of recovery resources among persons with substance use disorders, particularly among those who have criminal justice involvement.

Understanding the relationships between these intrapersonal resources among persons with substance use disorders who have criminal justice involvement who are completing inpatient treatment could have important treatment implications; at both the intermediate (i.e., inpatient) and post-inpatient (e.g., outpatient services, therapeutic communities, residential) levels of care. It is reasonable to expect high levels of abstinence self-efficacy would be related to increased motivation for recovery because abstinence self-efficacy fosters abstinence; a major treatment goal. The present study examined the relationships between motivation, treatment readiness, and abstinence self-efficacy among a sample of ex-offenders exiting inpatient treatment for substance use disorders. We hypothesized that there would be positively significant relationships between these intrapersonal resources, and that abstinence self-efficacy would predict increased motivation beyond what would be expected from treatment readiness.

Methods

Participants

Two hundred, seventy adults (224 men and 46 women) were recruited from inpatient treatment centers that based treatment on a complete-abstinence model of recovery in northern Illinois, in the United States. Their sociodemographic characteristics are present in Table 1. Participants had been previously incarcerated an average of 9.9 times, with their

most recent incarceration averaging 15.4 months, and they had been most recently released from prison for an average of 144.3 days. In terms of substances used, the majority (43.2%) reported a history of using heroin/opiates, followed by cocaine (28.9%), alcohol (14.7%), cannabis (7.1%), polysubstance use (5.6%), and amphetamine/crystal methamphetamine (.4%), with an average of 3 previous treatments for substance dependence.

Procedures

The present investigation was proposed to and approved by an institutional review board. All participants were recruited through inpatient substance abuse treatment facilities or reentry/case management programs. Ninety-three percent of the participants (n = 251) were recruited from inpatient treatment facilities where they were receiving inpatient services. Five percent of the participants (n = 13) were referred to the project through inpatient treatment facilities although the participants themselves were not receiving inpatient services at the time of recruitment. Two percent of the participants (n = 6) were referred through reentry/ case management services. Of the participants approached, 26 were excluded for eligibility violations (no substance use, no criminal history, convicted of violent crimes, etc.), 13 were not interested in the study, and 15 refused their random condition assignment of an experimental-design that was used in a separate investigation (Jason, Olson, & Harvey, in press). All participants were engaged in a process of informed consent, completed interviews prior to or on day of completing their inpatient treatment program, and received $40 for their involvement.

Measures

Demographics—We created a brief survey to collect sociodemographic characteristics. In addition, this brief survey solicited participants' information regarding their previous treatments for substance dependence and incarceration histories.

Motivation and readiness—The *Circumstances, Motivation, and Readiness Scales-Intake Version* (*CMRS*, De Leon et al., 1994) is an 18- item instrument developed to measure circumstances related to, and motivation and readiness for, ongoing substance dependence treatment. Although the CMRS is commonly administered to persons entering therapeutic communities, items from the motivation and readiness scales are not therapeutic community – specific thus they were appropriate for the present study in that participants were referred to various aftercare treatments and 12-step groups upon their discharge from inpatient substance use disorder treatment. Participants were directed to respond to items with respect to entering their next level of care on a five-point response scale (*strongly disagree* to *strongly agree*), with higher scores indicating greater motivation and readiness. The internal consistency and factor validity of the CMRS have been confirmed through discriminant and factor analyses (De Leon et al., 1997), indicating the CMRS' ability to assess motivation and readiness for treatment. The internal consistency measured by Cronbach's alpha for the motivation (≥ .70), readiness (≥ .62), and total score (≥ .85) scales have been reported (De Leon et al., 1994). In the present study, Cronbach's alpha showed good internal consistency for the motivation scale (.75), and very good internal consistency for the readiness scale (.81).

Abstinence self-efficacy—We administered the *Drug-Taking Confidence Questionnaire* (DTCQ, Annis & Martin, 1985), to assess participants' confidence in resisting the urge to use drugs or alcohol across 50 hypothetical situations. The DTCQ is rooted in Bandura's (1997) cognitive behavioral self-efficacy theory, and it is based on antecedents of substance abuse relapse (Annis & Davis, 1991). The DTCQ has been used among people with different addiction typologies (Sklar, Annis, & Turner, 1999). Because confirmatory factor analyses support the eight-factor model of the DCTQ's highly reliable subscales (.79 to .95; Sklar, Annis & Turner, 1997), we used a total confidence score in the present study by collapsing the subscale scores and averaging these scores on a scale that ranges from 0% (*not at all confident*) to 100% (*very confident*). This total score approach to calculating self-efficacy for abstinence has been effectively used in previous studies (Greenfield et al., 2000; Majer, Droege, & Jason, 2012; Majer, Jason, & Olson, 2004; Miller, Ross, Emmerson, & Todt, 1989). The DTCQ had excellent reliability with the present sample (Cronbach's alpha = .98).

Substance use—We administered Miller's (1996) *Form-90* to collect a continuous record of alcohol and drug use. The Form-90 provides a retrospective time frame for assessment and has excellent test-retest reliability (Miller & DelBoca, 1994).

Data Analysis

A hierarchical linear regression was used to examine the influence of predictors on levels of motivation, entering predictors sequentially in three steps in a manner that approximated their temporal relationship to motivation. Sociodemographic variables (age, gender, and race) were first entered to control for their variance as some research evidence has shown age to be related to motivation (De Leon et al., 2006; Melnick, De Leon, Hawke, Jainchill, & Kressel, 1997) and because of the significantly disproportionate cases across gender and racial categories in the present sample. Previous substance use (in the past six months) was included in the second step because it is consistently related to abstinence self-efficacy across many studies. Treatment readiness and abstinence self-efficacy were then entered to examine their effects apart from other predictors in the model. We tested for potential multicollinearity between these third step predictor variables and found they were not significantly related ($r = -.01$, $p < .001$, $n = 262$), thus they were examined together in the third step of our model.

Descriptive analyses were conducted to provide sociodemographic characteristics of the sample in addition to describing rates of motivation, treatment readiness, abstinence self-efficacy, and substance use in the past six months. Chi-square tests were conducted to examine proportional differences among participants based on gender and racial groupings, and Pearson correlation tests (all two-tailed) were conducted to examine the associations between major variables.

Missing data—A listwise deletion approach was used to evaluate data and calculate analyses. Participants with missing data (approximately 6% of all available cases) were excluded from analyses.

Results

Preliminary Analyses

Participants reported an average score of 22.06 (*SD* = 3.05) for motivation, 30.86 (*SD* = 4.10) for treatment readiness, and an average score of 77.11 (*SD* = 23.60) for abstinence self-efficacy. They reported an average number of days using alcohol 20.0 (*SD* = 40.7) and drugs 44.7 (*SD* = 57.4) for a combined alcohol/drug use average of 33.33 days (*SD* = 41.21); ranging from 1–180 days over the past six months. There were proportionately more men than women [X^2 (1, *N* = 270) = 117.34, *p* < .01], and African-American participants than those from other racial groupings [X^2 (4, *N* = 270) = 532.59, *p* < .01] in the sample.

Participants' treatment readiness scores were significantly and positively related to their motivation scores, *r* (264) = .58, *p* < .001, but not related to abstinence self-efficacy scores, *r* (262) = − .01, *p* < .001. However, abstinence self-efficacy scores were significantly and negatively related to motivation scores, *r* (262) = − .17, *p* < .01. The results were statistically similar when controlling for age, gender, and race though partial correlation analyses.

Major Analyses

A hierarchical regression model was employed to test our hypotheses, and results of this model are presented in Table 1. We assessed the quality of our data with respect to assumptions of linearity in our regression model, and these assumptions were met in a several ways. Scatter plots in terms of standardized residuals by predicted values did not resemble patterns indicative of heteroscedasticity and no non-linear patterns on major variables were observed. There were no obvious outliers among partial plots to suggest undue influence on predictors' regression coefficients, and there was no correlation among adjacent errors (Dubin-Watson value = 2.007). In terms of multicollinearity, the range of tolerance values (.837–.999) and variance inflation factor values (1.001–1.195) were acceptable.

Sociodemographic characteristics in the first step were not significant. The inclusion of substance use in the second step accounted for 4% of the variance. The inclusion of treatment readiness and abstinence self-efficacy accounted for an additional 32% of the variance; with treatment readiness predicting significant increases, and abstinence self-efficacy predicting significant decreases in levels of motivation. We ran this model with the inclusion of an interaction term based on main factors (treatment readiness × abstinence self-efficacy), and this interaction term was not a significant predictor of motivation, β = .06, *t* = 1.15, *p* = .25. In addition, we tested for interaction effects of substance use for both main factors, and neither the treatment readiness × substance use (β = − .04, *t* = −.818, *p* = .41) nor the abstinence self-efficacy × substance use (β = .04, *t* = .65, *p* = .52) interaction significantly predicted motivation.

Discussion

The significant negative relationship between abstinence self-efficacy and motivation was contrary to what we hypothesized, suggesting motivation for change among persons recovering from substance use disorders is related to their need for obtaining abstinence self-

efficacy. For instance, the inverted relationship between these intrapersonal resources suggests that motivation among persons completing treatment for substance use disorders is, in part, aimed toward the goal of increasing their abstinence self-efficacy; a resource that is instrumental in supporting ongoing abstinence (Chavarria et al., 2012; Moos & Moos, 2007). However, this finding could also mean that those with high levels of abstinence self-efficacy at the end of treatment are less motivated to change because they have sufficient levels of cognitive and behavioral self-regulatory strategies in addition to necessary relapse prevention skills (Bandura, 1997).

The negative relationship between these intrapersonal resources in the present study is consistent with research evidence from investigations involving alcohol-specific populations that found brief motivational interventions having no effect on abstinence self-efficacy (Romo et al., 2009), and significantly lower levels of abstinence self-efficacy for alcohol among offenders charged with DUI who reported being in higher stages of change across two measures of motivation (Nochajski & Stasiewicz, 2005). Findings in the present study add to this small body of research is a few ways: We used the entire DTCQ measure (not just one subscale; Romo et al.), we treated motivation as an outcome variable in relation to abstinence self-efficacy, and our sample was comprised of persons with various substance use disorder types (not limited to alcohol).

The lack of association between treatment readiness and abstinence self-efficacy suggests that one's openness to professional treatment as a means for change is not related to beliefs in one's abilities to effectively engage in recovery behaviors that sustain abstinence. In light of this finding, the significant relationship between motivation and abstinence self-efficacy in the present study provides some additional evidence that motivation and treatment readiness (measured by the CMRS) are separate factors (De Leon et al., 1997). Furthermore, the significant relationship between treatment readiness and motivation in the present study replicates what Morgan and Kressel (2010) found in their examination of these intrapersonal resources. However, relationship between treatment readiness and motivation was expected because scores representing these constructs were generated by the same instrument, and they are frequently combined to create a composite score of motivation/readiness (De Leon et al., 2006; Melnick, De Leon, Thomas, Wexler, & Kressel, 2001) though they are separate but related factors (De Leon et al., 1997).

Participants' previous substance use in the past six months predicted increases in motivation, a finding that is inconsistent with findings from one investigation (Freyer et al., 2005) that found readiness for change was not affected by alcohol problem severity among a sample of persons receiving treatment for alcohol dependency. Differences in sample characteristics and instrumentation may explain this discrepancy. However, findings in the present study extend those from one investigation (Field, Adinoff, Harris, Ball, & Carroll, 2009) that found a positive relationship between readiness to change and problems associated with alcohol and drug use in that we assessed substance use (not problems) among all substance types reported. Assessing actual substance use and not problem severity associated with substance use is a more proximal measure, and we think total substance use is more appropriate considering that participants were receiving treatment for substance use disorders through a complete-abstinence model of recovery. In addition, our findings

support the “hitting bottom” hypothesis in that greater substance use is related to increased motivation for change. However, there is considerable variation in the use of measures for assessing motivation (i.e., readiness to change, motivation), substance-related indices (problem severity, specific drug types, actual substance use), and time-points (past 30, 90, 180 days) across studies, possibly explaining for the mixed results regarding the relationship between substance use and motivation across studies.

Limitations

Although motivation might be better understood when accounting for abstinence self-efficacy and recent substance use, there are some limitations in the present study. For instance, the sample was heavily skewed towards African-American men that might limit generalizability to women and ethnically diverse persons. In addition, participants’ treatment experiences probably affected their levels of intrapersonal recovery resources. Intrapersonal resources for recovery were assessed at the completion of inpatient treatment when most investigations typically assess such resources at the beginning of treatment. Finally, the use of self-reported data at one time-point is another limitation of the present study that might affect generalizability, as repeated measures design might have provided more information in relation to changes in predictor variables and motivation over time. Nonetheless, results in the present study have implications for future research.

Future Research

Investigations should consider samples comprised of more women and ethnically diverse persons with criminal justice involvement in addition to using a multi-site/regional approach to participant recruitment in order to better understand the relationships between these intrapersonal resources among ex-offenders. Future investigations comprised of ex-offenders at various stages within a continuum of care (e.g., both entry and discharge from inpatient treatment, intensive outpatient) and who are engaged in different treatment modalities (e.g., halfway house, recovery homes, therapeutic communities) would help us better understand the role of these intrapersonal resources. In addition, future investigations should examine the relationship between 12-step involvement and intrapersonal resources such as motivation and readiness to extend our knowledge of how groups like AA and NA increase intrapersonal resources such as abstinence self-efficacy. Lastly, the present study utilized reliable measures of motivation and treatment readiness in a sample of ex-offenders who were completing inpatient treatment for substance use disorders, whereas previous studies investigated these intrapersonal resources among similar populations engaged in the therapeutic community model of care. Replication studies are needed to confirm and extend our preliminary findings of intrapersonal resources utilized by ex-offenders in other treatment modalities. Furthermore, future research is needed to determine whether these intrapersonal resources are related to important recovery outcomes beyond treatment retention rates that are typically assessed.

Practice

Practitioners should assess for abstinence self-efficacy when engaging highly motivated clients in alcohol/drug treatment settings, as findings in the present study suggest that self-efficacious behaviors for ongoing abstinence is related to the need for behavior change

among persons with substance use disorders. Although highly motivated clients generally tend to be complicit with treatment objectives and demonstrate therapeutic progress, our findings suggest that some of these clients might lack in terms of abstinence self-efficacy which has been consistently demonstrated across studies to be a most important intrapersonal resource for recovery. Treatment providers should consider relapse prevention interventions that are focused on increasing abstinence self-efficacy among persons with substance dependence who are highly motivated for recovery.

In addition, results from the present study suggest clients who are highly motivated at the completion of their inpatient treatment are those who see the value of continued care through professional services. Practitioners should consider devising treatment plans that focus on the need for aftercare services early in the course of treatment as a way to foster motivation for ongoing recovery at discharge. Addressing various aftercare components early in the course of inpatient treatment is one way to help clients understand the need for ongoing treatment and possibly increase their momentum for their recovery. Although clinical judgment should guide decision-making when considering various types of continued care services that best meets clients' needs, results in the present study suggest that making clients aware of the need for ongoing professional care during the course of inpatient treatment would foster ongoing motivation for recovery, particularly at discharge when such a transition is likely to increase clients' vulnerability to relapse. Furthermore, high rates of substance use were related to increased levels of motivation in the present study. Practitioners should consider infusing elements associated with recent substance use when utilizing motivational interviewing techniques.

Conclusion

The present study examined predictors of motivation that have not been examined in previous investigations with persons who have substance use disorders. Our investigation is innovative in that it examined the relationships between intrapersonal resources at the completion of treatment when most investigations have examined these resources at the beginning of one's treatment experience. In addition, the present investigation involved both men and women with considerable incarceration experiences, adding to the growing body of literature on ex-offenders. Overall, findings in the present investigation suggest that abstinence self-efficacy should be considered in relation to motivation for change, particularly among ex-offenders with substance use disorders.

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Table 1

Sociodemographic Characteristics of Ex-offenders in the Sample

Characteristics	**%**	***M***	**(*SD*)**
Age (in years)		40.4	(9.5)
Ethnicity/Race			
African –American	74.1		
White	21.1		
Hispanic/Latino	3.3		
Other	1.5		
Gender			
Men	83		
Women	17		
Marital Status			
Single (never married)	74.9		
Divorced/separated/widowed	18.3		
Married/remarried	6.8		
Education (in years)		10.9	(1.9)
Employment (past three years)			
Unemployed	32.7		
In a controlled environment	27.7		
Part-time	25.4		
Full-time	11.2		
Other	3.0		
Income (monthly)		$367	($710)

Table 2

Hierarchical Regression Analyses for Variables Predicting Motivation Among Ex-Offenders

Predictor	ΔR^2	B	SE B	β
Step 1	.01			
Age		− .02	.02	− .07
Gender		.41	.51	.05
Race		1.47	1.37	.07
Step 2	.04**			
Substance use		.01	.01	.20**
Step 3	.32***			
Treatment readiness		.42	.04	.57***
Abstinence self-efficacy		− .02	.01	− .14**
Total R^2	.417**			
n	253			

Note.

*** $p < .001$,

** $p < .01$.