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# The Effectiveness of Interactive Journaling in Reducing Recidivism Among Substance-Dependent Jail Inmates

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## Abstract

The present study sought to evaluate the influence of interactive journaling on criminal recidivism and identify significant predictors of recidivism among a sample of 183 male inmates incarcerated in a local jail facility randomly assigned to either an interactive journaling condition or a control group. All participants met *DSM-IV-TR* criteria for substance dependence, had their current offense indicate substance involvement, and had a minimum of one previous arrest in the prior 12 months. The recidivism rate (51%), in terms of subsequent bookings within a 12-month period, for the journaling group was significantly lower than the recidivism rate (66%) for the control group,  $\chi^2(1, 183) = 4.13, p < .05$ . The three most significant independent predictors of subsequent bookings were severity of posttraumatic stress disorder, group assignment (journaling vs. placebo), and employment status. Interactive journaling appears to show promise as a brief treatment intervention strategy for substance dependence in local jail settings and may have the potential for reducing recidivism.

## Keywords

journaling, criminal recidivism, substance dependence, inmates, prospective study

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Substance use disorders remain a serious concern for local jail systems. A national survey revealed that more than two thirds of jail inmates met *Diagnostic and Statistical Manual of Mental Disorders* (4th ed.) (*DSM-IV*; American Psychiatric Association [APA], 1994) criteria for substance dependence or abuse the year prior to their admission to jail (Karberg & James, 2005). Furthermore, jail inmates who met diagnostic criteria for substance dependence or abuse were more likely than inmates who did not meet criteria for a substance use disorder to have a prior criminal record (70% vs. 46%, respectively). Overcrowding, arguably associated with alcohol and other substance use disorders, has also become a principal concern for local jail systems. High incarceration rates not only place a strain on law enforcement officials but also contribute to incarceration costs. The increase in the number of inmates held in local jails in the United States is striking. Between 2000 and 2007, the U.S. total jail population has increased at an average annual rate of 3.3%, bringing the total number of jail inmates to 780,581 (Sabol, Minton, & Harrison, 2008). Substance use disorders may have profound effect on recidivism rates and thus contribute to high U.S. jail populations.

Of the extensive criminal recidivism literature Andrews, Bonta, and Wormith (2006) reviewed, they found that problematic substance use was commonly identified as a primary risk factor predictive of future criminal behavior across numerous populations. In a similar meta-analytic review, problematic substance use remained a significant predictor of general and violent recidivism regardless of the presence or absence of a mental disorder (Bonta, Law, & Hanson, 1998). Furthermore, the authors classified problematic substance use as a dynamic predictor of criminal recidivism, in that a dynamic predictor can provide relevant information regarding what is "potentially amenable to change" and could ultimately serve as a target for the purposes of treatment planning. Taken together, the findings from these two reviews suggest that problematic substance use is a significant predictor of future criminal behavior and should be considered within the context of treatment intervention efforts designed to reduce recidivism. The key to preventing criminal recidivism among jail inmates therefore may involve identifying and matching individuals who are at risk of recidivism with appropriate treatment intervention strategies that target specific risk factors, such as problematic substance use.

It is also important to understand the role of local jail systems in the criminal justice system. Jails are locally operated correctional facilities that receive offenders for a short period of time following arrest who are held pending arraignment, trial, conviction, or sentencing. More extensive substance use treatment interventions used in correctional settings that are frequently available to state and federal prison populations are not as readily applicable to county jail inmates because of their shorter and more indefinite incarceration stays. In general, three recommendations for treatment interventions designed specifically for inmates suffering from substance use issues have been identified: (a) reducing substance use, (b) reducing the personal and interpersonal supports for substance-oriented behavior, and (c) enhancing alternatives to substance use (Andrews et al., 2006).

A popular treatment strategy used by local jail systems for inmates with mental health conditions is jail diversion. Jail diversion efforts involve a reduction or avoidance of

jail time by using community-based treatment as an alternative to jail time. The benefits of jail diversion programs appear to be twofold; such programs not only connect eligible inmates to comprehensive community-based mental health treatment but also alleviate the considerable overcrowding experienced by many local jail systems. Research evaluating the effectiveness of six jail diversion programs for individuals with co-occurring disorders found that overall, at a 12-month follow-up, diversion reduced time spent in jail without increasing the public safety risk despite having diverted individuals spend more days in the community (Steadman & Naples, 2005). Although most diversion programs have evinced favorable findings in terms of a reduction in average number of subsequent arrests and jail time (Hoff, Baranosky, Buchanan, Zonana, & Rosenheck, 1999; Lamberti et al., 2001; Steadman & Naples, 2005), improvements related to substance use outcomes are either not as promising or have not been evaluated.

A limitation of jail diversion for substance-involved inmates is seen in a multisite study evaluating the effectiveness of jail diversion for nine programs that found that, despite experiencing fewer days in jail, diversion had no effects on subsequent arrests (Broner, Lattimore, Cowell, & Schlenger, 2004). In addition, diverted inmates did not experience any significant changes in both their use of substances or in their scores on measures designed to assess their overall quality of life at a 12-month follow-up compared to individuals who were not enrolled in the program over the same time period. Therefore, despite mixed findings in relation to the effectiveness of jail diversion programs, a need remains for a brief "in-house" substance use treatment intervention strategy designed specifically for use with substance-dependent local jail inmates and which addresses the apparent time constraints associated with a local jail context.

One potential treatment option is interactive journaling. Interactive or "reflective" journaling has been shown to be a valuable component of many effective learning strategy methods (Deaver & McAuliffe, 2009; Epp, 2008; Staulcup & Barth, 1984; Stone, 1998). Interactive journaling encompasses elements from the transtheoretical model of change (TMC; Prochaska & Velicer, 1997) and motivational enhancement therapy (MET; Miller, 1995). The TMC postulates that change occurs in a pattern beginning with pre-contemplation and progressing through contemplation, preparation, action, maintenance, and termination. MET is a nonconfrontational approach whereby individuals are led through the process of assessing their current situation and determining what strategies might be used to assist in identifying and achieving change goals. Thus, an MET approach appears quite appropriate and may facilitate an individual's progression through the various stages of change included in the TMC. Interactive journaling builds on this foundation through guided questioning and restructuring strategies designed to aid individuals in examining the feelings and cognitions surrounding maladaptive behaviors via interactive journaling booklets. The booklet used in this study is described in greater detail in the Method section. The combination of emotional and cognitive expression used in interactive journaling has been shown to be more effective than cognitive processing alone in regard to behavior change (Frattaroli, 2006).

Interactive journaling is a particularly appealing brief intervention strategy for use with local jail inmates because it requires minimal interaction by clinical personnel and, most importantly, is time efficient. The use of interactive journals has been found

effective in reducing the likelihood of engaging in serious forms of misconduct during incarceration among federal prison inmates (Camp, Daggett, Kwon, & Klein-Saffran, 2008). Furthermore, an evaluation of DUI offenders determined that offenders who used interactive journals had a significantly lower recidivism rate for driving under the influence than a comparison group composed of DUI offenders who did not receive interactive journals (Loudenburg, 2008). However, the effectiveness of this particular approach has not been evaluated for reducing recidivism in a local jail setting.

High rates of substance use disorders precipitating criminal recidivism among jail inmates coupled with the nation's considerable jail overcrowding issue remain serious public safety concerns and suggest the need for a brief treatment intervention strategy. Although journaling appears to be a useful resource for the promotion of change in a variety of contexts, little attention has been given to the use of this technique to reduce recidivism among substance-dependent inmates in a correctional setting, let alone among a local jail population. Given these issues, the present study sought to fill the apparent gap in the research literature in the evaluation of interactive journaling as an approach to reduce criminal recidivism among a sample of substance-dependent male inmates incarcerated in a local jail facility. A secondary focus of the present study was to identify significant predictors of recidivism among this same sample of local jail inmates and determine whether journaling provided an independent contribution to study outcome.

## **Method**

### *Participants*

Previous research conducted at the site of the present study determined that a substantial proportion of inmates met three criteria: (a) indications of probable substance dependence (b) current offense was substance-related, and (c) a previous incarceration within the past 12 months (Proctor, Hoffmann, & Westlund, 2010). These three variables were included as inclusionary criteria for the present study. Therefore, inmates that were identified as likely substance dependent on one or more substances because of three or more positive responses on an addictions screen at classification, whose current offense was related to substance involvement, and who had a minimum of one prior incarceration in the previous 12 months were recruited for study participation.

A total of 300 male inmates were determined eligible for the present study based on the three aforementioned study inclusionary criteria. Eligible participants were approached on their respective housing unit by a case manager employed by the jail and offered assistance in addressing addiction issues. Those accepting assistance were then referred to one of two clinical psychology graduate students who then recruited the inmates for the clinical trial. However, 31 inmates were deemed ineligible because of their refusal of the case manager's offer of assistance. In addition, given that the graduate students in charge of data collection were only available to work at the jail on a part-time basis, combined with the relatively brief and often unknown incarceration periods associated with a pre-trial facility, 80 inmates were released before they could be approached for

study participation. Of those inmates approached by the graduate students, four refused to participate in the study. Of the remaining 185 inmates, 100 were randomly assigned to the journaling condition and 85 were assigned to the placebo condition. However, two inmates rejected the journal when offered and were therefore excluded from the study, which resulted in a net sample of 183 inmates with an average age of 36.56 years ( $SD = 11.09$ ) and a range of 18 to 65 years.

Only male inmates were selected for the study because they constituted the largest segment of the jail population, and male graduate students conducting the clinical interviews with female inmates would have created a logistic complication for the detention center, which requires a staff member of the same sex as the inmate to be present when a person of the other sex interacted with inmates. Ethnic composition of the sample was predominately Caucasian (73%,  $n = 134$ ), and African Americans constituted the largest racial minority (24%,  $n = 43$ ). The remaining 3% ( $n = 6$ ) were distributed among Hispanics, Asians, Native Americans, and those inmates who reported Other or multiracial ethnicity. Most of the inmates had never been married (47%,  $n = 86$ ) or were either divorced or separated (32%,  $n = 58$ ). Only 17% ( $n = 32$ ) were currently married at the time of incarceration and the remaining 4% ( $n = 7$ ) reported either currently living together with their partner, or that they were widowed. Education level of the total sample tended to be low, in that 42% ( $n = 77$ ) had not completed high school and only 9% ( $n = 17$ ) had received any vocational or formal education beyond high school. In terms of employment status, a majority (61%,  $n = 112$ ) of the inmates were employed either full or part time at the time of incarceration. Most inmates reported that they worked as unskilled or service workers (73%,  $n = 134$ ) prior to incarceration, with skilled trades being the next largest job designation (16%,  $n = 30$ ).

Data from the Comprehensive Addiction And Psychological Evaluation (CAAPE; Hoffmann, 2000) were examined to determine the prevalence of mental health and substance use disorder indications and were used to confirm a substance dependence diagnosis. Overall, alcohol dependence was the most common substance use disorder, with 78% ( $n = 142$ ) of the total sample meeting *DSM-IV-TR* (APA, 2000) diagnostic criteria. The remaining substance use disorder diagnoses that predominated were as follows: cocaine dependence, 34%; marijuana dependence, 20%; and heroin dependence, 16%.

Axis I mental health diagnoses were prevalent among the substance-dependent inmates. Diagnostic indications for affective disorders were reported by a majority of the inmates. More than half (51%,  $n = 93$ ) reported symptoms compatible with a diagnosis of major depressive episode, and 27% ( $n = 50$ ) reported positive criteria for a manic episode. Twenty-one percent ( $n = 39$ ) reported indications of both manic and depressive episodes compatible with a possible diagnosis of bipolar I disorder. Among the anxiety disorders, most inmates (54%,  $n = 98$ ) reported symptoms compatible with a diagnosis of posttraumatic stress disorder (PTSD). Panic attacks with sufficient stressful indications to suggest a diagnosis were reported by 27% ( $n = 50$ ) of the inmates.

Among the Axis II disorders covered by the CAAPE, 50% ( $n = 91$ ) met formal criteria for antisocial personality disorder (ASPD) in that they met criteria for conduct

**Table 1.** Baseline Comparisons of Demographic Information and Diagnostic Indications Between Groups

Variable	Group	
	Control (n = 85)	Journaling (n = 98)
Demographic variable		
Ethnicity (White)	68	78
Not a high school graduate	45	40
Unemployed	39	39
Never married	47	47
Age <25	11	20
Diagnostic indication		
Alcohol dependence	79	77
Cocaine dependence	31	37
Marijuana dependence	14	26
Heroin dependence	12	20
Major depressive episode	49	52
Manic episode	22	32
Psychosis	13	19
Posttraumatic stress disorder	54	53
Panic attacks	25	30
Antisocial personality disorder	46	53

Note: Values are percentages. Groups did not differ significantly on any of the demographic or clinical variables ( $p > .05$ ).

disorder as an adolescent in addition to ASPD indications as an adult. Most (44%) of the remainder of the total sample met the adult criteria but denied the conduct disorder indications as adolescents.

Prevalence of various mental health conditions as indicated by the CAAPE interview by group assignment are illustrated in Table 1. None of the differences in terms of those appearing to meet at least minimal criteria, or a more detailed analysis where levels of severity for the various conditions were considered, yielded any statistically significant differentials between the two groups. Although not statistically significant, the trend for most of the clinical comparisons was for the journaling group to report slightly more psychopathology in terms of the prevalence rates of the various substance use disorders and other mental health conditions. Overall, consistent with previous research of local jail inmates, those dependent on at least one substance tended to have high rates of other co-occurring mental health conditions as well (James & Glaze, 2006).

### Measures

The CAAPE (Hoffmann, 2000) was used to assess for indications of prevalent mental health conditions and substance use disorders among the inmates. It is designed

specifically for use with adults and is not an adaptation of another instrument. The CAAPE is designed for routine clinical administrations facilitated by a detailed manual (Hoffmann, 2000). The CAAPE is a structured diagnostic assessment interview compatible with *DSM-IV-TR* (APA, 2000) criteria for eight Axis I and six Axis II disorders. Axis I disorder indications assessed by the CAAPE include depressive and manic episodes, panic disorder, generalized anxiety and phobias, PTSD, obsessive–compulsive disorder, psychosis, in addition to substance-specific dependence and abuse. Axis II indications include ASPD and possible paranoid, schizoid, borderline, dependent, and obsessive–compulsive personality disorder indications. The CAAPE also provides an assessment of substance use disorders for a number of different substances, including alcohol, marijuana, cocaine, stimulants, sedatives, hallucinogens, and opioids. Both demographic and clinical content covered by the CAAPE have been shown to be related to recovery after addictions treatment (Zywiak, Hoffmann, & Floyd, 1999).

### *Outcome Measure*

The primary outcome measure for the present study was the proportion of inmates booked at the Buncombe County Detention Facility (BCDF) within a 12-month period following an inmate's entrance into the study. The BCDF is the only jail facility available for both the local city police department and the county sheriff's office. Thus, anyone arrested and booked within the county can be readily identified and tracked by the management information system (MIS) of the BCDF, which was used to determine number of subsequent bookings. This procedure involved a record review for all 183 inmates included in the study using the MIS of the detention center.

### *Intervention*

A 24-page interactive journal developed by The Change Companies titled "Changing Course" was used as the intervention in the present randomized clinical trial. The interactive journal was designed specifically for individuals in a local correctional setting struggling with substance use issues. The primary focus of the journal is to help individuals make the connection between their substance use and criminal activity and afforded the inmates a means of weighing the costs and benefits associated with different options they might pursue and how they might develop a plan for change following release.

The journal is based on the transtheoretical model of change (TMC; Prochaska & Velicer, 1997), a theoretical model of behavior change that views change as a process involving several stages: precontemplation, contemplation, preparation, action, maintenance, and termination. The TMC provides an integrative framework for how individuals progress through the various stages of change and move toward adopting and maintaining a particular health behavior. One of the first steps on the road to change is recognizing and accepting the existing problem. The Changing Course journal encourages inmates to reflect on the choices that have led to their current situation and recognize alternative, more acceptable ways to lay the foundation for a more rewarding life. That

is, the journal is designed to help guide inmates as they make the transition from the precontemplation to the contemplation, preparation, or action stage of change. The journal uses a combination of visually appealing images, factual information, and simple individual writing exercises to engage the individual as they consider the process of making a positive life change.

To facilitate the process of making a positive life choice and provide the inmate with an introduction to the change process itself, the Changing Course journal begins with a checklist of various descriptors that inmates are instructed to check off if they apply to them. The journal then has the inmates summarize, in their own words, the specific details regarding their arrest and their motivation for committing the offense for which they are currently incarcerated. This is followed by an inventory of some of the common adverse consequences associated with substance use that span a wide range of areas (e.g., relationships, school/work, finances, health). Next, to elicit thoughts about the process of change, the inmates are presented with another checklist of various behaviors that they may select as they consider making a positive life change (e.g., current level of alcohol or drug use, how to handle anger, changes in thinking, relationship changes) and are instructed to indicate which areas apply to them. The journal then provides an outline for evaluating the rewards and costs of up to three specific changes, followed by strategies for implementing the selected changes, and it includes a page for them to write, down their specific individualized plan for change. Finally, the journal ends with presenting the inmates with the issue of making the decision regarding whether the inmate wants to seek professional help and/or support groups or not. This section also includes a page where contacts can be written down for future reference.

It is important to note that the journal is not intended for use as a clinical treatment aid but rather as a pretreatment tool to assist inmates in beginning to appreciate the connections linking their substance use, behaviors, and problems with the law and encourage inmates to seek treatment upon release. Furthermore, although the typical procedures for interactive journaling is upon review the client's responses to the guided topics and questions, the stays in a local jail are often brief and releases can occur rather abruptly and unexpectedly. Consequently, it was not possible to review the inmates' reaction to the journal, the journaling process, or the amount of time spent on the journal. In many cases it was not even possible to determine the extent to which an inmate completed the journaling prior to release. The recommended use for interactive journaling is for a professional to work with the client to review and discuss the journal. In this study, this aspect of the journaling process was not possible because of the limitations of time and the uncertainty of when the inmates were to be released.

## *Procedure*

Intake data collection occurred at the BCDF in Asheville, North Carolina, from 2008 to 2009. The facility used in the present study houses adult pretrial detainees and functions as the county jail for a city and county of moderate size. The BCDF has a maximum designed capacity of 356 inmates, but because of a considerable overcrowding issue,



houses on average more than 400 inmates on a given day. With the support of the sheriff, the staff at the BCDF agreed to provide a site for the clinical trial and to participate in the study implementation. All study procedures were approved by the human subjects committee of the university with which the authors were affiliated at the time of the study.

Based on previous research conducted at the BCDF (e.g., Proctor et al., 2010), which found that a majority of the inmates housed at the facility reported probable indications of substance dependence, current offense indicated substance involvement, and had a prior incarceration within the past 12 months, the BCDF staff incorporated a brief addictions screen, known as the UNCOPE, into the standard classification procedures at the facility. The rationale for screening during the classification process was to identify those inmates with a likely substance use disorder at a time when decisions about security level and unit assignments are made. The UNCOPE screen has been validated on recent arrestees and state prison inmates (Campbell, Hoffmann, Hoffmann, & Gillaspay, 2005; Hoffmann, Hunt, Rhodes, & Riley, 2003) and provides a simple and quick means of identifying risk for dependence for alcohol and other drugs with an overall accuracy of approximately 85% based on the aforementioned validation studies. In addition, the sheriff also hired a case manager to provide assistance for inmates in accessing local treatment providers and to act as a liaison with providers interested in treating inmates upon release from the BCDF.

The review of the daily classification report, which details the recently classified inmates' responses to the officer's questions at classification from the previous day, was used to identify likely participants for the study based on the study inclusionary criteria. Inmates interested in receiving case management services were then allocated by a research staff member to either the interactive journaling condition or the control group based on a manual randomized assignment procedure consisting of a flip of a coin. These inmates were then approached on their housing unit by a member of the research staff and asked to voluntarily participate in a research study in which they would be asked questions concerning alcohol and other drugs as well as any emotional problems they may have experienced. Inmates who indicated an interest in participating in the research study were then escorted by the unit's correctional officer and locked in a multipurpose room (which was located on each floor of the facility) with the member of the research staff team.

The research staff member then explained the overall purpose of the study, which was to evaluate the effectiveness of an interactive journal among inmates with likely substance use issues, and assured the inmates that the information disclosed during the interview would remain confidential and that their responses would in no way affect their relationship with the BCDF or their current legal situation. In addition, inmates were informed that the graduate student conducting the interview was a volunteer and had no affiliation with the detention facility. Inmates were instructed to read the consent form and were informed that the research staff member would answer any additional questions regarding the purpose of the study. Inmates were also informed that if they could not read the consent form the research staff member would read it for them. After

informed consent was obtained, inmates were administered the CAAPE, and inmates who met the three study inclusionary criteria and were confirmed to be dependent on one or more substances via the clinical interview were then offered either (a) the interactive journal or (b) a government booklet on substance use disorders and criminal behavior as a placebo based on the randomized assignment procedure. The clinical interview took approximately 30 to 60 min to administer depending on the range of positive responses provided by the inmates. The control group was informed that the federal brochure included information on substance use and related problems and also included the contact for a national hotline that they could reach upon release from the jail if they were interested in treatment services. Additional time, totaling no more than 10 min, was allocated to those inmates who received the interactive journal in an effort to provide a brief introduction to the contents of the journal and the journaling process itself but anticipated study outcomes were not discussed with the intervention group.

### **Data Analyses**

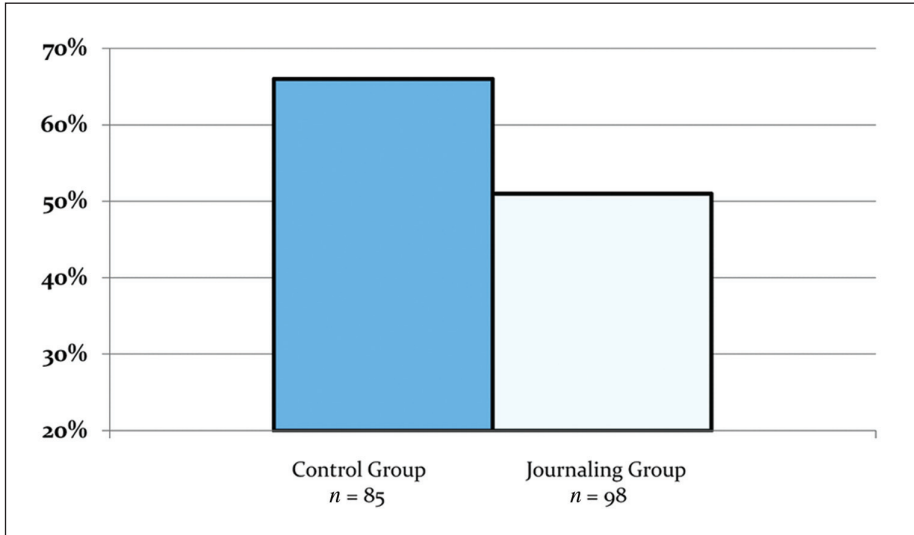
Information obtained from the daily classification reports and the one-to-one clinical interviews with the graduate students were entered and analyzed using PASW Statistics (formerly SPSS) software (Version 18) to assess study aims. The journaling and control groups were first compared on demographic characteristics and the frequency and severity (in terms of number of positive diagnostic criteria) of substance use disorders and other mental health conditions to ensure that randomization had in fact produced equivalent groups.

The relationship between group assignment (interactive journaling vs. control) and recidivism was investigated using a chi-square analysis to examine if the proportion of follow-up incarcerations among the inmates was the same for the two groups. Discriminant analyses were then used to determine if demographic or clinical variables in addition to group assignment predicted recidivism. A stepwise analysis using the option that maximizes the overall Wilks's Lambda statistic was used for determining which variables would enter the discriminant equation.

### **Results**

The observed recidivism rates among the two groups, who were subsequently booked within 12 months, were 66% for the control group as compared to 51% of those receiving the interactive journal,  $\chi^2(1, 183) = 4.13, p < .05$ . An absolute difference of 15% in recidivism rates suggests that approximately one in seven fewer inmates in the interactive journaling did not recidivate as compared to the control group (see Figure 1).

Based on the results from the discriminant analyses, the three most significant independent predictors of outcome were severity of PTSD; group assignment (journaling vs. control); and employment status. In making bivariate comparisons between the stated study outcome and the three identified predictor variables, readily interpretable relationships were noted (see Table 2). Inmates who exceeded the minimal indications



**Figure 1.** Twelve-month recidivism rates

Note: Statistical significance:  $p < .05$ .

**Table 2.** Recidivism Rates by Significant Independent Predictors

Independent predictor	Recidivism rate (%)
Group assignment*	
Journaling condition	51
Control condition	66
Severity of PTSD*	
No PTSD diagnosis	45
Exceeded minimal indications	72
Employment status*	
Employed full-time	46
Not employed full-time	67

Note:  $N = 183$ .

\* $p < .05$ .

of PTSD (i.e., those inmates who reported more than the minimum number of symptoms required from each criterion to substantiate a *DSM-IV-TR* diagnosis of PTSD) had a higher rate of recidivism than those not meeting this threshold (72% vs. 45%, respectively). The recidivism rate for those not employed full-time was 67%, which was in contrast to the recidivism rate displayed by inmates who were employed full-time (46%). There was no significant difference between the control and experimental groups on prevalence of PTSD or employment status.

Information regarding demographic and clinical diagnostic indications of the journaling group compared to inmates in the placebo condition is presented in Table 1. No statistically significant demographic or clinical differences were observed between the two groups. Demographically, the journaling group was composed of slightly more Caucasian inmates and high school graduates but such differences did not reach statistical significance. This suggests that randomization was successful in providing equivalent groups in terms of identifying possible confounding variables. Thus, although some clinical and demographic characteristics do have substantial associations with recidivism (i.e., PTSD, employment status), interactive journaling seems to have a significant and independent influence on criminal recidivism for those offenders who are substance dependent.

A demographic composite found to correlate significantly with risk for relapse for those in treatment for substance dependence was constructed (Zywiak et al., 1999). The composite consisted of the following four variables: (a) younger than age 25, (b) never married, (c) not a high school graduate, and (d) unemployed. Construction of this composite found that there was no statistically significant differential between the journaling and control groups. A statistically significant differential, however, was found for the total sample in terms of recidivism based on the number of demographic risk composite criteria met, as inmates who met none or only one of the demographic risk indications had a lower recidivism rate (51%,  $n = 100$ ) than those who met two or more (66%,  $n = 83$ ),  $\chi^2(1, 183) = 4.34, p < .05$ . Furthermore, although those inmates who failed to meet a single composite criterion had a slightly lower rate of recidivism than those who met just one, this difference did not reach statistical significance and no similar trend for greater recidivism was noted for those inmates who exceeded two positive findings.

## Discussion

The primary objective of the study was to determine the influence of interactive journaling on criminal recidivism—defined as an individual being booked in the county jail within a 12-month period following entrance into the study—among county jail inmates who were substance dependent, whose current offense was related to substances, and who were repeat recidivists. The findings from the present study suggest that this approach has merit in that it appeared to have a positive and statistically significant impact on recidivism rates independent of other prognostic indicators. The observed reduction in recidivism of 15% for the journaling condition compared to the control group (51% vs. 66%, respectively) would also appear to have a positive impact on jail overcrowding and suggests that interactive journaling has the potential to be of substantial clinical importance as well.

The prerequisite for interactive journaling, or any approach designed to facilitate behavior change, is that the tool or procedure be accepted and used by the individuals whose behavior is to be altered. Thus, the first step in determining the potential efficacy of a brief substance use intervention involving the use of an interactive journal among

a local jail population is to explore the extent to which inmates are willing to use a self-directed interactive journal while incarcerated. Of the 100 inmates offered the Changing Course journal, all but two accepted the journal and agreed to look over the booklet—which resulted in an acceptance rate of 98%. Perhaps the most important benefit of interactive journaling is the opportunity to gauge an inmate's self-reflective level of change. In the instance of a simple drug and alcohol pamphlet, there is no way of following up or monitoring an inmate's process of change, but with the interactive journal, it is possible to determine an inmate's extent of self-awareness, interest, and learning (Proctor, Corwin, Hoffmann, & Allison, 2009). However, study limitations regarding the amount of time the graduate students were available for data collection at the BCDF coupled with the relatively brief stays and unexpected releases associated with a pre-trial jail facility precluded a detailed analysis of the extent of journaling evidenced by those inmates who received the journal. Future research using an interactive journaling approach may benefit from more frequent visits with those inmates who receive the intervention, perhaps daily, to “check-in” on the inmates' extent of journaling and determine the amount of effort put forth in completing the journal.

The current findings may actually underestimate the potentials for interactive journaling as a means of addressing recidivism. The optimal use of journaling in this setting would have required a staff person to review each inmate's responses to the journal as well as the journaling process itself to offer the opportunity to discuss the inmate's reactions. This would logically have also provided an opportunity to consider options for those interested in accessing treatment. The constraints on the current study did not allow for this opportunity for the vast majority of cases. Instead, inmates were simply offered the journal following a brief introduction to the journaling process and were then typically left to make what they could of the experience on their own. Having been offered initial assistance by the case manager prior to journaling, the inmates would have had to take the initiative to then obtain help in accessing treatment or other assistance from the case manager as obtaining assistance or partaking of programs, such as weekly Alcoholics Anonymous meetings, in the jail are purely voluntary.

The findings from the present study should be considered in light of limitations that may limit the generalizability of the findings. First, the present study used only a male sample, which warrants caution in the interpretation of the findings for female inmates. Additional research is necessary to determine how female inmates might respond to the journaling process. Second, the jail facility used serves a county that is largely rural or suburban in nature whose largest city is of modest size. Thus, one would need to be cautious in extrapolating the findings for large urban settings with predominantly racial-minority populations. Third, reading level was not formally assessed prior to distributing the interactive journals beyond identifying potentially illiterate inmates as those who requested that the research staff member read the consent form to them on asking for their participation in the research study. This limitation may have presented difficulties regarding the integrity of the intervention and in completing the journal as directed for those inmates who could not read. However, no inmates indicated that they preferred that the member of the research staff read them the consent form on asking for their participation. The possibility remains, however, that illiterate individuals

were too embarrassed to request assistance in reading the consent form or simply did not care to comprehend the contents of the consent form, which suggests the need for additional research in this area. A logical next step for future work would be to use a brief literacy check prior to the distribution of the materials or a similar procedure in which the materials are discussed with a staff member or research assistant to make sure they were in fact read and fully understood. Fourth, as discussed earlier, because of the relatively brief and unexpected stays associated with a local jail setting, it was not possible to determine the extent of journaling completed by the inmates. Although the present study provides preliminary findings that a journaling intervention appears to be well received by jail inmates, further work with additional correctional populations (e.g., prisons, posttrial jail facilities) composed of inmates with more definite sentences would provide the opportunity for a more in-depth follow-up regarding inmates' extent of journaling as well as their reactions to the journaling process. Another limitation of the study is that it focused exclusively on substance-dependent recidivists. Consequently, we do not have any indications regarding whether journaling would prove more or less effective in avoiding recidivism among inmates with substance abuse or those incarcerated for the first time. Finally, the sample size, though adequate for a preliminary study, is not as large as might be desired to facilitate more in-depth analyses of subgroups defined by demographic variables, such as age, education, and employment or clinical variables, such as the presence or absence of certain mental health conditions.

Despite the limitations, this randomized clinical trial does suggest that interactive journaling appears to be well received by jail inmates, requires minimal interaction, is time efficient, and most importantly, may have the potential for reducing recidivism. The fact that significant reductions in subsequent arrests were observed with minimal involvement in the journaling process and with less than optimal implementation of the process itself suggests that greater reductions in recidivism might be achieved with a greater investment of time and effort. These preliminary findings suggest that the extent to which interactive journaling may provide at least a partial solution to local jail overcrowding and recidivism warrants further investigation.

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The author(s) declared no conflicts of interests with respect to the authorship and/or publication of this article.

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