Published in final edited form as:

J Dual Diagn. 2013 January 1; 9(2): 139–148. doi:10.1080/15504263.2013.779092.

Depression, Readiness for Change, and Treatment Among Court-Mandated DUI Offenders

Thomas H. Nochajski^{1,*}, Paul R. Stasiewicz², and David A. Patterson¹

Paul R. Stasiewicz: stasiewi@ria.buffalo.edu; David A. Patterson: dap29@buffalo.edu

¹University at Buffalo, Buffalo, New York, USA

²Research Institute on Addictions, Buffalo, New York, USA

Abstract

Objective—The current study is part of a larger study that was designed to evaluate the impact of brief interventions on subsequent alcohol and drug use of individuals convicted of driving under the influence (DUI). This element considers the interaction of depression levels with treatment on subsequent substance use and problems related to substance use.

Methods—Subjects were referred to the Research Institute on Addictions from various courts in the Western New York area for clinical evaluation and treatment referral, if further treatment was indicated. A total of 765 individuals were referred to the program, with 549 agreeing to participate. Participants were assessed at baseline using a number of different measures, with depression and readiness to change among them. A follow-up assessment took place 18–24 months following the baseline, with subsequent treatment experiences being one of the primary measures of interest for this study. A total of 443 participants were successfully interviewed at follow-up.

Results—The high depression group had greater readiness to change and a greater likelihood of entering treatment than the low depression group (p 's < .001). ANCOVAs showed depression by treatment interactions for drug problem severity, drug use, DUI risk, alcohol expectancies, abstinence self-efficacy, and psychiatric distress (all p 's < .05). Furthermore, the treated high depression group made the largest positive gains across all outcomes (all p 's < .01).

Conclusions—The readiness to change, treatment entry, and ANCOVA results, all support Wells-Parker and her colleagues' approach that depression may be a strong indicator of DUI offenders' readiness to change their substance use behavior.

Keywords

treatment outcome; depression; readiness to change; DUI; impaired driving

While overall fatal crashes in the United States have declined in the last couple of years, the percent of fatal crashes with alcohol involvement has remained relatively stable over the last decade, with approximately 32% involving blood alcohol content of .08 or above (NHTSA, 2012). Additionally, the arrest rates for driving under the influence (DUI) have also remained stable, with approximately 1.4 million arrests per year. Within these yearly 1.4 million DUI arrests, 33% are repeat DUI offenders (BJS, 2012).

Address correspondence to: Thomas H. Nochajski, Ph.D. Research Professor, School of Social Work, University at Buffalo, 660 Baldy Hall, Amherst, NY 14260. thn@buffalo.edu, Phone: 716 645 1245, Fax: 716 645 3456.

DISCLOSURES

Thomas H. Nochajski, Paul R. Stasiewicz and David A Patterson report no financial relationships with commercial interests.

Given the static nature of fatal crash rates and arrests for DUI, alternatives or additions to the sanctions currently being used are necessary to help reduce the crash and recidivism rates further. In their meta-analysis of interventions for DUI offenders, Wells-Parker et al. (1995) found that treatment and education programs had only a modest impact (7–9% reduction in recidivism rates). The authors also found that combinations of psycho-education and treatment with more broadly defined goals than just abstinence as having the largest impacts on recidivism. Nochajski and Stasiewicz (2006) point out that there has been a push towards more reliance on rehabilitation services, with rehabilitation covering psycho-education and standard abstinence based treatment, as well as brief and harm reduction interventions. Recent works have also shown modest improvements for treatment and psycho-educational efforts with DUI offenders (Bakker, Hudson & Ward, 2000; DeYoung, 1997; Kunitz et al., 2002; Lucker & Osti, 1997; Nochajski, 1999; Wells-Parker & Williams, 2002; Williams, Simmons, & Thomas, 2000; Yu, 2000).

Given the modest impact that rehabilitation efforts seem to have, considering potential factors that moderate the impact of treatment efforts may be beneficial. Wells-Parker and colleagues (2007), recently suggested that negative affect, specifically depression, may have a role in whether treatment has an impact for DUI offenders. The authors propose that negative affect, like depression, may actually increase motivation to change behaviors and result in more engagement in the treatment process. Research supporting this correlation has shown that depression can moderate the influence of treatment programs (Wells-Parker & Williams, 2002), and is related to abstinence self-efficacy, higher temptation to drink, greater likelihood of negative mood states during drinking and driving episodes (Dill et al., 2007), and greater likelihood of seeking treatment (Wells-Parker et al., 2006).

The current study set out to assess the association between depression and a number of factors that relate to positive outcomes for DUI offenders. Specifically, the study assessed whether baseline levels of depression influenced subsequent levels of alcohol and drug problems, alcohol use, alcohol expectancies, abstinence self-efficacy, hostility, psychiatric distress other than depression, and DUI recidivism. Expectations were that the high depression group, as compared to the low depression group, would show the highest levels of readiness to change, greater likelihood of treatment entry, and the most significant improvements across time on all outcomes.

METHODS

Sample

The study sample involved 765 convicted DUI offenders from Erie County, New York, who were referred to the Research Institute on Addictions for a court-ordered substance abuse evaluation. Participating courts represent urban, suburban, and rural areas. The purpose of the evaluation was to assess for alcohol-related problems and to determine if an alcohol treatment referral was indicated. All court referrals were asked to come to the Research Institute on Addictions for an initial meeting to discuss whether they wanted to enter the study or go to a treatment provider of their own choosing. Interested individuals were given a copy of the consent form, a full explanation of the study, and an opportunity to ask questions. The University at Buffalo Institutional Review Board reviewed the study protocol and all participants gave written informed consent. In addition, we obtained release of information forms to allow us to provide information back to the courts, probation officers, attorneys, or other treatment agencies if necessary.

A total of 549 (72%) individuals agreed to participate in the study. However, our final sample size was 520 because problems with an interviewer resulted in 29 cases being dropped.¹ Comparisons between the group who entered the study and the group who chose

not to enter, showed no differences for gender (78% male), age ($M = 33.3$, $SD = 11.29$), repeat offender status (29% repeat offenders), breath alcohol content (of those who did not refuse, 25.3% .20 or above), or chemical test refusal (29.8%). In addition, the majority of individuals who entered the study never married (60%), had some college education (61%), were employed full- or part-time (80%), and had a personal income of over \$20,000 (57%), with 38% having household incomes greater than \$50,000. However, relative to whites, other races were more likely to enter the study (84.6% vs 70.7%), $\chi^2 = 5.01$, $df = 1$, $n = 765$, $p = .025$.

Procedures

At baseline, participants were assessed using the Research Institute on Addictions substance abuse evaluation. Those who elected to enter the study were given a clinical assessment that included the measures listed below. If the assessment determined the need for more intense treatment, the participants were provided with a list of substance use treatment agencies in the area. The study sent back a report to the court indicating the offender had been recommended for treatment. It then became the court's responsibility to track whether an individual completed treatment. All treatment programs in the area are abstinence based programs. A follow-up interview, using the same measures as the initial interview, was conducted approximately 18 to 24 months following completion of their baseline assessment. Of the 520 individuals who remained in the study, 443 (85%) were successfully interviewed at the follow-up.

The individuals who completed the follow-up and the individuals who did not complete the follow-up interview did not differ on gender, race, education, marital status, employment status, personal income, repeat offender status, breath alcohol content, breath test refusal, disposition of final charge, alcohol problems, alcohol consumption, alcohol expectancies, or abstinence self-efficacy. However, relative to individuals who did not complete the follow-up, individuals who completed the follow-up were more likely to have higher scores on initial psychiatric distress, $t(518) = -2.16$, $p = .031$ (See Table 1).

Subsequent Alcohol or Other Drug (AOD) Treatment

As part of the follow-up interview, participants were asked about any treatment in which they may have participated after their initial experience in the current study. Of the 443 individuals who successfully completed the follow-up interview, 104 (23.5%) had entered treatment subsequent to the completion of the study intervention. The remaining 339 individuals did not enter treatment following the baseline assessment. Thus for purposes of this study, the treatment group consisted of those individuals who indicated they had entered a formal treatment program for substance use after baseline. The no treatment group indicated they had not entered any type of formal treatment program.

Ten of the 104 individuals who entered treatment went to private providers or federal agencies for treatment, while the remaining individuals entered treatment with agencies licensed by the New York State Office of Substance Abuse Services (OASAS). The OASAS agencies' primary goals are abstinence and they use both group and individual sessions in treatment protocols. The length of treatment ranged from 8 weeks to over 18 months, with approximately one-third still in treatment at the point of the follow-up interview. There were no differences in depression levels between the individuals who completed treatment and those still engaged in the treatment process.

¹The interviewer in question was stealing money intended for subject payment and at one point input false data to cover the thefts. When this was discovered, all 29 interviews completed by this individual were deleted from the study.

Measures

Severity of Alcohol Problems—The Alcohol Dependence Scale (ADS; Skinner & Allen, 1982; Skinner & Horn, 1984) is a 25-item measure of the alcohol dependence syndrome, and was used to measure the severity of alcohol dependence symptoms. The alpha coefficient for this study was .84.

The Alcohol Use Disorders Identification Test (AUDIT; Saunders et al., 1993) is a 10-item questionnaire used to identify persons whose alcohol consumption has become hazardous or harmful to their health. The alpha coefficient for this scale was .77.

The Drinker Inventory of Consequences (DRINC; Miller, Tonigan, and Longabaugh, 1995), a 50-item questionnaire, measured adverse consequences of alcohol abuse in five areas: Interpersonal, Physical, Social, Impulsive, and Intrapersonal. The total score was used for this paper, with a reliability coefficient of .92.

The total scores from the three aforementioned scales were standardized and then summed together to create an index of overall problem severity. The reliability coefficient for this index was .86.

The DIS-IV was administered to assess for alcohol use disorders (DIS-IV; Robins, Helzer, Cottler, & Goldring, 1997). The measure used in the current study consisted of the number of lifetime criteria for the combined abuse (4) and dependence (7) diagnoses. The mean number of positive lifetime criteria was 2.53 ($SD = 2.32$), with approximately 40% endorsing 3 or more of the combined abuse and dependence criteria. For more information concerning the diagnoses, see Stasiewicz, Nochajski, and Homish (2007).

Problem-Risk—The Research Institute on Addictions Self Inventory (RIASI; Nochajski, 2006 unpublished manual; Nochajski & Wiczorek, 1998) consists of 49 items that assess a variety of proximal and distal characteristics that are highly correlated with alcohol or drug problems, or DUI recidivism. This measure was used as a marker of potential risk, and had an alpha coefficient of .82.

Drug Problems—The Drug Abuse Screening Test (DAST; Skinner, 1982) is a brief 20-item measure of the seriousness of drug involvement. It was structured similar to the Michigan Alcoholism Screening Test (Selzer, 1971). The alpha coefficient for this scale was .82.

Alcohol Consumption and Drug Use—The Timeline Follow-back (TLFB; Sobell & Sobell, 1992; 1996) was used to collect drinking and drinking-driving information, as well as drug use information, for the 30-day period prior to each interview. Measures derived from the alcohol TLFB included: Number of days drinking, total number of drinks, number of days drinking-driving, number of days drinking 5 or more drinks, and maximum number of drinks in one day. These five measures were log-transformed and then summed together to create an index of alcohol use. For these five measures the alpha coefficient was .88.

The drug measure consisted of the number of days using drugs, number of days drugged-driving, number of days using multiple drugs, and number of days driving after using multiple drugs. These measures were log-transformed due to skewness. The log transformed variables were then summed together. The alpha coefficient for these four items was .62.

Alcohol Expectancies—Participants were asked to rate statements on how alcohol affects them, using the Alcohol Effects Questionnaire (as modified by Rohsenow, 1983).

Items were assessed using a five point Likert scale, ranging from Never (1) to Always (5). For the current study the total scale score was used, with a reliability coefficient of .97.

Abstinence Self-Efficacy—The Abstinence Self-Efficacy Scale (AASE; DiClemente, Carbonari, Montgomery, & Hughes, 1994) was used to assess confidence levels for remaining abstinent across 20 situations. The alpha coefficient for these 20 items was .95.

Readiness to Change—The University of Rhode Island Change Assessment Scale (URICA; McConaughy, et al., 1983) uses a 32-item measure and has four 8-item subscales (precontemplation, contemplation, action, and maintenance). These have been described in detail in the context of the stages of change model (Prochaska and DiClemente, 1984), and have been studied extensively in the area of addictive behaviors (Prochaska, DiClemente, and Norcross, 1992). The reliability coefficients for the precontemplation, contemplation, action, and maintenance subscales, were .69, .88, .90, and .89, respectively. For purposes of the current study, the readiness to change score was calculated by adding the mean item scores for the contemplation, action, and maintenance subscales together and then subtracting the mean item score for the precontemplation subscale from this total. The mean readiness to change score was 5.848 ($SD = 2.67$), with a range of $-.625$ to 12.375 . For purposes of indicating low, high and moderate readiness to change, scores we followed recommendations of DiClemente, Schlundt, and Gemmell (2004) to use cutoffs developed within the context of the group being studied. As a result, one standard deviation below the mean were considered low, scores one standard deviation above the mean were considered high, while those in the middle were considered moderate.

Psychiatric Distress—The Symptom Checklist-90 Revised (SCL-90-R; Derogatis, 1994) was used to assess psychiatric distress. The SCL-90-R contains 9 subscales: Somatization, obsessive compulsion, interpersonal sensitivity, depression, anxiety, hostility, phobic anxiety, paranoid ideation, and psychoticism, as well as a global severity index. The alpha coefficients ranged from a low of .73 for the psychoticism subscale to a high of .89 for the depression subscale, with means ranging from a low of .11 ($SD = .28$) for the phobic anxiety subscale to a high of .40 ($SD = .47$) for the obsessive compulsion subscale. A total psychiatric distress score was derived by summing the anxiety, obsessive compulsive, somaticism, psychotocism, phobic anxiety, paranoid ideation, and internal sensitivity subscales. The alpha coefficient for this overall psychiatric distress measure was .95.

The current study used the depression subscale to determine the levels of depression. The mean depression scores for the patient males ($M = .345$, $SD = .443$) and females ($M = .480$, $SD = .560$) were slightly higher than the means for the nonpatient samples of males ($M = .28$, $SD = .31$) and females ($M = .35$, $SD = .43$) in the SCL-90R manual, but well below clinical levels. For purposes of this study, we used gender-specific cutpoints of one standard deviation over the mean item score, resulting in 15 females (12.8%) and 46 males (11.4%) scoring high in depression.

Data Analyses

Initial analyses focused on the relationship between depression and readiness to change. A *t*-test was used to evaluate whether the low and high depression groups differed in terms of the readiness to change score.

The next analysis was a logistic regression focused on evaluating the associations of depression and readiness to change with subsequent treatment entry. Expectations were that both readiness to change and depression would be significantly associated with subsequent treatment entry.

The final sets of analyses focused on the relationships of treatment entry and depression with the various outcomes identified above. For this purpose, we used a series of ANCOVAs. Baseline assessments of all measures were used as covariates. Given our interest in the influence of depression, and that depression and readiness to change had a relatively strong relationship, we used readiness to change as an additional covariate in all analyses. The interactions of depression by treatment entry, if significant, would suggest that there were differential outcomes for treatment as a function of the level of initial depression.

In addition to the above mentioned ANCOVAs, we were also interested in evaluating the changes within the treated group to determine if the high depression individuals showed greater positive changes compared with the low depression group. For this purpose, we performed a series of repeated measures ANOVAs with specific apriori hypotheses that the effect for depression would be significant within the treated group and that the changes for the high depression group would be significant, while those for the low depression group would not.

RESULTS

Depression and Readiness to Change

We first evaluated the relationship between depression levels and readiness to change at baseline, using a t-test with the two depression groups (low vs high) as the independent measure and readiness to change as the dependent variable. The results showed a significant effect, $t(518) = -5.09, p < .0001, \eta^2 = .048$. As expected, individuals in the high depression group ($M = 7.45 (SD = 2.40)$) were significantly higher than the individuals in the low depression group ($M = 5.64, SD = 2.63$), meaning they were more ready to change their risky drinking behavior.

The next set of analyses considered the relationship of treatment entry to depression and readiness to change. Table 2 shows the results of the analyses. As noted in the table, depression was significantly associated with treatment entry, supporting the hypotheses that individuals with higher levels of depression would be more likely to seek out treatment. For the readiness to change assessment, we used the trichotomous measure. The results indicate that the highest group was most likely to enter treatment, as might be expected.

Depression and Treatment Entry

The next analysis considered whether treatment entry was related to levels of depression and whether this relationship remained after controlling for readiness to change. The relationship between depression and readiness to change was modest ($r = .341$), accounting for approximately 10% of the association. A stepwise logistic regression was used for this purpose. The results from the logistic regression indicate that readiness to change had a significant positive relationship with treatment entry; the odds for entering treatment were 1.41, meaning that for every unit increase in readiness to change, the odds of treatment entry increased by 41%. After controlling for readiness to change, depression was also significantly associated with treatment entry (Wald $\chi^2 = 5.28, p = .022$). The odds for treatment entry for individuals categorized as high in depression were 2.1, 95% CI [1.115–3.935], suggesting that individuals in the high depression group were over twice as likely to enter treatment than those individuals in the low depression group.

Relationships of Outcome Measures

Correlations between the eight outcomes showed a range in magnitude from a low of .170 between drinking and drug problem severity, to a high of .672 between the alcohol expectancy questionnaire and severity of alcohol problems. While the results suggest some

redundancy in the outcome measures, we decided to assess all eight outcomes, as they present different approaches to how alcohol and drug problems might be considered. In addition, we felt there was sufficient unexplained variance in the relationships to allow for a better understanding of the relationship between depression, treatment entry and the various outcomes.

ANCOVAs - Depression by Treatment

Table 3 shows the baseline and follow-up means and standard deviations for the eight outcome measures. ANCOVAs were run for the eight outcomes shown in the table using the baseline and readiness to change assessment from the baseline as covariates, with treatment entry and depression as the independent variables. Results from the ANCOVAs indicated significant treatment entry by depression interactions for drug problem severity, $F(1, 436) = 9.19, p = .003, \eta^2 = .021$; drug use, $F(1, 437) = 9.89, p = .002, \eta^2 = .023$; Research Institute on Addictions Self Inventory - general problem risk, $F(1, 437) = 10.21, p = .001, \eta^2 = .023$; alcohol expectancies, $F(1, 437) = 4.53, p = .034, \eta^2 = .010$; abstinence self-efficacy, $F(1, 436) = 8.47, p = .004, \eta^2 = .019$; and psychiatric distress, $F(1, 436) = 9.09, p = .003, \eta^2 = .020$. Even using a Bonferoni adjustment, 5 of the 8 tests were significant. These findings indicate that depression significantly influenced the effects of treatment for at least five of the outcomes that this study evaluated.

Simple Effects Testing

The next group of analyses considered specific changes across time within Cells (Low Depression – No Treatment; Low Depression – Treatment; High Depression – No Treatment; and High Depression – Treatment). Expectations were for highly significant differences across time within the High Depression – Treatment cells and either non-significant or smaller magnitude differences for all other cells. We used a Bonferoni adjustment across all simple effects tests ($n = 32$). Those cells in Table 3 marked with an * indicate that they met the Bonferoni adjusted alpha level of $p < .0015$.

For alcohol related problems, the only significant time effect was in the high depression – treatment yes cell, $F(1, 439) = 22.19, p < .0001, \eta^2 = .04811$. The means indicate that the follow-up assessment showed significantly lower alcohol-related problems than the baseline. Alcohol consumption showed significant effects for individuals in the low depression – no treatment cell, $F(1, 439) = 18.04, \eta^2 = .040$; individuals in the low depression – treatment cell, $F(1, 439) = 22.97, p < .001, \eta^2 = .050$; and individuals in the high depression – treatment cell, $F(1, 439) = 18.93, p < .001, \eta^2 = .041$. The means suggest that individuals in the low depression – no treatment cell showed an actual increase in drinking, while individuals in both treatment cells showed significant reductions.

Simple effects tests for drug problems showed a significant reduction for the low depression-no – treatment cell, $F(1, 439) = 16.23, p < .001, \eta^2 = .036$. Results for drug use showed a significant effect for individuals in the high depression – treatment cell, $F(1, 439) = 10.33, p < .001, \eta^2 = .023$, indicating a significant decrease in drug use from baseline to follow-up.

The results for the problem risk (Research Institute on Addictions Self Inventory), showed a significant increase for the individuals in the low depression – no treatment cell, $F(1, 439) = 21.68, p < .001, \eta^2 = .047$, and a significant reduction for the individuals in the high depression – treatment cell, $F(1, 439) = 22.79, p < .001, \eta^2 = .049$.

Alcohol expectancy results showed significant reductions for individuals in the low depression – no treatment – cell, $F(1, 438) = 11.38, p = .001, \eta^2 = .025$, and the high depression – treatment cell, $F(1, 438) = 36.75, p < .001, \eta^2 = .077$. For abstinence self-

efficacy, there were significant decreases for the individuals in the low depression – no treatment cell, $F(1,438) = 14.39, p < .001, \eta^2 = .032$, and the individuals in the high depression – no treatment cell, $F(1,438) = 11.22, p < .001, \eta^2 = .025$. In contrast, there was a significant increase in abstinence self-efficacy for the individuals in the high depression – treatment cell, $F(1,438) = 17.20, p < .001, \eta^2 = .038$. Finally, results for psychiatric distress other than depression, showed a significant increase for the individuals in the low depression – treatment cell, $F(1, 438) = 13.31, p < .001, \eta^2 = .030$. While individuals in the high depression – treatment cell did not meet the significance criteria, there was a marginal trend in the expected direction ($p < .003$) and the interaction of treatment by time within the high depression group was significant, $F(1,438) = 19.49, p < .001, \eta^2 = .043$, reflecting no change for individuals in the no treatment group and a reduction for individuals in the treated group (see Table 3).

DISCUSSION

The current study intended to assess the association of depression with a number of factors that relate to positive outcomes for DUI offenders. Readiness to change was one of the indicators and may be an important potential moderator of possible treatment entry and engagement (Wells-Parker et al., 2006). In terms of the Transtheoretical Model of Change (Prochaska & DiClemente, 1982), DUI offenders may be less ready to alter their behaviors. This lower readiness to change results in a decreased likelihood of treatment entry and, when they do enter treatment, less successful outcomes because of a lack of engagement in the treatment process (Nochajski & Stasiewicz, 2006). Readiness to change can be a very useful measure for the DUI field when trying to determine an individual's likelihood of taking action to change his or her behavior (Nochajski, 2009; Nochajski & Stasiewicz, 2005; Wells-Parker et al., 1998; Wieczorek et al., 1997). The results of the analysis in the current study's evaluation of the association of baseline depression with baseline readiness to change suggested that the individuals high in depression had higher readiness to change scores. In addition, the baseline depression scores were good predictors of treatment entry; the high depression group was much more likely to seek and enter treatment than the low depression group. These results support the prior work of Wells Parker and her colleagues (Dill et al., 2007; Wells-Parker et al., 2007; Wells-Parker et al., 2006), and suggest that negative affect may be an important indicator of potential readiness to change.

The next part of the current study focused on the impact of depression on treatment outcomes. From the results shown in Table 3, depression clearly had a large impact on subsequent treatment outcomes for the individuals who engaged in treatment. These outcomes might suggest a greater level of engagement on their part. However, because the treatment was not provided within the context of the study per se, there were no measures of actual treatment engagement, and comments from the participants at the point of follow-up did not show any patterns that would shed light on this issue. Future research needs to further delineate the treatment engagement issue and the impact that depression may have on that process. Nonetheless, while the specific mechanism for why this interaction may occur was not pursued in the current study, it is clear that depression in DUI offenders has some potential for moderating the impact of subsequent treatment, consistent with the findings of Wells-Parker and Williams (2002).

Limitations

The current study evaluated a sample of convicted DUI offenders in order to determine the potential moderating influence of depression levels on subsequent outcomes. These findings have some limitations most critically that treatment was not randomly assigned; individuals were referred for treatment or were free to pursue subsequent treatment as they felt the need. As such, some of the factors that may have influenced subsequent treatment entry may not

have been evident during the follow-up interviews. Furthermore, the level of depression at treatment entry may have differed from baseline assessments of depression. However, the baseline depression results were still significant predictors of subsequent treatment entry and outcomes, suggesting that any changes in depression from baseline to treatment entry may not have significantly altered the results of the current study.

A second issue is the under-reporting of problems. Extensive literature suggests that DUI offenders are known to either under-report problems (Cavaola, Strohmetz, Wolf, & Lavendar, 2003; Chang & Lapham, 1996; Lapham, C'de Baca, Chang, Hunt, & Berger, 2002; Nochajski & Stasiewicz, 2001; Nochajski & Wieczorek, 1998) or not view their drinking as a problem (Nochajski & Stasiewicz, 2005; Wieczorek, Callahan & Morlaes, 1997). A primary difficulty is that a large portion of DUI offenders do not want to change their behavior and consequently are disinclined to admit that they have problems (Lapham, C'de Baca, McMillan, & Hunt, 2004; Lapham, C'de Baca, Chang, Hunt, & Berger, 2002; Lincourt, Kuettel, & Bombardier, 2002; Nochajski & Wieczorek, 1998; Nochajski & Stasiewicz, 2001; Vingilis, 1983). Thus, these individuals may remain unconvinced about the necessity of formal treatment when mandated for an evaluation and told to go for treatment. Discrepancies between the offenders' perceptions of their drinking and the way the criminal justice and treatment systems see their drinking may lead to increased resistance and contribute to such problems as attrition from treatment, poor compliance, and poor outcomes (Nochajski, 1999; Nochajski & Stasiewicz, 2005). Within the context of the current study, the high depression individuals may have been more consistent in their reporting of problems and, as such, have allowed for an increased likelihood of detecting significant changes across time.

Another limitation involves the sample. The current study sample consisted of individuals who were referred from specific courts in a Mid-Western city of medium size. However, there has been some consistency in findings concerning psychiatric distress in various geographic areas of the United States (Lapham, C'de Baca, McMillan, & Lapidus, 2006; Lapham, Smith, C'de Baca, Chang, Skipper, Baum, & Hunt, 2001; Wells-Parker et al., 2007; Dill et al., 2007; Wells-parker & Williams, 2002).

Implications

Overall, the results support the importance of measuring psychiatric distress when assessing whether DUI offenders are at risk or are currently experiencing severe problems due to hazardous use of alcohol or other drugs. Furthermore, consideration of the levels of psychological distress when developing treatment programs may result in more positive treatment outcomes. This study and the supporting conclusions of past studies should attract attention from clinicians treating DUI offenders, given the expectations of providing evidence-based practices as standard, high-quality care. In light of the limitations of this study and those of similar previous studies, it bears repeating that the individuals high in depression had higher readiness to change scores. Additionally, the baseline depression scores were good predictors of treatment entry, with the high depression group much more likely to seek and enter treatment than the low depression group. These results support the prior studies (see; Dill et al., 2007; Wells-Parker et al., 2007; Wells-Parker et al., 2006), and suggest that negative affect may be an important indicator of potential readiness to change.

During the evaluation process after a DUI arrest, clinicians would benefit from the knowledge that the DUI offender is experiencing a depressed mood. This could be an indicator that the DUI offender has high readiness to change his or her behaviors. As indicated by Wells-Parker et al., (2006) "...depression is a marker for receptivity to additional intervention..." (p. 349). One of the main reasons the general public does not seek treatment for problem drinking, according to Schmidt and Weisner (1999), is that they

do not consider themselves as having a problem. This tends to be even more of a factor with DUI offenders. Extensive literature shows that DUI offenders either under-report problems (Cavaola, Strohmetz, Wolf, & Lavendar, 2003; Chang & Lapham, 1996; Lapham, C'de Baca, Chang, Hunt, & Berger, 2002; Nochajski & Stasiewicz, 2001; Nochajski & Wieczorek, 1998) or do not view their drinking as a problem (Nochajski & Stasiewicz, 2005; Wieczorek, Callahan & Morlaes, 1997). Working with this segment of the DUI population's readiness to change is challenging, as there is no motivation to change a repudiated problem.

Sackett (1996) indicated adjusting any practice calls for judicious use of clinical expertise should be guided by patient values. Not all depressed mood DUI offenders will necessarily be open to changing behaviors or will readily seek additional services (Wells-Parker et al., 2006). Likewise, some non-depressed mood DUI offenders will be ready to change their behaviors. Clinicians working with DUI offenders should consider the levels of psychological distress, as well as readiness to change, when evaluating this population and when developing treatment programs.

Acknowledgments

Support for this research was provided by National Institute of Alcoholism and Alcohol Abuse grant to Dr. Nochajski (R01 AA 12452).

References

- Bakker LW, Hudson SM, Ward T. Reducing recidivism in driving while disqualified. *Criminal Justice and Behavior*. 2000; 27:531–560.10.1177/0093854800027005001
- Cavaola AA, Strohmetz DB, Wolf JM, Lavender NJ. Comparison of DWI offenders with non-DWI individuals on the MMPI-2 and the Michigan Alcoholism Screening Test. *Addictive Behaviors*. 2003; 28:971–977.10.1016/S0306-4603(01)00291-X [PubMed: 12788269]
- Chang I, Lapham SC. Validity of self-reported criminal offences and traffic violations in screening of driving-while-intoxicated offenders. *Alcohol and Alcoholism*. 1996; 31:583–590.10.1093/oxfordjournals.alcalc.a008194 [PubMed: 9010549]
- Bureau of Justice Statistics. Sourcebook of criminal justice statistics. Oct. 2012 Retrieved from http://www.albany.edu/sourcebook/tost_4.html#4_a
- DeYoung DJ. An evaluation of the effectiveness of alcohol treatment, driver license actions and jail terms in reducing drunk driving recidivism in California. *Addiction*. 1997; 92:989–997.10.1111/j.1360-0443.1997.tb02978.x [PubMed: 9376781]
- DiClemente CC, Carbonari JP, Montgomery RPG, Hughes SO. The Alcohol Abstinence Self-Efficacy Scale. *Journal of Studies on Alcohol*. 1994; 55:141–148. [PubMed: 8189734]
- DiClemente CC, Schlundt D, Gemmell L. Readiness and stages of change in addiction treatment. *American Journal of Addictions*. 2004; 13:103–119.10.180/10550490490435777
- Dill PL, Wells-Parker E, Cross GW, Williams M, Mann RE, Stoduto G, Shuggi R. The relationship between depressed mood, self-efficacy and affective states during the drinking driving sequence. *Addictive Behaviors*. 2007; 32:1714–1718.10.1016/j.addbeh.2006.11.011 [PubMed: 17188432]
- Derogatis, LR. Symptom Checklist-90-R: Administration, scoring, and procedures manual. Minneapolis, MN: National Computer Systems; 1994.
- Kunitz SJ, Woodall WG, Zhao H, Wheeler DR, Lillis R, Rogers E. Rearrest rates after incarceration for DWI: A comparative study in a southwestern US county. *American Journal of Public Health*. 2002; 92:1826–1831.10.2105/AJPH.92.11.1826 [PubMed: 12406816]
- Lapham SC, C'de Baca J, Chang I, Hunt WC, Berger LR. Are drunk-driving offenders referred for screening accurately reporting their drug use? *Drug and Alcohol Dependence*. 2002; 66:243–253.10.1016/S0376-8716(02)00004-2 [PubMed: 12062459]

- Lapham SC, C'deBaca J, McMillan GP, Hunt WC. Accuracy of alcohol diagnosis among DWI offenders referred for screening. *Drug and Alcohol Dependence*. 2004; 76:135–141.10.1016/j.drugalcdep.204.04.020 [PubMed: 15488337]
- Lapham SC, C'deBaca J, McMillan GP, Lapidus J. Psychiatric disorders in a sample of repeat impaired-driving offenders. *Journal of Studies on Alcohol*. 2006; 67(5):707–713. [PubMed: 16847539]
- Lapham SC, Smith E, C'de Baca J, Chang I, Skipper BJ, Baum G, Hunt WC. Prevalence of psychiatric disorders among persons convicted of driving while impaired. *Archives of General Psychiatry*. 2001; 58(10):943–949.10.1001/archpsyc.58.10.943 [PubMed: 11576032]
- Lincourt P, Keuttel TJ, Bombardier CH. Motivational interviewing in a group setting with mandated clients: A pilot study. *Addictive Behaviors*. 2002; 27:381–391. [PubMed: 12118626]
- Lucker GW, Osti JR. Reduced recidivism among first-time DWI offenders as a correlate of pre-trial intervention. *Journal of Offender Rehabilitation*. 1997; 24:1–18.10.1300/J076v24n03_01
- McConaughy EA, Prochaska JO, Velicer WF. Stages of change in psychotherapy: Measurement and sample profiles. *Psychotherapy: Theory, Research, and Practice*. 1983; 20:368–375.10.1037/h0090198
- Miller, WR.; Tonigan, JS.; Longabaugh, R. NIH Publication No 95–3911. Vol. 4. Rockville, MD: National Institutes of Health; 1995. The Drinker Inventory of Consequences (DrInC): An instrument for assessing adverse consequences of alcohol abuse. Project MATCH Monograph Series. Retrieved from <http://pubs.niaaa.nih.gov/publications/ProjectMatch/match04.pdf>
- Nochajski TH. Alcohol program completion: Does it matter for DWI recidivism? [Abstract]. *Alcoholism: Clinical and Experimental Research*. 1999; 23(5):239.
- Nochajski TH, Stasiewicz PR. Under-reporting by DWI offenders: Implications for motivational interviewing. [Abstract]. *Alcoholism: Clinical and Experimental Research*. 2001; 25:277.
- Nochajski TH, Stasiewicz P. Assessing stages of change in DUI offenders: A comparison of two measures. *Journal of Addictions Nursing*. 2005; 16:57–67.10.1080/10884600590919127
- Nochajski TH, Stasiewicz PR. Relapse to driving under the influence (DUI): A review. *Clinical Psychology Review*. 2006; 26:179–195.10.1016/j.cpr.205.11.006 [PubMed: 16364523]
- Nochajski TH, Wiczorek WF. Identifying potential drinking-driving recidivists: Do non-obvious indicators help? *Journal of Prevention and Intervention in the Community*. 1998; 17:69–83.10.1300/J005v17n01_06
- Prochaska JO, DiClemente CC. Transtheoretical therapy: Toward a more integrative model of change. *Psychotherapy: Theory, Research, and Practice*. 1982; 19:276–288.10.1037/h0088437
- Prochaska, JO.; DiClemente, CC. The transtheoretical approach: Crossing traditional boundaries of therapy. Homewood, IL: Dow Jones-Irwin; 1984.
- Prochaska JO, DiClemente CC, Norcross J. In search of how people change: Applications to addictive behaviors. *American Psychologist*. 1992; 47:1102–1114.10.1037/0003-066X.47.9.1102 [PubMed: 1329589]
- Robins, L.; Helzer, J.; Cottler, L.; Goldring, E. NIMH Diagnostic Interview Schedule. Version IV. St. Louis, MO: Washington University; 1997.
- Rohsenow DJ. Drinking habits and expectancies about alcohol's effects for self versus others. *Journal of Consulting and Clinical Psychology*. 1983; 51(5):752–756.10.1037/0022-006X.51.5.752 [PubMed: 6630690]
- Sackett D. Evidence-based Medicine - What it is and what it isn't. *British Medical Journal*. 1996; 312:71–72.10.1136/bmj.312.7023.71 [PubMed: 8555924]
- Saunders JB, Aasland OG, Babor TF, de la Fuente JR, Grant M. Development of the Alcohol Use Disorders Identification Test (AUDIT): WHO collaborative project on early detection of persons with harmful alcohol consumption- II. *Addiction*. 1993; 88:791–804.10.1111/j.1360-0443.1993.tb02093.x [PubMed: 8329970]
- Schmidt, LA.; Weisner, CM. Public health perspectives on access and need for substance abuse treatment. In: Tucker, JA.; Donovan, DM.; Marlatt, GA., editors. *Changing addictive behavior: Bridging clinical and public health strategies*. New York, NY: Guilford; 1999. p. 67-96.
- Selzer ML. The Michigan Alcoholism Screening Test: The quest for a new diagnostic instrument. *American Journal of Psychiatry*. 1971; 127:1653–1658. [PubMed: 5565851]

- Skinner HA. The Drug Abuse Screening Test. *Addictive Behavior*. 1982; 7:363–371.
- Skinner HA, Allen BA. Alcohol dependence syndrome: Measurement and validation. *Journal of Abnormal Psychology*. 1982; 91:199–209. [PubMed: 7096790]
- Skinner, HA.; Horn, JL. Alcohol Dependence Scale (ADS) user's guide. Toronto, Ontario: Addiction Research Foundation; 1984.
- Sobell, LC.; Sobell, MB. Timeline follow-back: A technique for assessing self-reported alcohol consumption. In: Litten, RZ.; Allen, JP., editors. *Measuring alcohol consumption: Psychosocial and biochemical methods*. Totowa, NJ: Humana Press; 1992. p. 41-72.
- Sobell, LC.; Sobell, MB. Timeline followback: User's guide. Toronto, Ontario: Addiction Research Foundation; 1996.
- Stasiewicz PR, Nochajski TH, Homish DL. Assessment of alcohol use disorders among court-mandated DWI offenders. *Journal of Addiction and Offender Counseling*. 2007; 27(2):102–112.10.1002/j.2161-1874.2007.tb00024.x
- U.S. Department of Transportation, National Highway Traffic Safety Administration. DOT HS 811–659. NHTSA's National Center for Statistics and Analysis; Washington, DC: NHTSA Traffic Safety Facts 2010. Retrieved on October 12, 2012 from <http://www.fars.nhtsa.dot.gov/Trends/TrendsAlcohol.aspx>
- Vingilis, E. Drinking drivers and alcoholics: Are they from the same population?. In: Smart, RG.; Glaser, FB.; Israel, Y.; Kalant, H.; Popham, RE.; Schmidt, WW., editors. *Research advances in alcohol and drug problems*. Vol. 7. New York, NY: Plenum Press; 1983. p. 299-342.
- Wells-Parker E, Bangert-Drowns R, McMillen R, Williams M. Final results from a meta-analysis of remedial interventions with drink/drive offenders. *Addiction*. 1995; 90:907–926. [PubMed: 7663313]
- Wells-Parker E, Dill P, Williams M, Stoduto G. Are depressed drinking/driving offenders more receptive to brief intervention? *Addictive Behaviors*. 2006; 31:339–350.10.1016/j.addbeh.2005.05.011 [PubMed: 16005159]
- Wells-Parker, E.; Dill, P.; Cross, G.; Mann, RE.; Stoduto, G.; Nochajski, TH. An integrated theoretical model for matching DUI offenders to intervention options: Negative cognitive/affective patterns, dissonance, and motivation. In: Logan, B.; Isenschmid, D.; Walsh, J.; Beirness, D.; Morland, J., editors. *Alcohol, drugs and traffic safety -T2007*(p.139). Seattle, WA: International Council on Alcohol, Drugs and Traffic Safety; 2007.
- Wells-Parker E, Williams M. Enhancing the effectiveness of traditional interventions with drinking drivers by adding brief individual components. *Journal of Studies on Alcohol*. 2002; 63:655–664. [PubMed: 12529065]
- Wells-Parker E, Williams M, Dill P, Kenne D. Stages of change and self-efficacy for controlling drinking and driving: A psychometric analysis. *Addictive Behaviors*. 1998; 23(3):361–363.10.1016/S0306-4603(97)00077-4
- Wieczorek, WF.; Callahan, CP.; Morales, MA. Motivation for change among DWI offenders. In: Mercier-Guyon, C., editor. *Alcohol, drugs and traffic safety —T97*. Annecy, France: CERMT; 1997. p. 1069-1075.
- Williams DJ, Simmons P, Thomas A. Predicting DUI recidivism following an alcohol safety action program. *Journal of Offender Rehabilitation*. 2000; 32(1/2):129–145.10.1300/J076v32n01_05

Table 1

Comparison of Follow-up Completers vs. Non-Completers

Measure	Total Sample (<i>n</i> = 520) <i>n</i> (%)	Completed Follow-Up (<i>n</i> = 443) <i>n</i> (%)	No Follow-Up (<i>n</i> = 77) <i>n</i> (%)	<i>p</i> -level
Gender (Male)	402 (77.3)	337 (76.1)	65 (84.4)	ns
Ethnicity (Caucasian/White)	476 (91.5)	401 (90.5)	75 (97.4)	ns
Education (> High School)	338 (65.0)	298 (67.3)	41 (53.2)	ns
Marital Status (Never Married)	317 (61.0)	278 (62.8)	39 (50.6)	ns
Unemployed (Yes)	104 (20.0)	90 (20.3)	14 (18.2)	ns
Income Less than \$20,000 (Yes)	222 (42.7)	192 (43.3)	30 (39.0)	ns
Repeat Offender (Yes)	171 (32.9)	141 (31.8)	30 (39.0)	ns
Refused Breath/Chemical Test (Yes)	159 (30.6)	132 (29.8)	27 (35.1)	ns
Lifetime Alcohol Diagnosis (No)	370 (71.2)	312 (70.4)	58 (75.3)	ns
	<i>M</i> (<i>SD</i>)	<i>M</i> (<i>SD</i>)	<i>M</i> (<i>SD</i>)	
Age	33.13 (11.03)	32.79 (11.10)	35.14 (10.45)	ns
Alcohol Dependence Scale	0.0 (2.45)	0.01 (2.60)	−0.06 (2.87)	ns
Log of Alcohol Consumption	5.06 (3.87)	5.16 (3.85)	4.47 (3.95)	ns
Log of Drug Use	0.22 (0.80)	0.25 (0.85)	0.06 (0.31)	ns
Depression	0.38 (0.48)	0.39 (0.49)	0.30 (0.41)	ns
Readiness to Change	5.85 (2.67)	5.86 (2.65)	5.75 (2.78)	ns
RIA Self Inventory	11.69 (6.66)	11.84 (6.62)	10.81 (6.83)	ns
Alcohol Expectancy	91.78 (29.24)	91.84 (27.97)	91.44 (35.90)	ns
Alcohol Abstinence Self-Efficacy	81.96 (13.65)	81.79 (13.38)	82.92 (15.17)	ns
Psychiatric Distress	17.40 (20.18)	18.19 (20.80)	12.83 (15.50)	<i>p</i> = .031

Note. RIA = Research Institute on Addictions; ns = not significant.

Table 2Treatment Entry by Baseline Depression and Readiness to Change ($n = 443$)

	No Treatment ($n = 339$) n (%)	Treatment ($n = 104$) n (%)	
Depression			
Low ($n = 389$)	309 (79.4)	80 (20.6)	$\chi^2 = 15.05, df = 1, n = 443, p < .001$
High ($n = 54$)	30 (55.6)	24 (44.4)	
Readiness to Change			
Low ($n = 66$)	58 (87.9)	8 (12.1)	$\chi^2 = 50.15, df = 2, n = 443, p < .001$
Moderate ($n = 288$)	238 (82.6)	50 (17.4)	
High ($n = 89$)	43 (48.3)	46 (51.7)	

Table 3

Means and Standard Deviations for Various Outcomes as a Function of Treatment Entry, Depression Level and Time of Assessment

	No Treatment Entry		Treatment Entry	
	Low Depression (<i>n</i> = 309) <i>M</i> (<i>SD</i>)	High Depression (<i>n</i> = 30) <i>M</i> (<i>SD</i>)	Low Depression (<i>n</i> = 80) <i>M</i> (<i>SD</i>)	High Depression (<i>n</i> = 24) <i>M</i> (<i>SD</i>)
Alcohol Problems				
Baseline	−0.824 (1.59)	0.358 (1.82)	1.74 (3.34)	4.54 (3.51) *1.59
Follow-up	−0.514 (1.79)	0.179 (1.84)	1.44 (4.32)	(4.12)
Effect size ²	.007	.000	.002	.048
Log of Drinking				
Baseline	4.70 (3.49) *	5.37 (3.28)	6.26 (4.52) *	7.21 (5.20) *
Follow-up	5.78 (3.60)	6.02 (3.93)	3.85 (4.47)	3.23 (4.65)
Effect size ²	.040	.001	.050	.041
Drug Problems ^a				
Baseline	0.825 (1.35) *	1.33 (1.85)	1.84 (2.65)	2.33 (2.63)
Follow-up	0.304 (1.04)	1.17 (2.73)	2.05 (4.05)	1.13 (1.78)
Effect size ²	.036	.000	.002	.015
Log of Drug Use ^a				
Baseline	0.102 (0.57)	0.342 (0.76)	0.586 (1.13)	0.963 (1.69) *
Follow-up	0.131 (0.51)	0.681 (1.44)	0.452 (1.23)	0.343 (0.79)
Effect size ²	.001	.009	.003	.025
RIA Self Inventory ^a				
Baseline	9.65 (5.05) *	17.47 (6.37)	14.59 (6.20)	23.96 (5.75) *
Follow-up	11.21 (5.99)	18.27 (7.28)	15.43 (6.48)	18.21 (6.41)
Effect size ²	.047	.001	.003	.049
Alcohol Expectancies				
Baseline	84.35 (24.00) *	109.17 (25.33) *	102.13 (28.61) *	131.00 (24.25) *
Follow-up	79.96 (24.77)	97.20 (31.28)	90.08 (38.43)	91.46 (36.92)
Effect size ²	.013	.010	.025	.077
Alcohol Abstinence Self-Efficacy ^a				
Baseline	84.56 (12.03) *	79.77 (12.86) *	76.63 (14.00)	66.25 (13.17) *
Follow-up	81.60 (12.89)	71.40 (13.90)	80.11 (15.78)	77.83 (15.60)
Effect size ²	.032	.025	.012	.038
Psychiatric Distress ^a				

	No Treatment Entry		Treatment Entry	
	Low Depression (<i>n</i> = 309) <i>M</i> (<i>SD</i>)	High Depression (<i>n</i> = 30) <i>M</i> (<i>SD</i>)	Low Depression (<i>n</i> = 80) <i>M</i> (<i>SD</i>)	High Depression (<i>n</i> = 24) <i>M</i> (<i>SD</i>)
Baseline	11.97 (12.01)	50.27 (29.88)	16.94 (13.79) *	62.38 (26.45)
Follow-up	12.98 (15.85)	50.53 (32.77)	24.98 (26.41)	50.17 (45.17)
Effect size ²	.002	.000	.030	.021

^aSignificant treatment entry by depression interaction from ANCOVA with Bonferoni adjustment $p < .005$

* Significant changes across time within that cell, with Bonferoni adjustment $p < .001$