BRIEF REPORT

RELATIONSHIP OF DEPRESSION WITH MEASURES OF SOCIAL FUNCTIONING IN ADULT DRUG ABUSERS

BRAD DONOHUE, RON ACIERNO, and EVAN KOGAN

Center for Psychological Studies, Nova Southeastern University

Abstract — The present study describes the relationship between depression and several measures of social functioning — including employment, criminal activity, incarceration, marital functioning, and alcohol and drug use — in a population of adult drug abusers. Our investigation extends past work in this area by specifically investigating the effects of depression (as opposed to simple substance use) on social and interpersonal functioning. Predictably, elevated levels of depression were associated with increased use of hard drugs and alcohol, greater levels of institutionalization, reduced attendance at work or school, and lower overall rates of marital satisfaction. Consistent with previous reports, level of marijuana use was not related to severity of depression. It appears that depressed substance abusers experience significantly more social, vocational, and interpersonal dysfunction than their nondepressed counterparts. It is proposed that the efficacy of existing treatment programs for adult drug abusers will be enhanced through the addition of strategies to assess and ameliorate depression.

Compared to the general population, patients entering drug treatment programs evince relatively high rates of psychopathology, including increased levels of anxiety, mood, and personality disorders, as well as alcohol abuse (Dinwiddie, Reich, & Cloniger, 1992; Gawin, & Kleber, 1986; Khantzian, & Treece, 1985; Mirin, Weiss, Griffin, & Michael, 1991; Mirin, Weiss, & Michael, 1988; Ross, Glaser, & Germanson, 1988; Rounsaville, & Kleber, 1986; Weiss, Mirin, Griffin, & Michael, 1988; Weiss, Mirin, Michael, et al., 1986). Importantly, the most frequently occurring comorbid psychiatric illness among substance abusers is depression (De Moja, 1990; Dinwiddie, et al., 1992; Mirin et al., 1991; Rounsaville & Kleber, 1986). Indeed, Ross et al. (1988) found that patients who met diagnostic criteria for a substance abuse disorder demonstrated higher rates of depression than subclinical drug users. In addition to high rates of comorbid psychopathology, drug abusers frequently exhibit difficulty in maintaining employment (Ross et al., 1988), engage in delinquent behaviors (Azrin et al., 1994a, 1994b; Dinwiddie et al., 1992; Tomas, Vlahov, & Anthony, 1990), and criminal actions and evince diminished social functioning (Kaufman, 1985; Lewis, Dana, & Blevins, 1988). To date, however, there has been little analysis of the relationship between depression and these social problems with this population. Moreover, most of the studies that have investigated associations between drug use and other measures of psychopathology have been restricted to patients using or abusing the same "drug of choice" (e.g., heroin; see Mirin et al., 1988), thereby greatly limiting the generalizability of noted results. The present study describes the relationship of depression and measures of social functioning — including employment, criminal activity, incarceration, and alcohol use — for a population of adult

drug users seeking outpatient psychotherapy for use/abuse of a variety of illicit drugs. Implications for treatment are discussed.

METHOD

Subjects

Subjects were 146 adults (101 males and 45 females) seeking treatment at a cost-free, outpatient drug abuse treatment center. Subjects ranged in age from 18 to 52 years ($M = 30.43$, $SD = 7.16$). Seventy percent of the subjects were self-referred, and 30% were court or agency mandated. Eighty-eight percent were White, 9% were Black, and 3% Hispanic. Thirty-three percent were high-school drop-outs. Forty-seven percent were employed or attended school full-time (defined as working/ attending school on 5 full days or more per week). Twenty-five percent were married. Subjects' mean education level was 12.1 years ($SD = 1.68$). Eighty-four percent of the sample sought treatment for abuse/dependence of "hard" drugs (i.e., cocaine, heroin, PCP, codeine, LSD). The remaining 16% sought treatment for marijuana abuse/dependence. Forty-nine percent of the subjects used hard drugs exclusively, while 17% of subjects were exclusively marijuana users. Thirty-four percent of subjects used both marijuana and hard drugs.

Inclusionary/exclusionary criteria for this study were as follows: (a) a substantiated report of illicit drug use within 30 days prior to the first intake (i.e., self- or significant-other report, positive urine analysis), and (b) no evidence of psychosis.

Procedure

Four 1-hour assessment sessions were scheduled during a 28-day period (one session each week) at our outpatient treatment center with both the subject and the subject's significant other, if available. During the initial one-hour intake interview, the drug user and the drug user's most significant other completed all measures described below. If a significant other was not available, or if the subject refused to allow a significant other to participate in the study, the drug user attended the assessment alone. (Significant others almost exclusively included the spouse for married drug users, a girl- or boyfriend for drug users involved in a sexual relationship, or parents for drug users living with their parents.)

Measures

Beck Depression Inventory (BDI). To measure severity of depression, all subjects completed the BDI during the intake session (Beck, Ward, Mendelson, Mock, & Erbaugh, 1961). The BDI is a 21-item self-report inventory that measures severity of depressive symptomatology. Total scores range from 0 to 63, with higher scores corresponding to higher levels of depression. A score of 10 is considered the traditional cutoff for mild depression (Beck, Rush, Shaw, & Emery, 1979). Beck and Steer (1984) demonstrated that the BDI has high internal consistency (alpha coefficient = .86).

Locke-Wallace Marital Adjustment Scale (LWMAS). To assess martial happiness, all subjects and their spouses ($n = 37$) completed the LWMAS (Locke & Wallace, 1959) during the intake session. The LWMAS is a 15-item self-report inventory that measures marital satisfaction. Potential scores range from 0 to 158, with scores below

100 indicative of marital discord. The LWMAS has demonstrated internal consistency (alpha coefficient = .83) (Cross & Sharpley, 1981).

Happiness Scale (Overall happiness question). To assess overall satisfaction between the subject and the subject's significant other (89 of 146 subjects had a participating significant other), the subject and the significant other independently completed the Happiness Scale (Azrin, Naster, & Jones, 1973) during the intake session. After rating level of satisfaction over 9 domains of the relationship, subjects were asked to report, using a 0 to 100 Likert rating scale, their overall happiness with their significant other. Higher scores correspond to higher levels of satisfaction. Similarly, significant others were asked to rate their level of happiness with the subject on this same scale. Although no reliability or validity has been reported for this measure, this measure has been utilized in other studies (see Azrin et al., 1994a, 1994b; Azrin, Naster & Jones, 1973; Donohue, Acierno, Van Hasselt, & Hersen, 1995).

Urine analysis. Urine samples were obtained during each of the four assessment sessions (observed by a staff member of the same sex). Each sample underwent a broadscreen assay (SYVA EMIT enzyme amino acid assay technique and thin layer chromatography with a reported 95.5% accuracy) for all commonly abused drugs.

Report of days using marijuana, hard drugs, and alcohol. During each assessment session, subjects reported number of days that they had used hard drugs, marijuana, and alcohol in the prior week (including the day of assessment). Thus, number of days using marijuana, hard drugs, and/or alcohol ranged from 0–28. In addition, significant others were also asked to report number of days that subjects used hard drugs, marijuana, and alcohol for the previous week (including the assessment session).

Police contacts. In order to assess criminal activity, subjects (and significant others, if available) independently reported number of police contacts (i.e., arrests, brief detainments) for the 7 days prior to each assessment session (including the day of assessment).

Days institutionalized. Subjects and significant others, if available, independently reported the number of days institutionalized (i.e., jailed, involuntarily committed to inpatient treatment) for the 7 days prior to each assessment session (including the day of assessment).

Days employed or in school. Subjects and significant others, if available, independently reported either the number of days school was attended (if enrolled in school full-time), or number of days attending employment (if not attending school full-time) for the 7 days prior to each assessment session (including the day of assessment). Note that scores ranged from 0 to 20 days, with 20 days representing perfect attendance.

When discrepancies existed between urinalysis, subject report, or significant other report along any of the above measures, the "worst case" score was utilized in the study. For example, if a subject reported that he attended work 5 days during the preceding week, and the significant other reported that he attended work on only 2 days, then the score of 2 days was entered into data analysis.

Table 1. Correlations between the BDI and other measures

	Beck Depression Inventory score
Hard drug use	.31***
Marijuana use	.04
Alcohol use	.20*
Number of police contacts	.15
Days institutionalized	.21*
% Attendance work/school	−.24**
Subject LWMAS score	−.43**
Significant other LWMAS score	−.32
Subject overall happiness rating	−.30**
Significant other overall happiness rating	−.32
Subject age	.26**

$*p < .01.$
$**p < .005.$
$***p < .001.$

Work/school attendance data were not obtained for three subjects because they were not actively seeking employment (i.e., they were on vacation from school). Three subjects who did not have a significant other refused to report number of days of alcohol use and therefore were excluded from analyses involving alcohol use.

RESULTS

The mean BDI score for subjects was 15.53 $(SD = 10.50)$. Subjects used hard drugs a mean of 5.90 days/month $(SD = 7.64)$; average monthly marijuana use was 4.92 days/month $(SD = 8.16)$; and polydrug users ingested hard drugs and marijuana a mean of 10.28 days/month $(SD = 9.24)$. The mean number of days/month of alcohol use was 6.87. Subjects' had a mean of .19 days/month $(SD = .58)$ of legal contacts and spent an average of .31 days/month institutionalized $(SD = 2.10)$. With 20 days/month considered 100% attendance, subjects attended work/school 58.20% of scheduled days $(SD = 41.84\%)$. Subjects' mean Happiness Scale score $(n = 89)$ was 68.64 $(SD = 27.50)$, and mean LWMAS score $(n = 37)$ was 99.30 (21.42). In contrast, significant others' mean Happiness Scale score $(n = 89)$ was 55.09 (28.34), and mean LWMAS score $(n = 37)$ was 90.81 $(SD = 31.11)$.

Data were analyzed using product-moment correlations to determine the relationships between BDI score and each of the other measures. To control for experiment-wise error rate, the significance level was set at .01 (one-tailed test). The correlations between BDI score and all measures are presented in Table 1. Inspection of Table 1 reveals that all but three correlations were significant at the .01 level. The exceptions included marijuana use $(r = .04, p < .30)$, police contact $(r = .15, p < .05)$, and significant other LWMAS scores $(r = −.32, p < .03)$. The latter two measures approached but did not meet significance. As expected, an inverse relationship was found between BDI scores and subject LWMAS scores $(r = −.43, p < .005)$, subject happiness scores $(r = −.30, p < .003)$, and significant other happiness score $(r = −.34, p < .001)$. Moreover, BDI score was found to be positively related to number of days using alcohol $(r = .20, p < .01)$, number of days using hard drugs $(r = .31, p < .001)$, number of days institutionalized $(r = .21, p < .006)$. Predictably, a negative relationship was found between BDI scores and percent work/school

attendance ($r = -.24$, $p < .003$). Interestingly, age was also positively correlated with depression for this sample of adult drug users ($r = .26$, $p < .002$).

DISCUSSION

Results of this study indicate that, as hard and soft drug use frequency increases, levels of depression also increase. The present study also builds on previous work and reveals that substance abusers who are depressed are at increased risk for several additional interpersonal and vocational problems. Indeed, increased depression in drug abusers was associated with increased use of hard drugs and alcohol, greater levels of institutionalization, and reduced attendance at work or school. A positive nonsignificant trend was found between depression and contacts with police. Similar difficulties were evident in interpersonal realms: increasingly depressed drug users reported significantly lower overall rates of satisfaction with their significant others (e.g., spouse, relative, friend, lover), and significant others of depressed substance abusers reported lower overall relationship satisfaction ratings as well. Marital functioning scores followed a similar trend: high levels of depression in substance abusers were associated with low levels of marital adjustment, as rated by the subject. Nonsignificant spouse-rated marital adjustment scores were also inversely related to levels of subject depression.

Although level of marijuana use was not related to intensity of depression, this result is consistent with previous findings. For example, Dinwiddie et al. (1992) found that non-drug abusers demonstrated rates of major depression similar to those of marijuana users, whereas rates of major depression for other drug users were significantly higher than those for non-drug users. In contrast to the Dinwiddie et al. (1992) study, the present investigation explored the relationship of marijuana use and depression, regardless of extent of other concurrent drug use. Therefore, it may be that marijuana use is unrelated to depression for adults, regardless of whether it is used in isolation or in conjunction with other drugs. Interestingly, consistent with Fabrega, Ulrich, and Cornelius (1993), age was positively related to depression. This may be because older subjects have used drugs for longer periods of time, and, as a result, have experienced more negative life events associated with drug use (e.g., institutionalization, unemployment) than younger subjects.

It appears that depressed substance abusers experience significantly more social, vocational, and interpersonal dysfunction than their nondepressed counterparts. Therefore, overall efficacy of treatment programs for adult drug abusers, particularly older adult users, may be increased by addition of strategies that target depression, and/or the above mentioned factors associated with depression. Earlier studies performed by our research team (see Azrin et al., 1994a, 1994b) provide support for the preceding statement. In our studies, behavior therapy was utilized to ameliorate problems with social functioning, depression, employment, criminal activity, incarceration, and of course, drug and alcohol use, for a population of drug abusers. As compared with a nondirective group intervention that did not specifically target these domains, subjects in the behavior therapy condition demonstrated significant improvement in these targeted areas throughout the one-year duration of study, as well as reductions in drug use. On the basis of these outcome evaluations and the present study, we recommend that current drug treatment programs incorporate strategies specifically to address depression in drug abusers. Moreover, interventions

aimed at ameliorating the vocational, societal, and interpersonal problem areas described above (e.g., marital therapy, vocational training) are also warranted.

REFERENCES

Azrin, N. H., Donohue, B., Besalel, V., Kogan, E., & Acierno, R. (1994a). Youth drug abuse treatment: A controlled outcome study. *Journal of Child and Adolescent Substance Abuse*, 3, 1–16.

Azrin, N. H., McMahon, P. T., Donohue, B., Besalel, V. A., Lapinski, K. J., Kogan, E. S., Acierno, R. E., & Galloway, E. (1994b). Behavior therapy for drug abuse: A controlled treatment outcome study. *Behaviour Research and Therapy*, 32, 837–866.

Azrin, N. H., Naster, B. J., & Jones, R. J. (1973). Reciprocity counseling: A rapid learning-based procedure for marital counseling. *Behaviour Research and Therapy*, 11, 365–382.

Beck, A. T., Rush, A. J., Shaw, B. F., & Emery, G. (1979). *Cognitive therapy of depression*. New York: Guilford Press.

Beck, A. T., & Steer, R. (1984). Internal consistencies of the original and revised Beck Depression Inventories. *Journal of Clinical Psychology*, 40, 1365–1367.

Beck, A. T., Ward, C. H., Mendelson, M., Mock, J., & Erbaugh, J. (1961). An inventory for measuring depression. *Archives of General Psychiatry*, 4, 561–571.

Cross, D., & Sharpley, C. (1981). The Locke-Wallace Marital Adjustment Scale reconsidered: Some psychometric findings as regards its reliability and factorial validity. *Educational and Psychological Measurement*, 41, 1303–1306.

De Moja, C. A. (1990). Anxiety and depression in drug users and abusers. *Journal of Social and Behavior and Personality*, 5, 733–736.

Dinwiddie, S. H., Reich, T., & Cloninger, C. R. (1992). Psychiatric comorbidity and suicidality among intravenous drug users. *Journal of Clinical Psychiatry*, 53, 364–368.

Donohue, B., Acierno, R., Van Hasselt, V., & Hersen, M. (1995). Social skills training in a depressed, visually impaired older adult. *Journal of Behavior Therapy and Experimental Psychiatry*, 26, 65–75.

Fabrega, H., Ulrich, R., & Cornelius, J. (1993). Sociocultural and clinical characteristics of substance abuse and non-substance abuse diagnoses. *Comprehensive Psychiatry*, 34, 312–321.

Gawin, F. H., & Kleber, H. D. (1986). Abstinence symptomology and psychiatric diagnosis in cocaine abusers: Clinical observations. *Archives of General Psychiatry*, 43, 107–113.

Kaufman, E. (1985). *Substance abuse and family therapy*. New York: Grune & Stratton.

Khantzian, E. J., & Treece, C. (1985). DSM-III psychiatric diagnosis of narcotic addicts: Recent findings. *Archives of General Psychiatry*, 42, 1067–1077.

Lewis, J. A., Dana, R. Q., & Blevins, G. A. (1988). *Substance abuse counseling: An individualized approach*. Pacific Grove, CA: Brooks/Cole.

Locke, H., & Wallace, K. (1959). Short marital-adjustment and prediction tests: Their reliability and validity. *Marriage and Family Living*, 21, 251–255.

Mirin, S. M., Weiss, R. D., Griffin, M. L., & Michael, J. (1991). Psychopathology in drug abusers and their families. *Comprehensive Psychiatry*, 32, 36–51.

Mirin, S. M., Weiss, R. D., Michael, J. (1988). Psychopathology in substance abusers: Diagnosis and treatment. *American Journal of Drug and Alcohol Abuse*, 14, 139–157.

Ross, H. E., Glaser, F. B., & Germanson, T. (1988). The prevalence of psychiatric disorders in patients with alcohol and other drug problems. *Archives of General Psychiatry*, 45, 1023–1032.

Rounsaville, B. J., & Kleber, H. D. (1986). Psychiatric disorders in opiate addicts: Preliminary findings on the course and interaction with program type. In R. E. Meyer (Ed.), *Psychopathology and addictive disorders* (pp. 140–168). New York: Guilford.

Tomas, J. M., Vlahov, D., & Anthony, J. (1990). Association between intravenous drug use and early misbehavior. *Drug and Alcohol Dependence*, 25, 79–89.

Weiss, R. D., Mirin, S. M., Griffin, M. L., & Michael, J. L. (1988). Psychopathology in cocaine abusers: Changing trends. *Journal of Nervous Mental Disease*, 176, 719–725.

Weiss, R. D., Mirin, S. M., Michael, J. L., et al. (1986). Psychopathology in chronic cocaine abusers. *American Journal of Alcohol Abuse*, 12, 17–29.