

DOCUMENT RESUME

ED 371 255

CG 025 410

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 TITLE Correlates of Prolonged Depression among Detoxified Alcoholics.  
 PUB DATE 93  
 NOTE 10p.; Paper presented at the Annual Meeting of the American Psychological Association (101st, Toronto, Ontario, Canada, August 20-24, 1993).  
 PUB TYPE Speeches/Conference Papers (150) -- Reports - Descriptive (141)  
 EDRS PRICE MF01/PC01 Plus Postage.  
 DESCRIPTORS Adults; Alcohol Abuse; \*Alcoholism; Behavior Disorders; Clinics; \*Depression (Psychology); Males; Moods; \*Predictive Measurement; Predictive Validity; \*Predictor Variables; Young Adults

ABSTRACT

The majority of depressive symptoms, prevalent among adults (without a history of a depressive disorder) entering alcohol treatment, usually abate within 2 to 3 weeks of abstinence without specific depression-focussed intervention, but some hospitalized alcoholics experience significant depressive symptoms despite sustained abstinence. Such depression may affect alcohol treatment participation and has been associated with poorer treatment outcome. In 562 alcohol dependent men with no preexisting DSMIII-R Axis I disorder who were admitted to an alcohol treatment program, this study examined persistent depression in relation to five potentially useful predictor domains: (1) neuropsychological functioning; (2) physical health; (3) family history of major depression and substance abuse; (4) psychosocial resources; and (5) drinking history/dependence. These areas were studied in order to identify which domains predict protracted depression among primary alcoholics. Results were that poorer social resources emerged as important for identifying male alcoholics at risk for prolonged depression, a noteworthy finding because social resources have traditionally been considered more important in female than in male depression, and because both social resource deficits and depression are associated with poor outcome for alcoholics following treatment. Poorer neuropsychological functioning may also be predictive, though other factors presumed to elevate risk such as health, family history, or patient drinking history were not useful in identifying men likely to suffer from prolonged depression. (MSF)

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**Correlates of Prolonged Depression  
Among Detoxified Alcoholics**

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## Correlates of Prolonged Depression Among Detoxified Alcoholics

Depressive symptoms are prevalent among adults entering treatment for alcohol abuse and dependence. Among alcoholics without a history of a depressive disorder, the majority of depressive symptoms, however, abate within 2 to 3 weeks of abstinence without any specific depression focused interventions (Brown & Schuckit, 1988; Hesselbrock et al., 1983; Jaffe & Ciraulo, 1986; Willengbring, 1986).

A portion of hospitalized alcoholics continue to experience significant depressive symptoms despite sustained abstinence. While persistent depression is common among alcoholics with a history of mood disorder, only 4-6% of male alcoholics with no pre-existing history of major depression typically display clinically significant depression even after 4-5 weeks of abstinence (Brown & Schuckit, 1988).

Such sustained depression may impact alcohol treatment participation (Hammen & Peters, 1978; Howes & Kohanson, 1979) and has been associated with poorer drinking outcome following addiction treatment (Hatsukami & Pickens, 1982; Pettinati et al., 1982). Thus, identification of risk for prolonged depression may help target specific depression behavioral or psychotropic interventions to those for whom depression will continue to be a major problem during treatment.

The present study examined persistent depression among alcohol dependent men with no preexisting DSMIII-R Axis I disorder (primary alcoholics) who were admitted to an inpatient alcoholism treatment program. Persistent depression was examined in relation

to five potentially useful predictor domains measured during the first week of treatment: neuropsychological functioning, physical health, family history of major depression and substance abuse, psychosocial resources, and drinking history/dependence. The purpose of this study was to identify above and beyond presenting levels of depression which domains of functioning predict to protracted depression among primary alcoholics.

## Method

### Subjects

562 men admitted to the Alcohol and Drug Treatment Program (ADTP) of the San Diego VA Medical Center were screened for participation in the Alcohol Research Center (ARC). Veterans who met DSM-III (American Psychiatric Association, 1980) criteria for primary alcohol dependence, were on no psychotropic medication, and did not meet diagnostic criteria for any concomitant psychopathology predating their addiction occurring during periods of extended abstinence, participated in this study.

Participants ranged in age from 20 to 74 ( $M=45.5$ ;  $S=11.0$ ) years. The typical man had completed 12 years of education and was unemployed (69.0%). 23.8% were married or resided with a partner, 15.3% were separated, 44.7% were divorced and 2.7% were widowed. The sample was predominantly white (79.7%), with 12.8% black, 5.7% Mexican-American and 1.1% American Indian.

Age at which alcohol dependence criteria were first met was 33.1 ( $S=11.3$ ) years with average length of alcoholism 12.4 years.

Patients drank an average of 24.6 days per month and consumed an

average of 16.7 drinks per day during the 3 months prior to entry into the ADTP.

### Procedures

Primary alcoholics in the ARC completed the Structured Clinical Interview (Schuckit et al., 1988) covering demographic information, medical history, personal and family history of alcohol/drug dependence and psychiatric disorders, history of withdrawal symptoms, age of onset of major life problems related to alcohol or drugs, and portions of the SADS to rule out an Axis I mood disorder. A resource person (i.e., relative or close friend) separately completed a comparable interview to confirm information.

### Measures

Severity of depressive symptoms was assessed using the Hamilton Depression Rating Scale (HDRS: Hamilton, 1960) within 48 hours of admission, and again during each of the 4 weeks of inpatient treatment. This 24 item instrument was administered by interviewers trained to criterion, with good interrater reliability ( $r=.92$ ). The HDRS, is designed to assess the severity of depressive symptoms, including mood, neurovegetative, and cognitive features (Garside, 1976; Hamilton, 1967). Cutoffs for clinical significance vary across studies; however, scores of 10 or below are typically considered within the normal range, and scores of 15-20 or greater are common among depressed patients requiring antidepressant medication (Cleary & Guy, 1977).

Potential predictor data were gathered at entry into treatment and categorized into five domains of functioning:

Neuropsychological functioning. This domain was comprised of the results from the Trail Making Test from the Halstead-Reitan neuropsychological examination (Trails A and B, times and errors); WAIS-R Digit Symbol subtest (Wechsler, 1955) (number correct); Visual Search Test (Rennick, 1979) (total time and errors).

Physical health. Morning blood draws were completed within 24 hours of admission. Measures of anemia (hemoglobin, hematocrit and mean corpuscular volume), liver function tests (SGOT, SGPT, GGT and bilirubin), and nutritional status (albumin, folic acid, total protein and vitamin B12) were analyzed by automated methods as described by Irwin, et al., (1988).

This domain consisted of the blood values for anemia, liver function and nutritional status, taken upon admission into the treatment program.

Family History Risk. This domain incorporated history of SADS diagnosed major depression and DSMIII-R based alcohol dependence among first degree biological family members.

Social Resources. This domain included the number of supports, perceived satisfaction of those supports as measured by Social Support Questionnaire (Sarason, et al., 1983), and alcohol/drug use patterns of supports (Cisn & Cahalan, 1970)..

Drinking History. This domain included age at onset of dependence, length of alcoholism, number of days per month typically drinking, mean number of drinks per day, maximum number of drinks per day, level of dependency, and the number of

drugs used other than alcohol. Measures were based on patient responses to the well validated Structured Clinical Interview (Schuckit, et al., 1988) and confirmed by independent family member interview.

## Results

Data were evaluated using two approaches: Examining HDRS scores of all 562 participants and by selecting demographically comparable nondepressed matches for those men with sustained depression. In the total sample analyses, protracted depression, was examined in two ways. First, two groups of patients were identified: 1) those who were depressed through the four weeks of inpatient treatment (i.e., HDRS > 18) and 2) all remaining patients. Second, depression criterion was defined as continuous HDRS scores taken at the fourth week of treatment. As expected, comparison of the persistently depressed and remitting groups indicated that men with persistent depression had significantly higher HDRS scores at intake ( $M= 28.00$ ) than nondepressed patients ( $M= 15.25$ ),  $F(1,556)= 138.70$ ,  $p<.001$ . Consequently, intake HDRS was included as a covariate in analyses.

Since a theoretically based hierarchy was established, hierarchical linear regression was used to predict to the depression group classification. Background characteristics of WAIS vocabulary, average monthly income for the past 3 months, age, ethnicity, marital status and years of education were entered in Block One to first account for potential differences across depression defined groups. Admission HDRS score was also included in Block One to control for initial difference in depression. Block One variables

accounted for 21.6% of the variance in outcome group. Component scores on the five domains of functioning, entered in Block Two, explained an additional 3% of the variance in protracted depression. Of the five domains entered, social resources reliably predicted alcoholics whose depression persisted compared to those whose depression remitted  $F(1,545)=15.83, p<.001$ . There was also a trend for poorer neuropsychological functioning to be associated with protracted depression,  $F(1,545)= 3.18, p=.075$ .

The regression procedure was repeated to predict to the continuous measure of fourth week HDRS scores. The Background variables in Block One predicted 28.3% of the variance in fourth week HDRS scores. The five functioning scores entered in Block Two did not contribute as a group to the prediction of fourth week HDRS. There was a trend, however, for better social resources to predict fewer depressive symptoms at week four of treatment,  $F(1,539)=3.61, p=.058$ .

In the second set of analyses, the persistent depression group ( $N=46$ ) was compared with individually demographically matched sample of 46 ARC men who initially experienced elevated depressive symptoms ( $HDR \geq 18$ ) but whose depressive symptoms remitted by week four of treatment. Groups were matched on WAIS vocabulary, age average monthly income, education, ethnicity, and marital status. Combined, the five domains of functioning explained 17.8% of the variance in protracted depression,  $F(5,70)=3.03, p<.05$ . As before, patients who remained depressed throughout treatment reported poorer social resources,  $F(1,70)=8.56, p<.005$ , and performed poorer on the neuropsychological screening,  $F(1,70)=4.44, p<.05$ . These two



variables accounted for 10.1% and 5.2% of the variance in protracted depression, respectively.

### Discussion

The purpose of this study was to identify clinical measures which could assist in determining which alcohol dependent patients are at risk for protracted depression during inpatient treatment for addiction. Men who were likely to experience continued depressive symptoms had fewer social supports and were less satisfied with their social support than alcoholic men without depression or whose depression subsided during the course of alcohol dependence treatment. Thus, poorer social resources emerged as an important domain for identifying male alcoholics at risk for prolonged and clinically significant depression. This finding is particularly noteworthy for two reasons: social resources have traditionally been considered more important in female depression than male depression (e.g., Toshiba & Kaplan, 1990), and both social resource deficits and depression are associated with poorer outcome for alcoholics following treatment (e.g., Brown, et al., submitted; Hatsukami & Pickens, 1982).

There was also a trend for poorer neuropsychological functioning to predict persistent depressive symptoms. Reduced neuropsychological functioning has been associated in the past with both elevated depression and alcohol use (Shafer, Butters, Brown, et al., 1990). Clearly, alcohol abuse provokes problems with attention and concentration, abstract reasoning, visual-spatial skills, and memory, and may continue for several months following abstinence.

In the present study, however, severity of initial neuropsychological impairment was predictive of sustained depression even after alcohol use and history measures were considered. The extent to which this reflects differences in cognitive processes or content of cognition is being explored.

Other factors which were presumed to elevate risk for sustained depression such as physical health, family history of depression, and patient drinking history were not useful as admission characteristics which differentiate men from whom depression will continue to be a problem from alcoholics displaying the more typical pattern of depressive symptom resolution.

While the present study has several limitations (e.g., male veterans only), the confirmatory diagnostic and history taking process lend confidence to the findings that depleted social resources and neuropsychological impairment may serve as clinical markers for risk of sustained depression among male primary alcoholics.