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Comparison of Psychological Symptoms Between Drug Abusers Seeking and Not Seeking Treatment

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Subjects participating in nontreatment research studies have provided a great amount of information regarding the effects and complications of substance abuse. However, the validity of generalizing results from these studies to all substance abusers has not been established. Psychological test results obtained from studies conducted on subjects who have no explicit interest in treatment may differ from those obtained using individuals who are seeking treatment, limiting the generalizability of the conclusions.

Results from studies (Carroll and Rounsaville, 1992; Chitwood and Morningstar, 1985; Gawin and Kleber, 1986; Graeven and Graeven, 1983; Rounsaville and Kleber, 1985; Rounsaville et al., 1991; Weiss et al., 1986) comparing the psychological status of treatment-seeking and non-treatment-seeking individuals are inconsistent. Some authors have reported that cocaine abusers seeking treatment have higher rates of psychiatric disorders (Gawin and Kleber, 1986; Rounsaville et al., 1991; Weiss et al., 1986, 1988) and more severe drug use than untreated cocaine abusers (Chitwood and Morningstar, 1985). Others (Carroll and Rounsaville, 1992) have reported that cocaine abusers seeking treatment are similar to their untreated counterparts on measures of severity and chronicity of cocaine use, use of self-control strategies to restrict cocaine use, and overall rates of current and lifetime psychiatric disorders. Studies with opiate abusers have shown less severe substance use, fewer drug-related problems, more adequate social functioning, and less psychosocial impairment among untreated drug abusers than in individuals seeking treatment (Graeven and Graeven, 1983; Rounsaville and Kleber, 1985). These data suggest that untreated opiate abusers have a greater ability to control their substance use, less prolonged use, and more chances of decreasing drug use without formal intervention.

To our knowledge, there is only one prior report (Schuster and Fischman, 1985) describing the psychosocial characteristics of individuals volunteering for cocaine research studies. The present study is the first to systematically compare the current psychological status, as measured by the Symptom Checklist-90-Revised (SCL-9-R), of treatment-seeking and nontreatment-seeking substance-abusing individuals who volunteered to participate in research studies.

Methods

The sample consisted of 528 psychoactive-substance-using individuals who applied to participate in drug abuse research studies (both treatment and nontreatment) at the National Institutes of Health, National Institute on Drug Abuse Intramural Research Program (NIH-NIDA-IRP) between 1988 and 1992. Subjects were recruited by newspaper advertisement, fliers, and word of mouth. At the first screening contact, applicants who expressed interest in substance abuse treatment (either spontaneously or in response to specific questions) were eligible only for treatment studies. All others were considered eligible for nontreatment studies. Applicants came for intake Monday through Friday from 9 a.m. until 5 p.m., and gave written informed consent to be tested. Subjects did not receive monetary compensation for the intake evaluation, which included psychological testing. Subjects in nontreatment protocols were paid for their participation according to the type and length of the study. Subjects in treatment studies received no payment for study participation.

Eligibility for either type of study required a history of psychoactive substance use and ability to understand the written consent form and questionnaires. Applicants were excluded if they had a current major or unstable medical or psychiatric disorder, were pregnant, or were lactating. All treatment subjects participated in nonresidential research studies for treatment of heroin or cocaine abuse, while non-treatment subjects participated in residential or nonresidential studies on the clinical pharmacology of a variety of drugs.

Demographic and drug use information was obtained using the Addiction Severity Index (ASI) (McLellan et al., 1986), which was administered by recruitment staff at the time of subjects' admissions to the primary research study. Psychological symptoms were evaluated using the SCI-90-R (Derogatis, 1983), which was self-administered at the time of intake evaluation. The SCL-90-R (Derogatis, 1983) consists of 90 items that assess psychopathology on a 5-point (0 to 4) scale of distress over the 7 prior days. The instrument measures somatization, obsessive-compulsive symptoms, interpersonal sensitivity, depression, anxiety, hostility, phobic anxiety, paranoid ideation, and psychoticism. A Positive Symptom. Total score was obtained from combining the nine subscale scores. The results of the test were used as inclusion or exclusion criteria for the primary studies.

Comparisons were made between individuals who applied to participate in substance abuse treatment research (TRS) and individuals who applied to participate in nontreatment research protocols (NTS). Comparisons of sociodemographic variables between groups were made by chi-square test for categorical variables and *t*-test for continuous variables. Results from the nine SCL-90-R subscales and the Positive Symptom. Total scores were compared using *t*-tests for independent measures. The two-tailed alpha level was .05.

Results

Data were obtained from 295 TRS and 233 NTS individuals. In both groups, there were 453 (85.8%) men, 264 (50%) African-Americans, 258 (48.9%) whites, 3 (.6%) Native Americans, 3 (.6%) Hispanics, and 2 (.4%) individuals who were not classified by race. Mean $\pm$ SD age was 31.7 ± 5.5 years and mean $\pm$ SD years of education was 11.8 ± 1.8 . The self-reported "drug of choice" was heroin for 224 (42.4%) subjects, cocaine for 203 (38.4%), marijuana for 53 (10.3%), and other drugs for 25 (4.7%), and was unknown for 12 (2.2%) subjects (Table 1). There were only cocaine or opiate abusers in the TRS group because of the nature of the treatment studies running at the time that data for the present study were collected. The TRS and NTS groups differed significantly ($p < .001$) in gender, race, and drug of choice.

TRS individuals had significantly ($t = 12.69$, $df = 1,526$, $p < .001$) higher Positive Symptom. Total scale scores than the individuals in the NTS group. Also, the TRS group had significantly

($p < .001$) higher scores for somatization, obsessive-compulsive symptoms, interpersonal sensitivity, depression, anxiety, hostility, paranoid ideation, and psychoticism. There were no significant differences between groups for phobic anxiety (Table 2).

Discussion

Unlike other investigations concerning psychological measures of treated versus untreated cocaine or opiate users, the present study assessed current psychological distress in psychoactive-substance-using individuals applying for participation in treatment and nontreatment research studies. The results suggest that individuals applying for treatment studies had more current psychological distress as measured by the SCL-90-R than their counterparts applying for nontreatment research studies.

The selection process of subjects for clinical trials in psychiatry has been associated with bias in fields other than substance abuse. A comparison between schizophrenic and depressed patients admitted for research or nonresearch treatment showed significant differences in age, gender, and legal status (Miller et al., 1983). A study of alcoholics indicated that volunteers for treatment research were not representative of the general treatment population (Taylor et al., 1982). Results from the present study may indicate that there is a bias in the selection of applicants for treatment and nontreatment clinical research studies.

This bias may be the result of: a) the presence of multiple psychopathology that increases the likelihood of seeking treatment, or b) the impetus to seek treatment produced by substance abuse in people affected by more than one psychiatric disorder. It has been reported in population studies that the simultaneous presence of multiple psychiatric disorders increases the chance of seeking treatment and that the probability of seeking treatment for a given disorder may be affected by the existence of another specific disorder (Du Fort et al., 1993).

The results of this study did not indicate whether the higher psychopathology observed in TRS individuals is the factor causing them to seek participation in treatment studies, or whether interest, in treatment studies involves a higher degree of self-awareness that results in the reporting of more psychopathology. On the other hand, since the SCL-90-R scores of the NTS individuals are similar to those from the general population (Derogatis, 1983), we may infer that their participation in drug abuse research studies is not associated with psychological distress. Factors other than psychological distress that were not present for the (nonresidential) TRS subjects, such as monetary compensation, provision of free food and shelter, or a safe residential environment, may motivate NTS individuals to participate in nontreatment residential research studies.

The results of the present study are limited by several sociodemographic differences between the two groups: the lower proportion of women and whites in the NTS group and the lack of other than cocaine or opiate abusers in the TRS group. To the extent that gender, race, or drug of choice significantly influences SCL-90-R results, these sociodemographic characteristics, rather than the treatment-seeking status itself, could account for the observed group differences. Previous work in non-drug-abusing subjects has not shown any gender effect on SCL-90 scales (Derogatis and Cleary, 1977), but there may be significant, SCL-90-R differences between cocaine- and heroin-dependent individuals seeking treatment (Montoya et al., 1994). Since the SCL-90-R is a widely used, validated, and reliable test (Derogatis, 1983), there is no reason to believe there is differential validity or reliability in TRS or NTS subjects. However, we cannot rule out that different results might have been obtained if subjects' psychopathology had been directly assessed by an interviewer.

This is the first report showing that individuals seeking to participate in substance abuse treatment research have higher psychological distress than substance abusers seeking

participation in research studies in which no treatment is provided. The data must be interpreted cautiously, since the two groups differed in some sociodemographic characteristics and in factors such as payment for study participation. However, the findings of this study may serve as a caution regarding the generalization of results obtained from studies involving substance abusers seeking or not seeking treatment. These may represent two different subgroups of substance abusers that need further characterization.

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References

- Carroll KM, Rounsaville BJ. Contrast of treatment-seeking and untreated cocaine abusers. *Arch Gen Psychiatry* 1992;49:464–471. [PubMed: 1599371]
- Chitwood DD, Morningstar PC. Factors which differentiate cocaine users in treatment from nontreatment users. *Int J Addict* 1985;20(3):44–459.
- Derogatis, LR. SCL-90-R administration, scoring, & procedures. Manual II. Towson, MD: Clinical Psychometric Research; 1983.
- Derogatis LR, Cleary PA. Factorial invariance across gender for the primary symptom dimensions of the SCL-90. *Br J Soc Clin Psychol* 1977;16:347–356. [PubMed: 588890]
- Du Fort GG, Newman SC, Bland RC. Psychiatric comorbidity and treatment seeking. Sources of selection bias in the study of clinical populations. *J Nerv Ment Dis* 1993;181:467–474. [PubMed: 8360638]
- Gawin FH, Kleber HD. Abstinence symptomatology and psychiatric diagnosis in cocaine abusers. *Arch Gen Psychiatry* 1986;43:107–113. [PubMed: 3947206]
- Graeven DB, Graeven KA. Treated and untreated addicts: Factors associated with participation in treatment and cessation of heroin use. *J Drug Issues* 1983;13:207–217.
- McLellan, AT.; Luborsky, L.; Cacciola, J.; Griffith, J.; McGahan, P.; O'Brien, CP. guide to the Addiction Severity Index: Background, administration, and field testing results. Rockville, MD: National Institute on Drug Abuse, Treatment Research Reports; 1986.
- Miller RD, Strickland R, Davidson J, Parrott R. Characteristics of schizophrenic and depressed patients excluded from clinical research. *Am J Psychiatry* 1983;140:1205–1207. [PubMed: 6614231]
- Montoya ID, Hess JM, Covi L, Fudala PJ, Johnson RE. A comparative study of psychopathology and cognitive functions between cocaine and opiate dependent patients. *Am J Addict* 1994;3:36–42.
- Rounsaville BJ, Foley S, Carroll KM, Budde D, Prasoff BA, Gawin FH. Psychiatric diagnosis of treatment-seeking cocaine abusers. *Arch Gen Psychiatry* 1991;48:43–61. [PubMed: 1984761]
- Rounsaville BJ, Kleber HD. Untreated opiate addicts: How do they differ from those seeking treatment? *Arch Gen Psychiatry* 1985;42:1072–1077. [PubMed: 4051685]
- Schuster, CR.; Fischman, MW. Characteristics of human volunteering for a cocaine research project. In: Kozel, NJ.; Adams, EH., editors. Cocaine use in America: Epidemiologic and clinical perspectives (NIDA Research Monograph 64. Rockville, MD: National Institute on Drug Abuse; 1985. p. 158–179.
- Taylor WC, Frederick WO, Reich JW. Experimental bias resulting from using volunteers in alcoholism research. *J Stud Alcohol* 1982;43(3):240–251. [PubMed: 7120995]
- Weiss RD, Mirin SM, Michael JL, Sollugub AC. Psychopathology in chronic cocaine abusers. *Am J Drug Alcohol Abuse* 1986;12:17–29. [PubMed: 3788897]
- Weiss RD, Mirin SM, Griffin ML, Michael JL. Psychopathology in cocaine abusers: Changing trends. *J Nerv Ment Dis* 1988;176:719–725. [PubMed: 3199107]

TABLE 1

Sociodemographic Characteristics of 528 Psychoactive-Substance-Using Individuals at the Time of Intake for Treatment (TRS) or Nontreatment (NTS) Research Protocols

	TRS (N = 295)	NTS (N = 233)
Males ^a	224 (76%)	228 (97.8%)
Females	71 (24%)	5 (2.2%)
Age		
Mean ± SD	31.68 ± 5.4	31.8 ± 5.6
Median	31	30
Range	21–7	19–52
Years of education		
Mean ± SD	11.90 ± 2.1	11.7 ± 1.6
Median	12	11
Range	7–18	7–19
Ethnicity ^a		
African-American	128 (43.1%)	135 (57.9%)
White	166 (56.2%)	91 (39.1%)
Hispanic	1 (0.3%)	2 (.9%)
Native American		3 (1.3%)
Not classified		2 (.9%)
Drug of Choice ^a		
Heroin	160 (54.6%)	62 (26.6%)
Cocaine	135 (45.4%)	68 (29.2%)
Marijuana	0	53 (22.7%)
Other	0	25 (10.7%)
Unknown	0	12 (5.1%)
Multiple	0	13 (5.7%)

^aThere were significant ($p < .001$) differences between TRS and NTS groups.

Comparison of SCL-90-R Scale *t* Scores Between TRS and NTS Individuals at the NIH-NIDA-IRP (*N* = 528)^a

	TRS (<i>N</i> = 295)		NTS (<i>N</i> = 233)		<i>t</i>	<i>P</i>
	Mean	SD	Mean	SD		
Somatization	59.82	11.37	47.88	9.81	12.77	<.001
Obsessive-Compul.	62.15	10.66	52.61	8.39	11.19	<.001
Interp. Sensit.	62.90	11.06	56.09	9.91	7.35	<.001
Depression	67.98	10.56	57.71	10.55	11.10	<.001
Anxiety	64.63	11.96	53.73	10.27	11.06	<.001
Hostility	60.15	11.39	49.12	10.88	11.27	<.001
Phobic Anxiety	58.14	11.03	58.62	9.38	.53	NS
Paranoid Ideation	61.69	11.49	54.15	11.85	7.38	<.001
Psychoticism	63.23	11.67	58.26	7.78	5.59	<.001
Total Score	64.60	9.69	53.45	10.55	12.69	<.001

^aTRS subjects had significantly ($P < .001$) higher scores for somatization, obsessive-compulsive symptoms, interpersonal sensitivity, depression, anxiety, hostility, paranoid ideation, and psychoticism, and a higher Positive Symptom Total than the NTS subjects. $DF = 526$. The lowest significant p -value was 2.47×10^{-6} for psychoticism.