

# DEPRESSIVE SYMPTOMS AMONG OUT OF TREATMENT DRUG USERS IN PUERTO RICO

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## INTRODUCTION

The purpose of this study is to assess the prevalence of depressive symptomatology among drug users in Puerto Rico. Various studies conducted on the island and in the United States have found a high prevalence of depressive symptoms among Puerto Ricans (1). However, there is a lack of information related to the prevalence of depressive symptoms among Puerto Rican drug users. The relationship between substance abuse and psychopathology has recently become the subject of great interest. The enthusiasm for this research has been fueled in part by the hope that identification and treatment of the co-existence of psychiatric disorders and drug dependency will improve the outcomes of substance abuse treatment and prevention of relapse.

## METHODS

The analysis was based on a sample of 335 drug users recruited in three public detoxification units, two of which are located in the San Juan metropolitan area and one located in Humacao (northeast Puerto Rico). Subjects were recruited as part of a larger study of drug abuse recovery and relapse. Approximately one and one-half years after initial recruitment, when subjects were out-of-treatment, the Center for Epidemiologic Studies Depression Scale (CES-D) (2) was administered to detect the prevalence of depressive symptomatology.

Factor analyses of the CES-D score were performed to determine the factor structure of the scale in this population. Also the internal consistency reliability of the scale was examined.

In order to establish what score should be used to indicate depression in the drug user population, the sensitivity and specificity of the CES-D was examined with the diagnosis criteria of the DSM-III-R major depression and dysthymia. Chi-square statistics were used to test differences in proportions and ANOVA tests were used to establish significant differences between means.

Univariate and bivariate analyses were performed to describe the distribution of CES-D scores and to test the association with the other factors. We studied the effects of using a specific drug, representing the pattern of drug use reported at the time of the CES-D assessment. The association between substance abuse and depression symptomatology was examined using logistic regression.

## RESULTS

Factor analyses distinguished a three-factor structure instead of the traditional four-factor structure. The somatic and depressive affect factors were combined into one. The internal consistency reliability analysis of the CES-D scale indicated a high Cronbach's alpha ( $\alpha = .91$ ).

**Table 1. Mean Score of CES-D by Sociodemographic Characteristics and Drug Use**

Variables	n	Mean	SD	F
Overall	335	13.7	11.7	
Sociodemographic				
Gender				
male	213	12.2	11.3	
female	122	16.3	12.1	.0018
Age				
less than 30 years	102	11.5	10.0	
30 - 35 years	118	15.5	12.8	
more than 35 years	115	14.1	12.0	.0343
Education				
less than high school	88	14.9	12.2	
high school	111	14.1	12.5	
more than high school	136	11.4	9.7	.0896
Marital status				
never married	114	12.4	10.5	
married	76	13.8	13.6	
disrupted marriage	145	14.3	10.7	.4987
Labor status				
out-of-labor force	221	14.9	11.7	
in labor force	114	11.3	11.5	.0083
Drug use (last 30 days)				
alcohol	98	14.3	11.3	.5347
marihuana	51	15.9	13.2	.1384
snorted cocaine	41	16.3	14.4	.1346
smoked cocaine (crack)	49	18.9	12.6	.0007
injected cocaine	34	16.0	11.0	.2341
snorted heroin	49	15.1	12.7	.3514
injected heroin	39	15.3	12.5	.3781

Table 1 depicts the mean score of depressive symptoms by sociodemographic and drug use characteristics. Subjects showed a mean of 13.7 (sd = 11.7) depressive symptoms with a range of 0 to 54. Significant differences were observed in the mean number of depressive symptoms by gender, age, labor status and type of drug use. CES-D scores were higher among women, older drug users, the unemployed and those currently reporting crack use. Subjects with high school or fewer years of education tended to score higher on the scale although the differences were not statistically significant.

Table 3 shows the results of a logistic regression used to identify which sociodemographic and drug use patterns were associated with a high level of depressive symptomatology (cutoff point = 20). This model shows that crack use was the principal predictor, and that crack use was the only drug that predicted a high level of depressive symptomatology. We also observed that the only sociodemographic characteristic associated with depressive symptomatology was education.

We are aware of the problems of utilizing traditional measurement instruments to diagnose psychopathology among drug users, as it is sometimes difficult to distinguish drug related symptoms and co-existent psychopathology. Therefore, we examined the effects of different cutoff points on the prevalence of depression symptomatology and compared them to the results of the DSM-III-R depression and dysthymia diagnoses to adapt the scale to this population. The results in Table 2 show a prevalence of high levels of depressive symptomatology of 37.3% among all drug users using the standard cutoff point of 16. Depression symptomatology based on the CES-D has shown good sensitivity and specificity when compared to DSM-III-R depression and dysthymia diagnoses. We found a sensitivity of 100.0% and specificity of 65.2% using the standard cutoff of 16. The analyses suggested that a cutoff of 20 represents more precisely a highly depressive symptomatology in this sample of drug users. At this point, the specificity was increased to 77.0% and the sensitivity only decreased to 92.3%. The prevalence of high levels of depressive symptomatology with this cutoff is 25.7%.

**Table 2. Depressive Symptomatology Prevalence and CES-D Sensitivity and Specificity Rates at Different Cutoff Points.**

Cutoff point	Prevalence	Sensitivity	Specificity
16	37.3	100.0	65.2
19	28.4	92.3	74.2
20	25.7	92.3	77.0
22	21.8	84.6	80.7
24	18.2	84.6	84.5

**Table 3. Logistic Regression Analyses of High Depressive Symptomatology Measured with the CES-D Scale (Cutoff Point = 20).**

	OR	95% CI
Sociodemographic		
Gender		
male	1.00	
female	1.35	0.77-2.35
Age		
less than 30 years	1.00	
30 - 35 years	1.76	0.91-3.40
more than 35 years	1.74	0.88-3.44
Marital Status		
single	1.00	
married	1.45	0.69-3.05
disrupted marriage	1.07	0.51-2.23
Education		
more than high school	1.00	
high school	1.75	0.85-3.60
less than high school	2.08	1.04-4.16*
Labor Status		
in labor force	1.00	
out of labor force	1.65	0.88-3.09
Drug Use (last 30 days)		
none	1.00	
alcohol	0.70	0.37-1.34
marihuana	0.90	0.41-2.00
snorted cocaine	1.45	0.61-3.41
smoked cocaine (crack)	2.12	1.03-4.35*
injected cocaine	0.77	0.30-1.95
snorted heroin	0.97	0.46-2.06
injected heroin	1.85	0.79-4.34

## DISCUSSION

The high internal consistency reliability and the good sensitivity and specificity for depressive disorders in this population after augmenting the traditional cutoff point suggest that this instrument is valuable for understanding depressive symptomatology among drug users. Results of the factor analyses in which only a three-factor structure was found have been reported previously for the Hispanic population (3). Our results indicate a 25.7% prevalence of high levels of depressive symptomatology when using the cutoff of 20. A similar prevalence rate with the standard cutoff of 16 has been reported in a previous study for the general population in Puerto Rico (4). The result of crack use as the only drug associated to high depressive symptomatology was not expected and is of great concern. The comorbidity of depression and crack use complicates even more the treatment of an addiction that is new on the island and without effective pharmacological treatments (5). High levels of depressive symptomatology among crack users suggest a need to develop specific interventions to address both psychopathologies.

## REFERENCES

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