

# FACTORS ASSOCIATED WITH DRUG TREATMENT DROPOUT AMONG IDUS IN PUERTO RICO

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## INTRODUCTION

Retaining severely addicted individuals in treatment is one of the main challenges currently facing the drug treatment field. Studies in drug treatment

systems have reported dropout rates ranging from 30% to 65% (1-3). A study of clients admitted through a centralized intake unit found that one in

five dropped out before the third treatment session (4). This study examined factors associated with drug treatment dropout among injection drug

users in Puerto Rico, a group that has contributed significantly to the self-sustaining AIDS epidemic in Puerto Rico since the mid-1980s.

## METHODS

**Sample.** Research staff enrolled 557 IDUs from communities in the North Central Health Region of Puerto Rico between May 1999 and July 2001. The methodology and procedures used in this recruitment strategy have been described elsewhere (5). Individuals were eligible if they had injected drugs within 30 days prior to the interview, were at least 18 years of age, and were not enrolled in drug treatment during the last 30 days.

Data used in this analysis were collected as part of a longitudinal study aimed at testing the efficacy of a two-facet intervention (including counseling and case management) in reducing drug use and HIV risk behaviors, entering IDUs in treatment, and increasing self-efficacy among drug injectors. The total sample of 557 injection drug users was randomly assigned to either an enhanced intervention (49.7%) or a standard intervention (50.3%).

**Follow-up.** Six months after the initial interview, 440 of the initial 557 participants (79.0%) were re-contacted and interviewed. A total of 20 individuals were excluded from the analyses because they reported receiving drug treatment services only in prison. **Dependent variable.** At follow-up, 124 (28.2%) of 440 subjects reported having received drug treatment services other than in prison. Drug treatment dropout was defined as participant withdrawal from treatment before completing all recommended sessions. Those who reported that they were still receiving drug treatment services at follow-up were classified as non-dropouts.

**Data Analysis.** Bivariate analyses using the chi-square test of independence and Mann-Whitney test for numerical variables were used to assess variables associated with drug treatment dropout. In order to assess the individual effect of each predictor, adjusted for the effect of other variables, multiple logistic regressions was performed. All statistical analyses were performed using SPSS (version 11.0). Due to the small sample size in each comparison group, only the predictors that were significant at 0.25 level or less were included in the multivariate model.

**TABLE 1. Drug treatment dropouts by sociodemographics and drug use severity (n=124)**

	Study Sample	Dropouts %	O.R.	95% C.I.	p - value
Overall	124	26.6	---	---	---
Gender					0.190
Male	115	25.2	1.00 <sup>a</sup>		
Female	9	44.4	2.37	0.60 - 9.44	
Age					0.170
18-24	42	19.0	1.00 <sup>a</sup>		
25-34	44	36.4	2.43	0.91 - 6.50	
35 or more	38	23.7	1.32	0.45 - 3.86	
Marital					0.769
Never married	37	21.6	1.00 <sup>a</sup>		
Married	40	30.0	1.55	0.55 - 4.37	
Divorced/separated	47	27.7	1.39	0.51 - 3.81	
Employment					0.490
Unemployed	73	27.4	1.00 <sup>a</sup>		
Full/part time	51	25.5	0.91	0.40 - 2.04	
Education					0.307
Less than high school	80	28.8	1.00 <sup>a</sup>		
High school level or more	44	22.7	0.73	0.31 - 1.71	
Homelessness					0.029
No	108	23.1	1.00 <sup>a</sup>		
Yes	16	50.0	3.32	1.13 - 9.75	
Years of drug injection					0.498
0-5 years	77	26.0	1.00 <sup>a</sup>		
6 or more years	47	27.7	1.09	0.48 - 2.47	
Frequency of injection					0.055
Non daily	54	18.5	1.00 <sup>a</sup>		
Daily	70	32.9	2.15	0.92 - 5.03	
Main drug used					0.005
Cocaine or heroine	88	19.3	1.00 <sup>a</sup>		
Speedball	36	44.4	3.34	1.44 - 7.77	

<sup>a</sup> Reference category

**TABLE 1.** Of the 124 participants who entered drug treatment, 33 (26.6%) dropped out before completing all recommended sessions.

Gender, age and homelessness were significantly associated with treatment dropout. Completers and dropouts did not appear to differ significantly on marital status, employment, or level of education variables.

Subjects who reported daily drug injection were nearly twice as likely to drop out as non-daily injectors and those who were mainly speedball users were nearly three-and-a-half times as likely to drop out as non-speedball users.

**TABLE 2. Drug treatment dropouts by health condition**

	Study Sample	Dropouts %	O.R.	95% C.I.	p - value
Perception of health					0.087
Good/excellent	85	22.4	1.00 <sup>a</sup>		
Poor/bad	39	35.9	1.95	0.85 - 4.46	
Depression symptoms					0.618
Minimal	33	27.3	1.00 <sup>a</sup>		
Moderate	26	19.2	0.64	0.18 - 2.19	
Severe	65	29.2	1.10	0.43 - 2.80	
Anxiety symptoms					0.653
Minimal	49	24.5	1.00 <sup>a</sup>		
Moderate	23	21.7	0.86	0.26 - 2.80	
Severe	52	30.8	1.37	0.57 - 3.30	
Vitality score					0.042
50 or more	74	20.3	1.00 <sup>a</sup>		
Less than 50	50	36.0	2.21	0.99 - 4.97	

<sup>a</sup> Reference category

**TABLE 2.** None of the mental health variables appeared to be significantly associated with drug treatment dropout. Individuals who scored less than 50 on the vitality sub-scale of the SF-36 were nearly twice as likely to drop out of drug treatment as those scoring more than 50.

**TABLE 3. Drug treatment dropouts by motivation/readiness and experimental condition**

	Study Sample	Dropouts %	O.R.	95% C.I.	p - value
Motivation stage					0.365
Pre-contemplation	7	42.9	1.00 <sup>a</sup>		
Contemplation	79	22.8	0.39	0.08 - 1.92	
Action	38	31.6	0.62	0.12 - 3.19	
Self-efficacy score					0.232
33 or more	65	23.1	1.00 <sup>a</sup>		
Less than 33	59	30.5	1.46	0.66 - 3.26	
Experimental condition					0.106
Control	47	34.0	1.00 <sup>a</sup>		
Enhanced	77	22.1	0.55	0.25 - 1.23	

<sup>a</sup> Reference category

**TABLE 3.** Having a low-self efficacy was significantly associated with treatment dropout. Conversely, those who participated in the experimental arm of the intervention were less likely to drop out of drug treatment than those assigned to the control arm.

**TABLE 4. Drug treatment dropouts by program service variables**

	Study Sample	Dropouts %	O.R.	95% C.I.	p - value
Treatment Services					0.002
Drug	34	47.1	1.00 <sup>a</sup>		
None/one	90	18.9	0.26	0.11 - 0.62	
Two or more					<0.001
Psychiatric	89	34.8	1.00 <sup>a</sup>		
None/one	35	5.7	0.11	0.03 - 0.50	
Two or more					0.030
Medical	56	35.7	1.00 <sup>a</sup>		
None/one	68	19.1	0.43	0.19 - 0.96	
Two or more					0.542
Family	110	26.4	1.00 <sup>a</sup>		
None	14	28.6	1.12	0.33 - 3.84	
One					0.021
Level of satisfaction	62	17.7	1.00 <sup>a</sup>		
High	62	35.5	2.55	1.11 - 5.87	
Low					

<sup>a</sup> Reference category

**TABLE 4.** Subjects who received services for their drug use or for psychiatric problems were significantly less likely to drop out of drug treatment. Subjects who received services for their medical problems were also less likely to drop out of drug treatment. Participants who reported a lower level of satisfaction with drug treatment services were two-and-a-half times more likely to drop out.

**TABLE 5. Factors Associated with drug treatment dropout among IDUs (n=124)**

	O.R.	95% C.I.	p - value
Female	1.47	0.20 - 10.71	0.707
25-34 yrs of age	4.70	1.14 - 19.35	0.032
35 or more	1.98	0.46 - 8.53	0.358
Homeless	7.11	1.58 - 32.05	0.011
Speedball users	9.00	2.36 - 34.09	0.001
Daily drug injection	1.54	0.50 - 4.78	0.456
Low score (vitality scale SF-36)	2.45	0.75 - 7.93	0.136
Perception of poor health	2.01	0.64 - 6.32	0.230
Intervention Model	0.26	0.08 - 0.89	0.032
Low self-efficacy	1.78	0.57 - 5.60	0.322
Drug problem services	0.37	0.11 - 1.21	0.100
Medical services	1.49	0.41 - 5.46	0.550
Psychiatric services	0.08	0.01 - 0.57	0.012
Low satisfaction with program services	1.25	0.39 - 3.98	0.705

<sup>a</sup> Reference category

**TABLE 5.** Results of a multiple logistic regression analysis show that subjects between the ages of 25 and 34 years of age were almost five times more likely to drop out of drug treatment than those over age 34. Those reporting homelessness were nearly seven times more likely and speedball users were nine times more likely to drop out. Conversely, subjects who received the enhanced intervention were significantly less likely to drop out of drug treatment. Receiving any psychiatric service also reduced the odds of treatment dropout.

## CONCLUSIONS

The finding that speedball injectors were more likely to drop out of treatment before completion was consistent with previous studies and not unexpected in Puerto Rico. Speedball injectors in Puerto Rico are more likely to have multiple co-morbidities and greater severity of these conditions (6), as well as to have a non-traditional life style (7). Drug treatment programs in Puerto Rico need proactive strategies such as outreach and case management to ensure that speedball injectors complete their treatment episodes, not only to reduce drug use but also to reduce HIV risk behaviors.

Receiving comprehensive psychiatric services reduced the odds of dropout among our study sample. Such service-related factors have been shown previously to be the best predictors of treatment outcomes, and this study is no exception (8).

Improving adherence to drug treatment and reducing dropout rates are complex processes that need to be addressed at the individual behavioral and social support levels, as well as at the program structure, process, and resource levels, as this study seems to suggest.

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