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Treatment Entry and Predictors Among Opiate-Using Injection Drug Users

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Abstract: This study examines entry into drug treatment among 491 street-recruited injection drug users in Denver, Colorado. The primary outcome was treatment entry within 6 months. Univariate tests were run using chi-square t-test analyses. Significant variables were included in a multiple logistic regression. Results showed that having more outreach contacts, not being homeless, having fewer problems with alcohol but more problems with drugs, and the contemplation or determination stage of change were associated with entering treatment. The identification of predictors of treatment entry may be useful for treatment centers in engaging certain populations of drug users. Behavioral interventions are an important tool in recruiting drug injectors into treatment.

Keywords: IDUs, methadone maintenance, treatment entry

1. INTRODUCTION

In 2003, in the United States there were 237,000 treatment admissions nationwide for injection drug use (1). This accounted for 13% of all treatment admissions, and opiates represented 77% of those. Injection-related admissions have risen 18% since 1992. There were also over 920,000 persons with AIDS (13 years of age or older) reported to the Centers for Disease Control (2). Among persons with a known exposure category, injection drug users (IDUs) account for 34% of those infected, and it is the second largest exposure group.

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Research has shown that an effective strategy for reducing HIV risk in this population is by reducing drug use through drug treatment (3, 4). Treatment has been associated with decreased drug injecting (3, 5), reduced HIV-related drug risk behaviors (4, 6, 7) and sex risk behaviors (8), and lower HIV seroconversion (9, 10). The current study was designed to assess predictors of treatment entry among out-of-treatment opiate injectors recruited through street outreach in Denver, Colorado.

2. METHODS

From 2000 through 2004, out-of-treatment opiate IDUs were recruited through street outreach in Denver, Colorado to participate in a study designed to facilitate entry into drug treatment and reduce injection-related HIV risk behaviors. Targeted sampling methods used indicators such as drug-related arrests and drug treatment admissions among IDUs to estimate the number of drug users in each of the city's census tracts. Outreach workers recruited study participants and provided interventions. Eligibility criteria were: 1) self-reported opiate injection in the prior 30 days; 2) 18 years of age or older; 3) no self-reported substance abuse treatment during the previous 30 days; and 4) able to provide informed consent. Eligibility was confirmed by urinalysis and inspection for evidence of recent venipuncture. Participants were compensated for their time as research subjects. Study procedures were approved by the Institutional Review Board of the University of Colorado School of Medicine.

Trained interviewers administered the following instruments: the Risk Behavior Assessment (RBA) and the anti-social personality disorder (ASPD) measure from the Diagnostic Interview Schedule (DIS), 4th Edition. Following the research interview, participants were offered free HIV, HBV, and HCV testing and counseling. Then they were randomly assigned to receive 1 of 3 interventions designed to facilitate an interest in treatment and reduce HIV-related risk behaviors. A 1-month period without any intervention was required prior to the 6-month follow-up interview.

2.1. Interventions

The case management intervention was a community-oriented approach with the emphasis on client autonomy and skill development. Case managers met with clients to address the breadth of problems that clients had and focus on employing and increasing client strengths. Substance abuse treatment was addressed when the client was ready; typically after other

basic needs, such as housing, were met. In the 2 less-intensive interventions, clients met with an interventionist who either used motivational interviewing techniques to facilitate more sweeping lifestyle changes or provided risk reduction education sessions.

2.2. Statistical Procedures

Interview data were entered, edited, and analyzed using Statistical Package for the Social Sciences (SPSS). The primary outcome variable was treatment entry, operationally defined as entering either methadone maintenance, outpatient drug-free, or residential drug treatment in the 6 months following their baseline interview. The following variables were assessed for their association with treatment entry: assignment to the case management intervention, demographics (gender, ethnicity, age, education, marital status, employment, arrests, homelessness), ASPD, drug use in the previous 30 days, number of years injecting drugs, HIV risk behaviors in the prior 30 days (used dirty needle/syringe, shared drug solution, shared drug paraphernalia), previous drug treatment experience, stage of change, number of contacts with an outreach worker, and ASI composite scores reflecting problems in the following areas: medical, employment, legal, family, psychiatric, alcohol, and drugs.

An alpha level of .05 was used for all statistical tests. Group differences were assessed using chi-square, t-test and Mann-Whitney U tests. Variables found to be significantly related to treatment entry in the univariate analyses were considered as candidates in a multiple logistic regression predicting treatment entry. A variable indicating whether or not the participant received case management was entered into the model first. Remaining variables were individually tested for entry into the model using the forward stepwise method.

3. RESULTS

3.1. Study Sample and Attrition Analysis

A total of 642 participants were interviewed at baseline. Of these, 491 (76.5%) received follow-up interviews 6 months later. Variables significantly associated with returning for follow-up included being in the case management intervention condition, being female, older, not homeless, longer term injectors, not being cocaine injectors, having previously been in treatment, and having higher psychiatric problem scores. Participants who returned for follow-up also averaged more contacts with outreach workers than those who did not return.

Table 1. Significant univariate comparisons of baseline variables by treatment entry for follow-up sample only

Variable	Total (percent or mean)	Entered treatment (percent or mean)	Treatment entry test statistic ¹
Case management			4.07*
No	37.4%	36.1%	
Yes	62.6%	45.5%	
Marital status			6.47*
Single	38.1%	35.8%	
Married or live with partner	27.5%	48.9%	
Divorced/Separated/ Widowed	34.4%	35.8%	
Consider yourself Homeless			7.11*
No	55.3%	45.1%	
Yes	44.7%	33%	
Previous treatment			6.82**
No	30.1%	30.4%	
Yes	69.9%	43.4%	
Stage of change			13.11***
Precontemplation	3.8%	23.1%	
Contemplation	84.8%	40.3%	
Determination	11.3%	56%	
Number of contacts: Total	6.66 (6.17)	8.18	3.93***
Among those who entered tx		5.70	
Among those who did not			
ASI employment	.78	.75	2.34*
problems: Total			
Among those who entered tx		.81	
Among those who did not			
ASI alcohol problems: Total	.11	.08	3.14**
Among those who entered tx		.13	
Among those who did not			
ASI drug problems: Total	.26	.28	2.44*
Among those who entered tx			
Among those who did not		.25	

¹Chi-Square tests for percents; Mann-Whitney U tests for means.

*p < .05, **p < .01, ***p < .001.

3.2. Treatment Entry

A total of 39.6% of the out-of-treatment IDUs recruited into the study entered drug treatment between their baseline and follow-up interviews. Table 1 reports significant univariate tests of association between baseline variables and treatment entry.

The 9 variables in Table 1 were entered into a stepwise multiple logistic regression. Five independent factors predicted treatment entry. These were: having more contacts with an outreach worker (OR = 1.09, $p < .001$), having fewer alcohol problems (OR = .08, $p < .001$), being in a later stage of change (OR = 2.06, $p < .05$ for contemplation and OR = 3.49, $p < .01$ for determination), not being homeless (OR = 1.67, $p < .05$), and having more drug problems (OR = 6.67, $p < .05$). Case management was forced into the model but was not significantly related to treatment entry.

4. DISCUSSION

This study assessed predictors of entry into drug treatment among out-of-treatment opiate injectors recruited through street outreach. Approximately 40% of participants entered treatment in the 6 months after their baseline interview. Results showed a number of predictors of treatment entry, including having had more contact with an outreach worker, having more drug problems, fewer alcohol problems, not being homeless, and being more "ready" as measured by stage of change (11). In other words, having more support (i.e., in the form of the outreach worker and stable housing) as well as already thinking about treatment (i.e., in the contemplation or determination stage of change) seem to be important factors in whether this population of opiate injectors entered treatment. This supports other research showing desire for treatment as a predictor for treatment entry (12). Additionally, homelessness may create disparities in treatment access (13) such that those who are not homeless may have more ability (e.g., financial) or access to enter treatment. Finally, people who reported having more drug-related problems were almost 7 times more likely than those with fewer drug problems to enter treatment. This may describe the situation of the IDU who is "sick and tired of being sick and tired," which is what many drug users anecdotally say after years of their drug habit. All of these factors together may represent a profile of an IDU who is ready to enter treatment. In contrast, having more alcohol problems and more employment problems may be prohibitive towards entering drug treatment. Interventions that address these problems prior to encouraging treatment participation may be more successful than those that do not.

Other associations with treatment entry were found in univariate analyses only, including receiving case management, being married, and

having had prior treatment. Again, these back up the idea that the more support these opiate injectors have, the more likely it is that they enter treatment. Support may come in the form of contact with the outreach worker, case management services, the support of a spouse or domestic partner, or the support of stable living arrangements. Prior treatment may be instrumental in that the person knows what to expect from treatment and possibly has had success before. These findings support other reports, including research by this group, showing that prior treatment may predict who will enter treatment again (1, 12, 14).

There are a number of limitations to this study. Targeted sampling is less rigorous than random sampling but provides a relatively representative sample of this hard-to-reach population who cannot be recruited through traditional random sampling methods. Also, study findings were based on self-report, which may have been affected by social desirability and recall error. This was reduced somewhat by the use of an audio computer assisted interview (ACASI) for sensitive questions which has been shown to increase validity of self-reported findings (15). Recall error may have been minimized by the short time period for recall (30 days). Another limitation is that the sub-sample of participants who returned for follow-up interviews was significantly different than the baseline sample on many variables. The results of this study should be extended only to opiate users who are similar to those who returned for follow-up.

Treatment for opiate users is of great importance when considering the detrimental effects of drug use as well as the risk for HIV and other infectious diseases. The population examined here is of particular interest as they were not already engaged in treatment when they began the study, thus making them unique to other research. This research supports behavioral interventions as a means to improve treatment entry among opiate injectors. The identification of predictors of treatment entry may be useful for treatment centers in engaging certain populations of drug users.

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