

## BACKGROUND

- Despite the proven effectiveness of methadone-maintenance treatment, most opioid-dependent individuals are not in treatment.
- Opioid-dependent individuals who are out of treatment are subject to an increased risk of overdose death, HIV and hepatitis infection, and incarceration.
- Understanding the differences between individuals who seek methadone treatment and individuals who do not seek methadone treatment is an important area of inquiry, which could be used to inform effective approaches to improving treatment entry rates.

## PURPOSE

To understand baseline differences between individuals who seek and individuals who do not seek methadone treatment.

## METHODS

### Participants:

- 515 opioid-addicted adults recruited for a study of entry and engagement in methadone-maintenance treatment in Baltimore, Maryland.
  - 351 in-treatment participants recruited upon admission to one of six Baltimore area methadone-maintenance programs.
  - 164 out-of-treatment participants who met the criteria for methadone maintenance but had not sought drug-abuse treatment during the prior 12 months.

### Measures and variables:

All instruments were administered at baseline.

- Addiction Severity Index (ASI;** McLellan et al., 1980): Composite scores and demographic data
- Friends Research Supplemental Questionnaire** (Nurco et al., 1993): Drug use and criminal history items
- Attitudes toward Methadone** (Brown et al., 1975; Schwartz et al., 2008): Total-item scale (28 items)
- Attitudes toward Buprenorphine** (Schwartz et al., 2008): Total-item scale (28 items)
- Community Assessment Inventory** (Brown et al., 2004; Kelly et al., 2010): Subscales assessing perceived support in 4 domains
- TCU Motivation Scales** (Simpson & Joe, 1993): Desire for Help (DH; 7 items) and Problem Recognition (PR; 9 items) subscales
- TCU Aids Risk Assessment** (Joe et al., 1991): Sex risk (5 items) and injection risk (3 items) subscales
- Urine drug testing:** Analyzed by enzyme multiplied immune test (EMIT) for opioids and cocaine

### Statistical analysis:

- Cross-tabulations and one-way ANOVAS for examining differences in demographic and predictor variables; internal consistency reliabilities for scale construction; and logistic regression analysis for predicting treatment entry.

## RESULTS

Table 1. Demographic differences between in- and out-of-treatment samples (N = 515)

Variable	Total Sample (N = 515)	In-Treatment Sample (n = 351)	Out-of-Treatment Sample (n = 164)	Test Statistic	p
Male, n (%)	280 (54.4%)	187 (53.3%)	93 (56.7%)	$\chi^2(1) = .53$	.47
Race, n (%)				$\chi^2(1) = .16$	.69
Black	385 (74.8%)	260 (74.1%)	125 (76.2%)		
White	125 (24.3%)	87 (24.8%)	38 (23.2%)		
Other	5 (1.0%)	4 (1.2%)	1 (0.6%)		
Married, n (%)	121 (23.5%)	39 (23.1%)	25 (33.8%)	$\chi^2(1) = .01$	.91
Mean age (SD)	41.5 (8.0)	41.2 (8.2)	41.9 (7.7)	$F(1, 513) = .86$	.35
Mean no. years of education (SD)	11.2 (1.7)	11.2 (1.6)	11.0 (1.7)	$F(1, 513) = 1.23$	.27

Note: Test statistic for Race was obtained by collapsing data into two categories: White (n = 125) v. Black/Other (n = 390).

Table 2. Baseline differences for predictor variables between in- and out-of-treatment samples (N=515)

Variable	Total Sample (N = 515)	In-Treatment Sample (n = 351)	Out-of-Treatment Sample (n = 164)	Test Statistic	p
	Mean (SD)	Mean (SD)	Mean (SD)	F	
ASI Medical composite	.13 (.28)	.15 (.29)	.08 (.22)	7.55	.006
ASI Employment composite	.85 (.23)	.82 (.25)	.91 (.18)	18.97	<.001
ASI Alcohol composite	.11 (.16)	.09 (.14)	.15 (.20)	16.77	<.001
ASI Drug composite	.32 (.10)	.32 (.10)	.34 (.10)	7.09	.008
ASI Legal composite	.22 (.21)	.19 (.22)	.28 (.19)	23.63	<.001
ASI Family/Social composite	.06 (.13)	.07 (.14)	.04 (.11)	3.76	.053
ASI Psychiatric composite	.07 (.16)	.08 (.17)	.04 (.13)	6.45	.011
Longest FT job (months)	62.3 (59.0)	62.4 (57.8)	62.3 (61.7)	.00	.989
Age at first crime	17.0 (7.6)	17.1 (7.6)	16.8 (7.7)	.29	.590
Age first used heroin	21.7 (6.5)	22.0 (6.4)	21.0 (6.7)	2.36	.125
Lifetime no. months of incarceration	33.6 (55.3)	28.4 (50.7)	44.9 (62.9)	10.09	.002
No. of prior methadone treatments	.89 (1.2)	1.2 (1.4)	.32 (.67)	56.12	<.001
Attitudes toward methadone	90.7 (13.0)	94.6 (12.1)	82.5 (10.6)	121.58	<.001
Problem recognition	36.0 (6.0)	36.1 (5.8)	35.7 (6.4)	.65	.420
Desire for help	30.0 (3.8)	30.7 (3.4)	28.6 (4.3)	36.13	<.001
Sex risk scale	.82 (1.18)	.76 (1.09)	.94 (1.36)	2.54	.111
Injection risk scale	.72 (.85)	.71 (.81)	.74 (.92)	.15	.697
Partner support	17.4 (3.6)	18.1 (3.5)	15.8 (3.3)	48.44	<.001
Family support	22.3 (4.2)	22.8 (4.3)	21.3 (3.7)	13.57	<.001
Friends support	20.5 (2.6)	20.8 (2.6)	19.9 (2.6)	14.72	<.001
Community support	30.5 (6.3)	32.0 (6.3)	27.3 (4.8)	69.60	<.001
No. of days used cocaine past 30 days	12.8 (12.6)	9.4 (11.3)	19.9 (12.4)	91.58	<.001
No. of days worked past 30 days	4.2 (8.6)	4.5 (8.6)	3.6 (8.7)	1.11	.293
No. of days did crime past 30 days	12.6 (13.2)	9.2 (12.0)	19.9 (12.8)	86.21	<.001
	f(%)	f(%)	f(%)	$\chi^2$	
On parole or probation	123 (23.9%)	93 (26.5%)	30 (18.3%)	4.14	.042
Ever inject	316 (61.4%)	222 (63.2%)	94 (57.3%)	7.68	.006
Ever experienced depression	145 (28.2%)	112 (31.9%)	33 (20.1%)	1.66	.198
Cocaine positive drug test	362 (72.0%)	220 (64.5%)	142 (87.7%)	29.15	<.001
Opiate positive drug test	438 (86.7%)	297 (86.6%)	141 (87.0%)	.02	.890

Table 3. Results of logistic regression analysis predicting treatment entry (N = 492)

Variable	Odds Ratio	95% CI (Lower, Upper)	Wald $\chi^2$	p
ASI Medical composite	1.01	(.28, 3.56)	.00	.992
ASI Employment composite	.02	(.00, .32)	7.79	.005
ASI Alcohol composite	.52	(.09, 3.10)	.53	.469
ASI Drug composite	2.56	(.05, 139.75)	.21	.645
ASI Legal composite	5.95	(.59, 59.78)	2.30	.130
ASI Family/Social composite	3.79	(.18, 78.31)	.74	.388
ASI Psychiatric composite	6.21	(.29, 131.11)	1.38	.240
Longest FT job (months)	1.00	(.99, 1.00)	.48	.487
Age at first crime	.99	(.95, 1.03)	.20	.658
Age first used heroin	1.03	(.98, 1.09)	1.23	.267
Lifetime months of incarceration	1.00	(.99, 1.01)	.04	.851
No. of prior methadone treatments	2.34	(1.60, 3.43)	19.10	<.001
Attitudes toward methadone	1.07	(1.04, 1.10)	20.37	<.001
Problem recognition	.96	(.90, 1.04)	.98	.321
Desire for help	1.19	(1.06, 1.32)	9.60	.002
Sex risk scale	.97	(.75, 1.25)	.06	.806
Injection risk scale	1.05	(.61, 1.81)	.03	.862
Partner support	1.16	(1.05, 1.28)	8.27	.004
Family support	1.04	(.95, 1.13)	.76	.383
Friends support	1.06	(.92, 1.22)	.64	.423
Community support	1.08	(1.02, 1.15)	7.31	.007
No. of days used cocaine past 30 days	.94	(.91, .98)	11.10	.001
No. of days worked past 30 days	.94	(.89, 1.00)	4.12	.042
No. of days did crime past 30 days	.93	(.89, .97)	14.35	<.001
On parole or probation	2.42	(1.12, 5.20)	5.09	.024
Ever inject	2.03	(.84, 4.90)	2.47	.116
Ever experienced depression	1.24	(.47, 3.30)	.19	.667
Cocaine positive drug test	.81	(.36, 1.82)	.27	.607
Opiate positive drug test	.79	(.30, 2.09)	.23	.634
Gender	1.00	(.45, 2.23)	.00	.997
Race	4.90	(1.78, 13.52)	9.41	.002
Age	.96	(.91, 1.01)	2.83	.093

Note: N = 492 due to 23 participants who had missing data (11 were missing baseline urine results; 10 reported never having committed crime; 1 reported never having used heroin; and 1 was missing results for baseline urine and both motivation scales).

Table 4. Results of logistic regression analysis for final model predicting treatment entry (N=492)

Variable	Odds Ratio	95% CI (Lower, Upper)	Wald $\chi^2$	p
ASI Employment composite	.02	(.00, .22)	9.81	.002
No. of prior methadone treatments	2.35	(1.67, 3.31)	23.87	<.001
Attitudes toward methadone	1.07	(1.04, 1.11)	24.49	<.001
Desire for help	1.17	(1.08, 1.26)	16.00	<.001
Partner support	1.17	(1.07, 1.28)	11.78	.001
Community support	1.08	(1.03, 1.14)	8.37	.004
No. of days used cocaine past 30 days	.95	(.93, .98)	15.63	<.001
No. of days worked past 30 days	.93	(.87, .98)	7.44	.006
No. of days did crime past 30 days	.95	(.93, .97)	21.28	<.001
On parole or probation	2.17	(1.07, 4.43)	4.56	.033
Race	2.20	(1.01, 4.79)	3.97	.046

Note: For variable "on parole or probation", reference group is yes.

## CONCLUSIONS

- Individuals were more likely to enter methadone treatment if they were African American, on parole or probation, had more lifetime methadone treatments and more positive attitudes toward methadone, reported more desire for help, and perceived greater support for recovery from their partners and communities.
- In contrast, individuals who used more cocaine, worked more days, had more employment problems, and had more days of illegal activity were less likely to enter treatment.
- Findings indicate the importance of targeted outreach efforts to attract out of treatment opioid-dependent individuals to treatment.

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