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Benefits of Concurrent Syringe Exchange and Substance Abuse Treatment Participation

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Abstract

Participation in syringe exchange programs (SEPs) is associated with many individual and public health benefits, but may have little impact on reducing drug use without concurrent treatment engagement. The present study evaluated rates of drug use, other risk behaviors, and illegal activities in newly registered SEP participants ($n = 240$) enrolled versus not enrolled in substance abuse treatment over a 4-month observation window, and examined the effect of days in treatment on these outcomes. After controlling for baseline differences, SEP registrants enrolled in treatment ($n = 113$) reported less days of opioid and cocaine use, injection drug use, illegal activities, and incarceration than those not enrolled in treatment ($n=127$). For those enrolled in treatment, days of treatment was strongly correlated with each of these outcomes. These findings provide good evidence for a dose-response effect of treatment in syringe exchangers, and suggest that substance abuse treatment significantly expands the harm reduction benefits of SEP participation.

Keywords

syringe exchange; substance abuse treatment; injection drug use; HIV risk behaviors; harm reduction

1.0 Introduction

Community syringe exchange programs (SEPs) are consistently associated with reduced rates of injection equipment sharing and reduced rates of HIV infection (e.g., Bluthenthal, Kral, Gee, Erringer, & Edlin, 2000; Des Jarlais et al., 1996; Des Jarlais, McKnight, Goldblatt, & Purchase, 2009; Gibson et al., 2002; Huo & Ouellet, 2007; see Wodak & Cooney, 2006 for a review). The fact that syringe exchange participation does not fully suppress the sharing of injection equipment is most likely related to the high rates of continuing drug injection in this subgroup of substance users (e.g., Des Jarlais, Braine, Yi, & Turner, 2007; Fisher, Fenaughty, Cagle, & Wells, 2003; Wood et al., 2002). Interventions that fully suppress drug injection would clearly enhance the harm reduction benefits of syringe exchanges. A recent study by Van Den Berg, Smit, Van Brussel, Coutinho, & Prins (2007) reached this conclusion in a study of 714 injection drug users in Amsterdam. Subjects in that study that concurrently participated in syringe exchange and substance

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abuse treatment had significantly lower rates of HIV infection compared to subjects engaged in less intensive levels of harm reduction.

While several studies have reported on promising strategies to bridge syringe exchange and substance abuse treatment participation (Kidorf et al., 2009; Kuo et al., 2003; Strathdee et al., 2006), little is known about the responsiveness of syringe exchangers to routine substance abuse treatment. The responsiveness of community syringe exchangers to treatment is an important issue for several reasons. Studies have repeatedly shown that syringe exchangers have a higher severity of drug use problems and less substance abuse treatment exposure compared to other samples of injection drug users (Bruneau et al., 1997; Grau, Bluthenthal, Marchall, Singer, & Heimer, 2005; Hahn, Vranizan, & Moss, 1997; Huo & Ouellet, 2007; Kidorf et al., 2004), variables often associated with a poorer treatment prognosis (e.g., Avants, Margolin, & McKee, 2000). For example, while an early study by Brooner et al. (1998) showed that community syringe exchangers achieved substantial reductions in baseline drug use and HIV risk behavior over the first 3-months of methadone maintenance, these and other outcomes were less favorable compared to other injection substance users. A follow-up study by Neufeld et al. (2008) reported the one-year outcomes of these patients. It found that differences in drug use and retention between admissions referred by the SEP versus other referral sources were primarily attributable to the higher rates of pre-treatment drug use severity in syringe exchange referrals.

Important information missing in these studies was the comparison of rates of drug use and other risk behaviors in syringe exchangers enrolled versus not enrolled in substance abuse treatment. This type of comparison can evaluate the incremental benefits on risk behavior achieved by combining syringe exchange and substance abuse treatment participation. In addition, these studies did not evaluate the effectiveness of substance abuse treatment modalities that did not include an opioid agonist on the drug use outcomes of syringe exchangers, nor the effect of days (dose) of treatment on subsequent outcomes. While numerous studies have reported on the effectiveness substance abuse treatment across a wide range of samples and treatments (see Gowing, Farrell, Bronemann, & Ali, 2007, for a review), these modalities have not been systematically evaluated in syringe exchangers that are homogeneous for high pre-treatment drug use severity and low rates of treatment exposure. Taken together, data comparing syringe exchangers with versus without concurrent substance abuse treatment can strengthen efforts to establish more functional bridges between syringe exchanges and substance abuse treatment programs.

The present study compares drug use and other high-risk behavior outcomes in new SEP enrollees (n=240) that were versus were not concurrently receiving substance abuse treatment during the first 4-months of their syringe exchange participation. The first set of analyses examines outcomes for syringe exchange subjects participating versus not participating in any type of substance abuse treatment. Syringe exchangers enrolled in substance abuse treatment were expected to have lower rates of drug use and other risk behaviors. The second set of analyses evaluates changes in opioid and cocaine use from baseline to SEP participation for subjects participating and not participating in substance abuse treatment. Only syringe exchangers enrolled in treatment were expected to exhibit reductions in drug use. The third set of analyses examines the effect of days in substance abuse treatment (“dose”) on drug use outcomes for the subset of syringe exchangers (n = 113) that enrolled in treatment. Larger doses (more days) of treatment were expected to be positively associated with better outcomes.

2.0 Materials and Methods

2.1 Participants

Opioid-dependent individuals newly registered at the Baltimore Needle Exchange Program (BNEP) from 5/03 to 3/07 participated in the study. The BNEP operates from a mobile medical van that is parked at east and west sites across the city. BNEP registrants interested in the study were referred by syringe exchange staff to our research van, which was parked near the BNEP vehicle at both sites. BNEP registrants were eligible for study participation if they were between 18 and 65 years of age, injecting heroin, and not currently receiving any type of substance abuse treatment. Research staff informed potential subjects of the purpose and requirements of the study, and the risks and benefits of participation. All subjects provided informed written consent, approved by The Western Institutional Review Board (WIRB) and the Baltimore City Health Department, and were paid \$15.00/hr for completing monthly study assessments. The 4-month follow-up period used in this report corresponded to the duration of the study intervention.

The study sample of 240 in this report was drawn from a larger pool of subjects ($n = 387$) that provided written consent to participate in a larger study evaluating methods for encouraging SEP registrants to enroll in substance abuse treatment (Kidorf et al., 2009). A total of 281 subjects were ultimately randomized to experimental study conditions in the larger study, with randomized subjects reporting more heroin use, more drug injections, and greater interest in treatment (Kidorf et al., 2009). In the present report, an additional 41 subjects were excluded because they failed to provide any research follow-up data, producing a final study sample of 240. Subjects in the present study ($n = 240$) were more likely to be female (31.2% vs. 14.6%; $\chi^2 = 4.71$, $df = 1$, $p < .05$), have more days of heroin use (out of 30) at baseline ($M = 28.2$, $SE = 0.28$ vs. $M = 25.9$, $SE = 1.1$; $t(279) = 2.79$, $p < .01$) and have lower Addiction Severity Index (ASI) legal severity baseline scores ($M = 0.16$, $SE = 0.01$ vs. $M = 0.25$, $SE = 0.04$; $t(279) = 2.60$, $p < .01$) compared to 41 subjects excluded because they failed to provide any follow-up data. Table 1 presents the baseline demographic characteristics and drug use severity of the study sample ($n=240$).

2.2 Assessments

The Structured Clinical Interview for DSM-IV (SCID; First, Spitzer, Gibbon, & Williams, 1995), a semi-structured diagnostic interview that utilizes a decision-tree approach for making diagnoses of many DSM-IV substance use and other psychiatric disorders, was administered at baseline to confirm the diagnosis of opioid dependence. The ASI (McLellan et al., 1992; McLellan, Cacciola, Alterman, Rikoon, & Carise, 2006) was also administered at baseline and assessed problem severity in seven areas commonly affected by substance use (alcohol use, drug use, medical, legal, employment, family/social, and psychiatric status). Treatment enrollment was assessed monthly and defined as admission to an outpatient or inpatient drug abuse program, and included treatment program name and modality, admission and discharge dates, and length of stay. We also conducted monthly follow-ups on days of opioid and cocaine use (from the ASI), high-risk behaviors (injection use and syringe sharing), community resource use (emergency room, syringe exchange attendance), illegal activities, and incarceration over the past 30-days (see Kidorf et al., 2009). Research staff was trained in the administration of all measures (Broner, King, Kidorf, Schmidt, & Bigelow, 1997).

2.3 Study Procedure

Subjects were randomly assigned to one of three treatment referral conditions over a 4-month period: 1) 8 individual motivational enhancement sessions (Miller, Zweben, DiClemente, & Rychtarik, 1995) and 16 treatment readiness group sessions designed to

motivate treatment-seeking and enrollment (Motivated Referral Condition -- MRC), 2) the MRC intervention with monetary incentives for attending sessions and enrolling in treatment -- MRC+I), or 3) a standard referral condition which directed participants back to the BNEP for referral (Standard Referral - SRC) (see Kidorf et al., 2009, for more details). The present study evaluates subjects (n=240) that ultimately enrolled in substance abuse treatment at any time during the 4-month evaluation period ("Treatment Enrolled"; n = 113) with those that did not enroll in substance abuse treatment ("No Treatment"; n = 127). Almost one fifth of the subjects in the Treatment Enrolled group (n = 20; 17.7%) reported participating in more than one type of substance abuse treatment; the average number of days in any type of treatment over the 4-month window was 51.67 days. The major study outcomes were derived from four monthly assessments. Subjects completed 95% of the four scheduled monthly assessments ($\underline{M} = 3.80$; $\underline{SE} = .05$); a trend finding showed that the Treatment Enrolled group completed a somewhat higher percentage of follow-ups than the No Treatment Enrollment group ($\underline{M} = 3.89$, $\underline{SE} = .05$ vs. $\underline{M} = 3.72$, $\underline{SE} = .07$; $t(238) = 1.87$, $p = .06$).

2.4 Data Analysis

Four sets of analyses were conducted with the study sample (n = 240). The first used chi-square tests and t-tests to compare the two study conditions (i.e., "Treatment Enrolled" vs. "No Treatment") on baseline demographics, syringe exchange site (east vs. west), substance severity (including ASI composite scores), and opioid treatment history (see Table 1). Variables that significantly differed between study conditions were employed as covariates in subsequent analyses. Additional covariates included number of follow-ups completed and randomized experimental study condition (Kidorf et al., 2009). Second, multilevel analyses (SAS PROC MIXED software) were used to compare study conditions for each of the dependent measures; results were reported per 30-day observation period using adjusted means and standard errors.

Third, to evaluate possible changes within each condition in opioid and cocaine use, we used paired t-tests to compare baseline 30-day reports of opioid and cocaine use from the ASI (converted to percent of days used) to reported use during the study (also using percent of days used). To evaluate condition differences in magnitude of change, we calculated change scores (baseline use minus use during the study) for each condition, and then compared conditions using t-test comparisons of change scores. The change scores were normally distributed. We also analyzed these data using an ANCOVA using the baseline score as a covariate and the post-score as an outcome. The results confirmed the paired t-tests results and are not shown.

A final set of analyses used a series of Pearson (partial) correlations to evaluate the relationship between days of treatment and each of the dependent measures for those enrolled in treatment (n = 113), using the covariates identified. The distribution of the number of days was moderately kurtotic (flat), but not skewed. Because of some relatively minor deviations from normality in some of the outcome variables, we ran bivariate correlations of the number of days of treatment with all outcomes using both Pearson and Spearman's correlations using the entire sample (n = 240). The results were nearly identical which suggested that deviations from normality were unlikely to affect the results. Because many subjects participated in more than one treatment modality, specific analyses comparing distinct modalities (e.g., methadone vs. short-term inpatient stays) were not conducted.

3.0 Results

3.1 Baseline variables across groups

As shown in Table 1, the Treatment Enrolled group had a higher percentage of Caucasian subjects, more likely attended the east Baltimore SEP site, had more previous opioid agonist treatment experience, and scored higher on two ASI composite scores (Family/Social and Psychiatric domains). These variables, in addition to the randomized experimental condition in the main study and number of follow-ups completed, were used as covariates in subsequent analyses.

3.2 Drug use and other risk behavior outcomes across groups

Table 2 shows the adjusted means for each of the outcome measures across the two study groups, controlling for baseline differences. Treatment Enrolled subjects reported fewer days of opioid and cocaine use, number of drug injections, incarceration, and illegal behavior than No Treatment subjects in each 30-day observation period.

3.3 Drug use from baseline to SEP participation

Both Treatment Enrolled and No Treatment subjects reported reducing percent days of heroin use over time (Treatment Enrolled: 0.95 (.01) vs. 0.49 (.01), $t = 15.74$, $df = 112$, $p < .001$; No Treatment: .93 (.01) vs. .78 (.01), $t = 5.50$, $df = 126$, $p < .001$), though Treatment Enrolled subjects had a greater reduction in use ($t = 7.59$, $df = 238$, $p < .001$). Treatment Enrolled subjects and No Treatment subjects also reported reducing percent days of cocaine use over time (Treatment Enrolled: 0.47 (.04) vs. 0.31 (.03), $t = 5.23$, $df = 112$, $p < .001$; No Treatment: 0.54 (.04) vs. 0.46 (.03), $t = 2.66$, $df = 126$, $p < .01$); once again, Treatment Enrolled subjects had a greater reduction in use ($t = 1.95$, $df = 238$, $p = .05$).

3.4 Days in treatment and study outcomes

Table 3 shows a series of Pearson (partial) correlations between days of treatment and each of the outcome measures for subjects that enrolled in substance abuse treatment ($n = 113$), controlling for baseline differences. Days of treatment were negative correlated with days of cocaine and opioid use, number of drug injections, incarceration and illegal behavior.

4.0 Discussion

Prior studies have shown that syringe exchangers can benefit from routine substance abuse treatment (Brooner et al., 1998; Kuo et al., 2003; Neufeld et al., 2008) but were limited by the absence of a non-treatment comparison group. The present study reduces this gap in knowledge by evaluating the outcomes of syringe exchangers with versus without concurrent enrollment in substance abuse treatment. Syringe exchangers that were also participating in substance abuse treatment reported significantly less drug use and fewer drug injections. The benefits of reduced drug use and drug injections and their collateral effects on other measures of outcome are discussed below.

4.1 Reduction of drug use

Syringe exchangers concurrently participating in any type of substance abuse treatment reported less opioid and cocaine use, and fewer drug injections compared to syringe exchangers that were not enrolled in treatment. These findings extend the large body of literature showing the effectiveness of substance abuse treatment in more clinically diverse samples of drug users to syringe exchangers homogeneous for a high baseline severity of drug use (Gowing et al., 2007). At the very least, the present study provides additional empirical support for efforts to increase the rate of substance abuse treatment participation in

syringe exchangers (e.g., Des Jarlais et al., 2010; Hagan et al., 2000; Heimer, 1998; Kidorf et al., 2005; 2009; Strathdee et al., 2006). While the collateral benefits of reduced illegal activity and incarceration and a strong trend toward fewer emergency room visits are not surprising, they help validate the self-reported decrease in drug use reported by subjects (McLellan, Lewis, O'Brien, & Kleber, 2000).

This appears to be the first study to report a clear dose response to substance abuse treatment in injection drug users enrolled in a community syringe exchange. The number of days of treatment was significantly related to the extent of improvement across outcome measures, despite the relatively brief observation window (4-months). This finding is consistent with earlier work in other samples of substance users illustrating the benefits of treatment retention over longer durations of time (e.g., Simpson, Joe, & Rowan-Szal, 1997; Zhang, Friedmann, & Gerstein, 2003), as well as studies demonstrating the effectiveness of long-term maintenance modalities on selected indices of harm reduction (e.g., Pendergast, Urada, & Podus, 2001; Sorensen & Copeland, 2000). It is possible that outcome variables unaffected in the present study covering 4-months, including equipment sharing and employment, might respond more favorably to longer durations of treatment (Zhang et al., 2003).

The within-subjects analyses demonstrated reductions in opioid and cocaine use over time for both Treatment Enrolled and No Treatment subjects, though the magnitude of change clearly favored Treatment Enrolled subjects. Other studies have shown some reduction in drug use for syringe exchangers independent of treatment participation (e.g., Hagan et al., 2000; Watters, Estilo, Clark, & Lorvick, 1994), though the only randomized trial evaluating this question showed no differences in drug use between subjects acquiring syringes from SEP vs. pharmacy settings (Fisher et al, 2003). Taken together, these findings provide additional support that SEP participation does not facilitate higher rates of drug use, and may even be associated with reductions in drug use for some participants.

4.2 Bridging SEP and treatment participation

These results provide additional support for more intensive and sustained efforts to bridge community syringe exchanges and substance abuse treatment programs (Kidorf & King, 2008). The establishment of more formal linkages between these interventions will improve the public health benefits of both of them (Kidorf et al., 2009; Van Den Berg et al., 2007). Prior research has consistently shown that the vast majority of syringe exchangers are not enrolled in substance abuse treatment (e.g., Kidorf et al., 2004). Improving the linkage between syringe exchanges and substance abuse treatment settings extends the reach of treatment to this critically important subgroup of high severity and highly impaired injection drug users (Grau et al., 2005; Huo & Ouellet, 2007; Kidorf et al., 2010; Neufeld et al., 2008). Concurrent participation in treatment and an SEP provides important harm reduction benefits for treatment-seeking patients that continue to inject drugs. It is also possible that greater linkage between community syringe exchanges and substance abuse treatment programs will enhance public recognition of the public health benefits of SEPs (Kidorf & King, 2008).

Motivation to seek treatment among syringe exchangers is variable (Henderson, Vlahov, Celentano, & Strathdee, 2003; Kidorf et al., 2005), and more work is needed to evaluate methods for encouraging treatment enrollment in this subgroup of drug injectors. In the present study, for example, the majority of those entering treatment had engaged in a formal intervention that combined motivational interviewing and modest behavioral reinforcement to facilitate treatment-seeking (Kidorf et al., 2009). Other promising strategies to motivate treatment seeking behavior in this population include offering free treatment (Booth, Corsi, & Mikulich, 2003), using interim maintenance modalities to initially engage and slowly

transition patients to more comprehensive and demanding treatment services and schedules (Schwartz et al., 2006), and providing social and transportation assistance (Strathdee et al., 2006). It is worth noting that the recent passing of the 2010 health care reform bill, The Affordable Care Act, will substantially expand access to substance abuse treatment services. This will likely improve the effectiveness of interventions to motivate treatment-seeking behavior in syringe exchangers and other substance users (McLellan et al., 2000).

4.3 Limitations

The major limitations of this study are those inherent in evaluations that do not use random assignment. Perhaps most important is a potential selection bias, such that subjects enrolling in treatment may be more likely to reduce their drug use over time even without the benefits of treatment. The use of covariate analyses addressed this problem but could not eliminate it, although there is a wealth of data demonstrating the long-term persistence of drug use among untreated injection opioid users (e.g., Goldstein & Herrera, 1995; Hser, Hoffman, Grella, & Anglin, 2001; Vaillant, 1992). That the sample included in the present study varied modestly in some ways on demographic and substance abuse severity compared to excluded subjects also reduces the generalizability of the findings. It is also not clear how work conducted with syringe exchangers in Baltimore might generalize to other geographic regions of the US and other countries.

The present study evaluated only injection frequency and equipment sharing, and could not determine the impact of treatment on other drug use or sexual risk behaviors (e.g., unprotected sex). Reviews of the literature suggest that substance abuse treatment is more effective in reducing injection versus sexual risks of infectious disease transmission (e.g., Gowing et al., 2007; Sorensen & Copeland, 2000). Finally, outcomes in the study were evaluated for 4-months, corresponding to the length of the randomized intervention in the main study. It is not clear whether the improved outcomes observed in the Treatment Enrollment group would continue over longer periods of time. While treatment duration is reliably associated with improved outcomes (Simpson et al., 1997), injection drug users with high levels of problem severity are particularly prone to treatment drop-out and discharge (Neufeld et al., 2008). Increasing rates of drop-out in the Treatment Enrollment condition following the 4-month observation might reduce condition differences in outcomes over longer periods of time. Still, some of the expected harm associated with treatment attrition might be reduced by community syringe exchanges that provide sterile injection equipment and offer encouragement and incentives to return to treatment (Kidorf & King, 2008). The strong improvements in drug use and other risk-behavior outcomes for SEP registrants participating in substance abuse treatment provide good support for additional efforts to better integrate these important community-based interventions.

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Table 1

Baseline demographics, drug use, treatment history and ASI composite scores

Characteristic	Overall (n=240)		Treatment (n=113)		No Treatment (n=127)		t or χ^2	p-value
	M (SE)		M (SE)		M (SE)			
<i>Demographics</i>								
Gender (%)								
Male	68.8%		64.6%		72.4%		$\chi^2 = 1.17$	ns
Female	31.2%		35.4%		27.6%			
Race (%)								
Non-white	76.7%		67.3%		85.0%		$\chi^2 = 10.57$.001
White	23.3%		32.7%		15.0%			
Age (years)	41.3 (0.5)		40.8 (0.8)		41.8 (0.7)		t = 0.93	ns
Education (years)	11.4 (0.1)		11.4 (0.2)		11.3 (0.2)		t = 0.49	ns
Marital (%)								
Not Married	90.0%		86.7%		92.9%		$\chi^2 = 2.54$	ns
Married	10.0%		13.3%		7.1%			
Employment (%)								
Unemployed	88.3%		89.4%		87.4%		$\chi^2 = 0.23$	ns
Employed	11.7%		10.6%		12.6%			
Homeless (%)								
No	90.8%		90.3%		91.3%		$\chi^2 = 0.08$	ns
Yes	9.2%		9.7%		8.7%			
SEP Site (%)								
East Baltimore	45.4%		52.2%		39.4%		$\chi^2 = 3.98$	<.05
West Baltimore	54.6%		47.8%		60.6%			
<i>Drug Use</i>								
Heroin (past 30 days)	28.2 (0.3)		28.6 (0.33)		27.8 (0.4)		t = 1.27	ns
Cocaine Use (past 30 days)	15.3 (0.8)		14.3 (1.10)		16.2 (1.1)		t = 1.28	ns
<i>Opioid Treatment History (%)</i>								
No	24.6%		15.0%		33.1%		χ^2	.001
Yes	75.4%		85.0%		66.9%		10.48	

Characteristic	Overall (n=240)		Treatment (n=113)		No Treatment (n=127)		t or χ^2	p-value
	M (SE)		M (SE)		M (SE)			
<i>Addiction Severity Index Composite Scores</i>								
Medical	0.32 (0.02)		0.32 (0.04)		0.33 (0.03)		t = 0.05	ns
Employment	0.83 (0.01)		0.82 (0.02)		0.83 (0.02)		t = 0.63	ns
Alcohol	0.13 (0.01)		0.12 (0.02)		0.13 (0.02)		t = 0.26	ns
Drug	0.35 (0.01)		0.35 (0.01)		0.35 (0.01)		t = 0.24	ns
Legal	0.16 (0.01)		0.18 (0.02)		0.14 (0.02)		t = 1.59	ns
Family/Social	0.19 (0.02)		0.23 (0.02)		0.16 (0.02)		t = 2.47	<.05
Psychiatric	0.10 (0.01)		0.13 (0.02)		0.08 (0.01)		t = 2.26	<.05

Table 2
Treatment Enrolled Versus No Treatment Comparisons Across 4-month Outcomes

Outcome Measures (# days per month)	Adjusted Means (S.E.) [†]		T-tests	
	Treatment Enrolled (n=113)	No Treatment (n=127)	t value	p-value
Opioid use	18.06 (1.61)	22.78 (1.57)	4.27	<.001
Cocaine use	8.23 (2.03)	11.89 (1.97)	2.63	<.01
Injection drug use	17.50 (1.74)	22.58 (1.69)	4.27	<.001
Equipment sharing	1.02 (1.38)	2.37 (1.34)	1.43	ns
Incarceration	1.58 (0.72)	2.80 (0.70)	2.47	<.05
Illegal activities	1.76 (1.65)	5.29 (1.60)	3.11	<.01
Employment	2.28 (0.97)	2.47 (0.94)	0.29	ns
Emergency room visits	0.11 (0.06)	0.06 (0.06)	1.14	ns
Syringe exchange use	1.21 (0.61)	2.58 (0.59)	3.24	.001

[†] Adjusted for: race, study condition, number of follow-ups, SEP site, treatment history, and ASI Family/Social and Psychiatric composite scores

Table 3

Pearson (partial) correlations (2-tailed) between days of treatment and outcomes (n=113)

Outcome Measures (% use over 4 months)	Days of Treatment	
	r^I	p-value
Opioid use	-0.62	<.001
Cocaine use	-0.31	<.05
Injection drug use	-0.57	<.001
Equipment sharing	-0.10	ns
Incarceration	-0.21	<.05
Illegal activities	-0.19	<.05
Employment	-0.06	ns
Emergency room visits	-0.19	.06
Syringe exchange use	-0.22	<.05

^I adjusted for: race, study condition, number of follow-ups, SEP site, treatment history, and ASI Family/Social and Psychiatric composite scores