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Challenges and Outcomes of Parallel Care for Patients with Co-Occurring Psychiatric Disorder in Methadone Maintenance Treatment

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Abstract

Objective—Most opioid users seeking treatment in community-based substance abuse treatment programs have at least one co-occurring psychiatric disorder, and the presence of psychiatric comorbidity in this population is associated with increased psychological distress, poorer quality of life, and reduced response to substance abuse treatment. This observational study describes clinical outcomes of referring patients receiving methadone maintenance and diagnosed with at least one co-occurring psychiatric disorder to a community psychiatry program located on the same hospital campus.

Methods—Participants ($n=156$) were offered priority referrals to a community psychiatry program that included regularly scheduled psychiatrist appointments, individual and group therapy, and enhanced access to psychiatric medications for one-year. Psychiatric distress was measured with the Symptom Checklist (SCL-90-R), which participants completed monthly.

Results—While about 80% of the sample ($n=124$) initiated psychiatric care, the average length of treatment was only 128.2 days ($SD = 122.8$), participants attended only 33% of all scheduled appointments ($M = 14.9$ sessions, $SD = 14.1$), and 84% ($n = 104$) did not complete a full year of care. Of those who did not complete a full year, almost two-thirds (65%, $n = 68$) left psychiatric care while still receiving substance abuse treatment. Exploratory negative binomial regression showed that baseline cocaine and alcohol use disorder ($p = .002$ and $.022$, respectively), and current employment ($p = .034$), were associated with worse psychiatric treatment retention. Modest reductions in psychiatric distress over time were observed (SCL-90-R Global Severity Index change score = 2.5; paired $t = 3.54$, $df = 121$, $p = .001$).

Conclusions—Referral of patients with co-occurring psychiatric disorders receiving methadone maintenance to a community psychiatry program is often ineffective, even after reducing common barriers to care. Service delivery models designed to improve attendance and retention, such as

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integrated care models, should be evaluated. This study is part of a larger clinical trial, registered at www.clinicaltrials.gov under #NCT00787735.

Keywords

community psychiatry; integrated treatment; co-occurring psychiatric disorder; methadone maintenance

The majority of patients with opioid use disorder seeking treatment in community-based substance abuse programs have at least one co-occurring psychiatric disorder (Brooner et al., 1997; Strain, 2002). The presence of psychiatric comorbidity in this population is associated with increased psychological distress and poorer quality of life (Brooner et al., 1997; Cacciola et al., 2001; Carpentier et al., 2009), and can reduce response to substance abuse treatment (Compton et al., 2003; Darke et al., 2007; Hien et al., 2000). While the development of on-site integrated treatment approaches remains a priority in the field (Clark et al., 2008; Flynn & Brown, 2008), the pragmatic strategy routinely adopted by substance abuse programs is to refer patients with psychiatric comorbidity to outside community agencies that provide psychiatric services. Despite this common approach, however, very few reports are available on the outcomes of this clinical practice (Flynn & Brown, 2008; McGovern et al., 2006).

Potential barriers to successful implementation of this parallel treatment approach are well known to substance abuse treatment providers and stakeholders (Clark et al., 2008; Flynn & Brown, 2008; McGovern et al., 2006) and might be characterized as program-related (e.g., inadequate staff training and support), systems-related (e.g., inconvenient and poorly coordinated psychiatric care) and patient-related (e.g., economic and transportation disadvantages). The potential benefits of removing some of these obstacles to parallel psychiatric care for those in substance abuse treatment have been repeatedly noted in the field (Flynn & Brown, 2008; McGovern et al., 2006), but have not been extensively evaluated (Donald et al., 2005).

An opportunity to investigate this issue emerged as part of a randomized clinical trial evaluating the efficacy of on-site integrated psychiatric care for community-based patients receiving methadone maintenance (Brooner et al., 2013). As part of this study, participants with at least one current co-occurring psychiatric disorder could receive off-site psychiatric services at a community-based psychiatry program located on the same hospital campus as the substance abuse program. Participants could schedule a psychiatry appointment from their substance abuse counselor's office, receive an intake appointment within a week, meet with a mental health counselor and psychiatrist on the day of intake, and receive a predictable schedule of psychiatric services from staff trained in the treatment of comorbid psychiatric and substance abuse disorders. Psychiatric treatment services were covered by health insurance or Maryland's Public Mental Health program for uninsured patients. Psychiatric medication expenses were covered by health insurance prescription plans or the research grant for uninsured participants. In addition, participants received daily methadone dosing with an adaptive stepped-care model of counseling that is associated with good adherence and reduction in drug use (Brooner et al., 2004; Kidorf et al., 2006). As expected,

participants assigned to the integrated care condition had significantly improved treatment retention and treatment outcomes compared to the parallel condition (Brooner, et al., 2013).

The present descriptive study extends the parent study by providing new data on the treatment response of participants receiving methadone maintenance referred to a community psychiatry program for the treatment of co-occurring psychiatric disorders. The study examines what process and treatment outcomes can be expected in this population when many of the obstacles to receiving community-based psychiatric care are reduced or eliminated, and participants receive comprehensive care for their substance use disorders. These clinical outcomes include the percent of participants receiving a therapeutic dose of psychiatric services (i.e., at least 6-12 weeks of continuous treatment; American Psychiatric Association, 2010), rates of psychiatric service adherence and retention, initiation of pharmacotherapy, psychiatrist prescription practices, and changes in psychiatric distress for those initiating psychiatric care.

Methods

Participants

Participants were 156 patients with opioid dependence enrolled at the Addiction Treatment Services program, a publicly supported, community-based substance abuse treatment program in Baltimore, Maryland, that utilizes methadone maintenance as one component of care. The program uses a sliding scale fee based on household income and number of dependents for patients that have no health insurance. Weekly fees for most uninsured participants averaged about \$10.00 per week. Participants were part of a larger study comparing the efficacy of on-site and integrated psychiatric care to an off-site “usual care” condition (Brooner et al., 2013). The parent study was conducted between January 2004 and June 2009, and participants in this report constituted the “usual care” arm of the study. All participants met Diagnostic and Statistical Manual of Mental Disorders - IV (DSM-IV) criteria for opioid dependence disorder and the Center for Substance Abuse Treatment guidelines for methadone maintenance, met DSM-IV criteria for a current psychiatric diagnosis eligible for treatment reimbursement within Maryland's public mental health system (e.g., schizophrenia, bipolar disorder, other mood and anxiety disorders), and reported interest in receiving treatment for the psychiatric condition. The following exclusion criteria were also employed in the parent study: 1) pregnancy, 2) acute medical or psychiatric problem that required urgent medical attention, or 3) cognitive impairment that might interfere with the comprehension of study procedures and participation requirements. All participants signed informed, written consent to join the study after a thorough explanation of study procedures. The study was conducted in accordance with the Declaration of Helsinki and was approved by the Johns Hopkins Institutional Review Board.

Demographic characteristics, psychiatric and substance use diagnostic profiles, and baseline urinalysis results are presented in Table 1. The percentage of female study participants (62.2%) is somewhat higher than found in the routine Addiction Treatment Services program census (approximately 50% female), and may reflect higher rates of mood and anxiety disorders in females with opioid use disorder (Brooner et al., 1997) or other unknown self-selection factors. Most participants had a current Axis I disorder (96.2%), and

almost half had more than one Axis I disorder (46.2%). Mood disorders (72.4%) were more prevalent than anxiety disorders (55.1%). Over half (55.1%) had an Axis II disorder; antisocial personality disorder was most prevalent (28.2%). After opioid dependence disorder, cocaine use disorder was the most prevalent substance use problem.

Assessments

Study interviewers completed a training protocol that has helped to establish and sustain good inter-rater reliability over the past two decades (Brooner et al., 1997; Kidorf et al., 2004). Participants completed the Structured Clinical Interview for DSM-IV for Axis I disorders (SCID-I) and the Structured Clinical Interview for DSM-IV for Axis II disorders (SCID-II) (First et al., 1995) during the second week of baseline to assess for the presence of lifetime and current DSM-IV Axis I and II psychiatric disorders. Psychiatric diagnoses were clinically reappraised by one of the study investigators, who also screened participants for suicidal ideation, thought disorder, delusions, and hallucinations. The Symptom Checklist-90-R (SCL-90-R; Derogatis, 1983) was also administered at baseline and monthly, and uses a 5-point Likert Scale to assess self-reported psychiatric distress across 90 items and 9 subscales (e.g., depression, anxiety); the Global Severity Index score is the average rating given to all 90 items and correlates highly to the individual scales. Finally, participants submitted urine samples under direct observation (i.e., through a one way mirror) for testing once per week using a modified random schedule (Monday, Wednesday, or Friday). Urine samples were tested at an off-site certified clinical laboratory that employed Enzyme Multiplied Immunoassay Technique (EMIT) testing for the presence of opioids, cocaine, and benzodiazepines.

Procedure

Participants randomly assigned to the off-site community psychiatry treatment condition of the parent study were informed by a research assistant of the opportunity to receive psychiatric care at the Community Psychiatry Program, located on the same hospital campus as the Addiction Treatment Services program. During the first week of the study, the substance abuse counselor gave these participants the telephone number of the Community Psychiatry Program admissions coordinator. Participants could make the call from the substance abuse counselor's office at any point following randomization; intake appointments were generally scheduled within 3 to 4 days of the telephone call. Those participants who failed to call during the first study week were encouraged weekly by the substance abuse counselor to call for an intake appointment. Addiction Treatment Services staff members were aware of possible interference in scheduling between counseling sessions at the two programs and made every effort to coordinate Addiction Treatment Services counseling sessions around Community Psychiatry Program sessions. This was possible due to good flexibility in Addiction Treatment Services counseling availability (weekday hours: 7:30 AM to 7:00 PM). Community Psychiatry Program hours extended from 8:30 AM to 5:00 PM Monday through Friday.

The Community Psychiatry Program admissions coordinator reviewed a copy of the SCID summary sheet and clinical re-appraisal prior to seeing the participant, and included this information in the intake assessment packet provided to the treating psychiatrist and

therapist. On the same day, a board-certified psychiatrist conducted an unstructured psychiatric evaluation to confirm the SCID-derived psychiatric diagnostic profile and psychiatric clinical re-appraisal, and formulated the initial treatment plan based on the psychiatric treatment protocol incorporated in the study and developed collaboratively by the investigators and the Community Psychiatry Program medical director. The first three months of the treatment plan were scheduled to include twice monthly psychiatrist appointments and weekly individual and group therapy sessions. This schedule could be adapted throughout the year based on the participant's response to the initial treatment plan. In general, however, the expectation was that individual therapy sessions would be offered either weekly or every other week, with psychiatrist appointments reduced to once monthly and group therapy continued only for those who remained interested. Thus, for participants remaining in psychiatric care for one year, the frequency of psychiatric services delivered was expected to be approximately 15 psychiatrist sessions, 33 individual sessions, and 13 group sessions. None of these sessions were manual guided. All prescriptions were submitted to a single pharmacy that processed and delivered prescriptions within two business days. The pharmacy billed either third-party health insurance payers (including Medicaid) or the research grant (i.e., for uninsured participants). Participants without medical insurance could receive up to two prescribed medications each month free of charge while participating in the study. Patients who were prescribed more than two medications received prescription(s) from the prescriber to fill using their own financial resources, favoring low-cost generic medications when possible.

Mental health therapists with a master's degree in the behavioral sciences (state licensed or certified as professional therapists or social workers) provided individual therapy (i.e., 50-minute sessions), and were supervised by senior Community Psychiatry Program staff. These sessions were used to help participants reduce psychiatric distress and symptoms, solve problems, conceptualize relationships between psychiatric and substance use disorders, and take medications as prescribed. Therapists also referred participants to a weekly, 50-minute non-manualized psycho-educational or psychotherapy group relevant to the treatment of individuals with co-occurring psychiatric and substance use disorders (e.g., social skills groups). Participants who failed to attend any scheduled psychiatric sessions for eight consecutive weeks were discharged from psychiatric care, though they could resume psychiatric treatment at any point in the remaining 12 months simply by rescheduling a new appointment with the treating therapist. Participants were followed for up to one year.

All participants received routine substance abuse treatment at Addiction Treatment Services. Mean methadone dose across all participants was 78 mg ($SD = 26.2$). Individual and group counseling was used to help participants meet treatment plan goals, including reduction of substance use and improvement of medical and psychosocial functioning. An adaptive treatment approach (Brooner & Kidorf, 2002; King & Brooner, 2008) was employed to advance participants with frequent absences from counseling sessions and drug-positive urine samples to more intensive schedules of weekly counseling, and to return them to less intense schedules once adherent to the counseling schedule and drug-abstinent. The most intensive step (Step 4) required participants to attend nine hours of counseling per week (1 hour of individual and 8 hours of group counseling). Clinic-based behavioral contingencies

(e.g., methadone dosing time restrictions and tapers) were used to motivate attendance to substance abuse counseling sessions. Overall, participants attended a mean of 71.5 ($SD = 60.9$) of 94 scheduled sessions (76%); 39% of all urine specimens tested were drug-positive, with cocaine used most frequently ($M = 20.3\%$ positive, $SD = 0.40$). Urinalysis results were distributed weekly to the appropriate substance abuse and psychiatric treatment staff. During the study, staff providing psychiatric treatment services (psychiatrists, individual and group therapists) completed forms weekly to document all contacts with participants. Research support staff reviewed these forms and monitored adherence to the psychiatric treatment protocol on a weekly basis.

Results

Psychiatric Treatment Initiation

For the approximately 80% of the study participants ($n = 124 / 156$) initiating psychiatric care, the mean number of days from the beginning of randomized care until the initial intake session was 36.7 ($SD = 37.8$). However, only 48% of the full sample ($n = 75/156$) received at least 6 consecutive weeks of any services, and only 35% ($n = 54/156$) received at least 3-months of consecutive services.

Psychiatric Treatment Retention

Study participants initiating care ($n = 124$) remained in psychiatric treatment for an average of 128.2 days ($SD = 122.8$; range = 1 -353). Most of these participants (84%; $n = 104/124$) did not complete a full year of substance abuse and psychiatric care. Almost two-thirds of these latter participants left psychiatric care while remaining in substance abuse treatment (65%; $n = 68/104$); the remainder (35%; $n = 36/104$) were no longer followed for psychiatric care after leaving substance abuse treatment against medical advice. Twenty percent ($n = 25/124$) of those initiating psychiatric care had multiple episodes of care within the 12-month evaluation (i.e., resumed care after ending it for 8 or more consecutive weeks).

An exploratory negative binomial regression ($n = 124$) was conducted to determine baseline variables associated with psychiatric treatment days (censored at the last attended psychiatric session). Variables included demographics (age, gender, race, education, marital, employment), current psychiatric diagnoses (any psychotic disorder, any mood disorder, any anxiety disorder, any Axis II disorder), and current substance use disorder diagnoses (alcohol use disorder, sedative use disorder, cocaine use disorder). Cocaine use disorder (adjusted $M = 42.1$, $SE = 20.6$ vs. adjusted $M = 99.1$, $SE = 46.5$; $t = 3.16$, $df = 1$, $p = .002$), alcohol use disorder (adjusted $M = 35.0$, $SE = 22.9$ vs. adjusted $M = 119.2$, $SE = 50.0$; $t = 2.28$, $df = 1$, $p = .022$), and employment (part-time or full-time in past 30 days; adjusted $M = 46.6$, $SE = 25.1$ vs. adjusted $M = 89.6$, $SE = 38.4$; $t = 2.12$, $df = 1$, $p = .034$) were associated with fewer psychiatric treatment days.

Psychiatric Treatment Utilization and Adherence

Utilization of services offered by the community psychiatry program was disappointingly low. The minimal amount of psychiatric services allotted to participants over the one-year psychiatric treatment protocol included 15 psychiatrist appointments, 33 individual therapy

sessions, and 13 group sessions. Among participants who initiated psychiatric care, poor adherence led to a treatment schedule that included a mean of 7.2 ($SD = 3.6$) psychiatrist sessions, 24.4 ($SD = 15.5$) individual sessions, and 10.8 ($SD = 3.3$) group sessions over the one-year observation period. Unfortunately, the poor adherence that created this minimal services schedule reduced attendance to the sessions. Only 53% of scheduled psychiatrist sessions ($M = 3.4$ sessions, $SD = 3.0$), 42% of individual therapy sessions ($M = 10.9$ sessions, $SD = 10.7$), and 5% of group sessions ($M = 0.61$ sessions, $SD = 2.0$) were attended. Overall, participants attended only 33% ($M = 14.9$ sessions, $SD = 14.1$) of all scheduled sessions.

Psychotropic Medication Prescription Practices

Most participants initiating psychiatric care were prescribed at least one psychotropic medication (83%; $n = 103/124$); of this subgroup, 70% ($n = 72/103$) were prescribed medications from more than one drug class. Participants were prescribed a variety of psychotropic medications that were chosen based on clinical criteria. Most participants (76%; $n = 78/103$) were prescribed serotonin reuptake inhibitor antidepressants (e.g., citalopram; fluoxetine). Other medications prescribed to participants included heterocyclic antidepressants (56%, $n = 58/103$ e.g., nortriptyline, trazodone), atypical antipsychotics (31%, $n = 32/103$; e.g., quetiapine, risperidone), other antidepressants (19%, $n = 20/103$; e.g., mirtazapine, bupropion), and mood stabilizers (17%, $n = 17/103$; e.g., lithium, valproate). Other medications were prescribed less frequently.

Psychiatric Treatment Response

Treatment response for those initiating psychiatric care at any point during this 12-month evaluation ($n = 124$) was assessed by comparing baseline SCL-90-R Global Severity Index scores with the mean Global Severity Index score across the observation period, using only participants with more than one follow-up ($n = 122$). This analysis revealed a statistically significant reduction of psychiatric distress ($M = 47.1$; $SD = 11.0$ vs. $M = 44.6$; $SD = 11.0$; paired $t = 3.54$; $df = 121$; $p = .001$) over the study, despite the generally low rates of exposure to the available services.

Discussion

The present study clearly illustrates the challenge of engaging patients receiving methadone maintenance in psychiatric care that is offered outside of the substance abuse treatment setting. Similar concerns have been reported in a variety of other substance abuse treatment settings though little data on the outcome of these referrals are available (Donald et al., 2005; Flynn & Brown, 2008; McGovern et al., 2006). While most participants in the present study attended the intake session at the Community Psychiatry Program and were started on psychotropic medications, few sustained consistent treatment participation over the one year evaluation. Most importantly, poor service adherence and retention were observed even though psychiatric care and medication prescriptions were offered conveniently and with little cost to study participants, thereby removing some of the major barriers common to the delivery of psychiatric services outside of the substance abuse treatment setting (Clark et al., 2008; McGovern et al., 2006).

That concurrent substance use may have negatively affected treatment engagement is supported by the regression analysis showing that both baseline cocaine use disorder and baseline alcohol use disorder were associated with fewer days receiving psychiatric care. Over one-third of the collected urine samples tested positive for illicit drugs even though participants received comprehensive and intensive substance abuse treatment services. Previous studies have demonstrated that substance use in this population is associated with poor program retention (Joe et al., 1999). Strategies designed to reduce drug use and improve substance abuse treatment retention (Carroll & Onken, 2005) would likely have a positive and beneficial impact on psychiatric treatment engagement and retention. However, it is worth noting that most study participants discontinued psychiatric care while continuing their treatment for substance use disorder.

It is important to note that patients using illicit drugs were assigned to intensified schedules of substance abuse counseling services (up to 9 hours per week) at the Addiction Treatment Services program. While these sessions were routinely rescheduled or excused to permit attendance to scheduled Community Psychiatry Program appointments, some patients may have been less willing to attend psychiatric services over and above the intensified substance abuse treatment schedule. A challenge in developing effective integrated or parallel treatment models for those with co-occurring disorders is the delivery of psychiatric care that does not compromise availability or utilization of substance abuse treatment services.

One surprising finding emerged from the regression analysis: employment was associated with lower psychiatric treatment retention. It is possible that employed participants may have improved sufficiently over a shorter period of time and decided to terminate psychiatric care. Alternatively, employed individuals may have experienced more difficulties scheduling and attending Community Psychiatry Program appointments due to time constraints, though this problem was not specifically tracked or anecdotally identified by staff during conduct of the study. In either case, this finding suggests that employment in this population may pose an obstacle to long-term psychiatric care that might be constructively addressed with patients early in the course of treatment.

Despite the disappointing engagement in Community Psychiatry Program services, participation in any psychiatric care was associated with significant reduction in psychiatric symptoms and severity. While the present study supports the benefits of even modest levels of psychiatric treatment engagement, the overall clinical significance of this finding is unclear because psychiatric distress levels can change over time in this population independent of psychiatric intervention (Strain et al., 1991). This raises the practical concern of what might be done to increase participation in psychiatric services available in the community.

The good news comes from studies showing that behavioral reinforcement can improve utilization of substance abuse and psychiatric services offered in substance abuse treatment settings (Brooner et al., 2004; Helmus et al., 2003; Kidorf et al., 2009, 2013). In the present study, adherence to substance abuse treatment sessions, which was reinforced using positive and negative program contingencies, was appreciably greater than adherence to psychiatric services. Future studies might evaluate the efficacy of using behavioral contingencies to

reinforce utilization of psychiatric and other clinical services offered outside the substance abuse treatment setting. Motivational and family interventions have also demonstrated efficacy in enhancing adherence to treatment services (DiClemente et al., 2008; Kidorf et al., 2006; Stanton & Shadish, 1997), and could be used alone or in combination with other behavioral approaches.

The present study possesses many of the limitations inherent in observational studies. Interpretation of these results would benefit from comparison to a standard referral condition that did not seek to reduce or remove common barriers to outpatient psychiatric care. This type of study might show that reducing obstacles to care offered some improvement in psychiatric treatment engagement and outcome. The results are also limited to treatment-seeking patients with opioid use disorder in one U.S. northeastern city, and to a community-based substance abuse treatment program that has good experience conducting clinical work and research with patients experiencing co-occurring psychiatric disorders (e.g., Brooner et al., 1997; King et al., 2000; King et al., 2001; Brooner et al., 2013; Kidorf et al., 2013).

In sum, the present study provides important information on the outcomes of patients with opioid use disorder and comorbid psychiatric disorder who were referred to a program outside of the methadone maintenance setting for psychiatric care. These types of referrals are commonplace in methadone and other substance abuse treatment settings but little is known about the effectiveness of this treatment approach. While many participants initiated treatment, adherence to scheduled psychiatric services was generally poor, and few patients sustained participation in psychiatric care throughout the one-year evaluation. The fact that these results were obtained even when common barriers to treatment were substantially reduced strengthens the overall merit of the report. Efforts to integrate substance abuse and mental health care at the local and state levels hold promise for improving treatment for patients with co-occurring disorders (Sacks et al., 2013), though many barriers remain (Gotham et al., 2010). The development of alternative service delivery models to help this large and challenging patient population receive and benefit from adequate doses of psychiatric care constitutes a timely and potentially productive area of investigation.

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Table 1
Demographic, psychiatric, and substance use disorder characteristics at baseline (*n*=156)

Characteristic	<i>n</i> (%)	<i>M</i> (<i>SD</i>)
DEMOGRAPHICS		
Gender		
Male	59 (37.8%)	
Female	97 (62.2%)	
Race		
White	93 (59.6%)	
African American	45 (28.8%)	
Native American	15 (9.6%)	
Hispanic	2 (1.3%)	
Pacific Islander	1 (0.6%)	
Age (years)		39.4 (8.52)
Education (highest grade completed)		10.88 (2.16)
Married	27 (17.3%)	
Employed (part or full time)	26 (16.7%)	
PSYCHIATRIC DISORDERS (current)		
Axis I disorder	150 (96.2%)	
Multiple Axis I disorders	72 (46.2%)	
Psychotic disorders	6 (3.8%)	
Schizophrenia	1 (0.6%)	
Schizoaffective disorder	5 (3.2%)	
Mood disorders	113 (72.4%)	
Major depression	78 (50.0%)	
Bipolar I	19 (12.2%)	
Dysthymia	15 (9.6%)	
Anxiety disorders	86 (55.1%)	
Posttraumatic stress disorder	37 (23.7%)	
Panic disorder	22 (14.1%)	
Social Phobia	23 (14.7%)	
Generalized anxiety disorder	15 (9.6%)	
Axis II disorders	86 (55.1%)	
Antisocial personality disorder (APD)	44 (28.2%)	
Axis II not including APD	61 (39.1%)	
SUBSTANCE USE DISORDERS (current) [†]		
Opioid	156 (100%)	
Alcohol	11 (7.1%)	
Sedative	16 (10.3%)	
Cocaine	41 (26.3%)	

Note. Psychiatric and substance use disorder diagnoses were determined using the Structured Clinical Interview for the DSM-IV. With the exception of psychotic disorders, only psychiatric disorders prevalent in at least 10% of the sample are included in the table. Some participants have multiple psychiatric diagnoses in each diagnostic category.

¹ Alcohol, sedative, and cocaine use disorders are co-occurring with opioid dependence in this sample.