Published in final edited form as:

Drug Alcohol Depend. 2013 January 1; 127(1-3): 243–247. doi:10.1016/j.drugalcdep.2012.06.020.

Prevalence of mood and substance use disorders among patients seeking primary care office-based buprenorphine/naloxone treatment

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Abstract

BACKGROUND—Psychiatric comorbidity can adversely affect opioid dependence treatment outcomes. While the prevalence of psychiatric comorbidity among patients seeking methadone maintenance treatment has been documented, the extent to which these findings extend to patients seeking primary care office-based buprenorphine/naloxone treatment is unclear.

AIMS—To determine the prevalence of mood and substance use disorders among patients seeking primary care office-based buprenorphine/naloxone treatment, via cross sectional survey.

METHODS—237 consecutive patients seeking primary care office-based buprenorphine/naloxone treatment were evaluated using modules from the Structured Clinical Interview for DSM-IV Axis I Disorders (SCID-I). Current (past 30 days) and past diagnoses were catalogued separately.

RESULTS—Patients ranged in age from 18 to 62 years old ($M = 33.9$, $SD = 9.9$); 173 (73%) were men; 197 (83%) were white. Major depression was the most prevalent mood disorder (19% current, 24% past). A minority of patients met criteria for current dysthymia (6%), past mania (1%), or past hypomania (2%). While 37 patients (16%) met criteria for current abuse of or dependence on at least one non-opioid substance (7% cocaine, 4% alcohol, 4% marijuana, 2% sedatives, 0.4% stimulants, 0.4% polydrug), 168 patients (70%) percent met criteria for past abuse of or dependence on at least one non-opioid substance (43% alcohol, 38% marijuana, 30% cocaine, 9% sedatives, 8% hallucinogens, 4% stimulants, 1% polydrug, and 0.4% other substances).

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Contributors

Authors JDS, DTB, CJC, RSS, and DAF designed the study and wrote the protocol. Authors JDS and MTJ managed the literature searches and summaries of previous related work. Author AD undertook the statistical analysis, and author JDS wrote the first draft of the manuscript. All authors contributed to and have approved the final manuscript.

Conflict of Interest

No conflict declared.

Partial findings have been presented as a poster session at the 73rd Annual Meeting of the College on Problems of Drug Dependence.

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CONCLUSION—Mood and substance use comorbidity is prevalent among patients seeking primary care office-based buprenorphine/naloxone treatment. The findings support the need for clinicians to assess and address these conditions.

Keywords

Opioid-Related Disorders; Comorbidity; Diagnosis; Dual(Psychiatry); Substance-related disorders; Buprenorphine; Primary Health Care

1. INTRODUCTION

Primary care office-based buprenorphine/naloxone treatment has helped expand access to opioid agonist treatment in the United States (Sullivan et al., 2005). There are an estimated 350,000 patients receiving buprenorphine/naloxone, and approximately 46% receive this treatment from primary care physicians (Greene, 2010). Patients receiving primary care office-based buprenorphine/naloxone treatment are more likely to never have been enrolled in methadone maintenance treatment and to have shorter durations and more recent onset of opioid dependence compared to those receiving methadone maintenance treatment (Sullivan et al., 2005). While the prevalence of psychiatric and substance use comorbidity among patients seeking or enrolled in methadone maintenance treatment has been systematically investigated (Brooner et al., 1997; Darke and Ross, 1997; Ross et al., 2005; Rounsaville et al., 1982b; Schäfer et al., 2011; Strain, 2002), these rates have not been examined among persons seeking or receiving primary care office-based buprenorphine/naloxone treatment. Psychiatric and substance use comorbidity can affect treatment outcomes among patients receiving opioid agonist treatment (Brooner et al., 1997; Bux et al., 1995; Cacciola et al., 2001; Darke et al., 1993; el-Bassel et al., 1993; Havard et al., 2006; Kosten et al., 1988; McKay and Weiss, 2001; Rounsaville et al., 1982a; Schäfer et al., 2011; Srivastava et al., 2008; Sullivan et al., 2010). Since buprenorphine/naloxone is attracting new patients to medication assisted treatment, it is important to determine the prevalence of mood and substance use disorders among these patients. Therefore, the aim of the current study was to determine the prevalence of mood and substance use disorders among patients seeking primary care office-based buprenorphine/naloxone treatment in a randomized clinical trial evaluating psychosocial treatments combined with buprenorphine/naloxone.

2. METHODS

2.1. Subjects and Setting

Participants were 248 patients who were consecutively evaluated for enrollment in a primary care office-based buprenorphine/naloxone research program for opioid dependence between May 2006 and August 2010. Participants were recruited through primary care clinician referral, word-of-mouth, the internet, and advertisements in the community. Of those who presented for enrollment, 237 patients (96% compliance) completed the evaluation as part of the screening process for determining study eligibility; these 237 patients are the focus of the current study. All patients provided written, informed, voluntary consent. The study was conducted at the primary care center of a large urban hospital and received appropriate institutional review board approval at Yale University School of Medicine.

2.2. Data Collection

Patients provided demographic information, including age, race/ethnicity, gender, employment status, educational level, marital status, and self-reported “primary drug of abuse.” Psychiatric diagnoses were established by specially trained and supervised research assistants administering modules A and E from the Structured Clinical Interview for Diagnostic and Statistical Manual for Mental Disorders, Fourth Edition (DSM-IV) Axis I

Disorders (SCID-I) (First et al., 2002). Module A assessed mood disorders, including lifetime major depression, mania, and hypomania, as well as current dysthymia; diagnoses of mood disorders were made based on DSM-IV symptom criteria, independent of any potential association with substance use. Module E assessed substance use disorders, including lifetime abuse of and dependence on opioids, alcohol, cocaine, cannabis, sedatives, stimulants, hallucinogens, multiple substances simultaneously (“polydrug”), and other substances. For all disorders, lifetime diagnoses were categorized as “current” or “past” (i.e., diagnoses were considered “current” only if criteria were met in the 30 days prior to the evaluation.) For this study, “current” and “past” disorders were considered mutually exclusive (i.e., individuals with “past” disorders met criteria for a disorder in the past, but not currently).

A standardized assessment training protocol was utilized wherein research assistants completed SCID-I training materials; attended didactic workshops; received individual training by a doctoral-level clinical psychologist (co-authors CJC or DTB); and observed numerous SCID-I assessments. Research assistants then conducted evaluations under the observation of a doctoral-level clinical psychologist until deemed to have performed at a sufficient level, at which point they became “certified.” After being certified, research assistants conducted the diagnostic evaluations and received ongoing supervision and retraining as needed.

2.3. Data Analysis

Prevalence of mood and substance use disorders was determined using descriptive statistics. We performed a logistic regression analysis with presence of a current mood or substance use disorder as the dependent variable and each of the demographic and clinical variables listed in Table 1 as the independent variables. For this analysis, we converted age into a binary variable (either above or below the median age).

3. RESULTS

The 237 patients ranged in age from 18 to 62 years old ($M = 33.9$, $SD = 9.9$); 73% were men; 83% were white; 55% were employed; 84% had greater than or equal to a high school education; 68% had never been married; and 63% reported heroin as their primary drug of abuse (Table 1).

Prevalence rates of mood disorders and substance use disorders are summarized in Table 2. About half (45%) of the 237 patients met criteria for a lifetime mood disorder. Nineteen percent met criteria for current major depression, and an additional 24% met criteria for at least one episode of major depression in the past. Six percent met criteria for current dysthymia, while no patients met criteria for current mania or hypomania. Past mania was found in 1% of patients, and past hypomania was found in 2% of patients.

All but one patient (99.6%) met criteria for lifetime opioid abuse or dependence. A substantial majority (70%) of the 237 patients met criteria for lifetime abuse of or dependence on at least one non-opioid substance. Meeting criteria for current abuse of or dependence on a non-opioid substance was less common (7% cocaine, 4% alcohol, 4% marijuana, 2% sedatives, 0.4% stimulants, 0.4% polydrug), while meeting criteria for past abuse of or dependence on a non-opioid substance was more common (43% alcohol, 38% marijuana, 30% cocaine, 9% sedatives, 8% hallucinogens, 4% stimulants, 1% polydrug, and 0.4% other substances).

Thirty-two percent of patients met criteria for a current mood or substance use disorder. Univariate (Pearson chi-square test) and multivariate (logistic regression) analyses revealed

that no demographic or clinical variables were independently related to having a current mood or substance use disorder.

4. DISCUSSION

The present study suggests that lifetime mood and substance use comorbidity are common among patients seeking primary care office-based buprenorphine/naloxone treatment. In particular, lifetime diagnoses of major depression or alcohol, cocaine, and cannabis use disorders (abuse or dependence) were seen in greater than one quarter of the patients. In contrast, epidemiological studies with nationally representative samples suggest lifetime rates of 13.2% for major depression, 10.3% for any drug use disorder, and 30.3% for an alcohol use disorder (Compton et al., 2007; Hasin et al., 2005; 2007). Prior research on patients entering primary care office-based buprenorphine/naloxone treatment has described the psychiatric comorbidity of patients by documenting receipt of psychiatric medications or by self-reported psychiatric treatment (Alford et al., 2011; Magura et al., 2007; Parran et al., 2010; Soeffing et al., 2009), while non-opiate substance use has been assessed using urine toxicology or self-reported use in the days preceding treatment initiation (Alford et al., 2011; Magura et al., 2007; Parran et al., 2010; Soeffing et al., 2009; Stein et al., 2005). The present study extends previous research and is the first we are aware of to describe the prevalence of mood and substance use disorders among patients seeking primary care office-based buprenorphine/naloxone treatment by direct interview and application of formal diagnostic criteria. The use of formal diagnostic criteria allows for greater accuracy and improved comparison to other research using similar criteria. In addition, the conduct of this study in an office-based primary care setting increases the likelihood that its findings will generalize to patients seen in similar settings, as compared with patients presenting for treatment at specialty treatment programs.

4.1. Mood Disorders

Major depression was seen in a substantial proportion of patients seeking primary care office-based buprenorphine/naloxone treatment. While the reported prevalence of mood disorders among opioid dependent patients both in and out of treatment is generally high, variability exists between different studies (Brooner et al., 1997; Ross et al., 2005; Rounsaville et al., 1982a; Schäfer et al., 2011; Strain, 2002), partly based upon method and timing of assessments. A comprehensive literature review synthesized results across these studies and suggested a prevalence of 20–25% for past and 15% for current major depression (Strain, 2002), which is consistent with the present findings. This literature, however, did not include patients who were seeking or receiving treatment in primary care or with buprenorphine/naloxone.

Depression in opioid dependent patients has been associated with poorer physical health, decreased quality of life, and increased risk-taking behaviors and suicidality (Cacciola et al., 2001; Carpentier et al., 2009; Darke et al., 2005; Havard et al., 2006; Rounsaville et al., 1986; 1982a). Compared to opioid dependent patients without a comorbid psychiatric illness, comorbid patients often have poorer treatment outcomes (Cacciola et al., 2001; Compton III et al., 2003; Havard et al., 2006; Rounsaville et al., 1986; 1982a). However, a recent systematic review concluded that specialized interventions that address these comorbid conditions may serve to equalize treatment outcomes between these two groups (Schäfer et al., 2011). Whether these additional interventions would be available or used in primary care office-based treatment with buprenorphine/naloxone is an empirical question. Being prescribed a psychiatric medication or having a self-reported psychiatric illness was not related to treatment retention in previous studies of patients receiving office-based buprenorphine/naloxone treatment, although these studies did not examine the influence of

specific disorders (e.g., depression) or include formal diagnostic assessments (Alford et al., 2011; Magura et al., 2007; Parran et al., 2010; Soeffing et al., 2009).

Major depression is often associated with female gender, in both the general population and those with opioid dependence (Brooner et al., 1997; Hasin et al., 2005; Rounsaville et al., 1982a). In our sample, however, no demographic or clinical information was associated with having a current mood or substance use disorder. Research with larger samples may identify unique characteristics associated with mood or substance use disorders among patients seeking primary care office-based buprenorphine/naloxone.

Longitudinal studies that have compared depressive symptoms in opioid dependent patients prior to beginning treatment and at various time points during treatment have found that prevalence and severity of depression tend to decline within the first few weeks after treatment initiation (Darke et al., 2009; Dean et al., 2004; Gonzalez et al., 2003; Havard et al., 2006; Hesse, 2006; Kosten et al., 2003; Pani et al., 2010; Rounsaville et al., 1982a; Stein et al., 2010). Clinical guidelines recommend waiting at least one week after opioid treatment initiation before treating depression (Ross, 2008; Schäfer et al., 2011; Stein et al., 2010; Torrens et al., 2011). Although findings are not uniformly positive, several studies have documented the efficacy of antidepressant treatment for opioid dependent patients with a diagnosis of a depressive disorder (Nunes et al., 1998; Stein et al., 2010; 2004; Torrens et al., 2011).

4.2. Substance Use Disorders

Past non-opioid substance use disorders were found in a majority of patients seeking primary care office-based buprenorphine/naloxone treatment, while current non-opioid substance-related disorders were less common. Previous studies examining non-opioid substance use disorders among opioid dependent patients have found somewhat higher, although varying, rates of current non-opioid substance dependence, including cocaine (6–68%), alcohol (25–49%), marijuana (8–41%), and sedative (4–17%) dependence (Brooner et al., 1997; Darke and Ross, 1997; Kidorf et al., 2004; Strain, 2002). Along with a shorter duration and more recent onset of opioid dependence and a lower likelihood of previous methadone maintenance treatment (Sullivan et al., 2005), the lower rates of current non-opioid substance dependence in our sample may be another characteristic distinguishing patients seeking primary care office-based buprenorphine/naloxone treatment from those seeking methadone maintenance treatment. Alternatively, the lower prevalence of current non-opioid substance use disorders found in this study could be due to a number of different factors, including temporal trends in other substance use disorders among opioid dependent patients in the community or as an artifact of study recruitment procedures.

The impact of substance use disorders on treatment outcomes has not been systematically examined in patients receiving primary care office-based buprenorphine/naloxone treatment; however, several studies have examined the impact of non-opioid substance use prior to treatment entry. Two studies found that cocaine use at baseline was associated with worse treatment outcomes, including poorer treatment retention and continued opioid use (Alford et al., 2011; Sullivan et al., 2010), while one study suggested that either cocaine or alcohol use at baseline was independently associated with improved retention in treatment (Soeffing et al., 2009).

Given that methadone has existed as a treatment modality for opioid dependence much longer than buprenorphine/naloxone, it is not surprising that the impact of substance use disorders has been more thoroughly investigated among those seeking or enrolled in methadone maintenance treatment. For instance, a diagnosis of current cocaine dependence in patients seeking or enrolled in methadone maintenance treatment has been shown to be

associated with poor treatment outcomes, increased risk for HIV infection, and decreased physical and mental health and psychosocial functioning (Brooner et al., 1997; Bux et al., 1995; Grella et al., 1995, 1997; Kidorf et al., 1998; Kosten et al., 1986, 1988; Preston et al., 1998; Tzilos et al., 2009). Similarly, problematic alcohol use during methadone maintenance treatment is associated with decreased physical and mental health and poor treatment outcomes (el-Bassel et al., 1993; Srivastava et al., 2008; Stenbacka et al., 2007), and the use of sedatives is associated with increased risk of overdose and HIV infection and decreased mental health (Darke et al., 1993; Kidorf et al., 1996).

It is currently unclear whether these findings regarding non-opioid substance use disorders in methadone maintenance treatment will extend to those seeking or enrolled in primary care office-based buprenorphine/naloxone treatment, and future research should address this subject.

4.3. Study Limitations and Clinical Implications

Our study has several potential limitations. First, patients were seeking primary care office-based buprenorphine/naloxone treatment through a research study; thus, findings may not generalize to non-research-related office-based buprenorphine/naloxone settings and populations. Second, to minimize patient response burden, we did not assess anxiety or personality disorders and therefore cannot comment on the prevalence of these important conditions. Given that personality disorders, especially antisocial personality disorder, are highly prevalent in other opioid dependent populations and have been shown to affect treatment outcomes, future research on primary care office-based buprenorphine/naloxone treatment should include comprehensive assessment of Axis I and Axis II diagnoses (Brooner et al., 1997). Third, since evaluations were conducted prior to treatment initiation, it is difficult to assess whether psychiatric comorbidity is independent or substance-induced and could consequently improve with the treatment of opioid dependence. Future research might consider assessing psychiatric comorbidity after treatment initiation in order to examine the prevalence of independent disorders. Fourth, although careful attention was given to the training, retraining, and supervision of research assistants, ongoing reliability checks and systematic confirmation by a clinician of SCID-I diagnoses were not performed. Lastly, although the SCID-I assessment is frequently used to describe the psychiatric comorbidity of opioid dependent patients (Strain, 2002), it has not yet been formally validated among individuals with substance use disorders.

Despite these limitations, the present study provides an initial exploration into the psychiatric comorbidity of patients seeking primary care office-based buprenorphine/naloxone treatment. Due to the documented impact of psychiatric comorbidity on opioid dependent patients receiving methadone maintenance treatment, clinicians providing primary care office-based buprenorphine/naloxone treatment should consider screening for and addressing comorbid psychiatric and substance use to possibly help improve treatment outcomes. Future research should examine the impact of psychiatric comorbidity on primary care office-based buprenorphine/naloxone treatment outcomes. Additionally, future research should investigate the efficacy of different treatments for comorbid mood disorders in this patient population, the feasibility of integrating these treatment approaches into primary care, and indications for referral to specialty care.

Acknowledgments

Role of Funding Source

Funding for this study was provided by National Institute on Drug Abuse grants (K23 DA024050, K24 DA000445, R01 DA019511); the National Institute on Drug Abuse had no further role in study design; in the collection, analysis and interpretation of data; in the writing of the report; or in the decision to submit the paper for publication.

We thank Tera Fazzino, M.A., who kindly assisted with data entry.

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Table 1

Demographic characteristics of patients seeking primary care office-based buprenorphine/naloxone, N=237.

Age, mean (SD)	33.9 (9.9)
Gender, % (N)	
Male	73% (172)
Female	27% (64)
Race, % (N)	
White	83% (197)
Non-White	17% (40)
Education, % (N)	
Less than High School	16% (38)
High School Graduates	84% (199)
Employment Status, % (N)	
Employed (full time, part time)	55% (131)
Unemployed (not employed, retired)	45% (106)
Marital Status, % (N)	
Married	14% (33)
Single/Divorce/Widow	86% (204)
Primary Drug of Abuse, % (N)	
Heroin	63% (149)
Opioid Medication	37% (88)

Table 2

Prevalence of mood and substance use disorders in patients seeking primary care office-based buprenorphine/naloxone, N=237.

Variable	Lifetime % (N)	Current % (N)	Past % (N)
<i>Mood Disorders</i>			
Major Depression	43.0 (102)	19.4 (46)	23.6 (56)
Dysthymia	N/A	5.5 (13)	N/A
Mania	0.8 (2)	0.0 (0)	0.8 (2)
Hypomania	1.7 (4)	0.0 (0)	1.7 (4)
<i>Substance Use Disorders</i>			
<i>Opioid</i>			
Abuse	0.4 (1)	0.4 (1)	0.0 (0)
Dependence	99.2 (235)	97.5 (231)	1.7 (4)
<i>Alcohol</i>			
Abuse	17.7 (42)	2.1 (5)	15.6 (37)
Dependence	29.1 (69)	2.1 (5)	27.0 (64)
<i>Cocaine</i>			
Abuse	11.8 (28)	2.5 (6)	9.3 (22)
Dependence	24.9 (59)	4.2 (10)	20.7 (49)
<i>Cannabis</i>			
Abuse	34.2 (81)	3.8 (9)	30.4 (72)
Dependence	8.4 (20)	0.4 (1)	8.0 (19)
<i>Sedative</i>			
Abuse	7.2 (17)	0.4 (1)	6.8 (16)
Dependence	4.2 (10)	1.7 (4)	2.5 (6)
<i>Stimulant</i>			
Abuse	1.3 (3)	0.0 (0)	1.3 (3)
Dependence	3.0 (7)	0.4 (1)	2.5 (6)
<i>Hallucinogen</i>			
Abuse	5.5 (13)	0.0 (0)	5.5 (13)
Dependence	3.0 (7)	0.0 (0)	3.0 (7)
<i>Polydrug</i>			
Abuse	0.8 (2)	0.0 (0)	0.8 (2)
Dependence	0.8 (2)	0.4 (1)	0.4 (1)
<i>Other Drug</i>			
Abuse	0.4 (1)	0.0 (0)	0.4 (1)
Dependence	0.0 (0)	0.0 (0)	0.0 (0)