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Psychiatric Care of Patients With Depression and Comorbid Substance Use Disorders

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Abstract

Background—The goal of this study was to describe the sociodemographic and clinical characteristics and routine psychiatric care of depressed patients with or without substance use disorders (SUDs) and to assess the association between the presence of comorbid SUD and the psychiatric management of patients with depression.

Method—Each of a sample of 531 psychiatrists participating in the Practice Research Network (PRN) of the American Psychiatric Institute for Research and Education was asked to provide information about 3 randomly chosen patients. Data were collected using a self-administered questionnaire, which generated detailed diagnostic and clinical data on 1228 psychiatric patients. Weighted data were analyzed using the SUDAAN software package. Multivariate logistic regression was used to compare depressed patients with and without SUD.

Results—A total of 595 patients (48.4%) were diagnosed with depression (DSM-IV criteria). The prevalence of SUD (excluding nicotine dependence) in this group was 18.1%. The group with SUD had a significantly larger proportion of males, young adults, patients seen in public general hospitals, and non–managed care public plans. No significant group differences were found for primary payer, locus of care, length of treatment, type of current or past treatment,

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Drug names: amitriptyline (Elavil and others), bupropion (Wellbutrin), clomipramine (Anafranil and others), desipramine (Norpramin and others), disulfiram (Antabuse), doxepin (Sinequan and others), fluoxetine (Prozac), fluvoxamine (Luvox), mirtazapine (Remeron), naltrexone (ReVia), nefazodone (Serzone), nortriptyline (Pamelor and others), paroxetine (Paxil), sertraline (Zoloft), trazodone (Desyrel and others), venlafaxine (Effexor).

Disclosure of off-label usage: The authors have determined that, to the best of their knowledge, no investigational information about pharmaceutical agents has been presented in this article that is outside U.S. Food and Drug Administration–approved labeling.

and prescription of medications. Only 2.2% of SUD patients were prescribed with an anti-SUD medication (i.e., disulfiram and naltrexone).

Conclusion—Concomitant SUDs have little effect on the routine psychiatric care of depressed patients. Efforts should be made to improve the identification and management of depressed patients with SUD.

The concurrent presence of depression and substance use disorders (SUDs) is frequent and highly correlated. Epidemiologic studies have shown that the 12-month prevalence of SUD among individuals with a major depressive episode in the general population in the United States is 22.9%, and the odds ratio (OR) for the lifetime presence of depression and substance use varies between 1.9 and 3.5., Given the high comorbidity of depression and SUD, it has been hypothesized that alcohol and drugs may be used by some individuals to self-medicate the symptoms of depression.

Although most clinical studies have focused on the prevalence of depression among SUD patients, few studies have examined the presence and clinical impact of SUDs among depressed patients. A study conducted in a sample of 396 consecutively enrolled depressed patients showed that the lifetime prevalence of any alcohol, drug, or polysubstance abuse and/or dependence was 60.8%. Another study conducted in a sample of 49 patients with mood disorders at a general hospital in Taiwan showed that the prevalence of SUD was 42.9%.

It has been reported that psychiatric patients with comorbid SUD demonstrate greater use of psychiatric services, increased cost of care, greater severity of psychiatric illness, increased risk of suicide, and more frequent hospitalizations (i.e., revolving-door pattern).,– A number of clinical trials have investigated the treatment of patients with comorbid depression and SUD, but the results are still inconclusive.– Currently, no established treatment exists for patients with depression and SUD, and practice guidelines provide little information about the clinical management of patients with both disorders.

Although SUDs among depressed patients seem to be frequent and represent a clinical challenge, to our knowledge, no studies have focused on the impact of SUDs on the routine clinical care of depressed patients. The purpose of this study was to examine (1) the prevalence of SUDs among depressed patients and (2) variations across sociodemographic, clinical, and system characteristics, as well as clinical management and treatment by SUD status, in a nationally representative sample of psychiatric patients seen in routine clinical practice. Results from this study should provide insight regarding the routine psychiatric care of depressed patients with SUD and the need to develop guidelines and quality improvement interventions to promote more effective identification and treatment of comorbid psychiatric disorders.

METHOD

Data for this study came from the 1997 Study of Psychiatric Patients and Treatments, conducted by the Practice Research Network (PRN) of the American Psychiatric Institute for Research and Education. This is a biennial, cross-sectional, self-administered mailed survey

that asks psychiatrist members of the PRN to provide demographic, clinical, diagnostic, treatment setting, and health plan characteristics for 3 patients chosen at random from 12 consecutive patients seen during the study period.

PRN Procedures

Criteria for participation in the PRN included (1) membership in the American Psychiatric Association (APA) and (2) a minimum of 15 hours per week providing face-to-face patient care. The latter criterion ensures that PRN members routinely practice clinical psychiatry. Of the 531 psychiatrists who participated in this study, 224 were randomly selected and 307 were self-identified volunteers. The entire sample was weighted to be representative of the universe of APA members. Details of the sampling procedures are available elsewhere.

Study materials were mailed to all PRN members who consented to participate in the study. The APA Institutional Review Board approved the study, and, when required, it was also approved by the local institutional review board where the psychiatrist was practicing.

Instrument

The instrument contained 3 parts: (1) overall information about psychiatrists' clinical caseload; (2) consecutive patient log of 12 patients, including 3 patients randomly identified for additional data collection; and (3) the "Detailed Diagnostic and Treatment Form" comprising 25 items completed by the psychiatrists for each of the 3 study patients.

In the Detailed Diagnostic and Treatment Form, the psychiatrists provided information on the patients' demographic characteristics, type of health plan, and source of payment for the visit. The psychiatrists also reported how they were being compensated for the visit, patients' clinical profiles using multiaxial DSM-IV diagnoses, and histories of psychiatric hospitalization. Psychiatrists were also asked to provide information about treatment setting, number of recent visits, planned future visits, and treatment services provided at the current visit, including the name and dosage of all medications currently prescribed to the patient.

Data Analysis

To generate nationally representative estimates, a 3-stage propensity score weighting scheme was employed. The weight used in the first stage adjusted for discrepancies between the National Survey of Psychiatric Practice (NSPP) sample profile and the APA membership population profile on variables compiled for all APA members (e.g., age, sex, race/ethnicity, region of country, training). The weight used in the second stage adjusted for discrepancies between the entire PRN membership and the NSPP sample profile on relevant demographic information and the extensive set of characteristics assessed in the NSPP (e.g., involvement in medical research, affiliation with medical school, outpatient practice setting). The weight used in the third stage adjusted for the fact that the probability of any one patient's being selected into the study was inversely proportional to the number of patients being seen by the psychiatrist during the week of sampling and during the time period in which the patient was seen. Stabilization was used at each stage of weighting using quintile medians to reduce the effect of outliers. The ratio of standardized weights is 7.8:1, which is within the range recommended in standard texts on applied sampling to avoid unacceptably high design

effects. All analyses were run using these weights. Where weights could not be calculated because of missing data, those psychiatrists' patients were excluded (i.e., 17 patients from 7 psychiatrists). Thus, the effective study sample included 1228 patients.

Comparisons were made between depressed patients with and without SUD. The category of depression included DSM-IV diagnostic codes 296.2x, 296.3x, 300.4x, and 311.xx. The category of SUD comprised all substances except nicotine dependence, thus including DSM-IV codes 291.x, 292.x, 303.x–305.x (excluding 305.Ix).

Frequency distributions and standard errors of categorical variables and mean and standard errors of continuous variables were calculated. Design-based significance tests such as Wald chi-square tests for categorical variables and Wald F tests for continuous variables were carried out using the SUDAAN software package to include information about weighting and clustering of observations for each psychiatrist when calculating statistics. Logistic regression was used to assess the magnitude of the association between SUD and demographic, clinical, and treatment factors, controlling for variables found significant in the bivariate analysis, such as gender, age, treatment setting, health plan coverage, and presence of an Axis II comorbidity. The bivariate analyses were useful in identifying groups of greater risk of comorbid SUD, and the logistic regression helped in identifying factors most strongly associated with the presence of SUD.

RESULTS

Clinical and Demographic Characteristics

A total of 531 psychiatrists participated in this survey. They provided information on 1228 patients, of whom 595 (48.4%) had a diagnosis of depression. Of the patients with depression, 108 (18.1%) had comorbid SUD. The SUD diagnoses included (not mutually exclusive) alcohol (65.7%), cocaine (10.6%), marijuana (9.8%), opiate (7.5%), amphetamine (5.2%), sedative (4.8%), and other substance (12.5%) abuse and dependence.

Comparisons of demographic characteristics (Table 1) for depressed patients with and without SUD showed a significantly higher proportion of males in the SUD (60.9%) than the non-SUD (35.3%) group both in the bivariate (χ^2=14.7, df=1, p<.001) and multivariate (OR = 0.3, 95% confidence interval [CI] = 0.2 to 0.5) analysis. A significant difference was found in the age distribution between the 2 groups (χ^2 =13.7, df = 4, p = .009), with the greatest proportion of patients in the SUD group aged 35 to 54 years. Taking the group aged 35 to 54 years as reference, the multivariate analysis showed that significantly more SUD patients were in this group compared with the groups of patients aged 17 years or younger (OR = 0.1, 95% CI = 0.0 to 0.4), 55 to 64 years old (OR = 0.4, 95% CI = 0.1 to 1.0), and 65 years and older (OR = 0.2, 95% CI = 0.1 to 0.5). No significant differences were found for ethnicity, marital status, and education.

Analysis of other psychiatric or medical comorbidity (Table 2) showed that more than 50% of patients in both groups had at least 1 other Axis I disorder, with no differences between groups. For Axis II disorders, the bivariate analysis showed a significantly higher proportion of patients with comorbid personality disorders in the group with substance use disorders

(41.6% vs. 25.6%; χ^2 = 6.8, df = 2, p = .001). However, no significant difference was found in the multivariate analysis that adjusted for variables such as gender, age, treatment setting, other managed health plan, and public nonmanaged health plan. No significant group differences were found in the proportion of patients with other medical comorbidity or with a score less than 50 on the Global Assessment of Functioning (GAF). The most common psychiatric disorders in the group with depression and SUD were anxiety disorders (19.5%), somatoform disorders (6.5%), and attention-deficit disorders (3.4%) (Table 3).

Treatment Characteristics

The distribution of current and past treatments provided by the psychiatrist was similar for both groups. Most patients were seen for psychiatric management, individual therapy, or initial evaluation. In contrast, a very low proportion of patients received family therapy, group therapy, or electroconvulsive therapy (ECT). The significant differences shown in the multivariate analysis for ECT, group therapy, and light therapy are not reliable owing to the small number of patients in each cell. Comparisons of current treatments received from other providers (see Table 2) showed that the only significant difference was in the proportion of patients receiving treatment by substance abuse counselors. However, the small proportion of SUD patients (8.4%) who received treatment from substance abuse counselors is remarkable.

Medications were prescribed to most patients in both groups. The group of medications most frequently prescribed was antidepressants, with 83.3% and 86.4% of patients prescribed antidepressants in the non-SUD and SUD groups, respectively. The antidepressants most frequently prescribed overall were fluoxetine and paroxetine (see Table 3). A significantly lower proportion of patients in the SUD group were prescribed sertraline (20.1% vs. 6.3%). No significant differences were found in the proportion of patients prescribed benzodiazepines, with nearly one third of patients receiving them. A relatively low proportion of patients were prescribed mood stabilizers (6.9% and 10.9% of patients in the non-SUD and SUD groups, respectively). Rates of prescription of medications to treat SUD (i.e., naltrexone and disulfiram) were remarkably low, with only 2.2% of SUD patients receiving a prescription with this type of medication.

History of psychiatric visits showed that 50% or more of patients had visited the psychiatrist in the past month and past week and nearly one third had visited the psychiatrist during the past week. The mean ± SEM number of psychiatric visits in the past week was 0.5 ± 0.9, and in the past 30 days it was 2.1 ± 0.2. The mean ± SEM length of treatment was 2.1 ± 0.16 years for the non-SUD group and 2.3 ± 0.40 years for the SUD group. Comparison between groups showed no significant differences in any of these variables.

Treatment Settings and Systems of Care

The results of the analysis comparing the treatment setting and the characteristics of the psychiatric services provided for the current visit are shown in Table 4. Almost half the patients were seen in solo practices. The bivariate analysis showed a significant group difference by treatment setting (χ^2 = 20.9, df = 11, p = .04) that may be due to the larger proportion of patients with SUDs seen in public settings. In the multivariate analysis,

significant group differences were found for public general hospital, public psychiatric hospital, group health maintenance organization, and nursing home settings compared with solo practice settings. However, these differences may not be reliable owing to the small sample size.

Most patients in both groups were seen as outpatients, with no significant group differences. Results by health plan showed that the SUD group had a larger proportion of patients in non–managed care public plans (36.6% vs. 20.9%), which was significant in both bivariate (χ^2 = 4.7, df = 1, p = .03) and multivariate (OR = 2.9, 95% CI = 1.4 to 6.2) analyses. No significant group differences were associated with primary source of payment for services provided during the current visit.

DISCUSSION

This study is the first to examine the current practices of psychiatrists for managing depressed patients with SUD. The results show that the rate of current SUD among depressed patients in psychiatric practice (18.1%) is similar to the rate observed in a population-based study (22.9%), but lower than the rates found in clinical samples ascertained in Taiwan (42.9%) and the United States (60.8%). The lower prevalence of SUDs found in this study might reflect a limitation of the methods to collect SUD diagnostic data or the fact that psychiatrists tend to underreport and/or underdetect SUD in their patients or SUD patients tend to seek treatment from other providers.

The comparisons between depressed patients with and without SUD yielded few significant differences. Specifically, patients with SUD were more likely to be males, young adults, seen in public general hospitals, and treated under non–managed care public health plans. The larger proportion of males in the SUD group is consistent with the findings from studies conducted in the general and clinical populations.,–

Our finding that a larger proportion of patients with SUD received treatment in public settings or received coverage under non–managed care public plans may be the result of the more severe decline in socioeconomic status of depressed patients with SUD as a consequence of their drug use. It is important to note, however, that most patients in both groups were seen in private settings or group practices. This contrasts with samples used in most clinical research studies of SUDs that collect data in public health settings, questioning the generalizability of results from randomized clinical trials.

Although prior studies have indicated that SUDs affect the clinical manifestations and service utilization of individuals with depression, our results from a sample of psychiatrists do not support those findings. This lack of differences in service utilization may be due to the fact that psychiatrists (1) only conceptualize their work as treating mental disorders (other than SUDs) and do not take into account the SUDs diagnoses when formulating treatments for their patients; (2) lack sufficient knowledge and expertise to diagnose and treat SUDs in routine clinical practice, which may reflect a lack of success in transferring research results to practitioners; (3) have no confidence in the results of clinical trials or practice guideline recommendations for SUDs and therefore are skeptical to adopt them in

their practices; and/or (4) have no access to medications or services specially designed for treatment of SUDs.

The results of the survey of prescription of medications by psychiatrists also showed no differences between groups. Antidepressants, as expected, were the most commonly prescribed group of medications, and, although clinical trials with antidepressants have shown some efficacy for treatment of SUDs, psychiatrists are not prescribing more of these medications to depressed patients with SUD. On the other hand, the use of anti-SUD medications such as naltrexone or disulfiram, which have also shown some efficacy for treatment of SUDs, was notably low, particularly among patients with depression and SUD. Although we cannot conclude from the data whether an SUD was in remission, the lack of differences in prescription of medications may be explained by any of the factors presented above to interpret the lack of differences in service utilization or, more likely, by the modest efficacy of those medications for treatment of SUDs.

It is important to note that prescription of benzodiazepines was quite high in both groups (36.9% and 31.4% in the non-SUD and SUD groups, respectively), and of the SUD patients prescribed benzodiazepines, only 26.7% had a comorbid anxiety disorder. Although we do not know if other specific reasons existed for their prescription (e.g., insomnia), the use of benzodiazepines in patients with SUD is an issue of concern because they may intensify depressive symptoms, are frequently used for suicidal purposes, and can produce dependence. Current psychiatric practice guidelines for treatment of depression recommend that “benzodiazepines and other sedative hypnotics carry the potential for abuse or dependence and should be used cautiously except as part of a detoxification regimen.”(p24) However, given that the present study does not provide information about the complete clinical context for their prescription, we cannot make a judgment of the appropriateness of this clinical decision. We do not have, for example, information about current symptomatic status, response to previous treatments, patients’ treatment preferences, or other reasons that influenced the selection of a particular treatment. Therefore, although the use of benzodiazepines in SUD patients is an issue of concern, we cannot draw conclusions about quality of psychiatric care on the basis of these data.

One of the limitations of this study is that it is cross-sectional and relies on the report of psychiatrists about their patients. Although clinicians were encouraged to fill out the questionnaires as soon as possible after seeing the patient and to refer to medical records, there is a risk that clinicians either did not ask about some of the items on the study questionnaire or had recall biases. There may also have been some level of “social desirability bias” from clinicians who responded to the questionnaire according to “recommended” practice guidelines and not to their “real” practices. However, the heterogeneity of the psychiatric practices and the complexity of the clinical situations may make it difficult for the clinician to respond according to what are recommended best practices. Two of the strengths of the study are that data were collected from a nationally representative sample of psychiatrists and that information was accessed from a wide range of psychiatric treatment settings, which captures the heterogeneity and complexity of the treatment of depression and SUDs in routine clinical practice in psychiatry.

In summary, the low number of depressed patients with SUD reported by psychiatrists may suggest that psychiatrists are not facing the challenges of identifying and treating SUDs among depressed patients. Also, the minimal impact that SUDs produce in the clinical management and service utilization of depressed patients requires further examination. Studies should be conducted to determine the impact of SUDs on the clinical decision making for and routine care of patients seen by other mental health professionals and in a larger sample of patients. Efforts should be made to enhance the dissemination of research findings, develop evidence-based treatment guidelines, and promote training of psychiatrists in the identification and management of SUDs among depressed patients.

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Table 1

Sociodemographic Characteristics of Depressed Patients by Substance Use Disorder (SUD) Status (N = 595)[a]

	Non-SUD (N = 487)		SUD (N = 108)		
Characteristic	**%**	**SEM**	**%**	**SEM**	**OR[b] (95% CI)**
Gender					
Male	35.3	2.7	60.9	5.7	…
Female	64.7	2.7	39.1	5.7	0.3 (0.2 to 0.5)
Age, y					
0–17	10.2	1.9	2.5	1.3	0.1 (0.0 to 0.4)
18–34	18.1	2.0	16.2	3.9	0.6 (0.3 to 1.3)
35–54	47.3	2.9	64.9	5.2	…
55–64	11.5	1.6	8.7	3.3	0.4 (0.1 to 1.0)
≥65	12.9	2.1	7.6	3.0	0.2 (0.1 to 0.5)
Race/ethnicity					
African American	4.8	1.4	7.7	4.0	1.3 (0.4 to 3.7)
Hispanic	2.9	0.8	0.8	0.6	0.2 (0.0 to 2.6)
White	92.3	1.6	91.5	4.0	…
Marital status					
Married or cohabiting	48.7	3.0	49.7	5.8	…
Widowed/divorced/separated	24.6	2.4	28.0	4.9	1.1 (0.6 to 2.1)
Never married	26.7	2.6	22.3	4.4	0.9 (0.4 to 2.1)
Education, y					
≥ 12	79.1	2.7	81.1	4.3	0.7 (0.3 to 1.9)
< 12	20.9	2.7	18.9	4.3	…

[a] Abbreviations: CI = confidence interval, OR = odds ratio.

Symbol: … = category was used as the reference group.

[b] Adjusted for gender, age, Axis II comorbidity, treatment setting, other managed care health plan, and public non–managed care health plan.

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Table 2

Diagnostic, Clinical, and Treatment Characteristics of Depressed Patients by Substance Use Disorder (SUD) Status (N = 595)[a]

Characteristic	Non-SUD (N = 487)		SUD (N = 108)		
	%	SEM	%	SEM	OR[b] (95% CI)
Axis I: comorbidity (other than SUD)	56.7	2.7	59.5	5.6	1.1 (0.6 to 1.8)
Axis II: any comorbidity	25.6	2.4	41.6	5.6	1.6 (0.9 to 2.8)
Axis III: medical comorbidity	50.5	3.0	55.4	6.1	1.0 (0.5 to 1.7)
Axis V: GAF score < 50	19.3	2.6	27.1	5.2	1.1 (0.5 to 2.4)
Current treatment (all that apply)					
Psychiatric management	77.4	2.7	69.6	5.8	0.7 (0.3 to 1.3)
Individual therapy	46.9	3.3	44.2	6.2	0.8 (0.5 to 1.5)
Initial evaluation	13.4	1.9	14.7	4.1	1.1 (0.5 to 2.6)
ECT	0.8	0.4	2.2	2.2	1.2 (0.1 to 9.2)[c]
Family therapy	2.9	0.9	1.7	1.3	0.5 (0.1 to 4.7)
Group therapy	1.4	0.6	1.2	1.2	0.9 (0.1 to 5.5)[c]
Other	1.0	0.5	2.5	2.1	4.1 (0.4 to 45.7)[c]
Past treatments (all that apply)					
Psychiatric management	34.8	2.8	41.9	5.4	1.2 (0.7 to 2.2)
Individual therapy	30.0	2.8	30.2	5.0	0.9 (0.5 to 1.7)
Initial evaluation	13.8	2.0	16.1	3.9	1.1 (0.5 to 2.3)
Family therapy	4.5	1.3	2.0	1.3	0.5 (0.1 to 3.9)
Group therapy	2.7	1.1	1.5	1.2	0.3 (0.0 to 2.6)
ECT	1.2	0.6	0	0	0
Light	0.1	0.1	0	0	0
Other	0.5	0.2	2.2	2.1	8.9 (1.2 to 67.4)[c]
Current treatment by other providers					
Non-psychiatrist MD	13.7	2.2	15.6	5.0	0.8 (0.3 to 2.0)
Psychiatrist	5.4	1.3	6.4	2.7	1.34 (0.4 to 4.1)
Psychologist	11.2	2.0	10.8	3.4	0.8 (0.4 to 1.9)
Social worker	14.8	2.3	13.7	4.3	0.8 (0.3 to 2.0)

Characteristic	Non-SUD (N = 487) %	Non-SUD (N = 487) SEM	SUD (N = 108) %	SUD (N = 108) SEM	OR[b] (95% CI)
Nurse	4.1	1.1	9.3	3.2	1.7 (0.5 to 5.5)
Other mental health provider	5.5	1.5	7.4	2.9	0.8 (0.3 to 2.4)
Other provider	2.2	0.7	1.1	0.9	0.7 (0.1 to 2.9)
Medications (all that apply)					
Antidepressants	83.3	1.9	86.4	3.9	1.5 (0.7 to 3.4)
Benzodiazepines	36.9	2.9	31.4	5.1	0.7 (0.4 to 1.3)
Mood stabilizers	6.9	1.5	10.9	4.1	1.5 (0.6 to 4.1)
Antipsychotics	12.7	2.1	9.4	2.6	0.7 (0.3 to 1.5)
Stimulants	6.6	1.4	5.3	2.2	1.0 (0.3 to 3.1)
Antialcohol	0.1	0.1	2.2	1.4	63.3 (5.8 to 685.7)[c]
Other medications	9.7	1.7	9.7	3.5	1.0 (0.4 to 2.5)
Treatment visits (all that apply)					
Any visits in the past month	64.5	2.8	61.6	6.0	0.8 (0.4 to 1.5)
Any visits in the past week	26.1	2.8	34.4	6.0	1.7 (0.9 to 3.4)

[a] Abbreviations: CI = confidence interval, ECT = electroconvulsive therapy, GAF = Global Assessment of Functioning, OR = odds ratio.

[b] OR adjusted for gender, age, Axis II comorbidity, treatment setting, other managed care health plan, and public non–managed care health plan.

[c] OR is not reliable owing to small cell sizes.

Table 3

Comorbid Psychiatric Disorders and Type of Antidepressants Prescribed by Psychiatrists (N = 595)[a]

	Non-SUD (N = 487)		SUD (N = 108)	
Variable	**%**	**SEM**	**%**	**SEM**
Psychiatric disorders				
Anxiety	27.0	2.4	19.5	4.6
Somatoform	2.3	0.6	6.5	3.2
Attention-deficit	7.6	1.4	3.4	1.9
Impulse-control	2.5	0.9	2.4	1.7
Delirium	0.1	0.1	2.2	2.1
Bipolar	1.5	0.6	1.7	1.3
Eating	2.5	0.8	1.3	0.9
Tic	0.4	0.3	1.2	1.2
Schizophrenia/psychotic	2.3	0.8	0.5	0.5
Antidepressants prescribed				
Fluoxetine	20.5	2.3	26.4	4.7
Paroxetine	13.0	1.8	18.0	4.4
Trazodone	9.5	1.6	12.7	4.0
Venlafaxine	8.1	1.6	12.0	3.7
Bupropion	7.4	1.4	7.8	3.5
Nefazodone	3.2	0.9	6.4	3.3
Sertraline	20.1	2.3	6.3	2.4*
Mirtazapine	1.7	0.8	3.0	2.2
Nortriptyline	4.0	1.1	2.4	1.2
Amitriptyline	2.7	0.9	2.0	1.4
Imipramine	1.2	0.6	1.3	0.9
Clomipramine	0.5	1.0	1.2	1.2
Doxepin	2.7	1.2	1.1	0.7
Fluvoxamine	2.1	0.7	0.8	0.8
Desipramine	1.1	0.5	0.5	0.5

[a]Abbreviation: SUD = substance use disorder.

*$p < .01$.

Table 4

Characteristics of the Psychiatric Services Provided to Depressed Patients by Substance Use Disorder (SUD) Status (N = 595)[a]

	Non-SUD (N = 487)		SUD (N = 108)		
Characteristic	**%**	**SE**	**%**	**SE**	**OR[b] 95% CI**
Treatment setting					
Solo practice	46.6	3.6	43.0	6.2	…
Group office	20.7	3.2	15.0	4.4	0.7 (0.3 to 1.6)
Public general hospital	2.4	0.8	6.7	2.8	3.7 (1.1 to 12.0)
Private general hospital	7.2	1.8	6.0	2.8	1.1 (0.4 to 3.3)
Public psychiatric hospital	1.2	0.6	0		0
Private psychiatric hospital	2.0	0.7	4.2	1.7	3.3 (0.9 to 12.3)
Group HMO	1.4	1.0		0	0
Private clinic outpatient	9.6	2.3	5.4	2.6	0.5 (0.1 to 2.0)
Public clinic outpatient	6.5	1.8	14.9	4.9	1.8 (0.7 to 5.2)
Nursing home	0.7	0.5	0		0
Correctional facility	0.2	0.1	0.8	0.6	2.3 (0.5 to 11.7)[c]
Other	1.4	0.7	3.8	2.4	5.3 (0.7 to 4.7)[c]
Locus of care					
Inpatient	9.7	2.0	12.0	3.7	0.9 (0.2 to 4.3)
Outpatient	86.4	2.6	84.8	3.9	…
Partial	3.9	1.7	3.2	1.4	0.7 (0.1 to 4.7)
Health plan (all that apply)					
Carve out	14.6	2.2	10.7	3.3	0.8 (0.4 to 1.9)
HMO/PPO	22.9	2.5	20.3	5.3	1.4 (0.7 to 3.0)
Managed care other	7.0	1.3	2.8	1.4	0.3 (0.1 to 1.2)
Non–managed care, private	29.5	2.7	25.8	5.0	…
Non–managed care, public	20.9	2.6	36.6	6.3	2.9 (1.4 to 6.2)
No coverage	6.0	1.4	9.1	2.9	1.2 (0.4 to 3.2)
Primary payment source					
Private	49.2	2.9	42.2	5.9	…
Medicare	11.7	2.0	17.3	4.5	1.2 (0.3 to 4.6)

	Non-SUD (N = 487)		SUD (N = 108)		
Characteristic	**%**	**SE**	**%**	**SE**	**OR[b] 95% CI**
Medicaid	6.3	1.7	11.5	4.5	0.7 (0.1 to 3.6)
Workers' compensation	1.0	0.4	0.5	0.5	0.2 (0.0 to 3.4)[c]
Other public	2.6	1.0	5.6	2.2	0.6 (0.1 to 4.2)
No charge	1.3	0.6	1.6	0.7	0.7 (0.1 to 6.5)
Self-pay	27.8	2.7	21.3	4.5	0.6 (0.3 to 1.2)

[a] Abbreviations: CI = confidence interval, HMO = health maintenance organization, OR = odds ratio, PPO = preferred provider organization.

Symbol: … = category was used as the reference group.

[b] OR adjusted for gender, age, Axis II comorbidity, treatment setting, other managed care health plan, and public non–managed health plan.

[c] OR is not reliable owing to small cell sizes.