Substance Abuse: Research and Treatment

ORIGINAL RESEARCH

Psychiatric Consultation and Substance Use Disorders

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Abstract

Background: A substantial number of patients in general hospitals will evince substance abuse problems but a majority is unlikely to be adequately identified in the referral-consultation process. This failure may preclude patients from receiving effective interventions for substance use disorders.

Objectives: 1. To evaluate all referred patients for possible substance use disorders. 2. To ascertain the degree of convergence between patients referred for chemical problems and the corresponding DSM diagnosis. 3. To compare demographic data for substance abusing patients and referrals not so classified. 4. To evaluate conditions concomitant with substance use disorders.

Method: Consecutive one-year referrals (524) to consultation-liaison psychiatric services were scrutinized for chemically-related problems by psychiatric consultants.

Results: Of the referrals, 176 met criteria for substance use disorders (SUD) (57% alcohol; 25% other drugs; 18% both alcohol and other drugs). Persons diagnosed with SUD tended to be younger, male, non-Caucasian, unmarried, and unemployed. They were more likely to be depressed, have liver and other gastrointestinal problems, and to have experienced traumatic events; they also tended to have current financial difficulties. Most were referred for SUD evaluation by personnel in general medicine and family practice. Following psychiatric consultation, SUD designated patients were referred mainly to substance abuse treatment programs. The only variable related to recommended inpatient versus outpatient services for individuals with SUD was the Global Assessment of Functioning Axis (GAF) with persons having lower estimated functioning more likely to be referred for inpatient interventions.

Conclusions: These data are similar to the results of past studies in this area. Unlike previous investigations in the domain of consultative-liaison psychiatry, financial stressors and specific consultant recommendations were included in data gathering. Although the results are encouraging in that individuals with SUD were identified and potentially sent for appropriate treatment, the likelihood is that many patients with SUD remain unrecognized and do not receive necessary consultative and treatment services.

Keywords: consultation, substance use comorbidity, financial stressors

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Introduction

Care for the substance abusing patient is a constant challenge for consultation-liaison (CL) psychiatry and the medical system overall. The economic burden of such care is well described by Kathol et al,[1] who examined health claims expenditures in over a quarter million health plan enrollees. They report "total claims expenditures in enrollees with claims for both substance use and mental disorders in 2000 were four times that of those with general medical and/or pharmacy claims alone". Remarkably, almost 80% of these claims were for medical and not psychiatric services[1]. Data from Smothers et al,[2] suggest this burden may well be higher in the uninsured. In addition to costs, the burden of substance abuse has been measured by frequency of hospitalizations,[3] suicide attempts,[4,5] and even homicidal behavior.[6]

Estimates of the percentage of hospitalized patients who evince substance use disorders (SUD) vary greatly. Smothers et al,[2] suggest that approximately 7.4% of all hospitalized patients in U.S. short stay general hospitals have alcohol use disorders with rates increasing to 9.7% in teaching hospitals and 12.3% in government hospitals.[2] Similarly Smothers et al[7] reported non-alcohol drug use in 5% of all hospital admissions, increasing to 14% in the age group of 18 to 44 years of age. These overall estimates may not accurately illustrate the rates in a given hospital. In the case of alcohol pair wise tests of differences revealed significantly higher prevalence rates in admissions who were age range of 18 to 44, African-American, unmarried, of low socioeconomic status, on Medicaid or without health insurance, tobacco smokers, or drug abuser."[2] Therefore a hospital that serves a population with high frequencies of the above characteristics may have a higher than average rate of substance abuse. As indicated by Glaser,[8] 15 to 18% of the general population of the "urban" U.S. have substance abuse disorders. Since these patients are likely to be hospitalized, Glaser estimates that 25% of patients in some large urban medical centers may actually be substance abusers.

Research reviewed above documents high prevalence rates of substance abuse in hospital admissions and the extant literature suggests these patients would be well served if CL psychiatry were involved. For instance Alaja et al,[9] report that 28% of 1,249 CL patients had SUD, almost all were "comorbid" and 63% had "triple diagnoses," i.e.' "physical, mental and substance use diagnoses concurrently."[9] Other investigators have argued for increased presence of substance abuse consultation[10,9] and reported improved outcomes when such service is available.[10,12] Unfortunately, despite the literature cited above, the few reports available that document actual consultation rates suggest the CL services are widely underutilized. Data reported by Bourgeis et al,[13] revealed that only 0.9% to 6% of hospital admissions receive psychiatric consultation and in their own hospital only 18% of the 4.2% patients who received consultations were seen for substance abuse. Similarly Dilts et al[14] revealed an overall consultation rate of 3.7% with 25.4% of those receiving a substance abuse diagnosis. In their previously cited paper, Smothers, et al,[2] suggest that only 50% of patients with substance abuse are identified and only 17% are actually referred for evaluation or treatment.

In the aggregate, prior studies indicate that most individuals with substance abuse problems are not identified in the referral-consultation process; moreover, there appear to be continuing barriers to adequate consultation in this regard. Gill[15] reminds us that substance abuse frequently "repels our referent-colleagues." This phenomenon was well recognized much earlier by Dr. Benjamin Rush, "founding father" of American psychiatry, quoted in Glaser[8] as stating, "I am aware that the efforts of science and humanity, in applying their resources to the cure of a disease induced by an active vice, will meet with a cold reception from many people." Dr. Rush went on to publish "an inquiry into the effects of ardent spirits upon the human body and mind with an account of the means of preventing and of the remedies for curing them."[8] In this historical context we describe the experience of a CL psychiatry service based in a large urban teaching center specific to substance abuse consultations.

Method

For a one year period, consecutive referrals for psychiatric consultation were evaluated for possible SUD. The setting was a University Medical Center in a large metropolitan area of the Midwestern United States. For each consultation, data were gathered on reason for referral, patient demographics, dates of admission and discharge, referring service of the Medical Center,

consultation diagnosis, medical and psychiatric concomitant conditions, and recommendations. All referred individuals were evaluated by psychiatric consultants for SUD. Persons classified with SUD were compared to other referred patients on the above delineated variables via chi square statistics, *t* tests, and logistic regression procedures. The study was approved by the Institutional Review Board at the University of Minnesota.

Results

During the year 2001, 524 psychiatric consultations took place with 146 (28%) being referred explicitly for the evaluation of substance use. Most referrals came from staff persons in general medicine and family practice. Of the 146 consultations, 134 (92%) met DSM-IV diagnostic criteria for a substance use disorder. In addition 42 patients referred for reasons other that suspected problems with drugs, met SUD diagnostic criteria. Of these 176 individuals, 105 (57%) had primary problems with alcohol, 46 (25%) with drugs other than alcohol and 18% (n = 25) were dealing simultaneously with both alcohol and other substances. As presented in Table 1, SUD referrals tended to be younger, unmarried, non-Caucasian males who are unemployed. In Table 2 comorbid medical conditions are listed. As indicated, chemically dependent patients are two to three times more likely to have gastrointestinal (non-liver) problems than those without substance problems; they are approximately five times more likely to have sustained trauma in the past, with a two to three times greater likelihood of having liver dysfunctions. They were significantly less likely to have hematological complications, cancer, and endocrinological dysfunctions SUD diagnoses co-occurred with depression and to a lesser degree anxiety and delirium (Table 3). As presented in Table 4, individuals judged to have substance use problems were recommended mainly for inpatient or outpatient treatment for chemical dependency, and in comparison to persons without substance problems, had a reduced likelihood of a recommendation for medication. Finally, with reference to Table 5, Axis IV entries suggest that chemically dependent consultees

Table 1. Differences between patients with and without substance use disorders.

	SUD–	**SUD+**	**Statistic ($p < 0.001$)**
Age (M; SD)	51.14, 17.66	45.26, 12.39	t = 4.42, df = 469
Gender (Male, n, %)	135, 38.8%	111, 63.1%	$x^2 = 27.65$
LOS (SD)	22.7, +/– 41.06	8.33 +/– 7.86	t = 6.22, df = 395
Time-to-Consult (SD)	8.91 +/– 18.8	2.8 +/– 3.8	t = 5.83, df 398
Marital (Married, n, %)	138, 40%	40, 22.9%	$x^2 = 15.16$
Race (Caucasian, n, %)	249, 82.5%	98, 66.2%	$x^2 = 14.83$
Employment status			$x^2 = 44.34$
Employed (n, %)	114, 33.8%	50, 29.2%	
Unemployed (n, %)	39, 11%	57, 33.3%	
Disabled (n, %)	97, 28.8%	48, 28.1%	
Retired (n, %)	87, 25.8%	16, 5.1%	
Referring service, (n, %)			$x^2 = 27.086$, $p < 0.001$
Medicine	155 (44.5%)	73 (41.5%)	
Surgery	79 (22.7%)	14 (8.0%)	
ICU	34 (9.8%)	22 (12.5%)	
Family practice	62 (17.8%)	58 (33.0%)	
Other	18 (5.2%)	9 (5.1%)	
Past psychiatric history (present, n, %)	244 (70.9%)	136 (80.0%)	$x^2 = 4.856$, $p = 0.028$

Notes: LOS, length of stay; SUD–, non-substance use disorder; SUD+, substance use disorder.

Table 2. Concurrent medical conditions.

Problem type	SUD– (n, %)	SUD+ (n, %)	P	Odds ratio
Post overdose	22 (6.3%)	12 (6.7%)	0.273	0.593
Gastronintestinal	40 (11.6%)	44 (25.1%)	0.003	2.391
Endocrinological	42 (12.1%)	8 (4.6%)	0.017	0.360
Neurological	41 (11.8%)	15 (8.5%)	0.047	0.469
Cardiovascular	80 (23.1%)	34 (19.3%)	0.429	0.771
Post trauma	4 (1.1%)	10 (5.7%)	0.013	5.108
AIDS or HIV	17 (4.9%)	5 (2.8%)	0.393	0.600
Pulmonary	43 (12.4%)	16 (9.1%)	0.624	0.838
Hematological	20 (5.7%)	3 (1.7%)	0.034	0.239
Urological	36 (10.3%)	8 (4.6%)	0.021	0.358
Chronic pain	18 (5.2%)	12 (6.8%)	0.374	1.490
Cancer	37 (10.8%)	6 (3.4%)	0.009	0.235
Liver	18 (5.2%)	26 (14.8%)	0.005	2.89

may be experiencing elevated socio-economic stress compared to their counterparts.

Discussion

Our data are generally in accord with prior published studies with certain exceptions that will be delineated. The prevalence rate of 32.5% of all one year consultations is high but not dissimilar from the 25% reported by Dilts.[14] Comorbidity of SUD with depression (approximately 50%) is also congruent with previous reports as are the comorbid conditions such as liver disease, and experienced trauma.[3] Likewise, findings that SUD consultees tend to be younger males who are unemployed together with referrals coming mainly from personnel in general medicine and family practice are consistent with earlier studies. Thus, our findings suggest confluence across independent investigations of this type in several areas. The findings related to hematology, cancer, and endocrinological problems were unexpected; anemia and blood platelet dysfunctions have been found in other studies.[16] In addition, there are multiple and complex interactions between alcohol usage, for example, and endocrine functions; and drugs such as alcohol are known carcinogens.[17] It is likely that protracted drug usage mediates the emergence of such health problems and that most patients in the current investigation did not have this level of chronicity. Moreover, the adverse physical effects of drug usage may relate to individual differences in vulnerable systems of the body.

Table 3. Comorbidity of substance use disorders and other diagnoses.

Diagnosis	N, (%)
Depression	89 (50.6%)
Bipolar affective disorder	11 (6.3%)
Psychosis	12 (6.8%)
Adjustment disorder	3 (1.7%)
Anxiety disorder	20 (11.4%)
Somatiform disorder	2 (1.2%)
Dementia	3 (1.7%)
Delirium	21 (10.9%)
Other	7 (4.0%)

The inclusion of Axis IV information, financial stressors, in data collection appears to be a first in consultation-liaison research, albeit stress factors and chemical usage have concatenated consistently in prior studies investigating antecedent factors in chemical use disorders (c.f., Bride & MacMaster).[18]

We were unable to find consultation-liaison studies that specifically focused on treatment recommendations for consultees in a general hospital setting who evince substance use disorders. In the current study the large majority of such patients were referred for inpatient or outpatient chemical dependency

Table 4. Recommendations by psychiatric consultants.

Intervention	SUD–	SUD+	P	Odds ratio
Medication	228 (68.6%)	63 (37.3%)	0.008	0.466
Psychotherapy	42 (12.2%)	11 (6.5%)	0.158	0.542
Further medical work-up	79 (22.9%)	28 (16.6%)	0.567	0.844
Inpatient treatment	40 (11.6%)	64 (37.6%)	0.000	3.476
Outpatient treatment	39 (11.3%)	52 (30.8%)	0.000	3.707
Paramedical consultation	19 (5.5%)	8 (4.7%)	0.981	1.013
Evaluation only	30 (8.7%)	10 (5.9%)	0.282	0.587
Other	26 (7.6%)	17 (10.1%)	0.423	1.399

Note: SUD, substance use disorder.

treatment programs. In a subsequent investigation of variables related to the disposition of SUD patient in the current study, we found that the only variable associated with inpatient versus outpatient recommendations was that of Axis V, Global Assessment of Functioning (GAF). Gender, age, education, degree of comorbidity, and other personal and demographic characteristics were not germane. Specifically, as GAF increased by a single unit, the odds of an inpatient recommendation decreased by approximately 5%. More simply, if the patient was deemed to have SUD and a low GAF, she or he was likely referred for inpatient chemical dependency treatment.

Our work again places scrutiny on the pernicious attendant factors and sequelae of substance use disorders and points to the inescapable fact that many patients with chemical use problems seen in hospital settings for a variety of reasons are simply not identified by medical personnel. That is, 42 persons in our study met diagnostic criteria for substance use disorder who were not specifically referred because of such problems. One of the difficulties may be that, except for patients with chronic, protracted SUD symptoms, the overt physical symptoms may not be readily apparent; moreover, symptomatology may not be revealed via verbal self report because of "denial" or "minimizing" of substance-related difficulties (see Howard et al).[17]

The association between reported trauma and SUD found in our study has been a source of recent research interest and theoretical elaboration. Conrod and Stewart [20] presented data suggesting a causal link between extreme trauma, resulting in posttraumatic stress disorder (PTSD), and SUD. Excessive drug usage may occur via a self-medication process in which substances are ingested to aid in the management of hyperarousal and intrusive symptoms, both components of PTSD.

Given the often dire consequences of SUD and the inherent difficulties in the identification of many patients with drug-related problems, consideration should be given to procedures that might aid hospital personnel in selecting patients who might benefit from psychiatric consultation for possible diagnosis and treatment recommendations. Educating medical personnel about disorders that often covary with SUD would be one step in this direction. For example, medical staff persons should be alerted to the fact that poor emotional regulation (e.g. anxiety; anger) can be the harbinger of SUD.[21] Further, patients in

Table 5. Differences on axes III, IV, and V.

DSM axis	SUD–	SUD+	Statistic
III, Health issues (present, n,%)	30 (17.9%)	173 (50.7%)	$x^2 = 50.737$, $p < 0.001$
IV, Socioeconomic issues (present, n,%)	127 (75.6%)	168 (95.5%)	$x^2 = 32.018$, $p < 0.001$
V, GAF	44.60	43.49	$T = 0.845$, $df = 377$, $p = 0.399$

general hospitals who have experienced trauma may be prone to using chemicals for symptom relief. The employment of screening instruments with "non-obvious" items is also recommended as a means of selecting patients for consultation-liaison services. One such instrument is the Substance Abuse Subtle Screening Inventory-3 (SASSI-3). It contains several items that have no ostensive relationship to substance use, and hence would be disguised to patients inclined toward minimizing and denial; it also has excellent psychometric properties.[22] (For further information on screening, see Babor, et al).[23]

Disclosures

The authors report no conflicts of interest.

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