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four Brazilian state capitals

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Who seeks public treatment for substance abuse in Brazil? Results of a multicenter study involving four Brazilian state capitals

Quem procura tratamento para abuso de substância na rede pública no Brasil?
Resultados de um estudo multicêntrico envolvendo quatro capitais brasileiras

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Abstract

Objective: To assess the characteristics of alcohol and drug users who seek treatment at the Brazilian Unified Health System in Brazil.

Method: A multicenter cross-sectional study involving five clinical and research centers located in four Brazilian state capitals was conducted with 740 in- and outpatients. The only exclusion criterion was the presence of neurological or severe psychiatric symptoms at the moment of the interview. The Addiction Severity Index (ASI-6) and the Alcohol, Smoking and Substance Involvement Screening Test (ASSIST) were used to assess the severity of substance use and the problems related.

Results: There were significantly more men than women in the sample; mean age was 36 years. The drug most frequently used at all sites was alcohol (78%), followed by cocaine/crack (51%). Alcohol was the drug that most commonly motivated treatment seeking, at all centers. ASI-6 Summary Scores for Recent Functioning (SS-Rs) were quite similar among centers. SS-Rs were compared between users who had never received treatment for psychoactive substance abuse (n = 265, 36.1%) and those who had already been treated at one or more occasions (n = 470, 63.9%). This analysis revealed significant differences between the groups in the drug, psychiatric symptoms, legal, and family/social problems areas (p < 0.05).

Conclusion: Our findings confirm previous evidence suggesting that the management of patients seeking drug abuse treatment should take several different aspects into consideration, e.g., education, employment, and family relationships, which often appear as areas of concern for these individuals.

Keywords: Substance abuse, treatment, multicenter, alcohol, drugs, public health.

Resumo

Objetivo: Avaliar as características dos usuários de álcool e drogas que procuram tratamento no Sistema Único de Saúde.

Método: Estudo transversal multicêntrico envolvendo cinco centros clínicos/de pesquisa localizados em quatro capitais brasileiras foi realizado com 740 pacientes hospitalizados e ambulatoriais. O único critério de exclusão foi a presença de sintomas neurológicos ou psiquiátricos graves no momento da entrevista. A Escala de Gravidade de Dependência (Addiction Severity Index, ASI-6) e o teste ASSIST (Alcohol, Smoking and Substance Involvement Screening Test) foram utilizados para avaliar a severidade do uso de substância e problemas relacionados.

Resultados: Houve significativamente mais homens do que mulheres na amostra; a idade média foi de 36 anos. A droga mais usada em todos os centros foi o álcool (78%), seguido de cocaína/crack (51%). O álcool foi a droga que mais motivou procura por tratamento, em todos os centros. Os Escores Resumidos da ASI-6 para Funcionamento Recente (SS-Rs) foram bastante similares nos centros. SS-Rs foram comparados entre usuários que nunca haviam recebido tratamento para abuso de substâncias (n = 265, 36,1%) e aqueles que já haviam sido tratados uma ou mais vezes (n = 470, 63,9%). Foram observadas diferenças significativas entre os grupos nas áreas de droga, sintomas psiquiátricos e problemas legais e familiares/sociais (p < 0,05).

Conclusões: Nossos dados confirmam evidências prévias de que o manejo de pacientes que procuram tratamento para abuso de substância deve levar em conta vários aspectos, como educação, emprego e relações familiares, que normalmente geram preocupação nesses indivíduos.

Descritores: Abuso de substâncias, tratamento, multicêntrico, álcool, drogas, saúde pública.

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Introduction

Psychoactive drug consumption has become a serious problem in developing countries. In Brazil, the largest country in Latin America, reported prevalence rates of alcohol and drug abuse vary across studies, but one common finding is the high lifetime prevalence of use of any drug or alcohol, reaching 22.8 and 74.6%, respectively.¹ In the last decade, epidemiological studies conducted in Brazil have reported an increase in lifetime consumption of alcohol, tobacco, marijuana, inhalants, cocaine, and other drugs.^{1,2} Such a scenario has implications not only for the individual user, in terms of psychological and social problems, but also for the society at large, in terms of the significant economic impact associated with drug abuse.³

In response to the increased prevalence of psychoactive drug abuse, there is a growing interest in variables that may influence treatment effectiveness.⁴⁻⁷ For example, active participation in treatment has been associated with positive outcomes among psychoactive drug users.⁸ However, many drug users do not even start treatment, many leave treatment prematurely, or yet relapse following treatment completion.⁵ In this context, several authors have focused on addictive behaviors and tried to better understand the factors that motivate individuals to seek treatment for substance abuse,⁵ as well as barriers to treatment-seeking⁷ and outcome predictors.⁴

In spite of many scientific efforts, a number of questions still remain unclear, especially regarding access to treatment, treatment compliance, and treatment effectiveness. In Brazil, some studies have assessed drug abuse characteristics in the general population, however only a few have involved clinical samples.^{2,9} Among the limitations commonly mentioned by Brazilian investigators, political and logistical issues stand out, including limited funding and staff, which result in small or nonrepresentative samples and directly affect the quality of research. According to some authors, this scenario can be explained by the recent history of drug use research in developing nations.¹⁰ Finally, research conducted in large countries, such as Brazil, have the additional limitation of dealing with cultural and social differences as a result of data collection at different sites.

Having an improved knowledge of the profile of patients seeking treatment for substance abuse is extremely important to ensure adequate treatment planning. For instance, many treatment seekers have psychiatric comorbidities, use multiple drugs concurrently, or present deficits in several areas of their lives. An English study that evaluated the profile of treatment-seeking drug users found a higher prevalence of psychiatric disorders among multiple drug users,

and also revealed that female gender, physical health, interpersonal relationships, and drug dependence are important predictors of psychiatric symptoms.¹¹

Currently, drug abuse treatment in Brazil is available to the population free of charge via the National Unified Health System. Treatment is offered at psychosocial care centers specialized in alcohol and drug abuse, private clinics, and specialized hospitals. Patients are referred to these different levels of care according to abuse severity.^{12,13} In addition, nationwide preventive and treatment programs are often implemented by the government. Still, very little is known about the profile of patients that seek and benefit from these initiatives, about their reasons motivating treatment seeking, and about the severity of problems related to drug abuse in different Brazilian regions.

Therefore, the objectives of the present study were to assess the characteristics of alcohol and drugs users who seek treatment at the Brazilian Unified Health System in four Brazilian states, with a focus on addiction severity and the drug that motivated treatment seeking.

Methods

This was a multicenter cross-sectional study involving five research centers located in four Brazilian state capitals.

Data collection sites

The data collection sites were strategically chosen due to their previously reported ability to conduct large studies in the field and are described below:

- The Center for Drug and Alcohol Research (Centro de Pesquisa em Álcool e Drogas, CPAD), at the Universidade Federal do Rio Grande do Sul (UFRGS), was the coordinating center for this study.
- The Drug Dependence Unit (Unidade de Dependência de Drogas, UDED), a section of the Department of Psychobiology of the Universidade Federal de São Paulo (UNIFESP).
- The Women's Drug Dependent Treatment Center (Programa de Atenção à Mulher Dependente Química, PROMUD), affiliated with the Medical School of Universidade de São Paulo (USP). Provides treatment mostly for women.
- The Research and Assistance Program in Drug Addiction (Programa de Estudos e Assistência ao Uso Indevido de Drogas, PROJAD), affiliated with the Universidade Federal do Rio de Janeiro.
- The Center for Drug Abuse Studies and Therapy (Centro de Estudos e Terapia do Abuso de Drogas, CETAD), a permanent extension of the Department of Pathology at the Universidade Federal da Bahia (UFBA).

Referrals from other treatment locations were also analyzed by all data collection sites.

Sample selection

Between January and November 2007, a target sample of 740 subjects was obtained. Patients were either under assessment or already being treated for substance abuse or dependence on an inpatient (first 15 days after admission) or outpatient (first 10 days) basis. The goal was to interview 150 subjects at each study center.

Patients were included in the study if they had used alcohol or drugs in the 30 days preceding the interview. The only exclusion criterion was the presence of neurological or severe psychiatric illness with symptoms at the moment of the interview, ascertained by trained clinical interviewers. Regarding data collection at all centers, seven patients were not included in the sample due to severe depressive or psychotic symptoms, and four patients did not accept to participate in the study. The strategy of including patients from both inpatient and outpatient treatment regimens was intended to generate a heterogeneous sample, with characteristics of the typical Brazilian population who seeks specialized treatment for alcohol and drug abuse.

Instruments

The following instruments were used to assess patients:

- Sixth version of the Addiction Severity Index (ASI-6), a multidimensional semistructured interview lasting between 45 and 90 minutes. In the present study, a validated Brazilian Portuguese version of the instrument was used. The instrument assesses the patient's lifetime and recent status in seven functional areas or subscales, namely, medical status, employment and support, legal status, family and social status, psychiatric status, alcohol use, and drug use. Presently, one set of summary scores is available, the ASI-6 Summary Scores for Recent Functioning (SS-Rs), comprised of nine subscales covering status/functioning in the past 30 days, provides objective information by combining rational and empirical methods. The SS-Rs are psychometrically derived using the nonparametric item response theory (NIRT) and classical psychometric methods; they are standardized scores and thus have the advantage of reducing the extent of skewness in scores. One score is generated for each area/subscale, except for the family/social area, in which three scores are generated (problems, support, and child problems).

The SS-Rs are standardized T-scores with a mean of 50 and a standard deviation of 10, and may range from 0 to 100, where higher scores indicate greater severity.¹⁴

- The Alcohol, Smoking and Substance Involvement Screening Test (ASSIST), developed by a team of investigators supported by the World Health Organization to detect substance use and abuse, and validated for Brazilian Portuguese.¹⁵ The ASSIST instrument has shown high sensitivity and specificity for the detection of alcohol, cannabis and cocaine abuse/dependence, in addition to high reliability (Cronbach's alpha of 0.80 for alcohol, 0.79 for cannabis, and 0.81 for cocaine).¹⁵

Interviewers

All the 25 interviewers involved in the study graduated psychologists. Interviewer selection was based on the candidate's abilities in multiple areas, including: a) experience in dealing with sensitive questions, such as drug use and its consequences; b) comprehension of research principles and experience in obtaining informed consent; c) interest in the objectives of the study; and d) ability to apply a structured interview.

Logistics and quality control

The quality of the data collected was ensured mostly via training, supervisory oversight, and support provided to the field interviewers (psychologists) by the research center coordinators. Throughout data collection, a weekly meeting was held with the co-PI (FK) of each data collection site to oversee the data collection process and solve logistical problems. After data collection, each site was responsible for sending the original questionnaires to the coordinating center in Porto Alegre, state of Rio Grande do Sul (CPAD/UFRGS), where all data were entered into a single database. On a weekly basis, the PI (FP) called or emailed the co-PIs to discuss patient recruitment and solve problems related to data collection.

Statistical analysis

Data were entered into an Access database and analyzed using the Statistical Package for the Social Sciences (SPSS) version 16.0. Categorical variables were described as absolute frequencies and percentages. Quantitative variables with a symmetrical distribution were described as means and standard deviation, and those with an asymmetrical distribution were presented as medians and interquartile ranges.

Table 1 - Sample characteristics of substance abusers who sought treatment (n = 740)

	CETAD (BA)	PROJAD (RJ)	PROMUD (SP)	UDED (SP)	CPAD (RS)	p	TOTAL
Male sex (%)	85.2 ^a	86.0 ^a	46.2 ^b	88.7 ^a	80.7 ^a	< 0.001	78.0
Mean age ± standard deviation	31±12 ^b	37±11 ^{ac}	40±12 ^c	36±10 ^c	36±12 ^a	< 0.001	36±12
Income (R\$* - past 6 months)	4,000 (1,835- 8,400) ^{bd}	2,400 (1,000- 5,000) ^{ae}	2,400 (1,508- 4,900) ^{be}	5,500 (2,956- 8,700) ^{cd}	3,000 (1,237- 9,700) ^{abce}	< 0.001	3,600 (1,600- 7,200)
Steady partner (%)	35.0 ^a	33.3 ^{ab}	20.7 ^b	40.0 ^a	40.0 ^a	0.002	34
White ethnicity (%)	20.1 ^b	47.3 ^a	59.1 ^{ac}	72.3 ^c	62 ^{ac}	< 0.001	52.5
Outpatient treatment (%)	46.3 ^{de}	35.1 ^{be}	97.3 ^a	65.8 ^c	57 ^{acd}	< 0.001	60.5
Elementary and high school (%)	80.7 ^a	62.7 ^{cd}	56.7 ^{bc}	77.3 ^a	74.7 ^{ae}	< 0.001	70.3
Unemployed (%)	43.3 ^{ab}	51.3 ^a	57.3 ^a	34 ^b	50.7 ^a	0.001	47.4

CETAD (BA) = Center for Drug Abuse Studies and Therapy (Bahia); PROJAD (RJ) = Research and Assistance Program in Drug Addiction (Rio de Janeiro); PROMUD (SP) = Women's Drug Dependent Treatment Center (São Paulo); UDED (SP) = Drug Dependence Unit (São Paulo); CPAD (RS) = Center for Drug and Alcohol Research (Rio Grande do Sul).

* R\$ = *Reais*; R\$ 2.5 are equivalent to US\$ 1.

Results followed by different letters indicate the presence of statistically significant differences.

Ethical considerations

All patients were submitted to standard informed consent procedures and were only allowed to sign the consent forms after a thorough review of patients' rights and of the study objectives and limitations. The study was approved by the Institutional Review Board of Hospital de Clínicas de Porto Alegre (HCPA), Brazil, and by the respective boards of all centers included in the study. Patients received the equivalent of U\$ 15 after each interview as a compensation for their costs with food and transportation.

Results

Table 1 shows the demographic characteristics of the sample. There were significantly more men than women in the sample; the mean age was 36 years, but users from the CETAD center were younger than those selected at other centers. This center also showed a lower prevalence

of white ethnicity. Education level was significantly lower at the PROMUD center. Unemployment was higher at the UDED center, however without a significant difference when compared with the other centers.

Categorical variables are expressed as absolute frequencies and percentages. Quantitative variables with a symmetrical distribution are expressed as means and standard deviation. Variables with an asymmetrical distribution are expressed as medians and interquartile ranges. Quantitative variables were compared using analysis of variance (ANOVA), followed by Tukey's test; categorical variables were analyzed by chi-square test and multiple comparisons, and asymmetrical by Kruskal-Wallis.

The drug most frequently used at all sites was alcohol, followed by cocaine/crack. Marijuana was the third most frequent drug, and its use was more pronounced at CETAD, in the state of Bahia. Other psychoactive substances were homogeneously used across the centers, except for inhalants, which were more prevalent at PROJAD, in Rio de Janeiro (Table 2).

Table 2 - Use of alcohol and other drugs at the five research centers assessed

Alcohol/drug use (prior 30 days)	CETAD (BA)	PROJAD (RJ)	PROMUD (SP)	UDED (SP)	CPAD (RS)	p	All centers n = 740 (%)
Alcohol	107 (76.4)	127 (84.7)	126 (84.0)	122 (81.3)	122 (81.3)	0.389	604 (81.6)
Marijuana	74 (52.9) ^a	57 (38.0) ^{ab}	48 (32.0) ^b	61 (40.7) ^{ab}	62 (41.3) ^{ab}	0.010	302 (40.8)
Sedatives	42 (30.0) ^b	48 (32.0) ^b	47 (31.3) ^b	20 (13.3) ^a	42 (28.0) ^b	0.001	199 (26.9)
Cocaine/crack	75 (53.6) ^{ab}	87 (58.0) ^a	62 (41.3) ^b	76 (50.7) ^{ab}	78 (52.0) ^{ab}	0.026	378 (51.1)
Stimulants	6 (4.3)	4 (2.7)	5 (3.3)	7 (4.7)	5 (3.3)	0.903	27 (3.6)
Hallucinogens	9 (6.4)	3 (2.0)	2 (1.3)	5 (3.3)	4 (2.7)	0.132	23 (3.1)
Inhalants	2 (1.4) ^{ab}	18 (12.0) ^a	2 (1.3) ^b	4 (2.7) ^{ab}	6 (4.0) ^{ab}	< 0.001	32 (4.3)
Opiates	1 (0.7)	1 (0.7)	1 (0.7)	2 (1.3)	0 (0)	0.742	11 (1.5)

Results expressed as number of subjects (%).

CETAD (BA) = Center for Drug Abuse Studies and Therapy (Bahia); PROJAD (RJ) = Research and Assistance Program in Drug Addiction (Rio de Janeiro); PROMUD (SP) = Women's Drug Dependent Treatment Center (São Paulo); UDED (SP) = Drug Dependence Unit (São Paulo); CPAD (RS) = Center for Drug and Alcohol Research (Rio Grande do Sul).

Results followed by different letters indicate the presence of statistically significant differences.

Table 3 - Characteristics of alcohol use at the five research centers assessed

Variables	CETAD (BA)	PROJAD (RJ)	PROMUD (SP)	UDED (SP)	CPAD (RS)	p	All centers n = 740 (%)
Years of alcohol use*	3 (0-13) ^a	11 (2-20) ^b	10 (3-20) ^b	5 (0-16) ^{ac}	9 (0-20) ^{abc}	< 0.001	8 (0-18)
Years of alcohol abuse [†]	2 (0-8) ^c	9 (1-18) ^b	7 (1-15) ^{ab}	4 (0-15) ^{ac}	3 (0-14) ^{ac}	< 0.001	5 (0-15)
Alcohol use (days) [‡]	8 (1-15) ^a	15 (3-30) ^b	10 (3-23) ^{ab}	8 (1-24) ^{ab}	7 (1-25) ^{ab}	0.003	10 (1-23)
Binge drinking (days) [‡]	4 (0-13) ^a	15 (1-29) ^b	8 (0-20) ^{ab}	3 (0-19) ^a	3 (0-20) ^a	< 0.001	5 (0-20)
Years of drug use*	5 (0-10) ^a	10 (0-15) ^b	5 (0-15) ^{ab}	8 (0-15) ^{ab}	7 (0-13) ^{ab}	0.048	7 (0-14)
Concomitant use of drugs [‡]	13 (1-27) ^a	8 (0-26) ^{ab}	2 (0-15) ^b	7 (0-28) ^{ab}	8 (0-28) ^{ab}	0.006	7 (0-25)

Results expressed as medians (interquartile ranges).

CETAD (BA) = Center for Drug Abuse Studies and Therapy (Bahia); PROJAD (RJ) = Research and Assistance Program in Drug Addiction (Rio de Janeiro); PROMUD (SP) = Women's Drug Dependent Treatment Center (São Paulo); UDED (SP) = Drug Dependence Unit (São Paulo); CPAD (RS) = Center for Drug and Alcohol Research (Rio Grande do Sul).

* 3 times per week or more; [†] 5 drinks per day or more; [‡] in the preceding 30 days.

Results followed by different letters indicate the presence of statistically significant differences.

Table 3 describes the profile of alcohol consumption in the sample. There were significant differences in relation to years of alcohol use and abuse. CETAD, in the state of Bahia, showed the lowest time of alcohol use (in years), while PROJAD and PROMUD presented the highest results for this variable. The CPAD center also showed the lowest results for alcohol use, although differences were not significant. Alcohol use and binge drinking were higher at PROJAD and PROMUD when compared to the other centers. Drug use among alcohol users was more prevalent at CETAD.

In the analysis of SS-Rs, the family/child subscale presented higher results at the CPAD when compared with the other centers (significant differences in relation to PROJAD, PROMUD, and UDED). Also, there was a lower prevalence of legal problems at both sites located in the state of São Paulo (PROMUD and UDED).

Conversely, severity of problems related to Family/Social Support showed a significantly lower prevalence at CETAD when compared with PROJAD, PROMUD, and UDED (Table 4).

Alcohol was the drug that most commonly motivated treatment seeking in the sample assessed, at all centers. The PROJAD center showed a higher prevalence of cocaine and a lower prevalence of crack as the drugs that motivated treatment seeking (Table 5).

A final analysis was conducted, using Student's *t* test, to compare SS-Rs between users who had never received treatment for psychoactive substance abuse (*n* = 265, 36.1% of the sample) and those who had already been treated for substance abuse at one or more occasions (*n* = 470, 63.9%). This analysis revealed significant differences between the two groups in the following areas: drug, psychiatric symptoms, legal, and family/social problems (*p* < 0.05).

Table 4 - Summary scores of the Addiction Severity Index (SS-Rs, ASI-6) obtained at the five research centers involved

SS-R subscales	CETAD (BA)	PROJAD (RJ)	PROMUD (SP)	UDED (SP)	CPAD (RS)	p	All centers n = 740 (%)
Drug	49.8±10.4 ^a	47.4±10.8 ^{ab}	45.5±11.2 ^b	47.8±12.0 ^{ab}	49.1±11.5 ^a	0.012	47.9±11.3
Family/child	52.9±8.1 ^{ac}	51.5±7.5 ^a	51.2±7.1 ^a	49.6±5.3 ^d	54.8±9.3 ^{bc}	< 0.001	52.0±7.7
Alcohol	53.9±10.3 ^a	56.9±9.4 ^{ab}	57.3±9.8 ^b	55.2±11.0 ^{ab}	56.0±10.5 ^{ab}	0.033	55.8±10.3
Psychiatric	48.4±7.7 ^a	51.2±8.4 ^a	50.0±8.4 ^{ab}	50.6±8.4 ^{ab}	51.5±8.7 ^b	0.017	50.4±8.4
Medical	45.5±8.6 ^a	49.0±8.5 ^b	45.2±10.1 ^a	44.3±10.6 ^a	49.2±9.1 ^b	< 0.001	46.6±9.6
Legal	51.2±7.7 ^a	51.8±6.9 ^a	47.6±4.8 ^b	47.8±4.9 ^b	51.0±7.3 ^a	< 0.001	49.9±6.7
Employment	40.5±11.1 ^a	45.9±9.3 ^b	43.7±10.1 ^a	39.8±11.6 ^a	42.7±10.8 ^{ab}	< 0.001	42.6±10.8
Family/social support	43.2±10.2 ^a	47.5±10.1 ^{bc}	47.2±11 ^{bd}	47.8±10.8 ^{cd}	44.5±9.8 ^{ab}	< 0.001	46.1±10.5
Family/social problem	56.4±9.0 ^a	54.9±8.5 ^{acd}	53±10.3 ^{bc}	52.1±8.8 ^{bd}	56.7±9.5 ^a	< 0.001	54.7±9.3

Results expressed as mean ± standard deviation.

CETAD (BA) = Center for Drug Abuse Studies and Therapy (Bahia); PROJAD (RJ) = Research and Assistance Program in Drug Addiction (Rio de Janeiro); PROMUD (SP) = Women's Drug Dependent Treatment Center (São Paulo); UDED (SP) = Drug Dependence Unit (São Paulo); CPAD (RS) = Center for Drug and Alcohol Research (Rio Grande do Sul).

Results followed by different letters indicate the presence of statistically significant differences.

Table 5 - Drugs motivating treatment seeking at the different centers assessed

First, second or third drug motivating treatment seeking	CETAD (BA)	PROJAD (RJ)	PROMUD (SP)	UDED (SP)	CPAD (RS)	p	All centers n = 740
Alcohol	48.3 ^a	67.5 ^b	70.3 ^b	56.6 ^{ab}	58.0 ^{ab}	0.001	60.2
Marijuana	32.2 ^a	27.2 ^{ab}	16.6 ^b	29.6 ^{ab}	23.3 ^{ab}	0.024	25.8
Cocaine	32.2 ^a	58.9 ^b	29.7 ^a	40.8 ^a	31.3 ^a	< 0.001	38.7
Crack	35.7 ^a	8.6 ^b	24.1 ^a	25.7 ^a	37.3 ^a	< 0.001	26.2
Stimulants, sedatives	2.8	3.3	6.9	2.6	6.0	0.233	4.3
Other drugs	18.9 ^{ac}	45.7 ^b	12.4 ^a	27.0 ^c	21.3 ^{ac}	< 0.001	25.2
Anything	2.1	2.6	0	2	0.7	0.299	1.5

Results expressed as number of subjects (%).

CETAD (BA) = Center for Drug Abuse Studies and Therapy (Bahia); PROJAD (RJ) = Research and Assistance Program in Drug Addiction (Rio de Janeiro); PROMUD (SP) = Women's Drug Dependent Treatment Center (São Paulo); UDED (SP) = Drug Dependence Unit (São Paulo); CPAD (RS) = Center for Drug and Alcohol Research (Rio Grande do Sul).

Results followed by different letters indicate the presence of statistically significant differences.

Discussion

The present study assessed the profile of drug abuse treatment seekers selected at five research centers located in four Brazilian states. Based on the data collected, we believe that the main goal of our study was met, namely, to improve our knowledge of the characteristics of alcohol and drugs users seeking treatment at the Brazilian public health system, of the severity of problems related to drug abuse, and of the main drug motivating treatment seeking. Patients selected at the four Brazilian states were similar, suggesting that our sample was representative of the general population of treatment seekers in Brazil, although some distinguishing features will be addressed below. In addition, our findings highlight the complexities involved in substance abuse treatment, with several variables influencing treatment planning and patient management. Such a complex scenario includes both individual variables (e.g., the presence of comorbidities and addiction severity) and also environmental factors (e.g., characteristics of the health care system, social/family support, etc.).

As mentioned above and shown in Table 1, the samples selected at all participating centers were similar and heterogeneous in terms of demographic characteristics – even at PROMUD, a center that provides treatment mostly to female patients at an outpatient basis. A predominance of male patients has been reported in previous substance abuse studies and at specialized treatment facilities. Women, in turn, are known to more frequently seek help for the treatment of alcohol use and mental health problems,¹⁶ but the stigma that still surrounds addicted women often delays or hinders their decision to seek treatment.¹⁷ Also, the fact that women usually report worse social support than men could influence the severity of their substance

use.¹⁸ A Brazilian study of female alcohol users treated at a specialized outpatient clinic showed that most of them presented severe dependence.¹⁹

The mean age of our sample is in line with the relevant literature, which shows that substance abusers tend to seek treatment later in life than individuals with other psychiatric disorders, probably as a result of a higher number of barriers to treatment initiation.⁷ In turn, the higher mean age observed in our patients when compared with samples of non-alcohol drug users may be explained by the high rates of alcohol use and abuse observed in our study, as problems alcohol-related problems tend to manifest later in life.^{20,21} Moreover, our results showed a tendency to lower alcohol consumption and increased marijuana consumption in the state of Bahia (CETAD) when compared with the other centers, which may also be associated with the younger sample recruited at that center.

We found a low rate of patients living with a partner, which probably reflects the difficulties of living with a drug addict. This finding was also more common among PROMUD patients, which is consistent with other Brazilian studies that suggest a low tolerance among males toward female drug-dependent partners.²² Conversely, there is also evidence that a family environment marked by neglect, abandonment, physical abuse and lack of dialogue is associated with initiation of drug use.²³ Therefore, it is difficult to know whether the dysfunctional relationships commonly observed among drug users are caused by drug abuse *per se* or whether they are a consequence of dysfunctional family patterns.

As expected, patients recruited at CETAD, the only research center located in the state of Bahia, northeast Brazil, differed from the remainder of the sample with regard to ethnicity: CETAD patients were predominantly Afro-Brazilian, compared to a majority of Caucasians selected at the other regions. According to the Brazilian

Institute of Geography and Statistics, about 78% of the population in Bahia is Afro-Brazilian. Again, this is an example of the typical variability faced by studies conducted in large countries such as Brazil and justifies the inclusion of data collection sites located in different regions in order to broaden the validity of the study.²⁴ However, in spite of the ethnic differences observed across the centers involved, the severity of problems related to the use of drugs was very similar in the different regions assessed.

Overall, the sample showed high education levels when compared to the general Brazilian population. Education level has long been associated with social and economic status in Brazil. As a result of flaws in the Brazilian public health system, individuals with better financial conditions tend to better identify and find treatment facilities, which probably explains the higher education rates found in our sample. Also, although education is known to be higher among women in Brazil, our study found lower results at the PROMUD center, where mostly women are treated. This finding may be the result of specific characteristics of the patients treated at that center, but it underscores the importance of studying the characteristics of drug users and to investigate how this population differs from non-drug users. A study conducted in the United States showed an association between poor literacy and higher rates of depressive symptoms in an alcohol- and drug-dependent population.²⁵ Our study did not confirm those findings, but the PROJAD center, located in Rio de Janeiro, interestingly showed the lowest education levels and also the highest rates of psychiatric symptoms.

Our sample also showed a higher rate of unemployment (47.4%) when compared to data available for the general Brazilian population. Official data for 2008 reveal much lower unemployment rates in Brazil, as low as 9.8%, which points to the severity of problems related to drug abuse, including poverty and a circular cause and effect relationship involving job-seeking and unemployment among drug/alcohol users.²⁶

Previous studies have shown high severity scores in many areas of the ASI-6 related to alcohol and drug use in individuals seeking specialized treatment.²⁷ Our sample showed a high prevalence of alcohol-related problems: 81% of the subjects had consumed alcohol in the 30 days preceding the interview (Table 2), and most reported alcohol abuse for about 5 years (Table 3). According to Caetano & Laranjeira, several factors contribute to the high rates of alcohol use observed in Brazil, e.g., the expansion of local alcohol industries as a result of socioeconomic growth, massive advertising, low pricing and the lack of adequate consumption policies.²⁸

A substantial percentage of the sample used marijuana in the 30 days preceding the interview (Table

2). The CETAD center showed the highest prevalence of marijuana use, which highlights the influence of cultural factors on the choice of drugs. Marijuana was introduced and distributed in Brazil through the Atlantic slave trade, which brought people from Africa in ships that reached mainly the state of Bahia, in the northeastern Brazilian coast. Some authors hypothesize that the high prevalence of marijuana use and abuse currently observed in the state of Bahia is still a legacy of that period.²⁹ Similarly, the high rate of inhalant use obtained in the PROJAD sample may suggest either a sample selection bias or a local cultural specificity in Rio de Janeiro.

The high rate of binge drinking found in the PROJAD sample (Table 3) confirms a consumption pattern that had already been reported among Brazilian youths and adults.^{30,31} According to the National Institute on Alcohol Abuse and Alcoholism, the concept of binge drinking or "heavy episodic drinking" emerged based on evidence suggesting an increased risk of problems associated with the consumption pattern, and is defined as the consumption of five or more alcoholic drinks for men and four or more drinks for women on one occasion. One-fourth of alcohol users drink excessive quantities of alcohol and present binge drinking-related problems.³² A Brazilian study conducted with 2,346 individuals aged 18 years or more showed that 28% regularly binge drank, and 25% reported at least one problem related to this behavior.³³

In the last decade, an increase in cocaine consumption has been documented in Brazil, both in the general population and among students, as a result of an increasingly widespread use of crack.^{1,34-36} The barriers and difficulties faced by the Brazilian public health system to accommodate the needs of cocaine- and crack-dependent patients under treatment, especially as a result of the closure of psychiatric beds, are well known.^{37,38} However, the majority of studies conducted in other countries to analyze the characteristics of treatment seekers have focused predominantly on alcohol abusers or cocaine snorters.^{39,40} Therefore, there is a lack of studies assessing the characteristics of crack users and the role of crack as the drug motivating treatment seeking.

In our sample, crack use was one of the main reasons leading people to seek treatment. At the CPAD center, crack was the drug that motivated treatment seeking for almost half of the sample; in the remainder of the sample, crack use accounted for at least 30% of the drugs motivating treatment seeking (Table 5). The typical crack user has been defined as a youth, unemployed, coming from a broken family, presenting with other psychiatric comorbidities and reporting

concomitant use of other drugs. Crack use has been implicated in increased mortality rates among young people, especially as a result of crime and AIDS infection.⁴¹⁻⁴⁴ Our results corroborate these findings: our PROJAD sample included the highest number of crack users and also presented the highest rate of legal problems (Table 4).

The results obtained for crack use in our sample underscore the current need to study the severity of problems related to the use of this particular drug. Crack was the second major drug motivating treatment seeking in our sample, a striking finding in view of the scarcity of information available on this drug in Brazil. Nevertheless, our results contribute to a better understanding of the profile of crack users and of their major concerns and reasons for seeking treatment, and therefore can be useful for the planning of therapeutic strategies.

The analysis of SS-Rs suggests that the differences observed across centers are the result of demographic and cultural factors that are inherent to studies conducted in large countries. In addition, none of the differences observed on SS-Rs reached statistical significance. Nevertheless, previous similar studies have used different versions of the ASI-6, which impeded the comparison of our data with the literature. Future studies are therefore needed to determinate whether or not our results can be generalized to other populations of drug users as well as to drug users not seeking treatment.

The severity of problems related to substance abuse is poorly understood in Brazil, but has been described in several studies conducted worldwide. U.S. studies have suggested a possible association between traumatic events in childhood and increased drug abuse severity, in addition to a greater vulnerability to relapse in this subgroup of patients.^{45,46} Another study conducted in India in 2003 showed that individuals seeking treatment for substance abuse, especially those presenting with psychiatric comorbidities, have a higher risk of contracting HIV.⁴⁷ Similar findings have been reported in Brazil.⁴⁸

Another important issue in this scenario is the possible relationship between substance abuse-related problems and the patients' reasons for seeking treatment. There is evidence that physical symptoms such as abstinence-related pain often motivate seeking treatment.¹⁸ A Canadian study has shown that, in a population of alcohol abusers, those with a diagnosis of dependence were more likely to seek treatment, suggesting an influence of severity of dependence on this outcome.³⁹ However, most studies so far have been performed in populations with low rates of crack abuse when compared with Brazil. This difference may

suggest that the pattern of drug consumption in general and of crack consumption in particular in Brazil may be different from (and significantly higher than) that in other countries. Finally, the increasing mortality rates associated with crack use in young populations further underscores the severity of the crack epidemic in Brazil.⁴⁹

In 2008, a sample of female patients seeking treatment for alcoholism was assessed for differences between early dropout and non-dropout patients. The study did not identify any social or demographic factor significantly associated with early dropout, but suggested an association of the latter with the pattern of alcohol consumption.⁵⁰ Another study assessing a population of female drug users undergoing psychiatric treatment in São Paulo showed that representations on the use of alcohol in these women were linked to family, profession and gender issues, indicating that the search for treatment was not only motivated by substance use *per se*, but by all areas affected by such use.⁵¹

Our findings confirm previous evidence suggesting that the management of patients seeking drug abuse treatment should take several different aspects into consideration, e.g., education, employment, and family relationships, which often appear as areas of concern for these individuals; however, little information is available on the severity and impairment associated with drug use in these areas.⁵² Several treatment programs tend to focus on reducing drug use and ignore the psychosocial problems underlying the patient's decision to seek assistance. Initiatives that do not prioritize patient's needs commonly have higher rates of treatment noncompliance.⁵

Finally, another aspect that should be taken into consideration is that the specific characteristics of the health care services sought by drug users may also influence their decision to seek treatment. Such aspects may include political issues (e.g., the funding received by each service) and also characteristics of each individual treatment program (e.g., complex admission criteria, absence of appropriate services for groups such as women, waiting lists, and lack of cooperation across service organizations).⁷ Therefore, further studies should be carried out with the aim of providing a detailed profile of the health care services available for drug users in Brazil, with a focus on identifying variables that may influence specialized treatment seeking.

In sum, efforts should continue to be directed toward the identification and understanding of populations at greater risk for drug abuse, and to the continuous improvement of our knowledge of addictive behaviors in Brazil and in the world. Taken together, these data could be extremely useful for the development of cost-

effective interventions aimed at increasing treatment seeking and treatment compliance rates, consequently decreasing relapse and reducing the social and financial costs involved in the treatment of substance abuse.

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