Differences in factors associated with first treatment entry and treatment re-entry among cocaine users

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Treatment entry and re-entry

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Abstract

Aims. To investigate factors associated with first entry to treatment and with treatment re-entry among cocaine users. **Design.** Cross-sectional study. **Setting/participants.** Cocaine users (n=313) recruited from community and treatment settings in Brazil. **Measurements.** Structured questionnaire including selected items from the Addiction Severity Index(ASI), General Health Questionnaire - version 28 (GHQ-28), CAGE and the Severity of Dependence Scale (SDS). **Findings.** Higher dose use, being a problematic drinker and increased awareness of their problem were associated with increased odds of making first contact with an agency. Greater severity of dependence, being involved in acquisitive crime, and social support increased the chance of treatment re-entry. Being involved in acquisitive crimes and concerns about confidentiality were associated with decreased odds of first treatment contact. Being a problematic drinker was associated with decreased odds of re-entry treatment. **Conclusions.** These findings suggest that the distinction between first treatment contact and subsequent entry to treatment is useful, clinically relevant, and deserving of further investigation.

Key words: treatment-seeking, first entry treatment, re-entry treatment, cocaine misuse

Introduction

Many people with substance misuse problems do not seek treatment. The estimated ratio of untreated to treated individuals among problem drinkers, for example, has been estimated at between 3:1 to 13:1 (Cunningham *et al.*, 1993). There are many reasons for not seeking treatment. These include not having a problem, not recognising a problem, fear of identification with an illegal and stigmatised behaviour, lack of access to services, unacceptability of existing services, as well as other reasons. Findings with regard to the severity of problems among treatment and non-treatment samples have been inconsistent. Several studies have found that severity of dependence was greater among cocaine users in treatment (Chitwood & Morningstar, 1985; Robson & Bruce, 1997). However, Carrol & Rounsaville (1992), after matching a treatment and a community sample in relation to a demographic profile, found higher levels of multiple drug use among users in the community. With regard to environmental circumstances and social-cultural context, Chitwood & Morningstar (1985) found that after matching patients in treatment and patients in the community in relation to dependence severity, the patients in treatment were more likely to suffer negative consequences from cocaine use and to have less social support. Other studies comparing drug users in treatment to those in the community have found that the level of drug use *per se* did not reliably differentiate help seekers from non-help seekers (Power, Hartnoll & Chalmers, 1992; Varney *et al.*, 1995).

Drug misusers who seek treatment are a heterogeneous group, both in terms of their characteristics and problems (Gossop *et al.*, 1997), and in terms of their subsequent responses to treatment (Hser *et al.*, 1999). Among drug users who approach treatment agencies, dropout and multiple admissions to treatment are common, and such issues are best understood within a treatment career perspective that assesses the dynamic of drug abuse and its treatment over time (Anglin & Hser, 1990; Hser *et al.*, 1997). The reasons why some users who had a first contact with treatment agencies do not return to treatment may be related to a treatment experience which leads to abstinence or to some other "successful" outcome. Or, it may be related to other factors which are unrelated to first treatment experience. Hser *et al.* (1997) suggested that "first treatment experiences may often be associated with precedents and consequences that are quite different from those related to subsequent treatment experiences". In the United States, Anglin, Hser & Grella (1997) found that a higher level of prior treatment use was associated with more severe

addiction career characteristics, injected drug use and criminal activities. Claus, Mannen & Schicht (1999) compared the profiles of clients entering treatment for the first time versus those returning to treatment and found that clients who had previously received treatment were likely to have more severe substance abuse problems, additional psychiatric problems, and greater problems in other life areas. In a multi-site study of UK treatment services, Gossop *et al.* (1997) found marked differences between the characteristics and problems of clients seeking treatment in residential and in methadone treatment programmes, with clients at specialist inpatient and residential rehabilitation programmes having the highest levels of previous contact with addiction (and other) treatment services.

The present study examines the factors associated with non-contact, first treatment contact, and treatment re-entry among cocaine misusers recruited from both community and treatment settings in Brazil. The study investigates the factors associated with first treatment experience and how they differ from those associated with subsequent contact with treatment services.

Methods

Subjects

The sample comprised 313 cocaine users. The criteria for inclusion in this study were: use of cocaine on a regular basis (at least twice a week for a minimum of three months) and recent use (within the past two months). Subjects were obtained in two recruitment stages. Sample 1 was recruited from specialist public and private addictive disorder treatment clinics in Sao Paulo. A second sample was obtained from non-treatment settings in the community and was recruited through personal nomination by the members of sample 1. All community-recruited subjects were selected on the basis that they had not been in treatment during the previous year.

The interviewees were asked about their previous treatment experience. Seventy-six reported having never sought treatment ('no contact' group); for one hundred and eleven ('first contact' group) this was their first contact with a drug treatment agency; and one hundred twenty-six ('treatment re-entry' group) were currently seeking treatment and had previous contact with drug

treatment agencies. The treatment sample were asked to report information about the time before entry into treatment and the community sample about the time before the interview.

Subjects were given a travel and food voucher for participating in the study and were interviewed only after informed consent was obtained. The study was approved by the Ethical Committee of the Federal University of São Paulo.

Instruments

Data were collected using a structured questionnaire containing detailed questions about patterns of drug consumption, crime, social support, perceived help need and barriers to seeking treatment (selected items from the Addiction Severity Index, McLellan *et al.*, 1992). Three standardised instruments were included: the General Health Questionnaire - version 28 (Goldberg & Willians, 1988), CAGE (Mayfield, McCleod & Hall, 1974; Masur & Monteiro) and the Severity of Dependence Scale, SDS (Gossop *et al.*, 1995; Ferri *et al.*, 2000).

Statistical Analysis

Variables used in the logistic regression analysis were created by combining sets of related items. For 'crime', the subjects were asked if they had ever committed a crime in any of nine categories. The responses to these nine categories were entered into a factor analyses (PCA followed by varimax). Three factors emerged; a factor related to acquisitive crimes ('crime 1'), a factor related to other crimes ('crime 2') and murder.

Subjects were asked if they felt comfortable discussing personal and drugs problems with six categories of close people and health professionals using a scale from 1 to 6. The means of these scores were used as a measure of 'social support 1'. 'Social support 2' was a result of combining 10 items related to the support received from family and friends.

Two aspects of "perceived help need" were evaluated. General awareness of the problem was constructed by combining 5 questions on the extent of their perception of the drug use being a problem. Subjects were asked to what extent they attributed their problems in the area of health,

relationships, finance, employment, housing and law to their drug use. The responses to 8 questions were combined as a measure of the second aspect of "perceived help need".

The scores for the statements "I wouldn't want anyone knowing about my problems" and "I would be worried about confidentiality (who would be told about my drug use)" were added to form a "confidentiality" variable. Similarly, 3 questions relating to having too many responsibilities or having to care for children were combined to form a responsibility score.

Logistic regression analyses were performed to assess variables associated with help seeking behaviour. For predictors of treatment entry, a logistic regression was conducted using as the dependent variable whether the users had never sought treatment ("no contact group") or were having their first contact with drug treatment agency ("first contact group"). Another logistic regression for predictors of treatment re-entry compared the first treatment entry and the re-entry groups. This analysis was conducted using as the dependent variable whether the users were seeking treatment for the first time ("treatment entry group") or whether they had had previous contact with a drug treatment agency ("treatment re-entry group"). A backward selection procedure based on the likelihood ratio test was used to determine a subset of variables that were associated with outcome. Table 2 and 3 summarise the variables used in the model and show the results of both logistic regressions, giving the estimated odds ratio, the 95% Confidence Interval based on the Wald test and the p value based on a likelihood ratio test (a cut off point of 0.10 was used).

Results

In terms of social demographic characteristics, no statistically significant differences were found between the "no contact", "first contact" and "previous contact" groups. The majority of the sample were young males (90% male and the mean average was 26 years old). Forty-eight percent did not complete basic education and 44% were unemployed. The pattern of drug use of the 313 cocaine users considered in this study is shown in Table 1. The most common current route of administration was smoking (60% of the full sample). The second most frequent route of cocaine administration was intranasal use, snorting (38%). Injecting was rare with only 5 subjects (1.6%)

injecting cocaine. The mean length of snorted cocaine use was 7.7 years and smoked cocaine use was 3.5 years. The mean of the amount used per day in a typical session was statistically different between the three groups (5.3 grams SD=5.2 for the full sample). Apart from cocaine, the most common illicit drugs used were cannabis (95%) and inhalants (59%). The combined use of alcohol/cannabis with cocaine was common. Around 80% of the full sample reported having used alcohol and cocaine together for most of the time they used cocaine. The concomitant use of cocaine and marijuana was reported by 57% of the full sample. This was a behaviour more common among users who had never had contact with drug treatment agencies (76%). The age of first use was around 14 years old for alcohol (range 4-29), tobacco (range 7-35) and cannabis (range 6-37), for snorted cocaine 18.6 (range 8-42) and 22.8 (range 10-50) for crack cocaine.

TABLE 1 AROUND HERE

The mean interval between initial cocaine use and the time they were interviewed among the *first contact* group was 7.8 years (SD=6.2, range 1-34) and among *no contact* group was 6.2 (SD=4.4, range 1-19) (t=-2.06, p<0.05). Forty-two percent of those who had previous contact with a drug treatment agency had had from 1 to 2 contacts, 32% from 3 to 5, 19% from 6 to 10 and 9% more than 10 contacts.

First treatment entry

Comparisons using logistic regression analysis were made between subjects who had never sought treatment (*no contact*) and those who were making their first contact with a treatment agency (*first contact*). The results (Table 2) show that age, the use of larger daily amounts of cocaine (in a typical day) in the last month, being a problematic drinker (CAGE) and increased *awareness* of their drug problem were associated with increased odds of treatment entry, i.e. they increased the chance of making first contact with an agency. Being involved in acquisitive crimes, and being concerned about confidentiality were associated with decreased odds of making first contact with a drug treatment agency.

TABLE 2 AROUND HERE

Treatment re-entry

Comparisons were also made between subjects who were seeking treatment for the first time and those who were seeking re-entry to treatment. Table 3 shows the variables selected for the model for treatment re-entry. The results show that age, severity of dependence upon cocaine, being involved in *crimes* and having *social support* increased the odds ratio for treatment re-entry, i.e., were predictors of treatment re-entry. Being a female and being a problematic drinker (*CAGE*) decreased the odds ratio for treatment re-entry.

TABLE 3 AROUND HERE

Discussion

The majority of drug users in our sample were using cocaine in high doses and had been using cocaine for many years. The main route of cocaine administration was by smoking. Injecting was rare in this sample (less than 2%). Not surprisingly, variables relating to cocaine use were related to treatment contact. There was a clear difference between the three study groups in terms of cocaine doses. Those users who were seeking treatment were using higher doses of cocaine (taking, on average, between 5 and 6½ grams on a typical day). The users who had not received treatment were using lower doses, though even these users were taking relatively large amounts of the drug (on average about 3½ grams per day). Cocaine dose was most clearly related to first treatment entry. For treatment re-entry, severity of dependence upon cocaine was a more powerful predictor. Although drug dose and severity of dependence are positively associated (Gossop et al., 1995), they are also indicators of different factors. The use of high daily doses of cocaine could be expected to increase the risks of a range of health and social consequences, and this could, in turn lead the user to seek treatment. The Severity of Dependence Scale was specifically devised to provide a measure of impaired control over drug use. For this reason, it is possible that the more severely dependent cocaine users may have experienced greater difficulty in giving up their cocaine use after a previous treatment episode, and be more likely to re-enter treatment.

Most drug misusers take a range of different substances (Lehman & Simpson, 1990; Gossop et al., 1997). In our sample, rates of (lifetime) use of amphetamines and sedative drugs were higher

among the treatment groups than among those who had not been in treatment. The non-treated sample were more likely to report concurrent use of alcohol and/or cannabis with cocaine. It is unclear why rates of alcohol and cannabis use were higher among the out-of-treatment group. It is possible that the use of legally available (or widely available) substances such as alcohol and cannabis rather than other illegal drugs reflects a more "recreational" or socially integrated pattern of drug use. However, (lifetime) rates of use for such widely used substances as alcohol and cannabis are unlikely to provide particularly useful measures of problematic substance use. A more informative indicator is provided by the CAGE scores. These show that the clients seeking treatment for the first time were more likely to report problematic or alcoholic patterns of drinking. Problem awareness was also higher among users making their first treatment contact than among the out-of-treatment sample. This is consistent with the common-sense observation that users with more severe problems would be more likely to seek treatment. It is also consistent with the findings of other studies (Cunningham, 1993; Thom, 1986; Hartnoll, 1992; Varney, 1995).

The finding that cocaine users with more severe drinking problems were less likely to re-enter treatment was unexpected. It is possible that problematic drinking was not adequately treated during previous treatment episodes and that this led to a dissatisfaction with treatment. Other studies (Simpson & Lloyd, 1981; Chatham *et al.*, 1997; Gossop *et al.*, 2000) noted that drinking problems are often been given insufficient attention by agencies providing treatment to drug misusers. Drug misusers and/or clinical staff may focus upon what is perceived to be the main illicit problem drug (notably cocaine or heroin) and to neglect the use of other substances (Weiss *et al.*, 1988). We suggest that efforts should be made to develop and strengthen the assessment and treatment of drinking problems among drug misusers.

It is also possible that the finding that women were less likely to reenter treatment than men may be related to their dissatisfaction with the treatment they received which may not be addressing their needs as female clients. However, Hser *et al.* (1998) comparing treatment entry and non-entry among drug abusers did not find gender differences, and Clauss, Mannen & Schicht (1999) comparing clients entering treatment for the first time versus those returning to treatment found more females among those returning to treatment. This highlights the need for further study in this area.

The close links between drug dependence and criminal activity have been extensively reported elsewhere (Ball, Shaffer & Nurco , 1983; Anglin & Speckart, 1985; Stewart *et al.*, 2000; Gossop *et al.*, 2000). In our sample, involvement in crime, and concern about confidentiality were among the factors associated to reduced rates of initial treatment entry. These two variables may run together and lead cocaine users initially to avoid treatment because of fears that their criminal activities may become more easily identified (and punished). However, involvement in crime was another variable which was related differently to treatment entry and to treatment re-entry. When cocaine users had previously had contact with treatment services, those with higher rates of criminal involvement were more likely to seek re-entry to treatment (four times more likely when involved in acquisitive and more than twice as likely when involved in other crimes). It is possible that this finding may be associated with the higher levels of dependence of this group and, therefore, their greater need to maintain an expensive illegal supply of cocaine.

The temporal relationship between the factors studied and treatment seeking behaviour could not be full explored in this study due to its cross-sectional approach. The apparent differences between the three groups found in the study (non-contact, first treatment contact and re-entry treatment) could be due to differences in the subjects which are unrelated to their treatment experience since the same subjects were not followed-up through their different treatment experiences. A prospective study design would be a way to overcome this problem.

Despite this limitation the study gives support to the treatment career perspective which emphasises the dynamic and changing nature of drug misuse and which draws attention to the complex ways in which the user, their problems, and their involvement with treatment services change over time. Our results suggest that the distinction between first treatment contact and subsequent entry to treatment is a useful and important one. Although these different treatment episodes are similar in certain respects, they are also different in others. Our results point to some of the differences in reasons why drug misusers seek treatment in the first instance or why they seek re-entry to treatment. The importance of differentiating between first treatment contact and subsequent contact is often neglected both in clinical practice and in research. We suggest that the issue is important and that it deserves further investigation.

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Table 1: General sample characteristics of the three groups

	Full Sample n=313	"no contact" group(1) n=76	"first contact" group(2) n=111	"previous contact" group(3) n=126

Cocaine main route of administration(%)				
Smoked	60.4	59.2	56.8	64.3
Snorted	38.0	40.8	41.4	33.3
Injected	1.6	0	1.8	2.4
Length of cocaine use- mean (SD)				
Smoked	3.5(3.1)	3.3(2.7)	3.6(3.1)	3.5(3.4)
Snorted	7.7(6.0)	6.5(4.6)	7.5(6.1)	8.2(6.7)
Amount used in a typical session - mean (SD)-grams	5.3(5.2)	3.6(3.0) [a,b]	5.2(5.1) [a,b]	6.5(6.2) [a,b]
Drugs used with cocaine				
Cocaine+alcohol	78.0	88.0 [a,b]	76.1 [a]	73.6 [b]
Cocaine+cannabis	57.1	76.0 [a,b]	50.9 [a]	51.2 [b]
Ever used (%)				
Cannabis	94.9	94.6	94.6	95.2
Inhalants	58.8	52.6	58.6	62.7
Sedatives	30.0	15.8 [a]	24.3 [b]	43.7 [a,b]
Hallucinogens	27.2	26.3	23.4	31.0
Amphetamines	15.0	6.6 [a,b]	15.3 [a,b]	19.8 [a,b]

Where means on the same row share superscript letters ([a,b]), these show statistically significant group differences ($p<0.05$).

Table 2: Variables predicting treatment entry: logistic regression results.

Independent variables	0dds Ratio	95% CI	p
Demographic variables			
*Age**	1.06	0.99-1.14	0.10
Gender	•	•	•
Employed	•	•	•

	Odds Ratio	95% CI	p
Pattern of cocaine consumption			
Daily amount (grams)*	1.13	0.98-1.30	0.09
Route of administration	●	●	●
Severity of dependence	●	●	●
Length of use	●	●	●
Costs of cocaine (in the previous month)	●	●	●
Crime			
Crime1 (acquisitive crimes)*	0.03	0.00-0.18	<0.001
Crime2 (other crimes)	●	●	●
Comorbidity			
GHQ	●	●	●
CAGE*	5.21	1.86-14.57	<0.01
Social support			
Social 1 (ability to discuss problems)	●	●	●
Social 2 (support received from family and friends)	●	●	●
Perceived help need			
Aware about their drug problem*	3.77	1.95-7.28	<0.001
How they related their problems with their drug use	●	●	●
Barriers to seeking treatment			
Confidentiality*	0.59	0.40-0.89	<0.05
Too busy or with no one to look after their children	●	●	●
Lack of belief in agencies' effectiveness	●	●	●

*variables retained in final regression equation

Table 3: Variables predicting treatment re-entry: logistic regression results.

Independent variables	Odds Ratio	95% CI	p
Demographic variables			
Age*	1.09	1.03-1.15	<0.01
Gender (Female)*	0.38	0.12-1.16	0.09
Employed	●	●	●

Pattern of cocaine consumption			
Daily amount (grams)	●	●	●
Route of administration	●	●	●
*Severity of dependence**	1.08	0.99-1.19	0.08
Length of use	●	●	●
Costs of cocaine (in the previous month)	●	●	●
Crime			
Crime1 (acquisitive crimes)*	4.11	1.21-14.00	<0.05
Crime2 (other crimes)*	2.40	0.88-13.15	0.07
Comorbidity			
GHQ	●	●	●
*CAGE**	0.36	0.17-0.77	<0.01
Social support			
Social 1(ability to discuss personal and drug problems with others)	●	●	●
Social 2(support received from friends and family)*	3.07	1.09-8.67	<0.05
Perceived help need			
Aware about their drug problem	●	●	●
How they related their problems with their drug use	●	●	●
Barriers to seeking treatment			
Confidentiality	●	●	●
Too busy or with no one to look after their children	●	●	●
Lack of belief in agencies' effectiveness	●	●	●

*variables retained in final regression equation