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Research paper

Key drug use, health and socio-economic characteristics of young crack users in two Brazilian cities

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ABSTRACT

Background: Crack use constitutes a major problem in cities across Brazil. While existing data suggest that crack use is generally concentrated among disenfranchised young people with extensive health problems and crime involvement, extensive data gaps exist. To address this issue, this study aimed to assess key characteristics of young crack users in two Brazilian cities.
Methods: $N = 160$ regular and young adult (ages 18–24) crack users were recruited by community-based methods in the cities of Rio de Janeiro (Southeast) and Salvador (Northeast). Assessments included an interviewer-administered questionnaire on key social, drug use, health and service use characteristics, as well as serological testing of HBV, HCV and HIV status, and were conducted anonymously between November 2010 and June 2011. Participants provided informed consent and received transportation vouchers following assessment completion. The study was approved by institutional ethics review boards.
Results: The majority of participants were: male, with less than high school education, unstably housed (Rio only); gained income from legal or illegal work; arrested by police in past year (Salvador only); had numerous daily crack use episodes and shared paraphernalia (Salvador only); co-used alcohol, tobacco, cannabis and cocaine; had no injection history; rated physical and mental health as 'fair' or lower (Salvador only); had unprotected sex; were never HIV tested; were not HIV, HBV or HCV positive; and did not use existing social or health services, but desired access to crack user specific services.
Conclusion: Crack users in the two Brazilian sites featured extensive socio-economic marginalization, crack and poly-drug use as well as sexual risk behaviours, and compromised health status. Social and health service utilization are low, yet needs are high. There is an urgent need for further research and for targeted interventions for crack use in Brazil.

Introduction

Crack use has widely proliferated across Brazil since the early 1990s; it is described by many as an 'epidemic' and subject to extensive social and political debate (Andrade, Lurie, Medina, Anderson, & Dourado, 2001; Bastos, Caiaffa, Rossi, Vila, & Malta, 2007; Inciardi et al., 2006). Specifically, the images of '*cracolandias*' – urban neighbourhoods devastated by open crack use and related crime, sex work and violence – strongly shape public impressions of crack use in Brazil (Raupp & Adorno, 2011). Ongoing debates of policy options are torn between a 'war on crack' and more public health-oriented approaches (Brasil, 2010; Lyons, 2012).

Despite the alleged 'epidemic,' available epidemiological data are limited. A concrete estimation of the size of the crack user population is missing; the (lifetime) prevalence of crack use among general adult and student populations is estimated at <1% based on major national surveys; currently, there may be as many as 1 million active crack users in Brazil (Secretaria Nacional Antidrogas, 2006; De Andrade, Vierra Duarte, & de Oliveira, 2010). Similar to the socio-economic patterning of crack use in other countries, crack use is mainly concentrated in marginalized populations. For example, crack use is predominantly common among young and socio-economically disenfranchised street youth (Noto et al.,

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2004). Perhaps unsurprisingly, high levels of crack use have been found among inmates in adolescent detention settings (McLennan, Bordin, Bennett, Rigato, & Brinkerhoff, 2008; Priuli & de Moraes, 2007).

Furthermore, there are indications that treatment demand for crack use has considerably increased in Brazil; in select treatment services, crack and cocaine related treatment seeking increased from <20% to 50% or more (Dualibi, Ribeiro, & Laranjeira, 2008; Dunn, Laranjeira, Da Silveira, Lucia Formigini, & Ferri, 1996). National data on drug-related hospitalizations show that cocaine/crack comprised 5% of all hospitalizations for mental and behavioural disorders in 1999, the highest percentage of all illicit drugs (but still much less than the percentage of cases involving alcohol) (Noto, Moura, Nappo, Galduroz, & Carlini, 2002). However, little general information on drug use characteristics, health profiles, or service needs is available on crack users in Brazil.

Some important characteristics – specifically concerning morbidity, mortality and criminal involvement – have been documented for crack users in Brazil. For example – similar to findings from elsewhere – comorbid mental health problems and other substance abuse are highly prevalent (Zubaran, Foresti, Thorell, Franceschini, & Homero, 2010). In a study of 115 in-treatment crack users, 42% indicated alcohol dependence, 25% Antisocial Personality Disorder (APD), 21% anxiety disorder, 48% depression, and 47% suicidal ideation (Kessler et al., 2012). Several different types or formulations of crack are currently used across Brazil, depending on the region (Bastos, Mendes, Arruda Vierra Duarte, & Bertoni, 2011). Crack users typically report extensive co-use of other drugs – most commonly alcohol, tobacco, cannabis, and cocaine (Andrade, Santiago, Amari, & Fischer, 2011; Guindalini, Vallada, Breen, & Laranjeira, 2006; Nappo, Galduróz, & Noto, 1996; Oliveira & Nappo, 2008; Ribeiro, Sanchez, & Nappo, 2010).

There is evidence of common high-risk sexual behaviours and susceptibility to sexually transmitted infections (STIs) among crack users in Brazil (von Diemen, De Boni, Kessler, Benzano, & Pechansky, 2010). Among 350 street drug users in São Paulo, 40% never used a condom during sex; 14% exchanged sex for money, goods, or drugs, and almost half did so without using condoms (Carvalho & Seibel, 2009). Recent estimates of HIV/AIDS prevalence among illicit drug users in Brazil are 5.9% (Brazilian Ministry of Health, 2012), 10 times the rate in the general population. Importantly, injection drug use (IDU) has substantively decreased in prevalence among street users in recent years in most regions of Brazil, and most feature lower rates of Blood-borne virus (BBV) infections than found among street drug users elsewhere (Malta et al., 2010). Among 125 women crack users in Salvador, Brazil, 1.6% of the participants were HIV+ (Nunes, Andrade, Galvão-Castro, Bastos, & Reingold, 2007). Sexual risk behaviours (e.g., sex-for-drug exchanges) in the context of crack use have been identified as main risk factors for HIV seroprevalence among Brazilian street drug users (de Azevedo, Botega, & Guimaraes, 2007; Malta et al., 2010; Nunes et al., 2007; Passos & Figueiredo, 2004).

Brazilian crack users also exhibit substantively elevated mortality rates (Dualibi et al., 2008). In a 12-year prospective study of 131 crack users in São Paulo (Dias et al., 2011) 21% of the sample ($n = 27$) had died at follow-up, with homicide, HIV/AIDS, and drug overdose as the leading causes of death, representing a 12-fold higher mortality risk than the general population. Ribeiro, Dunn, Laranjeira, and Sesso, (2006) estimated markedly lower five-year survival rates for crack users with a history of IDU (63%) compared to those without (86%).

Similar to evidence from North America (Bennett, Holloway, & Farrington, 2008; Manzoni, Brochu, Fischer, & Rehm, 2006), criminal involvement is common among Brazilian crack users (Oliveira & Nappo, 2008; Ribeiro et al., 2010). Among 294 in-treatment crack/cocaine users, 56% had a history of arrest, and many engaged in illegal activity (e.g., thefts, robbery, drug dealing) to finance their drug use (Dunn & Laranjeira, 1999). Other studies have found higher involvement in property, drug and violent crime and incarceration histories among crack compared to other drug users (Buchanan et al., 2006; Carvalho & Seibel, 2009; Ferri & Gossop, 1999).

Despite these data, there are major data gaps specifically concerning key drug use, health, socio-economic and service need characteristics of crack users in Brazil. In this context, the purpose of this study was to assess these characteristics in a multi-site sample study of young, disenfranchised crack users in Rio de Janeiro (South-Eastern State of Rio de Janeiro) and Salvador (North-Eastern State of Bahia) located in two distinct regions of Brazil. On this basis, this study generated comprehensive data drug use histories and patterns, physical and mental health status, drug use related health risks, social and health service utilization, and key socio-economic markers among young crack users in two marginalized urban settings in Brazil.

Methods

Two community-based samples of street-involved crack users recruited from neighbourhoods of Rio de Janeiro (Jacarezinho) and Salvador (Pelourinho, Calabar, Ribeira, Fazenda Coutos and Valéria) previously identified as key areas for street drug use were assessed. Participant recruitment in both sites was facilitated by community-based contact persons (e.g., community workers) by disseminating information about the study to the study population. Interested potential participants were assessed for eligibility by a brief screening interview. If eligible, participants presented to the local study sites (Manguinhos Emergency Room Unit, Rio; community-based health service sites at the Federal University of Bahia) for assessment. The study's eligibility criteria included: (1) crack use on 3 or more days/week in the last 3 months; (2) 18–24 years of age; and (3) consent to participate in the full assessment protocol. The study excluded persons featuring acute intoxication or mental health episodes or other problematic behaviour impeding assessment.

Individual assessments were conducted in a private room in the local study sites, following provision of informed written consent. Assessments consisted of an interviewer-administered questionnaire with 31 items on socio-demographic, drug use health and service/treatment need characteristics. This questionnaire was developed based on instruments used for similar studies in Canada (Fischer et al., 2010), supplemented with standard Brazilian question items on socio-demographics and sexual risk behaviours (see Berquó & Barbosa, 2008). The draft instrument was pilot-tested ($n = 12$) in both sites, and revised and adapted for comprehension and cultural suitability. Assessments were conducted by 5 interviewers in Rio and 3 in Salvador, all experienced in field research with marginalized population and specifically trained for this study by the lead investigators. The assessments, on average, took 45 min to complete. Following the questionnaire, basic physical data (e.g., height and weight) and blood specimens were collected by a trained nurse for infectious disease testing by venipuncture with Vacutainer® tubes. Nurses also provided pre-BBV test counselling – including basic prevention and treatment information based on Brazilian standards (Ministério da Saúde, 1998)(due to anonymous study procedures test result feedback was not given) – and information on basic health and social services. Sera samples were separated by centrifugation ($1400 \times g$ for 5 min). Following assessment completion, participants received a transportation pass (approximate value: US$ 10) for time and effort.

A total of 175 (95 in Rio; 80 in Salvador) individuals were screened for study eligibility (14 were excluded for age, 1 for drug use criteria); a total of 160 study assessments (81/79)

were completed between November 2010 and June 2011. All data and samples were sent to the Oswaldo Cruz Foundation (FIOCRUZ, Rio de Janeiro) for processing and analysis. Serum samples were stored in microtubes at −20 °C, and the following tests using commercial enzyme immunoassays were conducted at the Viral Hepatitis Laboratory (IOC/FIOCRUZ) based on manufacturer instructions: HBsAg (ETI-MAK-4, Diasorin, Italy), anti-HBc total (ETI-AB-COREK PLUS, Diasorin, Italy), anti-HBs (ETI-AB-AUK-3, DiaSorin, Italy), total anti-HAV (ETI-AB-HAVK PLUS, DiaSorin, Italy), anti-HCV (HCV Ab, Radim, Italy), and anti-HIV (anti-HIV tetra Elisa, Biotest, Germany). All reactive samples were re-tested for results confirmation. Questionnaire data were scanned using Teleform® procedures and manually quality-checked; statistical analyses were performed using Stata v.9. Descriptive data analysis were conducted for variables of interest by site on the total study sample ($n = 160$).

The study protocol was approved by the Ethical Review Committee, Institute of Psychiatry, Federal University of Rio de Janeiro, as well as the Brazilian National Ethics Committee (CONEP 519/2010).

Results

The majority of participants in both sites were male, single, of mixed race or black, with some elementary schooling, and just over 20 years old. Most of the respondents living in Salvador reported living in stable housing, while in Rio the majority reported an unstable housing situation (including living on street; see Table 1).

The largest proportion of respondents in both sites reported income from 'legal or illegal work,' together with various other sources, for income generation in the past 30 days. The largest amounts of income were generated from criminal activity in Rio, and from sex work in Salvador. About half the respondents from Salvador reported non-monetary ways of obtaining drugs specifically related to trading goods, or engaging in drug exchanges and drug-related activities (e.g., middling). About half of the sample in Salvador, and about a quarter in Rio had been arrested in the past year, primarily for drug offences (see Table 2).

Participants reported an average length of 4 (Rio) and 5 (Salvador) years of crack use, respectively, with an average daily consumption of 12 and 8 'rocks' of crack, respectively. The majority in Rio reported crack smoking on plastic cups as their main paraphernalia, whereas in Salvador most used pipes or smoked mixed crack/cannabis cigarettes. In both sites, the majority shared crack paraphernalia with others; most had done so on numerous (i.e., >6 times) occasions in the past month; a small minority reported oral sores or burns. Participants in both sites reported extensive lifetime histories of various legal and illegal drug use; majorities reported current alcohol, tobacco and cannabis (as well as cocaine in Salvador), in addition to crack (see Table 3).

About half of the sample in Rio, and about a quarter in Salvador, reported their physical health status to be 'good' or better. In both sites, just under half reported physical health problems: the majority desired to receive medical attention, but did not. Correspondingly, about half the sample in Rio and a third in Salvador rated their mental health status to be 'good' or better. About half of respondents in both Rio and Salvador reported recent mental health problems, for which virtually none received medical attention despite high levels of interest for such attention. Only two respondents (in Salvador) reported ever having used a drug by injection. In contrast, half of respondents in Rio, and two-thirds in Salvador reported unprotected sex in the past month, with nearly half of these episodes involving multiple partners. About 40% of participants in Rio, and 25% in Salvador had been tested for HIV prior to the study. Serological testing confirmed that a total of 12 participants (3 or 5% in Rio, 9 or 15% in Salvador) were HIV+. In addition, 5 participants in Rio were HBsAg+, and 1 in Salvador was anti-HCV+ (see Table 4).

Virtually no respondents in either site reported utilization of key social and health services (in last 30 days); the main exceptions by prevalence were the use of: food banks (Rio, 26%), shelters (Rio, 12%), and community health centres (Salvador, 11%). However, the

Table 1
Socio-demographic characteristics of sample.

	Rio de Janeiro ($n = 81$)		Salvador ($n = 79$)	
	Range	Mean (SD)	Range	Mean (SD)
Age	18–24	21.2 (2.2)	18–24	20.6 (2.1)
	n	%	*n*	%
Sex				
Male	54	67	70	89
Female	26	32	9	12
Transgendered	1	1	0	0
Colour/race				
White	8	10	5	6
Black	31	38	32	41
Asian	2	3	3	4
Mixed race	40	50	36	46
Indigenous	0	0	1	1
Marital status				
Single	57	71	56	71
Married or cohabitating	11	14	22	28
Other	13	16	1	1
Education				
No formal education	2	3	0	0
Some elementary schooling	67	84	62	79
Completed elementary school	6	8	7	9
Some or completed high school	5	6	10	13
Housing status				
Owns house or family apartment	14	18	41	52
Rented house/apartment/room	4	5	7	9
Unstable housing (including homelessness)	62	77	31	40

Table 2
Income sources, other drug sourcing, and criminal justice involvement of sample.

Income source (past 30 days)	Rio de Janeiro ($n=81$)		Salvador ($n=79$)	
	Received R$ from source n (%)	Value in R$ Mean (SD)	Received R$ from source n (%)	Value in R$ Mean (SD)
Paid work (legal or illegal)	34(42)	727(610)	55(70)	517(588)
Social benefits	3(4)	450(350)	8(10)	474(172)
Gifts, loans	10(12)	478(474)	27(34)	171(116)
Soliciting/begging	20(25)	874(976)	13(17)	257(222)
Sex work	14(17)	1093(508)	6(8)	1342(2167)
Drug dealing	7(9)	1085(452)	11(14)	543(252)
Criminal activity	9(11)	2911(2614)	5(6)	280(215)
Other	6(7)	401(460)	1(1)	130(57)
	n	%	n	%
Non-monetary ways of obtaining drugs (past 30 days)				
Legal services	4	5	6	8
Illegal services	2	3	6	8
Sexual services	7	9	9	11
Trade goods for drugs	5	6	21	27
Drug exchange/middling, etc.	6	7	12	15
Other	12	15	3	4
Arrested by police (past year)	23	28	44	56
Arrested for drug offense	14	17	25	41
Arrested for property offense	5	6	13	25
Arrested for violent offense	3	4	8	16

Table 3
Crack use characteristics of sample.

	Rio de Janeiro ($n=81$) n		Salvador ($n=79$) n	
Number of crack 'rocks' used per average use day				
Mean	12		8	
Median	12		6	
Range	1–50		2–30	
	n	%	n	%
Main ways of using crack (past 30 days)				
Smoking mixed crack and tobacco	1	1	8	10
Smoking mixed crack and cannabis	3	4	27	34
Smoking on soft drink/beer can	1	1	9	11
Smoking on plastic cup	70	87	3	4
Smoking with pipes	2	3	34	43
Shared crack smoking implements (past 30 days)	49	61	44	61
Among sharers, shared > 6 times	41	84	33	76
Had oral sores, wounds, burns in the mouth area (past 30 days)	9	11	14	18
	Lifetime n (%)	Past 30 days n (%)	Lifetime n (%)	Past 30 days n (%)
Other drugs used				
Alcohol	61(75)	21(34)	72(91)	56(73)
Tobacco	76(94)	70(92)	62(79)	59(86)
Cocaine	55(68)	14(26)	67(85)	45(61)
Cannabis	64(79)	42(64)	71(90)	64(85)
LSD	3(4)	0(0)	0(0)	0(0)
Benzodiazepines	5(6)	0(0)	11(14)	3(9)
Opioids	0(0)	0(0)	1(1)	0(0)
Inhalants (including glues, solvents)	42(52)	2(5)	40(51)	5(11)
Amphetamines	6(8)	0(0)	1(1)	0(0)

majority in both sites (74% in Rio, 88% in Salvador) stated that they would utilize basic social or health service facilities for drug users if these were available.

Discussion

Our study's results present several important insights and implications. First, our sample indicated disproportionately high levels of ethnic minorities (e.g., blacks), low educational status and, at least in Rio, unstable housing conditions. These data are consistent with findings of studies from Brazil and elsewhere, documenting street-level crack use to be highly concentrated among marginalized and disenfranchised young urban populations, even when compared to other drug use populations (Andrade et al., 2001; Fischer & Coghlan, 2007; Fischer et al., 2006; Nunes et al., 2007). Notably, characteristics of socio-economic marginalization (e.g., unstable housing) are documented as a key predictor of increased morbidity or mortality risk among street drug use populations (Corneil et al., 2006; Walley et al., 2008); the role of these in this specific sample requires further examination.

Table 4
Key health risks and status indicators of sample.

	Rio de Janeiro ($n = 81$)		Salvador($n = 79$)	
	n	%	*n*	%
Physical health status (past 30 days)				
Excellent, very good, or good	43	53	19	24
Fair or poor	38	47	54	68
Physical health problems (ast 30 days)	32	40	36	46
Among those receiving medical attention	4	13	9	25
Would like to receive medical attention	24	75	30	83
Mental health status (past 30 days)				
Excellent, very good, or good	45	56	30	37
Fair or poor	35	44	44	56
Mental health problems (past 30 days)	30	37	44	56
Among those receiving medical attention	0	0	2	4
Would like to receive medical attention	17	57	32	73
Ever injected a drug	0	0	2	3
Unprotected sex (past 30 days)	45	56	53	67
Among those had unprotected sex with 2 + partners (not including regular partner)	21	45	25	46
Ever tested for HIV				
Yes	34	42	20	25
Reported that they tested HIV+ (among those tested)	2	5	3	15
HIV+ (serology)	3	3.7 [95%CI:0–7.8]	9	11.2 [95%CI: 4.2–18.2]
Hep B+ (HBSAg)	5	6.2 [95%CI: 9–11.5]	0	0
Hep C+ (HCVAB)	0	0	1	1.3 [95%CI: 0–3.8]

As is the case for many other street drug use populations (DeBeck et al., 2007; Leigey & Bachman, 2007; Stewart, 2009), the sample generated income from a diversity of legal and illegal sources. While the proportion of those reporting criminal and drug dealing activities was not as high as in some other crack using samples (Booth, Kwiatkowski, & Chitwood, 2000; Chettiar, Shannon, Wood, Zhang, & Kerr, 2010; Shannon et al., 2008), these participants, depending on site, generated among the highest amounts of income required in the context of high expenditures on crack. The study sample also featured high rates of arrest and hence intensive criminal justice system involvement, as shown for other crack user populations. Arrest rates – related to mainly drug but also property and violent offences – were notably higher in Salvador; it requires further investigation whether this is indeed an expression of higher crime activity or more intensive law enforcement activity targeting crack users in that locale.

Several substance use specific characteristics of the sample are noteworthy. In both sites, intensive crack use patterns (e.g., numerous daily use episodes) were common. However, a heterogeneous picture of main ways of crack use emerged – e.g., with crack smoking on plastic cups most common in Rio, and crack pipe or combined crack/cannabis use most common in Salvador – suggesting regionally different crack use 'cultures.' The sharing of crack implements was reported by the majority in both sites. Such sharing behaviour has been identified as a key concern among other crack user samples as it may function as a risk pathway for BBV (e.g., hepatitis C virus [HCV]) transmission (Fischer, Powis, Firestone Cruz, Rudzinski, & Rehm, 2008; Scheinmann et al., 2007; Tortu, McMahon, Pouget, & Hamid, 2004). However, a relatively small proportion reported oral burns or sores common among crack users elsewhere, especially when using hazardous makeshift implements made from metal or glass (Faruque et al., 1996; McMahon & Tortu, 2003). Samples in both sites indicated intensive current co-use patterns of other substances in addition to crack, involving tobacco and cannabis, as well as alcohol and cocaine (in Salvador). It is documented that the co-use of crack with cannabis is a common 'harm reduction' method among many crack users in South America; however, the combined intensive smoking patterns of these various substances may result in problematic (e.g., pulmonary-bronchial) effects on users (Andrade et al., 2011; Haim, Lippmann, Goldberg, & Walkenstein, 1995; Restrepo et al., 2007). Interestingly, users in both sites reported high lifetime but low current prevalence levels of inhalant/stimulants; similar patterns were observed for both alcohol and cocaine use in Rio. Further investigation is needed to examine the causes of these distinct drug use pathways, also as these potentially relate to (e.g., the initiation of) crack use itself.

While about half the Rio sample self-reported both their physical and mental health status to be 'good' or better, these ratings were substantially lower in Salvador; the specifics of these differences (e.g., whether related to subjective factors or concrete interventions) will need to be examined. Among those reporting physical or mental health problems, most did not, yet would have liked to receive medical care for these problems. These data suggest a high unmet need for care for health problems in the study population, the potential reasons of which (e.g., a potential lack of services, or non-utilization of existing services due to potential access barriers, stigma, etc.) also need to be further investigated in order to facilitate improved health care for the study population. Notably, virtually no respondents had ever used a drug by injection, confirming a trend of an absence of drug injection among street drug users in most regions of Brazil (Andrade et al., 2001; Burattini et al., 2005; Inciardi et al., 2006; Malta et al., 2008; Nunes et al., 2007). The strong benefits of such non-injection patterns are that IDU-related behaviours (e.g. needle-sharing) well documented as primary risk factor for BBV transmission are absent in these groups, contributing to substantively lowered BBV risks and prevalence levels (Thorpe et al., 2002; Gibson, Flynn, & Perales, 2001; Malta et al., 2010). Conversely, a majority of the sample actively engaged in sexual (e.g., unprotected sex) risk behaviours, and about half of these did so intensively, e.g. with multiple partners. A substantive share of these sexual risk behaviours may occur in the context of sex work or sex-for-drug activities, as reported above. Given the important role of sex-related risks for BBV transmission, and their high prevalence (as compared to IDU) in the sample, targeted BBV prevention measures among crack users in the study settings urgently need to focus on sex-related risks.

While hepatitis B virus (HBV) and HCV rates were low in the study sample – especially when compared to substantially higher rates among crack user populations elsewhere, e.g. in North America (DeBeck et al., 2009; Fischer et al., 2010; Tortu, Neaigus, McMahon, & Hagen, 2001) – the prevalence of HIV in the population likely (especially in Salvador) needs to be considered to be high. Given the virtual absence of IDU behaviours, most of these infections likely ought to be attributed to sexual risk behaviours, underscoring the need for targeted prevention measures in this area. For example, brief targeted psycho-social interventions for sex-related risks among crack users have shown positive results (Leukefeld et al., 2005; Sterk, Theall, & Elifson, 2003; Williams et al., 2012), and should be systematically delivered to the study population. This appears even more important, since only a minority of participants had ever been BBV tested, i.e., would know about their status, and on that basis are informed and able to initiate appropriate interventions.

Finally, the utilization of social and health services by the study population, despite the reported high levels of social and health needs, was markedly low, and mainly limited to the use of select social services by a few participants. Since the majority of participants reported that such services were generally 'available,' and a fairly large variety of relevant health and social services (e.g., through local Alcohol & Other Drugs Psychosocial Centres, Community Health Centres, Social Assistance Centres and Therapeutic Communities as well as in-patient treatment facilities, most of which are provided publicly and free-of-charge) (Vaissman, Ramoa, & Serra, 2008) are on offer in both sites, the barriers to better service utilization in the study population should be investigated. These barriers may be related to logistical factors (e.g., distance, transportation, opening hours) the perceived nature and quality of services offered, or factors like discrimination or stigma (Macmaster, 2005; Rapp et al., 2006; Wechsberg, Zule, Riehman, Luseno, & Lam, 2007). Given that majorities in both sites indicated interest in using services specifically offered for drug users, these major disjunctures between current service needs and utilization need to be better understood and effectively ameliorated.

This study features some important limitations. This exploratory study was based on a convenience sample with small numbers that cannot be generalized or considered representative of other crack users in Brazil. The exploratory nature also points to the need for further in-depth investigation of many results in each of the research domains. Many of the characteristics (e.g., housing) or behaviours (e.g., sexual behaviour, drug use patterns) described may be influenced by local cultural or ecological factors, or other extrinsic factors not explicitly assessed. Finally, the study relied largely on self-report data which cannot be objectively verified and may lead to inaccurate reporting of certain information (e.g., as influenced by social desirability dynamics). However previous studies have shown good validity of such data from similar study samples (Darke, 1998).

Our study examined social, drug use and health indicators of young street level crack users in two Brazilian cities, confirming extensive socio-economic marginalization, crack and poly-substance use, and unmet health and social service needs, many of which have been documented by studies of crack use populations elsewhere. There is an urgent need especially for improved comprehensive targeted prevention and treatment interventions for the study population to reduce future morbidity and mortality outcomes in this (young) drug user population. In particular, the targeted prevention of prevalent sex risk behaviours relevant for BBV transmission, yet also treatment intervention for poly-drug use and other physical and mental health problems need to be addressed through effective interventions for the high-risk population of crack users in Brazil.

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Conflict of interest

None.

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