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# Sociodemographic and clinical profile of crack cocaine treatment-seeking individuals living in “Crackland”, Brazil

*Perfil sociodemográfico e clínico de indivíduos em busca de tratamento para o uso de crack que vivem na “Cracolândia”*

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## ABSTRACT

**Objective:** São Paulo’s Crackland is the biggest and oldest open drug use scene in Brazil, yet little is known about the profile of crack cocaine treatment-seeking individuals living in this region. The aim of this cross-sectional study was to describe the demographics and clinical characteristics of treatment-seeking crack users living in the Crackland region. **Methods:** A sample of ninety eight individuals were screened for DSM-V substance use disorders, including substance use, impulsiveness, and psychiatric symptoms. Recent crack cocaine use was also tested using biologic specimens. **Results:** Results indicated severe social vulnerability, as participants experienced high rates of homelessness (46.9%), unstable housing (50%), unemployment (60.4%) and early school drop-out (27.5%). The average age of crack use onset was 20 years (SD = 6.9) and the mean duration of continuous crack use was 15 years (SD = 9.7). Most participants presented with concomitant mental health disorders, particularly alcohol use disorder (87.8%), as well high rates of psychiatric symptomatology and impulsiveness. More than half of the sample reported at least one previous inpatient (73.5%) and outpatient (65.3%) addiction treatment attempt. **Conclusion:** This population profile should inform mental healthcare services, promoting the provision of tailored assistance by targeting specific demands at all levels of treatment.

## KEYWORDS

Crack, cocaine, Crackland, cocaine use disorder, treatment.

## RESUMO

**Objetivo:** Localizada em São Paulo, a Cracolândia é o maior e mais antigo cenário aberto de uso de drogas do Brasil. Ainda assim, pouco se sabe sobre o perfil dos indivíduos que vivem nessa região e buscam tratamento para *crack*. O objetivo deste estudo transversal foi descrever características demográficas e clínicas de usuários de *crack* vivendo na região da Cracolândia que estão em busca de tratamento. **Métodos:** Noventa e oito indivíduos foram avaliados para transtornos por uso de substâncias do DSM-V, padrão de uso de substâncias, impulsividade e sintomatologia psiquiátrica. O uso recente de *crack* também foi determinado por meio de coleta de amostras toxicológicas. **Resultados:** Os resultados indicaram grave vulnerabilidade social, com significativas prevalências de falta de moradia (46,9%), moradia instável (50%), desemprego (60,4%) e abandono escolar precoce (27,5%). A idade média de início do uso de *crack* foi de 20 anos (DP = 6,9) e a duração média do uso contínuo do *crack* foi de 15 anos (DP = 9,7). A maioria dos participantes apresentou alguma comorbidade psiquiátrica, particularmente transtorno por uso de álcool (87,8%), bem como altas taxas de sintomatologia psiquiátrica e impulsividade. Mais da metade da amostra relatou pelo menos uma tentativa anterior de tratamento por internação (73,5%) e ambulatorial (65,3%). **Conclusão:** Os achados desse estudo permitem um maior entendimento do perfil e das necessidades de usuários de *crack* vivendo na região da Cracolândia e podem ajudar serviços de saúde especializados em dependência química a promoverem uma assistência mais direcionada às demandas específicas dessa população.

## PALAVRAS-CHAVE

Crack, cocaína, Cracolândia, transtorno por uso de cocaína, tratamento.

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## INTRODUCTION

For the last half-century, crack cocaine (“crack”) use has steadily increased in Brazil, making the country the biggest crack cocaine market in the world<sup>1</sup>. As a result, the last few decades have been marked by a steep increase in the demand for crack cocaine use disorder (CUD) treatments<sup>2</sup>, with crack use becoming the leading cause of hospitalization, when compared to any other illicit substance use<sup>3</sup>.

The easy access, wide and ready availability combined with the low cost of crack have contributed to its widespread use in all regions of the country, with over 98% of Brazilian cities reporting problems related to crack use and most presenting open crack use scenes<sup>4</sup>. Today, crack use impacts all spheres of Brazilian society, yet it remains remarkably prominent among the most socioeconomically vulnerable<sup>5</sup>.

Crack use is associated with severe psychiatric comorbidities, such as alcohol and multiple substance use disorders, anti-social personality disorder, major depression, and anxiety<sup>6-9</sup>. When compared to the general population, individuals who use crack are more likely to be unemployed, homeless, involved in illegal activities such as drug trafficking, and have a history of incarceration<sup>2,5,10,11</sup>. Crack use is also associated with early school drop-out, exposure to violence, prostitution, risky sexual behaviors, and high rates of sexually transmitted diseases such as HIV, hepatitis, and syphilis<sup>11-13</sup>. Consequently, mortality among crack users is 12 times higher than in the general population<sup>14</sup>.

The high prevalence of crack use, the severity of CUD, and the socioeconomic disparities in Brazil have contributed to the emergence of “Cracolândia” (Crackland). Located in downtown São Paulo (Brazil’s most populated city), Crackland is the oldest and largest open drug scene in the country, where thousands of socially vulnerable individuals live in extreme poverty and appalling conditions in order to openly use crack cocaine<sup>4</sup>. Even though this open drug use scene has existed for at least three decades, there is a lack of research that focuses on this population. An in depth understanding of the characteristics of individuals who use crack in the Crackland region could offer important insights into the profile and treatment needs of this specific population and improve healthcare services by informing the development of more tailored interventions for this unique population. The aim of this observational, cross-sectional study was to characterize the demographics, clinical profiles, and history of treatment among individuals who use crack and seek treatment in the addiction treatment center located at the epicenter of Crackland.

## METHODS

### Study location

This study was conducted at *Unidade Recomeço Helvetia* (URH), a State-funded public treatment program situated in

the heart of Crackland. The URH is an open-access treatment program that offers a range of interventions for crack users in different stages of recovery.

### Sample

Between January 2018 and January 2020, 111 individuals seeking treatment at URH were screened for eligibility for this study. The inclusion criteria were: being 18 years of age or older and having a current CUD diagnosis, according to *The Diagnostic and Statistical Manual of Mental Disorders, 5<sup>th</sup> Edition* (DSM-V)<sup>15</sup>. Individuals with multiple substance use disorders were included if crack cocaine was reported as their primary use disorder. A total of 13 participants were excluded from the study for being younger than 18 years of age ( $n = 3$ ), not consenting to participate in the study ( $n = 4$ ), or not having CUD as their primary use disorder ( $n = 6$ ). As a result, our sample was comprised of 98 participants.

### Assessments

Interviews for this investigation were conducted in private rooms by two research assistants and one research coordinator, lasted up to 90 minutes, and included the collection of demographic information, pattern of substance use, and treatment history. The assessment battery included the Brazilian Economic Classification Criteria<sup>16</sup>; the Structured Clinical Interview for DSM-V Disorders<sup>17</sup>; the Alcohol, Smoking and Substance Involvement Screening Test (ASSIST)<sup>18</sup>; the Barratt Impulsiveness Scale (BIS-11)<sup>19</sup>; and the Brief Symptom Inventory (BSI)<sup>20</sup>. At the end of the interview, recent crack cocaine use was assessed with a rapid cocaine urine screening test (Abon Biopharm, Hangzhou, China).

This study was approved by the Research Ethics Committee of the Federal University of São Paulo and by the Ethics Committee of the Brazilian National Ministry of Health (Protocol No. CAAE 00745912.4.0000.5505). Descriptive statistics were performed using Stata 15.1. Dichotomous variables are presented as percentages and absolute numbers and continuous variables are presented as means and SD.

## RESULTS

### Demographics

As seen in table 1, our sample had mean age of 38.7 years and was predominantly male (84.7%) and single (87.8%). Blacks accounted for over half of the sample (54.1%), followed by Whites (43.9%). The mean level of education was low (8.7 years of schooling), with less than a third of participants (27.5%) holding a high school degree. Furthermore, over half of the participants (60.8%) were unemployed, and only a small portion of the sample was employed (4.1%). As a result,

according to the Brazilian Economic Classification Criteria<sup>16</sup>, the majority of the sample (96.9%) was comprised of individuals from Brazil's lowest socioeconomic class. Unstable housing was also common for the participants, with half of them living in some form of assisted housing and nearly half (46.7%) of them living on the streets of Crackland. While half of the sample reported currently living in assisted housing, over 90% of the total sample reported having previously slept on the streets of Crackland, with more than half (55.1%) reporting sleeping on the streets for over a month.

**Table 1.** Demographics, patterns of crack cocaine use, concomitant substance use disorders, psychiatric symptomatology, and impulsivity among treatment-seeking crack users living in Crackland

VARIABLE	N = 98
Age (years), mean (SD)	38.7 (9.5)
Male sex, n (%)	83 (84.7)
Race	
Black, n (%)	53 (54.1)
White, n (%)	43 (43.9)
Asian, n (%)	2 (2)
Marital status	
Single, n (%)	86 (87.8)
Married, n (%)	5 (5.1)
Divorced, n (%)	7 (7.1)
Education	
Years of schooling, mean (SD)	8.7 (2.7)
High school degree, n (%)	27 (27.5)
Occupation	
Formal employment, n (%)	4 (4.1)
Informal employment, n (%)	34 (34.7)
Unemployed, n (%)	60 (60.4%)
Socioeconomic classa	
A, n (%)	0
B, n (%)	1 (1)
C, n (%)	2 (2)
D, n (%)	0
E, n (%)	95 (96.9)
Housing, n (%)	
Currently homeless, n (%)	46 (46.9)
Living in assisted housing, n (%)	49 (50)
Living on own or in family home, n (%)	3 (3.1)
Days sleeping on the streets in the last 3 months	
Didn't sleep on the streets, n (%)	8 (8.2)
Less than a week, n (%)	24 (24.5)
1 to 4 weeks, n (%)	12 (12.2)
More than a month, n (%)	54 (55.1)
Has slept on the streets due to crack use, n (%)	90 (91.8)

VARIABLE	N = 98
Pattern of crack use	
Age at onset of crack use (years), mean (SD)	20.6 (6.9)
Duration of crack use (years), mean (SD)	15 (9.7)
Crack-positive urine sample, n (%)	48 (48.9)
Frequency of crack use in the last three months.	
Up to three days per month, n (%)	39 (39.8)
At least once per week, n (%)	19 (19.4)
Two to four days per week, n (%)	17 (17.3)
Five or more days per week, n (%)	23 (23.5)
Number of crack rocks smoked per day, mean (SD)	8.2 (7.8)
Concomitant substance use disorders	
Multiple substance use disorders, n (%)	72 (73.5)
Alcohol use disorder, n (%)	86 (87.8)
Tobacco use disorder, n (%)	67 (68.4)
Marijuana use disorder, n (%)	43 (43.9)
ASSIST scores	
Cocaine (crack), mean (SD)	24.1 (11.8)
Alcohol, mean (SD)	17.1 (12.4)
Tobacco, mean (SD)	16.3 (10.6)
Marijuana, mean (SD)	9.5 (10.1)
Treatment history	
Attended self-help group meetings due to crack use, n (%)	49 (50)
Received outpatient treatment for crack dependence, n (%)	64 (65.3)
Received inpatient treatment for crack dependence, n (%)	72 (73.5)
Number of previous inpatient treatments, mean (SD)	3.6 (5.1)
Number of previous treatment attempts, mean (SD)	4.8 (5.7)
Psychiatric symptomatology (BSI)	
Positive symptom total, mean (SD)	33.6 (11.3)
Global severity index, mean (SD)	1.2 (0.6)
Depression, mean (SD)	1.4 (1)
Anxiety, mean (SD)	1.3 (0.8)
Hostility, mean (SD)	1.2 (0.9)
Interpersonal sensitivity, mean (SD)	1.4 (1)
Obsession-compulsion, mean (SD)	1.5 (0.9)
Phobic anxiety, mean (SD)	1 (0.9)
Paranoid ideation, mean (SD)	1.6 (0.8)
Psychoticism, mean (SD)	1.5 (0.9)
Somatization, mean (SD)	0.9 (0.7)
Impulsivity (BIS-11)	
Total (overall impulsiveness), mean (SD)	79.5 (8.6)
Attentional impulsiveness, mean (SD)	21.9 (6.1)
Motor impulsiveness, mean (SD)	27.7 (3.9)
Non-planning impulsiveness, mean (SD)	29.9 (4.1)

<sup>a</sup>The Brazilian Economic Classification Criteria questionnaire (ABEP 2012) was used to stratify the participants by socioeconomic class from A to E, with Class A being the highest and Class E being the lowest.

ASSIST: Alcohol, Smoking and Substance Involvement Screening Test; BSI: Brief Symptom Inventory; BIS-11: Barratt Impulsiveness Scale, version 11; SD: standard deviation.

## Crack cocaine use and treatment

The mean age at the onset of crack use was 20 years old, and the mean duration of continuous crack use was 15 years. Nearly a quarter (23.5%) of the sample reported using crack at least five days per week; smoking, on average, 8.2 rocks of crack per day.\* Approximately half of the participants (48.9%) submitted a positive urine sample for crack cocaine at treatment intake. Moreover, concomitant DSM-V diagnoses of other substance use disorders were common, with 73.5% meeting the criteria for multiple substance use disorders, 87.8% meeting the criteria for alcohol use disorder, 68.4% meeting the criteria for tobacco use disorder, and 43.9% meeting the criteria for marijuana use disorder. As expected, the ASSIST mean score was higher for cocaine (i.e., crack) (24.1), followed by alcohol, tobacco, and marijuana (17.1, 16.3, and 9.5, respectively). By assessing the history of CUD treatment, we found that half of our sample had attended mutual help meetings, 65.3% had received outpatient treatment, and 73.5% had been previously admitted to an inpatient treatment program (e.g., therapeutic communities, psychiatric and clinical hospitals). The mean number of previous treatment attempts was 4.8.

## Psychiatric symptoms and impulsivity

When assessing the psychiatric symptomatology of the participants, we found that the mean global indices of distress measured with the BSI were 33.6 for the Positive Symptom Total (ranging from 0 to 53) and 1.2 for the Global Severity Index (ranging from 0 to 4). As for the nine symptom dimensions of the BSI, the highest mean score was observed in the paranoid ideation dimension (mean = 1.6), while the lowest mean score was observed in the somatization dimension (mean = 0.9). Finally, the levels of impulsiveness measured with the BIS-11 were also high, with the mean overall impulsiveness score being 79.5 and the mean domain scores for attentional impulsiveness, motor impulsiveness, and non-planning impulsiveness being 21.9, 27.7, and 29.9, respectively.

## DISCUSSION

Located in downtown São Paulo, Crackland has emerged as a region where thousands of individuals gather to openly use crack in the streets. To our knowledge, this is the first study to examine the profile of treatment-seeking individuals who use crack and are living in this area.

In agreement with previous descriptive studies<sup>5,21</sup>, our sample was composed mostly of men with low educational attainment who were unemployed and homeless. Such findings are consistent with previous studies and highlight the social vulnerability experienced by most individuals who use crack. In contrast, however, the proportion of participants with unstable housing (including those who were homeless), the proportion of participants who reported recently sleeping in the streets, and the proportion of participants characterized as being in Brazil's lowest socioeconomic class were particularly high in our sample compared to what has been observed in previous studies<sup>8</sup>. This suggests that, among the individuals who use crack, those living in Crackland may endure more pronounced socioeconomic marginalization.

The pattern of crack use, including the early age of onset, the high frequency and quantity of use, and the long duration of continuous use, is aligned with previous findings and offers additional evidence of the severe, compulsive, and chronic nature of CUD<sup>12</sup>. Furthermore, the high prevalence of concomitant substance use disorders, particularly alcohol use disorder, as well as the high rates of psychiatric symptomatology and impulsiveness among those who use crack have been previously reported<sup>7,8</sup> and underscore the high comorbidity of this disorder as well as the impulsive traits among crack users. Finally, the high number of failed treatment attempts, including both in- and outpatient treatment attempts, make clear the limited efficacy of the existing public treatments for CUD and highlight the chronic relapsing nature of typical CUD recovery patterns.

This study offers a brief while concise description of profile, problems and needs of treatment-seeking crack users living in Crackland. Based on these findings, treatment interventions for this population should consider mitigating social-economic barriers to treatment by assisting patients on how to obtain housing, job skills and work. In addition, pharmacological treatments targeting psychiatric comorbidities such as depression, anxiety and alcohol use disorder may also assist on the treatment of this population.

This study has several limitations that should be considered. First, relevant information related to psychosocial variables such as exposure to violence, prostitution, involvement with the criminal justice system, and infectious disease status were not investigated. Second, only participants who had crack cocaine as their primary substance use disorder were included in this study. Even though only a small number of individuals (n = 6) did not meet this criterion during the screening process, we may have observed different findings – including less severe health and social conditions – if individuals with a secondary diagnosis of CUD were included. Finally, our sample was composed of crack cocaine treatment-seeking adult individuals living in Crackland and did not include those living in this area who were under

\* We reported the number of rocks of crack rather than the number of grams of cocaine since in Brazil crack is sold in rocks and not in grams. Thus, crack users commonly report the number of rocks smoked but cannot determine the number of grams of cocaine smoked.

the age of 18 or those who did not seek treatment. As such, it is unclear whether our findings can be generalized to all individuals who use crack and live in Crackland, and it is important to recognize that we may not have gathered information from some of the most vulnerable individuals living in this area. Despite its limitations, this study still offers some important insights into the demographics, history, and pattern of crack use, as well as concomitant substance use disorders, psychiatric symptomatology, and impulsivity, among crack cocaine treatment-seeking individuals living in Crackland.

## CONCLUSIONS

When compared to previous studies, our findings suggest that individuals with CUD living in Crackland are socioeconomically more vulnerable but show similar histories and patterns of use when compared to individuals with CUD living in other regions and contexts in Brazil. The lack of treatment efficacy portrayed by the high number of previous treatment attempts made by our sample seem to be influenced by a confluence of factors related to the severity of CUD and the social marginalization to which most crack users in Brazil are exposed. Further studies that include non-treatment seeking individuals, a larger sample of women, and that investigate other relevant information, such as exposure to violence, crime involvement, and sexually transmitted diseases are necessary to better understand the profile and treatment needs of this extremely vulnerable population. Longitudinal studies that evaluate same participants in multiple time-points are also necessary to better understand the progression of this disorder.

## INDIVIDUAL CONTRIBUTIONS

**André Q. C. Miguel** – Designed the study, planned the analyses, and wrote the initial draft of the manuscript.

**Clarice S. Madruga, Claudio J. da Silva, Ronaldo R. Laranjeira and Jair J. Mari** – Designed the study, contributed to the written manuscript.

**Viviane Simões** and **Rodolfo Yamauchi** – Contributed to data collection, interpretation of data, and the written manuscript.

**Crystal L. Smith, John M. Roll** and **Sterling M. McPherson** – Contributed to the statistical analyses, interpretation of data, and the written manuscript.

## CONFLICT OF INTEREST

All authors declare that they have no conflicts of interest.

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