DOI: 10.1590/1413-81232022276.16522021

Housing characteristics of crack cocaine users in Northeast Brazil, 2011-2013

Raquel Rodrigues dos Santos (https://orcid.org/0000-0002-6657-5769) [1]
Mariana de Andrea Villas Boas Hacker (https://orcid.org/0000-0003-0418-8760) [2]
Jurema Corrêa da Mota (https://orcid.org/0000-0002-5007-1590) [3]
Francisco Inácio Bastos (https://orcid.org/0000-0001-5970-8896) [3]

Abstract *We compared sociodemographic characteristics, substance use patterns, sexual behavior, use of health services, and criminal records of homeless vs. domiciled users. Data are from the Brazilian National Survey on Crack Use. A discriminant model and correspondence analysis cross-compared characteristics of users according to their housing status. The logistic model revealed associations between "living in the streets" and female gender and intermittent work. "Homelessness" was also associated with the use of tobacco and "oxi" in the previous 30 days, reliance on soup kitchens, low access to public mental health services, and arrests in the previous year. Correspondence analysis highlighted the spatial proximity of the variables as follows: "having traded sex for drugs", "informal work", "age 31 years or older", "access to public mental health services", "problems with law enforcement", and female gender with homeless crack users. People who smoke crack cocaine in Northeast Brazil are seldom studied. Their profiles, stratified according to their housing conditions, show subgroups with specific characteristics. While domiciled users have access to specialized clinics, homeless users basically reported access to free food and harm reduction services.*

Key words *Social vulnerability, Crack cocaine, Homeless persons*

[1] Escola Nacional de Saúde Pública Sérgio Arouca, Fundação Oswaldo Cruz (Fiocruz). R. Leopoldo Bulhões 1480, Manguinhos. 21041-210 Rio de Janeiro RJ Brasil. rackelsanthos@hotmail.com
[2] Laboratório de Hanseníase, Instituto Oswaldo Cruz, Fiocruz. Rio de Janeiro RJ Brasil.
[3] Laboratório de Informações em Saúde, Instituto de Comunicação e Informação Científica e Tecnológica em Saúde, Fiocruz. Rio de Janeiro RJ Brasil.

Introduction

According to law enforcement agencies, healthcare professionals, and healthcare services, crack cocaine use in Brazil began in the 1990s as part of an illicit market in São Paulo (both the state capital and greater metropolitan area), with a growing demand for a cheap and highly portable drug, featuring small rocks at a low unit cost[1,2]. Prevalence of crack consumption increased substantially from 2001 to 2005, spreading rapidly across various regions of Brazil, including major urban areas, medium and small cities, and the countryside[3,4].

In the United States, the public health emergency from crack cocaine use had occurred in the previous decade, when the new drug, initially rare and whose production was semi-artisanal[5], and first used experimentally or circumstantially, began to be consumed continuously or more often intermittently (alternating periods of intense use or binges with states of apathy and exhaustion)[6], creating harmful and addictive use[7].

Meanwhile, the harmful and addictive use of crack cocaine exacerbates the expanded vulnerability of homeless persons. Homeless crack users face various adversities and characteristic obstacles from their homelessness such as lack of a private or protected space for personal hygiene and eating or even for storing their clothing and food. This same population often has difficulty accessing public services, since they lack identification papers or suffer explicit or veiled discrimination due to their precarious hygiene, prejudice on the part of public services staff, and the users' own distrust towards services, especially the services' real or hypothetical connection to law enforcement agencies and the possibility of being victims of abuse, violence, or arbitrary detention[8].

An example of the way housing status affects crack users' health was evidenced by a study in Ottawa, Canada, in 2002-2003, in which the working hypothesis was that homeless persons are more exposed to different forms of victimization (verbal violence, aggression, and sexual violence) when compared to the population with stable housing, thus jeopardizing homeless people´s mental health and physical integrity. The results showed that a history of sexual abuse in childhood and other common stressful factors in unsheltered populations had a negative and often lasting impact on their mental health[9].

The health of homeless crack users is usually compromised, while conventional health services are largely unprepared to deal with this population. The scientific literature from the United States, Canada, and United Kingdom (2012-2016) systematized the main characteristics of primary care programs that have dealt successfully with homeless patients: multidisciplinary approaches, linkage between general medical services and mental health, and social support[10].

The current study analyzes crack users´ housing status, an essential element in the approach to this population, even before therapeutic approaches in the strict sense (e.g., pharmacotherapy and psychotherapy). Access to housing is a key element, even if users experience additional problems such as hunger and violence. Various studies emphasize "housing first", that is, prioritizing shelter and if possible a regular domicile for these homeless users[11]. We compare the sociodemographic characteristics, drug use patterns, sexual behavior, use of social and health services, and record of arrest or imprisonment of domiciled and homeless crack users in Northeast Brazil.

Methods

Design

The present study is a survey that uses and analyzes secondary data from the *National Survey on Crack Use*, conducted in 2011-2012 in the five major geographic regions of Brazil, financed by the National Secretariat for Drug Policies (SENAD) under the Ministry of Justice and Public Security and coordinated by Fiocruz.

The secondary data were extracted from the questionnaire in the "Epidemiological Survey" of the above-mentioned National Survey, based on a probabilistic sample of users of crack and similar cocaine-based drugs in Brazil's 26 state capitals, the Federal District, nine metropolitan areas, and a "Brazil" stratum consisting of medium and small municipalities, In the local dimensions (i.e., the set of drug use scenes), time-location sampling (TLS) was used[12]. TLS was employed for selection of the sites and periods for conducting the research, using inverse sampling in the last selection stage (i.e., the potential interviewee). The study sample consisted of Brazilians 18 years or older who had used crack and/or similar cocaine-based drugs for at least 25 days in the six months prior to the interview (i.e., who had used the substance at least once a week) in open drug use scenes[1]. The selection stages in each geographic stratum and the procedures for

Ciência & Saúde Coletiva, 27(6):2407-2416, 2022

recruiting volunteers in the National Survey are described in detail in the supplementary material to the article by Coutinho *et al.*[13]. Additional details on the questionnaire and methodology are available at https://www.arca.fiocruz.br/handle/icict/46271.

The current study selected the Northeast region, the second most populous of Brazil´s five major geographic regions with approximately 47 million inhabitants and with the third largest territory, covering nine states: Maranhão, Piauí, Ceará, Rio Grande do Norte, Pernambuco, Alagoas, Sergipe, Paraíba, and Bahia[14].

Housing conditions and selected variables

The dichotomous variable "housing" was built with the question on the place where the user lived or spent/slept most nights in the 30 days prior to the interview: "homeless" vs. "some type of housing (own or third-party)".

The study analyzed variables potentially associated with housing status, such as sociodemographic data, drug use patterns, risk of infections/infectious diseases, sexual behaviors and practices, health status, access to and use of social and treatment services, and involvement with criminal justice. These sections of the questionnaire do not correspond to substructures of a hierarchical and/or causal nature (there is no consensus in the literature on a hierarchical structure of proximal/medial/distal determinants). The division used here strictly follows the questionnaire's logical structure.

Statistical analysis

The study used discriminant statistical methods to identify characteristics differentiating between groups according to the crack users' housing status.

All statistical analyses were performed according to the sampling plan used in the study: its complex nature, weighting, and underlying interdependences. Absolute and relative frequencies were calculated for the selected characteristics according to housing status. Chi-square test of homogeneity was used for categorical variables, with 5% level of significance.

Multiple interrelation was explored via discriminant analysis through logistic regression, becoming "properly housed" as reference category. The multivariate analysis started by considering logistic regressions between variables from the same thematic block from the study questionnaire, according to the principle of parsimony, that is, selecting the fewest variables that best predicted housing status. Intermediate models were adjusted with more flexible level of significance ($p \leq 0.200$)[15]. The final model was built using the stepwise method, maintaining the variables with 5% level of significance.

The joint relations between target variables and housing status were analyzed through multiple correspondence analysis. This analysis considered the proximity between categories of variables, measured by the Euclidian distance between them, besides the variables' relative contribution in the dimension, a multivariate representation of interdependence between these relations, to visualize in this perceptual mapping the characteristics situated closer to (vs. farther from) and more closely related to the subgroups under analysis[16]. In the two-dimensional graphic representation of the categories of variables, each axis represents how much variability in the set of data is explained by each[16].

Ethical aspects

The study protocol was approved in full by the Institutional Review Board of the Sergio Arouca National School of Public Health (ENSP/Fiocruz), as well as by the respective municipal and state committee when this additional demand was raised. For purposes of this sub-study (Northeast region), there was a new submission to the above-mentioned IRB, approved under number CAAE 15952819.0.0000.5240.

Results

In the Northeast region, 2,828 crack users were interviewed, 819 of whom (29.0%) were homeless (Table 1).

Most interviewees in the sample were males (85.6%; vs. the subset of homeless users, with 74.5%). A significant difference appeared in work: domiciled users were engaged more frequently in regular work (42.1%; vs. homeless users with 19.4%) (Table 1).

Homeless individuals were more vulnerable in terms of sexual behavior, with a frequent lifetime report of sexual violence, as well as higher rates of HIV infection (seropositivity), when compared to domiciled individuals (Table 1).

Statistical evidence shows that a higher number and proportion of homeless users used free food services and harm reduction programs

when compared to domiciled users. Meanwhile, users with housing (vs. homeless) were more likely to report access to addiction treatment services such as Centers for Psychosocial Care in Addiction (hereinafter "CAPS-ad", as in the original Portuguese acronym) in the previous 30 days (Table 1).

Homeless users reported more involvement with the criminal justice system, with more frequent lifetime reports of arrest and imprisonment when compared to domiciled users.

A statistically significant difference was also seen between domiciled and homeless users in relation to consumption of tobacco and "oxi" (an "emic" designation for a variant of base paste/crack) in the previous 12 months. Domiciled users were more likely to consume tobacco and "oxi" than homeless ones. In the previous 30 days, the statistically significant difference was maintained in the frequency of tobacco and oxi consumption (Table 1).

Table 2 shows the logistic regression with the variables that proved significantly associated with belonging to each subset ("homeless" vs. domiciled), in each block (sociodemographic, drug use, sexual behavior, social and treatment

Table 1. Crack users' profile stratified by housing status in Northeast Brazil.

Sociodemographic characteristics	Domiciled		Homeless		Total
	n	%	n	%	
Age**					
18-30	817	40.7	296	36.1	1,113
31 years or older	1,191	59.3	523	63.9	1,714
Sex					
Male	1,716	85.6	609	74.5	2,325
Female	289	14.4	209	25.5	498
Work					
Regular	837	42.1	157	19.4	994
Sporadic	696	35.0	354	43.8	1,050
Unemployed	457	23.0	297	36.7	754
Sexual behavior					
Received money or drugs for sex in the previous 30 days	300	19.5	177	28.2	477
Positive HIV test	64	3.4	57	7.1	121
Lifetime sexual violence	249	12.6	186	23.5	435
Social and treatment services and criminal record					
Free food service	131	6.6	231	28.6	362
Specialized clinic	97	4.9	17	2.2	115
CAPS-ad***	234	11.8	56	6.9	290
Harm reduction program*	27	1.3	40	5.0	67
Arrest in the previous year*	836	41.7	389	48.0	1,225
Lifetime history of imprisonment*	791	39.8	425	52.7	1,216
Drug use in the previous 30 days					
Tobacco*	1,583	78.9	721	88.0	2,304
Merla*	134	6.7	30	3.7	164
Oxi*	54	2.7	51	6.3	105
Drug use in the previous 12 months					
Tobacco*	1,612	80.3	728	88.9	2,340
Merla*	164	8.2	44	5.4	208
Oxi*	184	9.2	165	20.1	349

*Values unavailable (0.1% in domiciled users 0.5% in homeless users), refusals, does not know; **Epidemiological criterion, ***Centers for Psychosocial Care in Addiction.

Source: Authors.

services, criminal justice), as well as the final model, with variables independently associated with the outcome.

In Figure 1, the first dimension (Dim1) explains 73% of the data's variability, and the second dimension (Dim2) explains 27% of the variability. The figure also shows the proximity of the variables "exchanges sex for drugs", "without work (unemployed)", age 31 years or older, "tobacco use", "not having accessed CAPS-ad in the previous 30 days", "problems with criminal justice (arrested or imprisoned)", and "female gender" with the fact of a subset of crack users being homeless, which indicates a joint relationship (potentially synergistic) between them, defining a cluster of associated factors to be explored in the future for their causal interrelations[17].

Meanwhile, and observing the graphic representation, relations of proximity are evidenced between domiciled crack users and "age 18-30 years", "lack of report of exchanging sex for drugs", "regular work", "male gender", "tobacco use", and "no involvement with criminal justice".

The relationship of relative distancing from the variable "female gender" is confounded by this population's smaller sample fraction (compared to the large number of male interviewees), observable in this study and in the literature on users in contexts of crack cocaine dealing and use[18,19].

Discussion

This study represents a geographic cross-section of a nationwide survey and compares characteristics of crack users in open drug use scenes in terms of their housing status (domiciled vs. homeless) in Northeast Brazil. The vulnerability of homeless crack users has been discussed frequently in international studies[20-23]. In Brazil, studies on crack cocaine abuse are often held in convenience samples in therapeutic institutions focused on drug users' management and treatment[24,25]. Even these are heavily concentrated in the country's more industrialized regions, the

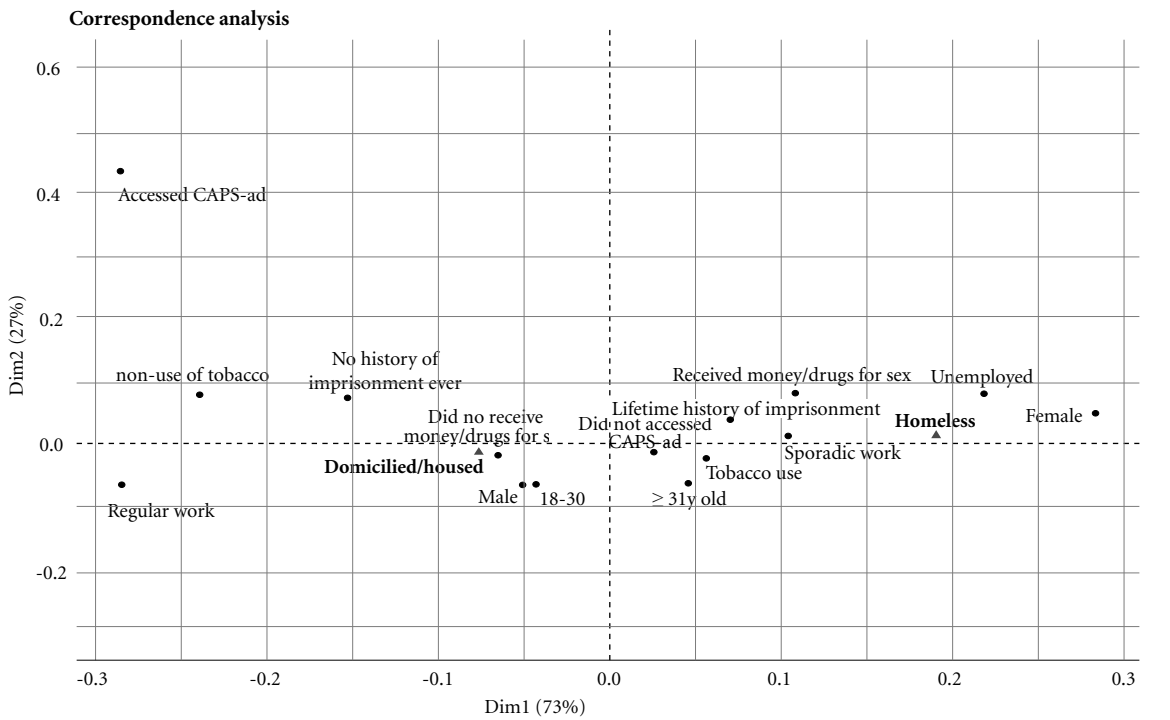

Figure 1. Correspondence analysis.

Source: Authors.

Table 2. Final multivariate model.

Variable	Crude OR (95%CI)	Adjusted OR (95%CI)
Age (Ref.:31 years or older)		
18-30	0.81(0.59-1.13)	0.79(0.58-1.07)
Sex (Ref.: Male)		
Female	1.67(1.01-2.77)	1.96(1.21-3.18)
Work (ref.: regular work)		
Sporadic work	2.28(1.53-3.40)	2.45(1.69-3.55)
Unemployed	2.61(1.60-4.24)	2.73(1.70-4.38)
Tobacco use in previous 30 days	1.73(1.07-2.79)	1.80(1.11-2.90)
Merla use, previous 30 days	0.57(0.22-1.50)	-
Oxi use, previous 30 days	3.31(1.35-8.13)	3.06(1.26-7.47)
Lifetime history of sexual violence	1.52(0.92-2.51)	-
Free food services	0.17(0.09-0.35)	0.17(0.08-0.34)
Specialized clinic		
No	2.56(0.95-6.90)	-
CAPS-ad (Ref.: Yes)		
No	2.63(1.52-4.56)	2.88(1.65-5.01)
Arrest in previous year	1.07(0.69-1.64)	1.15(0.75-1.78)

Source: Authors.

Southeast and South, which are also the ones concentrating the research centers on this topic in Brazil.

A nationwide survey of homeless people in 71 Brazilian cities in 2007 found that 15.7% consisted of beggars or panhandlers. The rest were engaged in various forms of informal work[26]. An ethnographic study in 2012-2013 at Praça da Sé, a site with a large concentration of homeless people in the city of São Paulo, showed that the work market on the streets was based on precarious and unstable occupations that mixed the informal market (frequently illicit), the presence of legal and illegal drugs, and intermittent police raids[27]. In the current study, homeless users were mostly related to informal work or lack of work altogether, while domiciled users were more frequently associated with regular work, evidencing a similar profile to that identified by studies that have detected weaknesses resulting from lack of income, a fact that can potentially exacerbate crack users' health conditions.

The characteristics associated in this study with sex/gender are consistent with the literature, indicating a growing number of homeless women (although still the minority) who consume crack[24,25]. A crosscutting study of 919 users (783 men and 136 women) in 2012 and 2013 in two large cities in central Brazil (Goiânia and Campo Grande) showed differences in crack use patterns between women and men: women consumed more crack, were more likely to trade sex for drugs/money, had more sexual partners, engaged more frequently in risky sexual behaviors such as inconsistent condom use, and reported more sexual violence[28,29]. In addition to the consistency between sex/gender and housing conditions, the current study also found a similar profile among women users, who reported more frequent exchange of sex for drugs/money.

Homeless users were more vulnerable to the simultaneous use of drugs and thus to the synergistic adverse effects of crack and tobacco. Both substances seriously affect the respiratory tract (increased risk of lung cancer) and mouth (increased risk of periodontitis, visible plaque, and gingival bleeding)[30-32].

"Homelessness" was associated with difficulty in access to treatment services because homeless users reported less frequent access to services and assistance from CAPS-ad and specialized clinics in the previous 30 days. Brazil's Law 10.216 of April 6, 2001, rules on the mental health care model, consisting of services according to population/nosographic complexity: CAPS-I, CAPS-II, CAPS-III, CAPS-i II, and CAPS-ad II. These services feature outpatient care with beds for detoxification and rest[33].

This situation was described in a study of crack users in Rio de Janeiro in 2010 and 2011,

which discussed the difficulty in access to drug treatment services (and other health services) by marginalized users (due to precarious schooling or housing). Another important point is the insufficient amount of CAPS-ad to meet current needs, despite a substantial increase in demand for care in previous years. Unsheltered users also report other barriers to care: healthcare professionals who are unreceptive to homeless people, the need for ID papers (generally unavailable to these users), services insufficiently adapted to the target population, and lack of social support programs to help them treat their drug addiction[34].

No variable from the "sexual behavior" block remained in the study´s final model, probably due to the central relevance of the other variables associated with poor housing status, which has been documented even in studies in high-income countries[35]. Various studies in Canada, where social inequalities are less pronounced than in Brazil and services are quite widely available (although still short of the needs), highlight the association between risky sexual behaviors and habits and users' marginalization[36]. Canadian studies emphasize the association between crack use and sexual vulnerability and inconsistent condom use. In this context, homeless youth prove to be more vulnerable than youth in general in terms of sexual relations (frequently unprotected) with multiple partners, engaging in commercial sex, and increased risk of sexually transmissible infections[28,37].

Another adverse factor inherent to homelessness is the exposure to a high-risk environment in terms of sharing substance use paraphernalia such as straws, pipes, and other devices. Widespread violence was also observed among female crack users, independently of exchanging sex for drugs[28].

The fight against crack cocaine's rapid expansion in the USA, especially in the 1980s and 1990s, had a huge impact on the U.S. prison system, since the sentences for crack and cocaine dealers were hugely exaggerated and disproportional: five grams of crack or 500 grams of cocaine were subject to the same five-year prison sentence[38]. This legal ruling and other measures and prejudices targeting minorities contributed to the mass incarceration of African Americans and poor populations in the United States, since crack, a cheap drug widely accessible in areas where these minorities lived and/or interacted, was sold and consumed by low-income populations, while high-cost cocaine was consumed more frequently by middle-class whites[39]. These disparities in convictions for crack and cocaine were discussed in a study in 51 states and the District of Columbia in 2009/2012, which interviewed 154,328 non-institutionalized individuals[40].

The most frequent characteristics of homeless crack users were trading sex for drugs, informal work, age 31 years or older, lower attendance at addiction services such as CAPS-ad (probably due to the above-mentioned barriers), problems with criminal justice, and female gender (very likely due to the profound gender inequality in Brazilian society)[41].

The study´s limitations include the cross-sectional design, which does not allow inferring causality or the temporal direction of the observed associations. Thus, there is no way of knowing whether harmful/addictive crack use is associated with the individual's homelessness, that is, whether homelessness precedes harmful use or the opposite. The observed associations probably present recursiveness, which is frequently investigated in Cybernetics and Systems Theory[42] but rarely explored by classical epidemiology (for additional information, see https://www.arca.fiocruz.br/handle/icict/46271).

The study also analyzed a structural phenomenon that does not correspond to the classical sense of outcome in epidemiology and thus cannot be adequately covered by the traditional risk concept[43].

Problematic crack use and its association with absent or precarious social capital and little or no income among users (and their families and peer networks) is a central issue for debate. Numerous structural factors are related to the context in which crack users interact and live, such as their erratic life experience[36], besides various contextual aspects in the micro, meso, and macro social dimensions, such as lack of housing, unemployment, the work market´s impermeability to persons with no schooling or professional qualifications, stigma, marginalization of this population, especially when homeless, and lack of care and treatment services[8].

Conclusion

The results for crack users' profile stratified by their housing status reveal the existence of two subgroups with specific characteristics. While domiciled users have access to services in CAPS-ad and other specialized clinics, homeless users basically only report access to free food and harm reduction services.

There have been substantial changes in drug policies in recent years, with closing of analogous programs to "Housing First" in Brazil, while such programs are still a central strategy in drug policy in the vast majority of countries such as the USA and Canada[44] and various Western European countries[11].

The fact that population-based surveys lack prospective applicability does not detract from their central role as a benchmark by which policies and actions can and should be assessed[45].

In Brazil, especially in the Northeast, there are few publications on homeless crack users in open drug use scenes, despite this population´s obvious vulnerability. The context of marginalization has proven to be associated with the use of other drugs, irregular work, and history of arrest. Such factors appear to be interrelated in complex ways, while it is not currently possible to discern their direction and the possible interactions between the multiple psychosocial and contextual factors (e.g., drug use scenes and services) under analysis.

In the health policies sphere, knowledge of crack users' profile according to their housing conditions may provide important backing for drafting public health policies targeted to this vulnerable population's specificities and needs.

Collaborations

RR Santos, MAVB Hacker and FI Bastos participated in the conception and design of the study. RR Santos, JC Mota and MAVB Hacker analyzed the data. RR Santos wrote the article and was in charge of the literature review. FI Bastos overviewed the critical review of the manuscript. All authors approved the final version of the article.

Funding

The original survey was funded by a contract with SENAD. New analyses were carried out in the context of FAPERJ "Health Network program" grant (E-26/010.002428/2019), coordinated by FI Bastos. JC Mota is a senior statistician of the FAPERJ network. FI Bastos is a CNPq career scientist.

The views and opinions expressed in this article are those of the authors and do not necessarily reflect the official policy or position of any agency of the Brazilian government.

References

1. Bastos FI, Bertoni N, organizadores. *Pesquisa Nacional sobre o uso de crack.* Rio de Janeiro: ICICT/Fiocruz; 2014.
2. Nappo SA, Galduróz JC, Noto AR. Crack use in São Paulo. *Subst Use Misuse* 1996; 31(5):565-579.
3. De Boni RB, Bastos FI, Vasconcellos M, Oliveira F, Limberger RP, Pechansky F. Drug use among drivers who drank on alcohol outlets from Porto Alegre, Brazil. *Accid Anal Prev* 2013; 62(2014):137-142.
4. Zeferino MT, Fermo VC, Fialho MB, Bastos FI. Semelhanças e contrastes nos padrões de uso de crack em Santa Catarina, Brasil: capital vs Meio Oeste. *Cien Saude Colet* 2017; 22(1):97-106.
5. Watkins D. *The cook up: a crack rock memoir.* Nova York: Grand Central Publishing; 2017.
6. Chaves TV, Sanchez ZM, Ribeiro LA, Nappo SA. Fissura por crack: comportamentos e estratégias de controle de usuários e ex-usuários. *Rev Saude Publica* 2011; 45(6):1168-1175.
7. Cornish JW, O'Brien CP. Crack Cocaine Abuse: An Epidemic with Many Public Health Consequences. *Annu Rev Public Health* 1996; 17:259-273.
8. Souza J, organizador. *Crack e exclusão social.* 2ª ed. Brasília: Ministério da Justiça e Cidadania; 2016.
9. Rattelade S, Farrell S, Aubry T, Klodawsky F. The Relationship Between Victimization and Mental Health Functioning in Homeless Youth and Adults. *J Interpers Violence* 2014; 29(9):1606-1622.
10. Jego M, Abcaya J, Ştefan D-E, Calvet-Montredon C, Gentile S. Improving Health Care Management in Primary Care for Homeless People: A Literature Review. *Int J Environ Res Public Health* 2018; 15(309):1-21.
11. Hwang SW, Burns T. Health interventions for people who are homeless. *Lancet* 2014; 384:1541-1547.
12. Stueve A, O'Donnel LN, Duran R, Doval AS, Blome J. Time-space sampling in minority communities: results with young Latino men who have sex with men. *Am J Public Health* 2001; 91(6):922-926.
13. Coutinho C, Bastos LS, Mota JC, Toledo L, Costa K, Bertoni N, Bastos FI. The risks of HCV infection among Brazilian crack cocaine users: incorporating diagnostic test uncertainty. *Sci Rep* 2019; 9(443):1-9.
14. Instituto Brasileiro de Geografia e Estatística (IBGE). *Cidades e Estados*. Rio de Janeiro: IBGE; 2018.
15. Wasserstein RL, Lazar NA. The ASA Statement on *p* -Values: Context, Process, and Purpose. *Am Stat* 2016; 70(2):1-18.
16. Hair Junior JF, Anderson RE, Tatham RL, Black WC, Sant'Anna AS, organizadores. *Análise multivariada de dados.* 5ª ed. Porto Alegre: Bookman; 2005.
17. Hernandez LM, Blazer DG, organizadores. *Genes, behavior, and the social environment: moving beyond the nature/nurture debate.* Washington, D.C.: National Academies Press; 2006.
18. Limberger J, Nascimento RS, Schneider JA, Andretta I. Women users of crack: systematic review of Brazilian literature. *J Bras Psiquiatr* 2016; 65(1):82-88.
19. Sterk CE. *Fast lives: women who use crack cocaine.* Philadelphia: Temple University Press; 1999.
20. McVicar D, Moschion J, Van Ours JC. From substance use to homelessness or vice versa? *Soc Sci Med* 2015; 136-137:89-98.

21. Dunne EM, Burrell LE, Diggins AD, Whitehead NE, Latimer WW. Increased risk for substance use and health-related problems among homeless veterans. *Am J Addict* 2015; 24(7):676-680.
22. Phillips M, Richardson L, Wood E, Nguyen P, Kerr T, DeBeck K. High-Intensity Drug Use and Health Service Access Among Street-Involved Youth in a Canadian Setting. *Subst Use Misuse* 2015; 50(14):1805-1813.
23. Tyler KA, Handema R, Schmitz RM, Phiri F, Kuyper KS, Wood C. Multi-Level Risk and Protective Factors for Substance Use Among Zambian Street Youth. *Subst Use Misuse* 2016; 51(7):922-931.
24. Halpern SC, Scherer JN, Roglio V, Faller S, Sordi A, Ornell F, Dalbosco C, Pechansky F, Kessler F, von Diemen L. Vulnerabilidades clínicas e sociais em usuários de crack de acordo com a situação de moradia: um estudo multicêntrico de seis capitais brasileiras. *Cad Saude Publica* 2017; 33(6):1-13.
25. Sá LC, Araújo TME, Griep RH, Campelo V, Monteiro CFS. Seroprevalence of Hepatitis C and factors associated with this in crack users. *Rev Lat-Am Enferm* 2013; 21(6):1195-202.
26. Tiengo VM. O Fenômeno População em Situação de Rua Enquanto Fruto do Capitalismo. *Textos Contextos* 2018; 17(1):138-150.
27. Diniz BF. O discurso sobre a vadiagem na praça da sé (SP). *Psicol Soc* 2016; 28(2):341-349.
28. Duff P, Tyndall M, Buxton J, Zhang R, Kerr T, Shannon K. Sex-for-Crack exchanges: associations with risky sexual and drug use niches in an urban Canadian city. *Harm Reduct J* 2013; 10(29):1-8.
29. Guimarães RA, Castro VOL, Oliveira SMVL, Stabile AC, Motta-Castro RC, Carneiro MAS, Araujo LA, Caetano KAA, Matos MA, Teles SA. Gender differences in patterns of drug use and sexual risky behaviour among crack cocaine users in Central Brazil. *BMC Psychiatry* 2017; 17(412):1-8.
30. Barsky SH, Roth MD, Kleerup EC, Simmons M, Tashkin DP. Histopathologic and Molecular Alterations in Bronchial Epithelium in Habitual Smokers of Marijuana, Cocaine, and/or Tobacco. *J Natl Cancer Inst* 1998; 90(16):1198-205.
31. Antoniazzi RP, Zanatta FB, Rösing CK, Feldens CA. Association Among Periodontitis and the Use of Crack Cocaine and Other Illicit Drugs. *J Periodontol* 2016; 87(12):1396-1405.
32. Gaio DC, Bastos FI, Moysés SJ, Moysés ST, Mota JC, Nicolau B, Ignacio S, Cubas MR, Vettorazzi MLT, Santos ZFDG, Werneck RI. Assessing oral health of crack users in Brazil: Perceptions and associated factors, findings from a mixed methods study. *Glob Public Health* 2021; 16(4):502-516.
33. Brasil. Ministério da Saúde (MS). Portaria nº 336, de 19 de fevereiro 2002. Dispõe sobre a proteção e os direitos das pessoas portadoras de transtornos mentais e redireciona o modelo assistencial em saúde mental. *Diário Oficial da União*; 2002.
34. Cruz M, Bertoni N, Bastos FI, Burnett C, Gooch J, Fischer B. Comparing key characteristics of young adult crack users in and out-of-treatment in Rio de Janeiro, Brazil. *Subst Abuse Treat Prev Policy* 2014; 9(1):2-7.
35. Palepu A, Patterson ML, Moniruzzaman A, Frankish CJ, Somers J. Housing First Improves Residential Stability in Homeless Adults With Concurrent Substance Dependence and Mental Disorders. *Am J Public Health* 2013; 103(S2):30-36.
36. Maté G. *In the realm of hungry ghosts: close encounters with addiction.* Berkeley: North Atlantic Books; 2010.
37. Tucker JS, Ryan GW, Golinelli D, Ewing B, Wenzel SL, Kennedy DP, Green Jr. HD, Zhou A. Substance Use and Other Risk Factors for Unprotected Sex: Results from an Event-Based Study of Homeless Youth. *AIDS Behav* 2012; 16(6):1699-1707.
38. England DC. Criminal Defense Lawyer. *Crack vs. Powder Cocaine: One Drug, Two Penalties* [Internet]. [cited 2021 fev 01]. Available from: https://www.criminaldefenselawyer.com/resources/crack-vrs-powder-cocaine-one-drug-two-penalties.htm.
39. Vagins DJ, McCurdy J, organizadores. *Cracks in the System: Twenty Years of the Unjust Federal Crack Cocaine Law.* Washington, D.C.: ACLU; 2006.
40. Palamar JJ, Davies S, Ompad DC, Cleland CM, Weitzman M. Powder cocaine and crack use in the United States: An examination of risk for arrest and socioeconomic disparities in use. *Drug Alcohol Depend* 2015; 149:108-116.
41. Ayres JRCM. *Sobre o risco: para compreender a epidemiologia.* São Paulo: Hucitec; 1997.
42. Drack M, Pouvreau D. On the history of Ludwig von Bertalanffy's "General Systemology", and on its relationship to cybernetics – part III: convergences and divergences. *Int J Gen Syst* 2015; 44(5):523-571.
43. Susser M, Stein Z. *Eras in epidemiology: the evolution of ideas*. Oxford, New York: Oxford University Press; 2009.
44. Watson DP, Shuman V, Kowalsky J, Golembiewski E, Brown M. Housing First and harm reduction: a rapid review and document analysis of the US and Canadian open-access literature. *Harm Reduct J* 2017; 14(1):1-13.
45. Papaioannou T, Rush H, Bessant J. Benchmarking as a policy-making tool: from the private to the public sector. *Sci Public Policy* 2006; 33(2):91-102.

Article submitted 18/03/2021
Approved 03/12/2021
Final version submitted 05/12/2021

Chief editors: Romeu Gomes, Antônio Augusto Moura da Silva