Craving in crack cocaine users according to individual and behavioral characteristics*

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Abstract

Objective: to analyze variation in craving levels according to individual and behavioral characteristics of crack cocaine users at two public treatment services in Pelotas, Rio Grande do Sul, Brazil. **Methods:** this was a cross sectional study with a sample of 133 participants; the Cocaine Craving Questionnaire scale was used to verify craving levels. **Results:** 86% of interviewees had moderate and severe craving levels; regarding individual factors, a higher level of severe craving was found in women (45%), those with brown skin color/"mestizos" (60%), low schooling (46%) and minor psychiatric disorders (59%); regarding behavioral factors, the level of severe craving was higher in users who divorced the last year (44%), those who had problems with the Law (61%), those who practiced violence acts (57%), those using more than four psychoactive substances (67%), and those with heavy crack consumption (57%). **Conclusion:** almost all crack users were found to have high craving levels; these were proportionally higher in some individual and behavioral variables.

Keywords: Crack Cocaine; Craving; Health Vulnerability; Drug Users; Social Determinants of Health; Cross-Sectional Studies.

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Introduction

Craving is the most prominent disorder related to crack cocaine use. Characterized as an intense desire to consume the substance, craving is one of the factors related to drug use pattern,[1-3] being a substance dependence diagnosis criterion, found both in the Tenth Revision of International Statistical Classification of Diseases and Related Health Problems (ICD-10) and also in the Diagnostic and Statistical Manual of Mental Disorders.[4] The urgent need to use crack and craving intensity pose risks associated with abusive use as a public health problem.[2]

Aspects related to social vulnerability, such as inequality, violence, the shortage of State investment in education, culture and health,[5] among others, may be associated with crack consumption. The influence of craving on the body is mainly related to changes observed in the users' mood, behavior and thoughts,[6,7] therefore it is essential to understand the relationship between social determinants of health and craving in the crack addict population.

These determinants are related to a person's living conditions and are characterized by social, economic, cultural, ethnic/racial, psychological and behavioral factors to which the individual is submitted. Social determinants influence all dimensions of the populations' health-disease process, not only individually but also collectively.[8]

> *The influence of craving on the body is mainly related to changes observed in the users' mood, behavior and thoughts.*

The objective of this study was to analyze variation in craving levels according to individual and behavioral characteristics of crack cocaine users at two public treatment services.

Methods

This is a descriptive study of drug users registered at the Psychosocial Care Center for Alcohol and Other Drug Users and also at the Harm Reduction service in the municipality of Pelotas, located in the state of Rio Grande do Sul, Brazil, in the year 2012. The choice of both of these specialized services was justified by the intention to include the largest possible number of drug users served by the municipality's public health services.[9]

Drug users aged 18 years old or older, living in the city of Pelotas and registered with and attending the city's public treatment services were eligible for this study.

To calculate the sample size, we adopted 50% crack user prevalence, since no previous estimate was available, allowing for a sampling error of 4% at a 95% confidence level. We used the total of individuals who were registered in the two services (N=5,900) for the denominator. With the aim of meeting the study's objectives, we set a target of 680 users to be interviewed.

The variables selected for analysis were:

a) Sociodemographic
- sex (male; female);
- age group (in years: less than 20; 20-24; 25-29; 30-39; 40-49; 50 and older);
- ethnicity/skin color (white; black; brown);
- marital status (single, married/stable relationship; divorced/widowed);
- education level (no formal education; elementary school; high school and technical education; higher education);
- family income (in monthly minimum wages: no income/less than 1; 1-2; 2 or more); and
- occupation (unemployed; formal employment; informal employment; self-employed worker).

b) Health problems
- existence of health problem (yes; no); and
- common mental disorders (negative; positive).

c) Have children (yes; no)

d) Events that have occurred in the last year
- divorce/separation;
- imprisonment or problems with the Law;
- change in financial condition;
- practiced violent act;
- suffered violent act; and
- suffered sexual violence.

e) Crack cocaine use
- period of crack use (in years: less than 1; 1-5; 6-10; 10 or more);
- pattern of use (mild, moderate; heavy);
- use associated with another drug (yes; no); and
- number of psychoactive substances used on the same day (1; 2-3; 3 or more).

f) Craving level (minimum; mild, moderate, severe)

The existence of common mental disorders was measured with the Self-Reporting Questionnaire-20 (SRQ-20) scale.[10] This scale consists of a questionnaire with 20 questions, using as a cutoff point 8 or more positive answers for suspected presence of disorders.

The Cocaine Craving Questionnaire-Brief (CCQ-B) was used to measure crack users' craving level. It had ten questions of the Likert scale type, the score of which is measured by simple addition. Craving levels are classified into four groups: minimum (0 to 11 points); mild (12 to 16 points); moderate (17 to 22 points); and severe (23 points and more).[3]

All data were collected by using structured questionnaires with crack users.

Quality control was performed in three stages: field supervision; data encoding supervision; and repeating questionnaires, through random selection of 5% of the questionnaires and checking key questions.

Data input was done using the Microsoft Access application and data were then exported to Stata version 12 for analysis, the initial stage of which consisted of descriptive and exploratory analyses using frequency distributions, descriptive measures and variable dispersion measures. In the second stage, bivariate analyses aimed to identify proportional differences between independent variables and crack users' craving levels, through the chi-square test for linear trend, using a 5% statistical significance level.

The research design followed the ethical principles recommended by the National Health Council/Ministry of Health, and was approved by the Research Ethics Committee of the Universidade Federal de Pelotas' Nursing School: Report No. 301/2011.

Results

Of the 681 users randomly selected for the study, 505 were interviewed. Losses and refusals amounted to 26% (n=176), mainly due to refusal to sign a Free and Informed Consent Form. Among the interviewees, 133 reported crack use and they formed the study's sample.

The majority of interviewees were male (84%), average age was 32 (SD=9.4). White ethnicity/color had 56% prevalence. Single people accounted for 71%, and 80% had complete or incomplete elementary education. Regarding occupational situation, 32% were unemployed, 15% had formal employment, 29% had informal employment and 24% were self-employed workers.

In relation to craving levels, 6 users had a minimum level, 12 had a mild level, 58 had a moderate level and 57 had a severe level of craving. The average score on the CCQ-Brief scale was 28 (SD=12.4).

Table 1 shows the distribution of craving levels. Higher prevalence (60%) of severe craving was found among users who stated their ethnicity/color was brown or mestizo, when compared to prevalence found among other users (p=0.045).

With regard to users who reported positive SRQ, 34 (59%) had severe craving levels, and 19 (33%) had moderate levels (p=0.014).

Table 2 shows that 48% of users with children had severe craving levels, while 61% of users without children had moderate levels (p=0.045).

Proportional differences were statistically significant between craving levels and the following events: have divorced or separated (p=0.040) and have committed violent acts (p=0.029) in the last year.

Distribution of craving levels according to the number of drugs used showed that 67% of those who use four or more psychoactive substances had severe craving levels (p=0.042).

Discussion

The majority of interviewees had moderate or severe craving levels. Severe craving levels were found among users who stated their ethnicity/color was brown, those who had common mental disorders, those who had children, those who used four or more psychoactive substances together with crack cocaine and those who had divorced and/or practiced any violent act in the last year.

The participants' predominant profile was male, around 30 years old, single, with low schooling and low income. This participant profile is similar to the one found by a study conducted in Psychosocial Care Centers in the Brazilian state of Minas Gerais in 2011,[11] as well as being similar to that found by the 2013 national survey on crack cocaine use in Brazilian capitals.[12]

Although crack abuse is not restricted to socially and economically disadvantaged classes, characteristics of social exclusion are more predominant among them when compared to the general population.[12,13] Standing out among these characteristics in our study is the female sex: in spite of being fewer in the sample, women had higher craving levels when compared to their male peers.

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Table 1 – Craving levels according to individual characteristics of crack users (n=133) served by public specialized treatment services in the city of Pelotas, Rio Grande do Sul, 2012

Variables	Total		Craving level								P-value[a]
			Minimum 0-11		Mild 12-16		Moderate 17-22		Severe ≥23		
	n	%	n	%	n	%	n	%	n	%	
Sex											
Female	22	16.5	2	9.1	1	4.6	9	40.9	10	45.4	0.248
Male	111	83.5	4	3.6	11	9.9	49	44.1	47	42.3	
Age group (in years)											
<20	6	4.5	0	0.0	1	16.7	2	33.3	3	50.0	
20-24	25	18.8	0	0.0	1	4.0	16	64.0	8	32.0	
25-29	31	23.3	1	3.2	1	3.2	12	38.7	17	54.9	
30-39	50	37.6	5	10.0	8	16.0	18	36.0	19	38.0	0.983
40-49	16	12.0	0	0.0	1	6.2	8	50.0	7	43.8	
≥50	5	3.8	0	0.0	0	0.0	2	40.0	3	60.0	
Ethnicity/skin color											
White	74	55.6	2	2.7	9	12.2	34	45.9	29	39.2	
Black	34	25.6	3	8.8	2	5.9	16	47.1	13	38.2	0.045
Brown skin color/ "mestizo"	25	18.8	1	4.0	1	4.0	8	32.0	15	60.0	
Marital status											
Single	94	70.7	4	4.3	11	11.7	40	42.5	39	41.5	
Married/stable relationship	26	19.5	2	7.7	1	3.8	13	50.0	10	38.5	0.942
Divorced/widowed	13	9.8	0	0.0	0	0.0	5	38.5	8	61.5	
Schooling											
None	1	0.8	0	0.0	0	0.0	0	0.0	1	0.8	
Elementary school	107	80.4	6	5.6	7	6.5	45	42.1	49	45.8	0.083
High school and technical education	21	15.8	0	0.0	4	19.1	11	52.4	6	28.6	
Higher education	4	3.0	0	0.0	1	25.0	2	50.0	1	25.0	
Family income (in monthly minimum wages - MMW)											
No income/<1 MMW[b]	43	32.3	3	7.0	0	0.0	17	39.5	23	53.5	
1-2 MMW[b]	46	34.6	3	6.5	5	10.9	21	45.6	17	37.0	0.304
>2 MMW[b]	44	33.1	0	0.0	7	15.9	20	45.5	17	38.6	
Occupation											
Unemployed	43	32.3	3	7.0	5	11.6	15	34.9	20	46.5	
Formal employment	20	15.0	1	5.0	1	5.0	11	55.0	7	35.0	0.863
Informal employment	38	28.6	0	0.0	3	7.9	18	47.4	17	44.7	
Self-employed worker	32	24.1	2	6.2	3	9.4	14	43.8	13	40.6	
Health problems											
No	80	60.2	4	5.0	7	8.8	34	42.5	35	43.7	0.674
Yes	53	39.8	2	3.8	5	9.4	24	45.3	22	41.5	
Common mental disorder (estimated by SRQ-20[c])											
Negative	75	56.4	4	5.3	9	12.0	39	52.0	23	30.7	0.014
Positive	58	43.6	2	3.4	3	5.2	19	32.8	34	58.6	

a) Chi-square test for linear trend.
b) MMW: monthly minimum wage was BRL 622.00 in 2012.
c) SRQ-20: Self-Reporting Questionnaire-20, with 20 questions.

Other predominant factors were self-declared brown or black ethnicity/color, low schooling and unemployment or precarious employment, suggesting that the process of social marginalization may precede substance use.

Impulsive behavior, resulting from higher craving levels,[2] may explain some of the events in the interviewees' lives in the last year. Standing out among them are changes in financial conditions, imprisonment or problems with the Law, suffering and/or committing violent acts.

Studies show that craving levels will be higher the longer crack is used for and the greater the amount used.[11,14] We also found this pattern in our study: the highest craving levels were found in users who used the substance for a longer time.

In order to cope with craving, crack users usually take other psychoactive substances either together or interspersed with crack.[15] However, our study showed that the more substances were taken, the heavier the craving levels were, reaching 67% severe craving for those who used four or more substances on the same day.

There was a statistically significant relation between the presence of common mental disorders and craving levels. Correct identification of psychiatric comorbidities is necessary, because they work as an aggravating factor,

Table 2 – Craving levels according to behavioral characteristics of crack users (n=133) served by public specialized treatment services in the city of Pelotas, Rio Grande do Sul, 2012

Variables	Total		Craving level								P-value[a]
			Minimum 0-11		Mild 12-16		Moderate 17-22		Severe ≥23		
	n	%	n	%	n	%	n	%	n	%	
Have children											
No	41	31.1	0	0.0	3	7.3	25	61.0	13	31.7	0.045
Yes	91	68.9	6	6.6	9	9.9	32	35.2	44	48.3	
Events in the last year											
Divorce/separation	34	25.6	4	11.8	1	2.9	14	41.2	15	44.1	0.040
Imprisonment or problems with the Law	51	38.4	0	0.0	5	9.8	15	29.4	31	60.8	0.305
Change in financial condition	58	43.6	1	1.7	6	10.3	27	46.6	24	41.4	0.239
Practiced violent act	37	27.8	2	5.4	1	2.7	13	35.1	21	56.8	0.029
Suffered violent act	45	33.8	2	4.4	3	6.7	18	40.0	22	48.9	0.345
Suffered sexual violence	4	3.0	0	0.0	0	0.0	2	50.0	2	50.0	0.840
Time of use (in years)											
<1	2	1.5	0	0.0	0	0.0	2	100	0	0.0	
1-5	50	37.9	1	2.0	4	8.0	24	48.0	21	42.0	0.262
6-10	61	46.2	3	4.9	6	9.8	25	41.0	27	44.3	
≥11	19	14.4	2	10.5	2	10.5	6	31.6	9	47.4	
Pattern of use											
Mild	45	37.5	4	8.9	4	8.9	21	46.7	16	35.5	
Moderate	10	8.3	0	0.0	2	20.0	6	60.0	2	20.0	0.565
Heavy	65	54.2	1	1.5	4	6.2	23	35.4	37	56.9	
Use with other drugs											
No	47	35.3	4	8.5	6	12.8	20	42.6	17	36.2	0.774
Yes	86	64.7	2	2.3	6	7.0	38	44.2	40	46.5	
Number of psychoactive substances used on the same day (n=86)											
1	26	30.2	1	3.8	2	7.7	16	61.5	7	26.9	
2-3	39	45.4	1	2.6	4	10.3	15	38.5	19	48.7	0.042
≥4	21	24.4	0	0.0	0	0.0	7	33.3	14	66.7	

a) Chi-square test for linear trend.

inducing and perpetuating the condition of substance dependence or abuse. Psychiatric comorbidities are often underestimated and underdiagnosed, with mental disorder symptoms being attributed to heavy crack consumption or withdrawal symptoms.[14,16,17]

More vulnerable populations may be more susceptible to severe craving levels. We hope the results of this research will contribute to reflections about health inequities among crack users, helping the creation of new proposals focused on comprehensive health care to assist these people.

Authors' contributions

Silveira KL, Alves PF and Pereira GB took part in all stages of the study's field work, reviewed the bibliography, carried out the analyses, interpreted the results and wrote the manuscript. Oliveira MM and Nunes BP took part in supervising and providing guidance, assisted with analysis and revised the final version of the manuscript. All the authors have approved the final version of the manuscript and declare that they are responsible for its accuracy and integrity.

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