

Crack cocaine and dreams: the view of users

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Abstract *This paper aims to describe the dream content of crack cocaine users as per their view and analyze its interference in the drug withdrawal process. This is a qualitative research with 21 crack cocaine users. Consuming crack cocaine during the dream meant a proof of failure or compensatory pleasure or warning of potential relapse; not consuming the crack cocaine meant the emergence of withdrawal symptoms or the success at overcoming drug dependence. Dream interpretation may lead users to craving and relapse. The outcomes may contribute to effective therapeutic interventions.*

Key words *Crack cocaine, Craving, Dreams, Relapse*

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Introduction

The characteristics and difficult understanding of the dreaming phenomenon make it an object of curiosity and study since the beginnings of human civilization. In ancient Greece, dreams ceased to be seen only as mystical or supernatural events only to be observed as natural phenomena that also occurred in animals, and with a connection to the daily events of individuals¹.

The dream has been shrouded in mystery and associated with religion, the prediction of events, and so forth². Different sciences, approaches and models try to explain the origin of dreams, leading to conflicting and diverse conclusions on this topic.

Freud attributed dreams to self-knowledge and regulation of impulses and desires. The father of Psychoanalysis argued that the realizations of desires repressed by individuals were hidden in the labyrinth of the dream's conscious contents, and the subject would not allow himself to realize these desires consciously. Thus, dreams would enable this individual to experience or fulfill such desires, albeit partially^{3,4}. Scientific advances, such as the electrophysiological study of sleep, led to the identification of sleep stages and allowed the understanding of dreams by brain mechanisms². Neurophysiological theories challenged Freud's view and considered dreams only as "random noises" that would occur in brain processes during sleep⁵.

However, as Scott and Ribeiro² point out, popular belief has not absorbed such data from science, avenging the idea that dreams refer to "hidden truths" capable of transmitting essential messages about the world and the dreamer. Dreams would reflect the interests and personality of individuals, as well as their anxious experiences, the moods and worries they experience.

Dreaming is a conscious state where there is no discernment and cognitive control typical of awakened individuals, but it allows the emergence of a coherent narrative, with vivid images, loaded with intense emotions and sometimes elements never experienced before⁶. The dream is a sequence of rich subjective experiences during sleep, in the absence of external physical stimulation or behavioral activity⁷.

Tanguay et al.⁸ state that there is a poorly studied relationship between sleep and drug dependence. Sleeping is crucial to the cognitive processes of memory consolidation and learning^{9,10}, which are essential processes in learning new skills and strategies to cope with addiction.

In addition, sleep disorders such as insomnia and interrupted sleep would increase the probability of a possible relapse into consumption¹¹. Several researchers have shown that dreams of drug-related content reports are common among patients seeking treatment for psychoactive substance dependence¹²⁻¹⁶.

Because of its penetration in Brazilian society and the risk behaviors that it generates, crack cocaine has become a challenge mainly for the professionals involved in the treatment of users. So much so that several aspects of the crack cocaine use culture have been analyzed to provide evidence that may facilitate the health care of crack cocaine users^{16,17}. Considering that drug users have dreams whose contents refer to the consumption of these substances, this work aimed to describe the content of the dreams of crack cocaine users, according to their vision, and to analyze their interference in the drug withdrawal process.

Methods

The understanding of the phenomenon object of this study depends on the crack cocaine users' account, the content of their dreams and the meaning they assign to them. Thus, the qualitative methodology was the most adequate due to its characteristics that take into account the understanding of the problem through the concepts, beliefs, opinions and meanings of those who experienced the issue^{18,19}.

Sample construction: Four key informants - KI (two psychiatrists, two psychologists) who were aware of the research theme and the study population¹⁹ were selected during the first stage of the study. These KIs were invited to an informal interview, i.e., without prior preparation of a roadmap²⁰. Issues relevant to understanding the topic emerged during the interview. The interviews were recorded, transcribed and analyzed and the data generated were the basis for preparing the script used in the interview with the research participants (crack cocaine users)¹⁸. Due to the difficulty in accessing the studied population, due to the illegal nature of crack cocaine, some of these KIs also played the role of gatekeepers (that is, they helped to access the population). Gatekeepers were known by the study population, which facilitated the participation of these users¹⁹. Each KI identified potential participants, explained to each of them the purpose of the research before introducing them to the re-

searchers. In-depth interviews²⁰ were conducted with sample participants using an intentional sample, selected by criteria: crack cocaine users over 18 years of age, with more than one year of drug use (ensuring exclusion of trial users); crack cocaine dependent as per criteria of the DSM-IV²¹, at the onset of the withdrawal period. The recruited respondents had recently completed treatment to ensure this last criterion, a condition reached with the help of the key informants who, with their knowledge network, managed to gather researchers and participants who fulfilled the criteria established for inclusion in the sample¹⁹. The respondents originated from six different locations of attendance and care intended for drug users, as indicated by the first letter of the alphanumeric code that identifies each participant. Private and free clinics, therapeutic communities and CAPS ad were activated for the recruitment of participants. Data were collected and completed in around one year in São Paulo.

The interviews were held until information was repetitive, at which point, called the theoretical saturation point, no new information was identified.¹⁸ The theoretical saturation is a widely used tool in qualitative investigations to establish the size of the final study sample^{19,22}. In practice, the theoretical saturation point is defined as the interruption of inclusion of new participants in the sample when the researcher deems that data obtained begin to show some redundancy or repetition, at which point it is not considered relevant to continue with data collection^{19,23}. That is, the information that could derive from new research participants would not add much to the material already obtained, no longer contributing to the improvement of the theoretical reflection based on the data being collected²³. In the case of this study, the theoretical saturation point was reached with a sample of 21 participants.

Instruments used: semi-structured interviews were conducted using a topic roadmap that was elaborated with the information gathered from the interviews with KIs²⁰. The roadmap consisted of previously standardized questions to facilitate comparison between responses and lower interviewer's interference. Additional questions emerged to clarify specific topics during each interview, enabling increased understanding¹⁹. The following subjects were part of the roadmap's content: sociodemographic data, withdrawal time, description of dreams and their impact on withdrawal/relapse, feelings triggered in the respondents, the family views, and the meaning assigned by users to dreams. The more contro-

versial issues in this study were those in which the participants evoked negative feelings such as failure, transgression, and so forth. In some cases, this circumstance may constrain them, at first, from answering these questions according to reality. The researcher applied the strategy recommended by the principles of qualitative research to bypass this situation, which is to reiterate these questions throughout the interview to obtain more credibility and security to the answers reached¹⁹. Throughout the interview, with the interviewer's ability to create an environment of trust and acceptance, the more comfortable and confident study participant was given the opportunity to change his/her initial statement by revealing truth-telling facts. The questions about the meanings they assigned to relapse into crack cocaine consumption, after dreaming with the drug, were the object of this technique. The interview was recorded following the respondent's consent and had a mean duration of 50 minutes.

Content analysis: Each respondent was identified by an alphanumeric code in which the first letter is related to the location of the interview, followed by the sequence of interviews, the gender of the participant, and finally, their age. The interviews were transcribed and read by researchers and then analyzed based on the principles of content analysis²⁴.

Preparation of the material: dismemberment and regrouping of responses by topic and question. This material gave rise to independent files for each item in the roadmap, each comprising answers that corresponded to each member of the sample^{19,24}. The preparation of this material counted on the help of software for qualitative research Nvivo¹⁹. The categories concerning the different behaviors identified were constructed from this information.

Processing the results: to obtain the frequencies and percentages concerning the different categories, allowing interpretations and inferences: in this study, we used the triangulation technique to analyze the results¹⁹, that is, two independent researchers with knowledge of the content analysis principles reconstructed the identified categories. The technique aimed to identify the convergence of interpretations, reducing the probability of misinterpretation and thus generating more adequate results. Parts of user narratives are shown in italics in the text, identified by the alphanumeric code explained above.

Ethical Considerations: The study was approved by the Research Ethics Committee of the Institution. The Informed Consent Form was

signed by each participant after receiving all the information about the study. Participant's anonymity was preserved.

Results

Sample characteristics

Twenty-one crack cocaine users with the following characteristics were interviewed: most of them were men ($n = 20$), over 30 years of age ($n = 17$), with a concentration between 30 and 40 years of age ($n = 12$). High schooling level was observed, with eleven of the respondents with complete/incomplete higher education. On the other hand, eleven of them self-declared unemployed during the interview. Only five participants reported having a partner, but thirteen reported having children. All met the DSM-IV dependency criteria (Chart 1).

Dreams' characteristics

Crack cocaine-related dreams (dreams of use) were described by the respondents as repetitive behaviors, environments, people and situations familiar to drug use. They also reported that these dreams of use always occurred at the beginning of the withdrawal stage, decreasing frequency over time.

The stage of their appearance was considered critical by many because they are in a moment of transition, they stopped consuming the drug recently and entered drug withdrawal. According to some, reliving through dreams the whole situation they were seeking to overcome could compromise withdrawal.

I dreamed that I was in the same place that I had left yesterday at six o'clock in the morning. It's in the favela, where I usually use. Anyway, I was just using [...]. I was with the same people who used to be there, the local community. It was as if I were there. (C01-H42)

Origin of dreams

Dreams seem to be mainly due to the intense, conscious or unconscious desire to use crack cocaine again. Dreams would be an uncontrollable and involuntary way of expressing the desire to consume the drug. A desire, perhaps caused by situations related to this consumption and experienced by the respondents.

These dreams occur precisely because of the desire to use. This desire is disguised in a dream, and in the dream, we desire and use it. I don't know. It's something very crazy indeed! (S03 -H27)

Content of dreams

According to reports, the drug has emerged in dreams in various contexts. Sometimes indirectly, that is, only the consumption environment, or even crack cocaine preparation ritual. In other cases, the respondent revealed the presence of crack cocaine in the dream, that is, he had direct contact with the drug. On the other hand, the dream content did not always portray the user's consumption reality, but always referred to the drug.

Fanciful content

They reported dreams, which despite referring to crack cocaine use, the situations experienced were bizarre and fanciful stories, which often surprised the respondents. Although they did not reproduce reality, these dreams brought about crack cocaine as the central focus of the plot, making the user, albeit in withdrawal, come in contact with the drug.

I had a dream with those trucks that carry those marble stones the size of a container. I was carrying one of these, but it was a crack cocaine stone the size of the container. Moreover, I was with a chainsaw trying to cut the stone and when I started to cut, I woke up. (S05-H52)

Content with different contexts of use

Dreams were also described involving new crack cocaine use-related experiences and experiments. The dream content showed different ways and situations than the actual crack cocaine user's ones, but the drug was present in the dream. Some users reported dreams whose plot involved situations contrary to their reality, such as drug use in the presence of relatives. Respondents said that these dreams indicated the user's moral degradation caused by the drug, which acted destructively on the few values he still preserved.

I dreamed that I was smoking a crack cocaine stone next to my wife, which I do not usually do. I was sitting in the armchair in the living room, next to her, smoking a crack cocaine stone. This was a very striking dream because I did not use the drug next to her. I felt bad; I thought, "Well, this could take place, and I did not want this to happen" [...]. (S04-H28)

Chart 1. Characteristics of the sample.

Respondent	Age	Gender	Skin Color	Schooling	Occupation	Partner	Children
C01-H42	42	M	NW	PSI	Formal	No	No
C02-H38	38	M	B	HEC	Formal	Yes	No
C03-H37	37	M	NW	SSI	Self-employed	No	No
P01-H28	28	M	B	HEC	Unemployed	No	Yes
P02-H36	36	M	B	SSC	Formal	No	Yes
P03-H31	31	M	NW	PSI	Unemployed	Yes	Yes
P04-H37	37	M	B	HEI	Unemployed	No	No
P05-H39	39	M	NW	PSI	Informal	No	Yes
S01-H26	26	M	B	HEI	Unemployed	No	Yes
S02-H32	32	M	B	HEC	Unemployed	No	No
S03-H27	27	M	NW	Literate*	Unemployed	Yes	Yes
S04-H28	28	M	B	SSC	Formal	No	Yes
S05-H52	52	M	B	HEI	Unemployed	No	Yes
I05-M30	30	F	NW	PSI	Unemployed	Yes	Yes
J01-H37	37	M	B	HEC	Formal	No	Yes
J02-H32	32	M	B	HEC	Formal	No	Yes
J03-H37	37	M	B	HEC	Unemployed	No	Yes
O01-H42	42	M	NW	PSI	Unemployed	No	Yes
O02-H56	56	M	B	HEC	Formal	No	No
O03-H42	42	M	B	HEI	Formal	Yes	No
O04-H38	38	M	B	SSC	Unemployed	No	No

HEC = Higher Education - Complete; HEI = Higher Education – Incomplete; PSI = Primary School - Incomplete; SSC = Secondary School – Complete; SSI = Secondary School - Incomplete; NW = Non-White; B = White; * Self-taught; M = Male; F = Female.

Content with the drug context

Although most of the reported dreams have had the presence of crack cocaine, there have also been reports of dreams where the drug was not part of the plot. However, the situations experienced in the dream were the same ones that the user faced to obtain the drug. While not in the dream, the respondent was referred to crack cocaine in the same way.

I did not only dream that I was using crack cocaine, but I also saw myself in awkward situations, looking for the crack cocaine stone, in situations of fights, of being arrested by the police. The scenes were about crack cocaine, but the stone was hardly present in the dream. (J02-H32)

Crack cocaine use ritual-related content

Another characteristic described by the respondents was the presence of the same ritual of preparation and use of when they consumed crack cocaine in dreams. All the steps were repeated in dreams, from getting money to buy the drug to the details of its preparation.

I took the crack cocaine stone; then I did all that process I liked to do, to grind carefully, to mix with coal, the whole process. I diluted it with a little al-

cohol, mixed it, let it dry, blended with tobacco, all that I used to do... then I would wrap it with some marijuana. The dream I had was perfect in that respect. Very real, right to the point where I put it in my mouth and wake up. (O04-h38)

Interpretation given to dreams

Dreams have aroused positive feelings about pleasure and satisfaction among some respondents, while others have reported feeling fear, frustration, and a feeling of defeat. These feelings were directly linked to the content and the interpretation users assigned to those dreams.

Not using the drug during dreams

For example, some respondents said that the fact that they were unable to consume the drug during the dream seemed to be encouraging regarding the treatment process of their addiction. They interpreted this as evidence that they were overcoming the drug problem. These dreams had a protective role for them since they reinforced withdrawal.

I knew I could not use the drug in my dream. I took the drug in my hand, but it gave it to someone else. So it's cool that my subconscious is changing

my way of thinking and acting. I even wake up happy to know that I did not use the stone in the dream. (CO3-H37)

What I remember is that I could not use it. When I was going to, I would wake up. The meaning I give to this is that the will of not using is already established in my consciousness. That's why I wake up at the time of use. (SO2-H32)

They reported that the family members who listened to the dream account, without the use of crack cocaine, showed that they were more relaxed, reinforcing the same interpretation provided by the user, that is, the dependence was being overcome.

However, contrary to previous ones, other interviewees reported that not using crack cocaine during dreams triggered the same negative symptoms they experienced in the absence of the drug when they awoke. The craving for the lack of crack cocaine increased the desire to consume it.

I never dreamed I was using the drug. I almost got to use it and, at that very moment, which would be a relief if it happened, putting the icing on the cake, for some reason does not happen. When I wake up I'm sweating; I cannot wait to light a cigarette, get in the shower, walk around the house, get out. And the fear of sleeping and living it again. It's not good, it's bad, actually a nightmare. (J02-H32)

Consuming the drug in the dream

Much in the same way as the previous accounts, diverging interpretations are found concerning this dream content. Some felt quite fragile, with much guilt and anguish to the point of interpreting dreams as a real possibility of an announced relapse.

Although I used the drug in my dream, I do not remember the pleasure: only the anguish, the haunting thought of other people seeing me smoking. Me becoming dirty again, suffering the horror and the pain of relapse. (SO1-H26)

... it was not a good dream; actually, it was a nightmare. I intend to take this out of my life and the dream brings me this use back. It's a bad feeling. (PO1-H28)

On the other hand, others did not understand these dreams in the same way, on the contrary, they saw benefit having consumed the drug in the dream and interpreted as a warning, an educational alert. It would be an alert message regarding the possibility of relapse into crack cocaine use. They began their day to defend their intention to remain in withdrawal firmly.

When I dream that I am using the drug, I see it as a warning of what I cannot do in my daily living. (CO3-H37)

Discussion

The dreams about use, which is the object of this research, are defined as vivid, subjective experiences during sleep, the relevance of which is centered in the fact that they contain drug-related topics, such as elements of the ritual of use, scenes of seeking and consuming the drug, and the like.^{13,25}

These dreams have already been described by other authors who focused on other drugs (alcohol, heroin, cocaine, and so forth)^{14,15,26-29}. However, the literature on crack cocaine-related dreams is hardly found, which reinforces the purpose of this work.

The results of this study show that the use-related dreams interfere in the daily life of crack cocaine dependence under withdrawal. Considering the potential physical^{30,31}, psychic^{17,32} and mainly social^{16,33,34} damages due to crack cocaine consumption, this finding deserves attention, especially when the user initiates recovery and achieves withdrawal.

The analysis of the characteristics of the sample reveals a contradiction, in some aspects, vis-à-vis the profile of the Brazilian crack cocaine user defined by the National Survey on Crack Cocaine Use³⁵ sponsored by SENAD (National Anti-Drugs Secretariat of the Ministry of Justice). In this survey, the crack cocaine user was characterized as being a young, single man, predominantly "non-white", with low schooling and unemployed/no fixed income. However, the participants in this study had high schooling, and several of them with higher education, mostly white, with a high average age, and eight of them with formal jobs, characteristics that do not correspond to the status attributed to crack cocaine users³⁵. These differences show that crack cocaine has advanced to other social classes, breaking the paradigm of the drug exclusively associated with contexts of high social vulnerability, something already disputed by other studies¹⁷. On the other hand, the sample of this study is aligned with the profile established by the national research concerning the predominance of men without family, fruit of the losses that they suffered due to drug consumption^{16,33,34}.

Participants affirm that dreams occur more frequently soon after the cessation of crack cocaine use, that is, at the onset of withdrawal, coinciding with the findings of other authors when studying dreams and drugs^{14,23,29,36}, and they can persist for weeks^{14,29,37}, 12 months, and even 35 years. However, when it comes to crack cocaine, an essential realm of these data should not be overlooked, that is, the initial stage of dreams occurs at a time when the user's craving level is increased due to drug use withdrawal, so dreaming of the drug at that time may induce relapse^{16,38,39}, and the aggravating factor of crack cocaine is that it is a drug known for its high relapse potential³⁹.

Respondents stated that crack cocaine was not always present in the dream, but its content was related to the environment, ritual and sometimes to scenes associated with the drug, situations which are enough for users to develop, upon awakening, signs of craving, leading some to drug use. Tiffany⁴⁰ considers that the repeated use of the drug leads the user to develop tracks associating them with consumption (smell, images, sounds, and so forth). Authors affirm that when users are exposed to these stimuli conditioned to the use of the drug, a strong desire and need to consume it is triggered in them^{16,39}. Bruehl et al.⁴¹ and Stalcup et al.⁴² attributed to these tracks an increased craving for the drug. However, the response to these stimuli is hard to interrupt because it occurs regardless of the user's will²³.

On the other hand, when the drug is present in the context of dreams, the responses polarize in two situations: drug use or not during dreams. It is perceived that, although the dream plots in these two cases are similar, the interpretation by the respondents does not follow the same line. While for some not smoking the drug was a sign

of healing from dependence, for others it meant the inability to feel pleasure, leading to an intensification of that desire upon awakening. This last interpretation finds support in the findings of some authors who advocate the idea of increased craving due to these dreams. Araujo et al.⁴³ identified a link between dreaming of alcohol and increased craving among alcoholics in the detoxification phase. Other authors^{12,28} affirm that the frequency with which these dreams occur could be related to an increased craving, which would encourage returning to the drug.

In contrast, consuming the drug during the dream meant defeat for some users. Guilt, the inability to remain in withdrawal revealed in the dream make them vulnerable and can compromise withdrawal. Johnson³⁸ reinforces this idea when he asserts that dreaming of drug use represents the dependent's desire to use it. However, conversely, other users felt empowered with this episode because they distinguished between dream and reality and optimistically interpreted to have found a new way to satiate the desire for the drug, which would be through dreams. Some researchers believe that drug pleasure achieved in the dream may have a compensatory role that favors withdrawal^{14,15}.

We can conclude that crack cocaine-related dreams compel involuntarily and uncontrollably the individual to revive the culture of use, that is, consumption, environments, colleague users, taste, smells and also pleasure. On the other hand, more important than the content of the dream alone, the interpretation that the users give to the dreams seems to be a piece of valuable information that can support possible therapeutic interventions aiming at the relapse prevention.

Collaborations

TR Silva – responsible for the work's design, analysis of the results, data interpretation, drafting of the manuscript. SA Nappo – responsible for the coordination of the research, by outlining its design, collaborated in the drafting of the manuscript, performed the critical review, and approved the version to be published.

References

- Pinto JR, Timo-aria C. Atividade Onírica e os sonhos. In: Tufik S, organizador. *Medicina E Biologia Do Sono*. Barueri: Editora Manole; 2008. p. 227-237.
- Scott R, Ribeiro S. A Ocorrência de Sonhos Antecipatórios é Proporcional à Crença em sua Eficácia. *Neurobiologia* 2010; 73(3):73-86.
- Freud S. *A interpretação dos sonhos*. Porto Alegre: L&PM Editores; 2012.
- Vinocur Fischbein S, Miramón B. Theoretical trajectories: Dreams and dreaming from Freud to Bion. *Int. J. Psychoanal* 2015; 96(4):967-992.
- Hobson JA, Pace-Schott EF, Stickgold R. Dreaming and the brain: Toward a cognitive neuroscience of conscious states. *Behav Brain Sci* 2000; 23(6):793-842.
- Pace-Schott EF. REM sleep and dreaming. In: Mallick BN, Pandi-Perumal SR, McCarley RW, Morrison AR editors. *Rapid Eye Movement Sleep-Regulation and Function*. New York: Cambridge university press; 2011. p. 8-20.
- Sikka P, Valli K, Virta T, Revonsuo A. I know how you felt last night, or do I? Self- and external ratings of emotions in REM sleep dreams. *Conscious Cogn* 2014; 25(1):51-66.
- Tanguay H, Antonio Z, Daniel G, Francesco L. *Relationship between drug dreams, affect, and craving during treatment for substance dependence* [thesis]. Ontario: University of Guelph; 2014.
- Blagrove M, Fouquet NC, Henley-Einion JA, Pace-Schott EF, Davies AC, Neuschaffer JL, Turnbull OH. Assessing the dream-lag effect for REM and NREM stage 2 dreams. *PLoS One* 2011; 6(10):e26708.
- Nielsen TA, Kuyken D, Alain G, Stenstrom P, Powell RA. Immediate and delayed incorporations of events into dreams: Further replication and implications for dream function. *J Sleep Res* 2004; 13(4):327-336.
- Berro LF, Frussa-Filho R, Tufik S, Andersen ML. Relationships between sleep and addiction: The role of drug-environment conditioning. *Med. Hypotheses* 2014; 82(3):374-376.
- Christo G, Franey C. Addicts Drug-Related Dreams: Their Frequency and Relationship to Six-Month Outcomes. *Subst Use Misuse* 1996; 31(1):1-15
- Colace C. *Drug Dreams: Clinical and Research Implications of Dreams about Drugs in Drug-addicted Patients*. London: Karnac Books; 2013.
- Hajek P, Belcher M. Dream of absent-minded transgression: An empirical study of a cognitive withdrawal symptom. *J Abnorm Psychol* 1991; 100(4):487-491.
- Reid SD, Simeon DT. Progression of dreams of crack cocaine abusers as a predictor of treatment outcome: a preliminary report. *J Nerv Ment Dis* 2001; 189(12):854-857.
- 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.
- Ribeiro LA, Sanchez ZM, Nappo SA. Estratégias desenvolvidas por usuários de crack para lidar com os riscos decorrentes do consumo da droga. *J Bras Psiquiatr* 2010; 59(3):210-218.
- Creswell JW. *Research design: qualitative, quantitative and mixed methods approaches*. 3rd ed. Thousand Oaks: Sage Publications; 2009.
- Patton MQ. *Qualitative research & Evaluation methods: integrating theory and practice*. 3rd ed. Thousand Oaks: Sage Publications; 2002.
- Kvale S. *Interviews: an introduction to qualitative research interviewing*. Thousand Oaks: Sage Publications; 1996.
- American Psychiatry Association. *Manual Diagnóstico e Estatístico de Transtornos Mentais*. 4th ed. Porto Alegre: Artmed; 2002.
- Glaser BG, Strauss AL. *The discovery of grounded theory: strategies for qualitative research*. New York: Aldine de Gruyter; 1967.
- Fontanella BJB, Luchesi BM, Saidel MGB, Ricas J, Turato ER, Melo DG. Amostragem em pesquisas qualitativas: proposta de procedimentos para constatar saturação teórica. *Cad Saude Publica* 2011; 27(2):389-394.
- Bardin L. *Análise de conteúdo*. 3rd ed. Lisboa: Edições 70; 2004.
- Tanguay H, Zadra A, Good D, Leri F. Relationship Between Drug Dreams, Affect, and Craving During Treatment for Substance Dependence. *J Addict Med* 2015; 9(2):123-129.
- Colace C. Drug dreams in cocaine addiction. *Drug Alcohol Rev* 2006; 25(2):177.
- Decicco TL, Higgins H. Dreams of Recovering Alcoholics: Mood, Dream Content, Discovery, and the Storytelling Method of Dream Interpretation. *Int J Dream Res* 2009; 2(2):45-51.
- Yee T, Perantie DC, Dhanani N, Brown ES. Drug dreams in outpatients with bipolar disorder and cocaine dependence. *J Nerv Ment Dis* 2004; 192(3):238-242.
- Jerry PA. Psychodynamic psychotherapy of the intravenous cocaine abuser. *J Subst Abuse Treat* 1997; 14(4):319-332.
- Afonso L, Mohammad T, Thatai D. Crack whips the heart: a review of the cardiovascular toxicity of cocaine. *Am J Cardiol* 2007; 100(6):1040-1043.
- Vogenthaler NS, Hadley C, Lewis SJ, Rodriguez AE, Metsch LR, del Rio C. Food insufficiency among HIV-infected crack-cocaine users in Atlanta and Miami. *Public Health Nut* 2010; 13(9):1478-1484.
- Ford JD, Gelernter J, DeVoe JS, Zhang W, Weiss RD, Brady K, Farrer L, Kranzler HR. Association of psychiatric and substance use disorder comorbidity with cocaine dependence severity and treatment utilization in cocaine-dependent individuals. *Drug Alcohol Depend* 2009; 99(1-3):193-203.

33. Carvalho HB, Seibel SD. Crack cocaine use and its relationship with violence and HIV. *Clinics* 2009; 64(9):857-866.
34. Degenhardt L, Singleton J, Calabria B, McLaren J, Kerr T, Mehta S, et al. Mortality among cocaine users: a systematic review of cohort studies. *Drug Alcohol Depend* 2011; 113(2-3):88-95.
35. Bastos FI, Bertoni N, coordenadores. *Pesquisa Nacional sobre o Uso de Crack*. Brasil. Secretaria Nacional de Políticas sobre Drogas (SENAD), Ministério da Justiça (MJ). 2013 Set [acessado 2012 Fev 15]. Disponível em: http://www.observamjc.uff.br/psm/uploads/Pesquisa_Nacional_sobre_uso_de_crack_e_outras_drogas.pdf
36. Colace C, Belsanti S, Antermite A. Limbic system irritability and drug dreams in heroin-addicted patients. *Heroin Addict Relat Clin Probl* 2014; 16(3):75-86.
37. Colace C. Dreaming in Addiction: A Study on the Motivational Bases of Dreaming Processes. *Neuropsychanalysis* 2004; 6(2):165-179.
38. Johnson B. Drug dreams: a neuropsychanalytic hypothesis. *J Am Psychoanal Assoc* 2001; 49(1):75-96.
39. Haas C, Karila L, Lowenstein W. [Cocaine and crack addiction: a growing public health problem]. *Bull Acad Natl Med* 2009; 193(4):947-962-3.
40. Tiffany ST. A cognitive model of drug urges and drug-use behavior: role of automatic and nonautomatic processes. *Psychol Rev* 1990; 97(2):147-168.
41. Bruehl AM, Lende DH, Schwartz M, Sterk CE, Elifson K. Craving and control: methamphetamine users' narratives. *J Psychoactive Drugs* 2006; Supl. 3:385-392.
42. Stalcup SA, Christian D, Stalcup J, Brown M, Galloway GP. A treatment model for craving identification and management. *J Psychoactive Drugs* 2006; 38(2):189-202.
43. Araujo RB, Oliveira MS, Piccoloto LB, Magrinelli M, Szupszynski K. A abordagem Cognitivo-Comportamental dos sonhos de alcoolistas. *Rev Psiquiatr do Rio Gd do Sul* 2004; 26(1):70-77.

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