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Is Ayahuasca an Option for the Treatment of Crack Cocaine Dependence?

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ABSTRACT

The low efficacy of crack cocaine addiction treatment available in Brazil has led Brazilian users to find alternatives to reduce drug consumption or even to reach abstinence. One of them is the use of entheogenic substances, like ayahuasca, an infusion obtained from two native plant species from the Amazon. The present report aimed to understand how crack cocaine users recover from drug addiction by consuming ayahuasca tea in a religious context. This is a qualitative study with a purposeful sample of 40 crack cocaine users, based on in-depth, semi-structured interviews. Participants reported that ayahuasca allowed them to access a consciousness dimension which enabled them to solve problems and traumas and reduce crack cocaine consumption. The religious ceremony increased the user's spirituality and the reception from the community gave them a sense of self-esteem, strengthening them in an emotional and social way. That positive experience has been incorporated into the daily routine of most participants. Findings indicate that ayahuasca, in a religious context, may have therapeutic value for crack cocaine dependence treatment.

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Introduction

Despite the efforts invested by the Brazilian government to combat crack cocaine use and dependence, little progress has been made, due to the low efficacy of the conventional treatments in promoting abstinence or reducing use (Fischer et al. 2013). Thus, treatment dropout or relapse following intervention seems to be a constant (Chaves et al. 2011).

Faced with this scenario, crack cocaine users have sought alternatives to reduce use or attain abstinence, among which the use of entheogens stands out (Gonçalves and Nappo 2015; Schenberg et al. 2014; Tófoli and Araujo 2016). One such substance is ayahuasca, which has been used for centuries in indigenous rituals and for medicinal and spiritual purposes in Brazil. In the twentieth century, ayahuasca consumption extended beyond its native habitat to be included in syncretic practices of the non-indigenous Western population (Labate and Cavnar 2011; Tupper 2008). Brazil is the seat of several of these religious movements, such as Santo Daime, União do Vegetal, and Barquinha, which combine aspects of the Indigenous use of ayahuasca, African spiritualism, and Catholic liturgy (Tupper and Labate 2015).

Consumption of ayahuasca tea affects sensory, cognitive, and emotional processes and often promotes a phenomenological experience of contact with spiritual beings

that includes vivid visual sensations that “convey teachings” (Palhano-Fontes et al. 2015). Some authors assert that psychedelic drugs promote an “expansion of consciousness,” leading to a persistent change in the perception of oneself, other people, and the environment (Majić, Schmidt, and Gallinat 2015). Other authors state that these effects of ayahuasca have been used as an adjuvant in the treatment of substance use disorders, because the established alteration of consciousness helps heal psychological trauma and provides opportunities for new experiences in the future (Liestner and Prickett 2012). Loizaga-Velder and Verres (2014) demonstrated that ayahuasca can serve as a therapeutic tool that can catalyze neurobiological and psychological processes to support recovery from substance dependencies. Labate et al. (2012) verified that 90% of members of a Santo Daime community, who reported substance dependence before taking part in Santo Daime, stopped using at least one substance upon which they reported dependency. Thomas et al. (2013), through an observational study of ayahuasca-assisted treatment for substance use disorders in a rural aboriginal population in Canada, concluded that the participants experienced positive and lasting psychological and behavioral changes.

Based on this research, the aim of the present study was to understand how crack cocaine users recovered from dependence through the use of ayahuasca tea within a religious setting.

Methods

The principles of qualitative research allowed analysis of the beliefs of the study participants concerning the relationship between ayahuasca tea and crack cocaine abstinence according to their perspectives and concepts (Patton 2002).

Eight key informants (KIs) were selected, including three former crack cocaine users who used ayahuasca and five healthcare professionals (psychiatrists and psychologists). The KIs were individuals with specific knowledge of the subject of interest and the investigated population who agreed to share this information with the investigators (Patton 2002). The KIs were invited to participate in informal interviews, during which time issues relevant to the subject of interest were allowed to emerge (Creswell 2013). The interviews were used as a basis for the formulation of the script used in the in-depth, semi-structured interviews conducted with the study participants (Kvale 1996). The interview script comprised 14 blocks (totaling 84 questions) approaching issues related to the ayahuasca ritual, crack cocaine use, and experience with ayahuasca tea. The DSM-IV criteria for dependence were considered (APA 1994) and the ABEP scale (2012) was used to categorize the socioeconomic levels of the participants. This scale is mainly based on the consumer goods owned by families and classifies individuals into the categories A1, A2, B1, B2, C, D, and E (A1 is the category with the largest number of consumer goods, whereas E is the category with the smallest number).

With the help of the KIs, who also played the role of gatekeepers (facilitated access to the communities), 11 Santo Daime communities agreed to receive the investigator. The community leaders named the initial interviewees, who met the following inclusion criteria: a crack cocaine user or former user; older than 18 years of age; either gender; and used ayahuasca tea within a religious ritual for the purpose of quitting crack cocaine or maintaining abstinence.

In-depth, semi-structured interviews were conducted with the study participants using the previously designed script. The average duration of the interviews was one hour.

The snowball technique (Biernacki and Waldorf 1981) was used to recruit the sample: the initial interviewees named by the community leaders indicated other possible participants, who in turn named other potential participants to form chains. To include the largest possible number of crack cocaine user profiles, 11 chains with 2–9 participants each were developed. The interviews continued until the interviewees' answers became redundant. When this point was reached (i.e., saturation), no

further interviews were performed (Creswell 2013). The final sample comprised 40 interviewees.

We also used participant observation, in which the investigator actively participates in the community culture (Patton 2002). One of the investigators remained for up to three days in each community and participated in all activities, including task distribution and preparation and consumption of ayahuasca tea. As recommended by Malinowski (1976), all of the observations made during the data collection period were registered in a field diary.

The last step of the study consisted of content analysis (Bardin 2011) of the narratives gathered in the interviews with study participants. Each interview was identified with a code. Next, the material was fragmented and clustered, resulting in reports for each addressed topic comprising the corresponding answers given by all of the participants. Following this preparation of the material (using NVivo 10 software; NVivo 2012) according to Bardin's recommendations (Bardin 2011) for content analyses, the next stage consisted of categorization. The interviews were transformed into a content representation through the identification of meaning units. Two investigators independently and simultaneously analyzed the data, and the results were compared to ensure their consistency and coherence. Finally, inferences were drawn, which provided support for explanations and the establishment of conclusions. Excerpts of the interviewees' narratives are transcribed in the results section; these excerpts are noted with italics and identified by the corresponding code.

The study protocol was approved by the Ethical Review Committee of the Federal University of São Paulo. Informed consent was obtained from each participant at the beginning of the initial interview after they were given information about the study; they were informed that they could withdraw at any time. Participation was anonymous.

Results

Sample characteristics

A total of 40 crack cocaine users or former users were interviewed, including 38 men and two women. The participants' ages varied from 23 to 47 years, with a mean age of 35 years. The majority (37 participants) came from the higher socioeconomic classes (A, B, and C). Only two participants were unemployed at the time of the interview. The education levels of the participants were high. None of the participants was illiterate, and only one participant only attended elementary school; all others

had attended secondary school and higher education institutions. According to the DSM-IV criteria, 36 participants were crack cocaine dependent at the time they sought ayahuasca, whereas four were abstinent and sought ayahuasca to help maintain this status.

Reasons for seeking ayahuasca

The consequences of crack cocaine abuse were most often cited as the motivation to seek treatment. Losses resulting from drug dependence, difficulties in relationships leading to social isolation, and involvement in crime with consequent marginalization were the main reasons help was sought.

Crack cocaine made a monster of me, a criminal. I began stealing, I reached the bottom. Up to that moment I had worked, but then I began robbing people. (J42M)

The search for treatment did not begin with ayahuasca. Instead, classical treatments tended to be performed first and were often sought more than once, which denoted the occurrence of relapse. The failure of the previous treatments resulted in lack of trust in the efficacy of conventional treatments, leading the participants to seek alternative strategies, such as the use of ayahuasca tea.

After one month of abstinence, I had a relapse. I was very upset, thinking, it's not possible to spend six months in treatment and then go back to the drug after just one month. That's when I felt desperate and the light of Santo Daime came into my life. (M23I)

The entheogenic effects of the tea awakened the curiosity of some participants, who initially sought the tea only to obtain pleasure. However, the participants were surprised by the ritual, the religiousness, and the results obtained, which led them to shift their initial focus.

I came for the tea, I came for the "high," the guy who told me to come here said this: for me to come here, because there was something truly crazy going on, but the first time I tried it, I realized it wasn't that. (LC45F)

The "treatment"

"Treatment" with ayahuasca tea applied within the context of a religious service comprised three main components: (1) the ayahuasca tea; (2) the religious service; and (3) the ayahuasca community.

Ayahuasca tea

The participants reported that intake of the tea was followed by the appearance of "*miração*" (plural, *mirações*), which is the colloquial term for vivid images manifesting with different characteristics (long or short, sharp or blurry contours, frightening or very beautiful, or revealing events of the past or the future). The differences in the visions seemed to be related to the psychological state of each interviewee, their expectations concerning the effects of the drug, and their sociocultural milieu. The narratives evidenced that these images revealed teachings and the state of mind of each participant.

Mirações represent that which is best! There are beautiful mirações, and others are horrible. Every day, I look forward to advance within Daime. The miração you have is the truth, it shows our flaws and whether someone is doing something truly evil. (AN39P)

Some participants reported *mirações* that represented negative revelations about the ayahuasca user's personality and character, which were associated with crack cocaine use.

The mirações showed me all my flaws: a drug user, an arrogant, egoist person. When the work was over [end of the effect], it seemed a weight had been taken from my back; at that moment I had the clarity to go on. (F32F)

Some interviewees reported the occurrence of religious images in the *mirações*, which contributed to strengthening of their confidence that they were on the right path.

I was in a golden palace with the Star of David on its front. A man came to me and showed me a book, and my name was on it. That made me believe [in the power of ayahuasca tea]. (AB32P)

Another group described their visions as demonic, including animals and unknown beings, which many interpreted as signs of the future or reflections of what they would become were they to persist in drug abuse behavior.

These experiences of intense suffering, which are often associated with unpleasant physiological symptoms, such as vomiting and diarrhea, are referred to by the colloquial term "*peia*." Despite their terrifying nature and inclusion of all types of torments, these visions had transforming effects, according to the interviewees.

I took it, underwent the process of vomiting, I had some diarrhea, felt very weak. I understood it was a necessary "cleansing." It was a very painful process. I had visions of hell itself. I felt I was falling into a pit, and the only thing I could see was the molten lava of a volcano,

stones, shattered bodies. I was in a place with much suffering and anguish; I felt the hands of embittered beings clinging to me. (MN39S)

The interviewees observed that the tea acted by detoxifying the body, not only at the physical level but also at the mental level, by removing toxins and anxiety and promoting cleansing. According to the participants, this process was highly relevant for their loss of the desire for crack cocaine.

I became cleansed... the tea cleansed me, took my anxiety away, the craving for crack cocaine. (RA34M)

Some participants revealed that they needed to take the tea and participate in the rituals for a long time before they experienced a *miração*. According to these participants, a *miração* is a gift that is only attained by merit.

*After so many wrong things that happened to me with crack cocaine, only fear, only horrible things, now I'm going to use a "remedy" that in addition to healing me, gives me *miração*; this can only be a gift God understands that I deserve. (MA37M)*

According to the interviewees' narratives, positive thoughts, feelings, and teachings became a part of their daily lives following the experience with ayahuasca. For instance, the participants mentioned developing a feeling of being *thankful* for life. They also asserted that the visions induced by the tea increased their *faith* and consequently their *spirituality*. Additionally, other feelings, such as *love*, *pleasure*, *well-being*, and *forgiveness*, were discovered by the participants.

The religious service

The entheogenic effects induced by the tea are modulated by religious rituals originating in Catholicism, shamanism, and spiritualism. The Catholic saints, God, Jesus, and the Virgin Mary appear side by side with Afro-Brazilian entities and Kardec's spiritism. Other striking aspects are the focus on order and discipline and the presence of a master who ensures the high level of services and proper concentration and acts as intermediary to the "higher power" that is the source of the teachings.

According to the interviewees, the hymns and the synchronicity of the dancing made the services joyful and gave rise to an atmosphere of energy and union among the attendants.

What called my attention was the union... the dancing, the joyfulness. Dancing relieves one's ill-being and is something beautiful. It's not just me: when everybody starts dancing at the same time, aligned, it's something beautiful. It's an organization. (FM26J)

The ayahuasca community

The religious community where the tea was prepared and consecrated, where rituals took place and tea drinkers met, was described by the interviewees as a place loaded with positive energy, friendship, and respect, and was favorable to reflection. At the end of the ritual, the community members gathered to celebrate the work done and share life experiences in a fraternal atmosphere.

The traditional church worship I used to attend did not have what is here. In the community, I participate in the spiritual work, and when it ends, there's partying, joy, people talking, people eating, people drinking soda. I see no sadness. (H26S)

Some interviewees stated that the community gave them back the feeling of their own relevance as human beings, which they had lost the moment they had started using drugs, especially crack cocaine. The label "user" or "dealer" disappeared. Additionally, the interviewees were touched by the support they received from other participants who had attained abstinence from drugs. The feeling of being part of a group made the interviewees orient their actions toward a collective direction. This feeling of belonging was perceptible in the interviewees' narratives and seemed to considerably aid in the transformation process. Feelings of protection and safety, which had scarcely been experienced in the interviewees' previous treatment attempts, made a difference.

There's [a feeling of] well-being among people that attracted me. People are well-intended and encouraged me saying things like "I also used [drugs] before, but I stopped [using them] here." These things strengthened me. The friends I made here, the value people attributed to me, not as dealer or user. This made a large difference for my transformation. (H28J)

The "cure"

The results achieved by each individual component of the "treatment" added up at some point, and crack cocaine stopped having meaning for the users' lives. The desire for the drug disappeared and was replaced by other feelings, such as guilt, thankfulness, and repentance.

I don't need crack cocaine anymore. I never thought about the drug again; I never felt the least desire for it. On the contrary, I feel sadness; I regret all those years I lost in my life, my health, money, time. Now I know it's horrible. (H38S)

Ayahuasca seemed to activate levels of consciousness by amplifying perceptions and thus allowing the "truth" about the user's (past and future) life to present itself to

the user through revealing visions. This expansion of consciousness allowed visualization of negative episodes from the interviewees' past lives, the challenges they would have to overcome in the future regarding the use of crack cocaine, actions to be developed, and choices to be made to return to the path of spiritual balance.

It expands consciousness... your thoughts become clearer, you get to see the dangers, you get to realize the seriousness of things, and what will happen to you, it's as if you were asleep, took Daime and your spirit wakes up. And you get more precise information about the path you're treading and where it will lead you. (G35F)

The tea-induced messages received by the interviewees also had a strong religious tone. Together with the entities, there was a deep presence of the controlling principles, which reinforce guilt, sin and, finally, forgiveness. These factors played a relevant role in discontinuing use.

...it's diving inside of yourself and seeing your flaws and their features... it [ayahuasca tea] showed me what I had done, that I'm a sinner, but that God forgave [me], and this [feeling of] comfort for having been forgiven made me put everything aside. (R37F)

The syncretism that characterized ayahuasca practices accounted for the experiences of visions reported by all of the interviewees, with religious entities corresponding to their original religious denominations. Thus, in addition to Catholicism, entities from Umbanda (a religion that originated in Africa), spiritualism, and other religions were present in the visions. However, although the religious beliefs and visions differed, the content of the messages was rather similar. The message systematically focused on two distinct situations: the world "of hope" offered by ayahuasca worship, represented by the reception of spiritual beings, and the "terrifying" world created by crack cocaine. This wide difference in representation left no doubts to the drug users as to the path that should be followed.

I felt healed through a miração I had. I realized that to stay with crack cocaine would bring no good, because if I did, I wouldn't be able to notice all those beautiful things that happened to me. I saw Yemanjá [an Umbanda deity] by my side, protecting and receiving me. It was then that I became aware of the difference with the mirações [induced] by crack cocaine, which are ugly, horror, just fear, just terror. (AN39P)

The principle inherent to all religions (i.e., that "good" will be rewarded and "evil" will be punished) is also explored in ayahuasca religious practice. This duality between opposites (good and evil, right and wrong, or good and bad) was present in most narratives.

Daime teaches how to be a righteous, dignified individual, one who doesn't lie, slander, isn't lazy. A crack cocaine user has all possible type of vices: related to the drug, sex, lying. Daime takes all that away. If you do something wrong, you'll be punished by peia....

This control seemed to be so strong that many interviewees reported that they had felt fear of such punishment. Thus, they changed their behaviors as a function of the fear of retaliation.

On some occasions, I stopped using crack cocaine for fear of peia... it works as a [kind of] punishment.... (AB32P)

The interviewees' narratives made clear that, similar to other religions, the path offered by ayahuasca to attain abstinence from crack cocaine was not easy, but instead demanded power of will and determination from the users. However, the users who achieved success felt strengthened, and this feeling contributed to the recovery of the self-esteem they had lost when they became drug dependent.

You have to have power of will, courage, because Santo Daime is not for the weak, it [serves to] strengthen [oneself]. (R33C)

Relapse

A small number of interviewees ($n = 8$) reported having fallen back into crack cocaine use after having attained abstinence with the help of ayahuasca. Among the reasons for relapse, detachment from the ayahuasca community stood out. Discontinuance of the involvement with community activities (i.e., tea consecration and participation in services), consumption of the tea as a part of rituals, the lack of continuous socializing with participants, and especially the lack of the shared receptiveness and affection were determinant causes for restarting crack cocaine use.

I could no longer participate in the community activities, and as I was far away, I kept on using Daime by myself. I'd take just a little and it was not the same. I was no longer concentrated on that. My faith decreased and I lacked power of will. (FM26)

Some interviewees reported difficulties adjusting upon returning to their former lives. Their family life became difficult.

I no longer can live at home. I need to move out. Too many people, they make noise; I don't like the smell; I don't want to keep listening to complaints. I want a space of my own. (L38C)

The narratives evidenced a lack of preparation among some interviewees for life outside the community. This outcome was possibly due to the meaning the community

came to have in their lives. They felt that the community was a protected environment characterized by endless receptiveness, and these conditions were difficult to reproduce in other environments.

Discussion

The findings led to the conclusion that use of ayahuasca within a religious setting provided the interviewees with support to attain or maintain abstinence from crack by helping resolve traumas, encouraging the understanding of potential outcomes of choices and improving decision making (Liester and Prickett 2012).

According to the results of the National Survey on Crack Use (SENAD 2014) the standard crack cocaine user in Brazil has a low education level, belongs to the lower social classes, and is unemployed. In contrast, the participants in this study corresponded to the higher social classes, had high education levels, and only two participants were unemployed. A similar pattern was found by Barbosa, Giglio, and Dalgalarrrondo (2005). These findings suggested that use of ayahuasca seems to predominantly correspond to groups from higher social classes with high education levels in the large cities of the southeastern region of Brazil.

The results show that the combination of religious practice and the use of an entheogen seems to have been successful for the control of crack cocaine dependence in the analyzed sample. According to the last Brazilian census (IBGE 2010), only 8% of the population declared that they did not follow any religion, whereas the remainder reported a rich religious diversity. As a function of the cultural miscegenation resulting from immigration processes, the Brazilian population follows many different religions (e.g., Christian, Afro-Brazilian, and spiritualism). The syncretism inherent to the Santo Daime religious practice allowed drug users from different denominations to participate in the ceremonies with no feeling of alienation, since their religious beliefs were considered in the rituals; this phenomenon might have contributed to the affinity developed by the crack users for this modality of worship (Barbosa, Giglio, and Dalgalarrrondo 2005).

Conversely, the ayahuasca religion is an organized institution with principles, norms, beliefs, and values associated with a well-defined behavioral pattern (Trichter, Klimo, and Krippner 2009). Thus, its followers are discouraged from continuing crack cocaine use (Doering-Silveira et al. 2005; Labate, Rose, and Dos Santos 2009). The religious environment changes the status of the ayahuasca, which is elevated from a simple tea to the category of a “holy plant” and, as such, plays the role of a sacrament in the religious rituals of the

ayahuasca community. Within this context, the visions elicited by ayahuasca are considered to be divine (Blainey 2014; Trichter, Klimo, and Krippner 2009). The holy status of the plant seems to have exerted strong influences on the crack cocaine users, who eagerly accepted the messages conveyed in the visions, regardless of their nature, and always saw them as “teachings.” According to the participants’ narratives, the feeling of “redemption” is greatly explored in ayahuasca worship practice. This concept has its roots in the Judeo-Christian tradition and is strongly associated with the notions of reward, punishment, and repentance (Barbosa, Giglio, and Dalgalarrrondo 2005). Redemption means the reencounter of the sinner with God’s will through His forgiveness (Rios, Grob, and Baker 2011). Considering the negative status of crack cocaine users in Brazilian society due to their association with violence, aggression, and marginality (Dias et al. 2011; Nappo, Sanchez, and Oliveira 2011), the possibility of being rescued may be liberating.

The set of transformations elicited by the religious component of the ceremonies led the interviewees to reassess themselves as blessed individuals for having received a communication from a deity. This reassessment was confirmed in many narratives in which the interviewees manifested a feeling of thankfulness (Blainey 2014). Additionally, the visions induced by the ayahuasca tea favored the occurrence of spiritual experiences related to the doctrines, dogmas, and divine entities of the religion practiced by each individual interviewee to increase their religiousness/spirituality (Trichter, Klimo, and Krippner 2009). Sperry (2001) found that individuals with higher levels of spiritual and religious commitment tended to report higher levels of well-being and satisfaction with life. These individuals also exhibited lower rates of depression and substance use disorders and manifested more empathy and altruism. In a study on the role of religion on drug dependence, Van Der Meer Sanchez, Oliveira, and Nappo (2008) found that the rates of recovery were higher and the rates of relapse were lower when treatment was permeated with some religious approach.

In parallel to the religious aspect of ayahuasca use, the interviewees reported that the tea induced the appearance of vivid visions disclosing past traumatic events, present mistakes, and paths for solutions. Some authors affirmed that these visions occurred because ayahuasca users reached a previously unknown level of consciousness (Palhano-Fontes et al. 2015), which could not be attained without the help of the tea (Barbosa, Giglio, and Dalgalarrrondo 2005). Neuroimaging studies performed following ayahuasca intake revealed activation of several brain areas

associated with emotional processing and memory formation, which allowed the user to reexperience emotional episodes in an advantageously vivid and real manner (Domínguez-Clavé et al. 2016; Riba et al. 2006). Such “real” visions and memories led to changes in behavior and life perspectives (Grob et al. 1996). Blainey (2014, 2010) considers such altered states of consciousness as the key for several solutions and thus describes ayahuasca as a “teacher” that instructs the individual on how to overcome some of his/her characteristics that are the source of much suffering and become a better person. Some authors observed that ayahuasca tea helped crack cocaine users understand their problems better and solve them by encouraging them to make stronger decisions, improve their social relationships, and develop more responsibility, motivation, and a purpose in life (Bouso et al. 2012). Loizaga-Velder and Verres (2014) emphasize an ayahuasca characteristic that may help in the understanding of these changes, which is the ability to lower psychological defense mechanisms.

On the other hand, Kuypers et al. (2016) attributed the transformation undergone by crack cocaine users to an increase in creative divergent thinking induced by ayahuasca and a decrease in conventional convergent thinking. A connection between divergent thinking and mood is particularly strong and positive (Baas, Dreu, and Nijstad 2008; Davis 2009). In contrast, convergent thinking and mood have a negative connection. The interviewees’ moods were highly positive, which might have opened their minds to creative ideas (Kuypers et al. 2016). Domínguez-Clavé et al. (2016) asserted that the tea accelerated the speed of thinking and facilitated the production of new associations.

One finding deserving of particular mention is the reduction of craving reported by the study participants. Considering that craving and relapse are strongly related in the case of crack cocaine (Chaves et al. 2011), this action of ayahuasca should be explored in future studies (Loizaga-Velder and Verres 2014).

The results of the present study demonstrate that the role of the ayahuasca community in the “treatment” of crack cocaine dependence should not be dismissed. Interviewees reported the recovery of feelings such as self-esteem, respect, a sense of belonging, an exchange of experiences, warmth, and solidarity with the group. Participants recovered their identity the moment that they were no longer seen as mere crack cocaine users (Bouso et al. 2012).

Although the number of occurrences was small, the teachings and behaviors learned at the ayahuasca community did not always have repercussions on social life outside of the institution (i.e., at home, work, or other

activities). In a study on ayahuasca used in the religious context, Trichter, Klimo, and Krippner (2009) found that the positive experiences acquired by the participants during the ceremonies and in their overall lives in the community were integrated into their daily lives. Some of the participants in the present study met problems in their attempts to adjust their lives to the teachings learned in the community, perhaps due to difficulties in reproducing a similar protective and friendly environment.

Results reported here are limited to the Santo Daime communities, since other communities didn’t take part in the sample. The sample of crack cocaine users in this study differs (in terms of socioeconomic data) from the one considered officially by the Brazilian government, which restricts generalizability. Other potential hypotheses about ayahuasca’s action should be deeply elaborated in future studies; for example, the fact that its users receive/accept messages as “teaching.” In conclusion, ayahuasca tea consumed within a religious context helped the study participants quit crack. Considering the low toxicity of ayahuasca (Gable 2007; Riba and Barbanoj 2005), this substance may become an effective tool for the treatment of crack cocaine dependence.

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