

## A phenomenological analysis of the subjective experience elicited by ibogaine in the context of a drug dependence treatment

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*Objective:* This report documents the phenomenology of the subjective experiences of 22 patients with substance-related disorders who were involved in a treatment combining cognitive-behavioral therapy and hospital sessions with ibogaine in Brazil. *Methods:* Participants underwent a one-to-one semi-structured interview exploring the subjective effects of ibogaine. We employed interpretative phenomenological analysis to identify relevant phenomenological categories, including physical sensations, perceptual (visual, auditory, and olfactory), emotional, cognitive, and spiritual. Participants also compared ibogaine with other drugs used in life, including psychedelics like ayahuasca, psilocybin mushrooms, and lysergic acid diethylamide. *Results:* The findings reveal that the subjective experience with ibogaine has similarities with other psychedelic substances, but also important differences. These include very strong and unpleasant physical effects as well as, at least in this patient population, a very difficult and challenging experience. *Conclusions:* Overall, the descriptions involve heightened memory retrieval, specially related to drug abuse and the perception of one's own future with or without drug use. Strong perceptual phenomena, especially dreamlike visions, were commonly reported. Based on Revonsuo's evolutionary hypothesis for the function of dreams and of previous suggestions that ibogaine has oneiric properties, we suggest the subjective experience of drug-dependent patients elicited by ibogaine may be framed as simulations of threat and danger.

**Keywords:** ibogaine, dependence, phenomenology, oneiric, hallucinations

### INTRODUCTION

Ibogaine is a naturally occurring monoterpene indole alkaloid studied since the 1960s as having important therapeutic properties in the treatment of drug dependence, specially reducing cravings to opioids (Alper, 2001; Alper, Lotsof, & Kaplan, 2008; Vastag, 2005; Winkelman, 2014). It has been additionally shown that ibogaine can also facilitate prolonged periods of abstinence in drug-dependent patients who were polyusers of alcohol, cannabis, cocaine, and crack-cocaine but not opioids (Schenberg, de Castro Comis, Chaves, & da Silveira, 2014), further expanding the potential therapeutic applications of ibogaine, an important consideration given that there are important differences between opioid and psychostimulant dependence (Badiani, Belin, Epstein, Calu, & Shaham, 2011), with the latter currently lacking effective and approved pharmacological treatments (Karila et al., 2011; Nutt & Lingford-Hughes, 2009; Phillips, Epstein, & Preston, 2014; Shorter & Kosten, 2011).

But despite considerable literature suggesting therapeutic applications of ibogaine in the treatment of drug addiction, there seems to be little information available in the scientific literature about its psychoactive effects per se. Ibogaine was first identified in the root bark of *Tabernanthe iboga*, a shrub

whose root is used in shamanic rituals of the Bwiti among the Fang and the Mitsogho in Western Africa, mostly in present-day Gabon (Alper, 2001; Brown, 2013; Goutarel, Gollnhofer, & Sillans, 1993). After oral ingestion, it can induce long-lasting non-ordinary states of consciousness including alterations in perception, emotion, and cognition. Given the broad effects some controversy about its classification persists, with current suggestions including hallucinogen, psychedelic, or oneirogen properties (Alper & Lotsof, 2007). The current model of the subjective experience induced by ibogaine proposes three sequential phases lasting around 24 hr or more. The first, or acute phase, can last from 4 to 8 hr and is the most intense part of the experience where perceptual, emotional, cognitive, and physical aspects predominate. The second phase, termed intermediary or evaluative phase, can last from 8 to 20 hr, and consists of a period where the intensity of effects is considerably decreased, with the main characteristics being a heightened sensitivity to any sensory stimulation and a

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deepened capacity for introspection and reflection. The last phase, termed residual stimulation, can last from 1 to 3 days and is the phase where attention and consciousness returns to the ordinary state (Alper & Lotsof, 2007).

The aim of the present report is to better and more comprehensively explore the subjective experiences induced by ibogaine, especially in the acute phase. Specifically, we relied on reports from patients with drug-related disorders who ingested ibogaine in a hospital in Brazil as part of their treatment. These reports were evaluated using interpretative phenomenological analysis.

## METHODS

### Ethics and confidentiality

All procedures were previously approved by the Ethical Committee of Universidade Federal de São Paulo (UNIFESP) in Brazil. Participants signed informed consent stating that their participation was voluntary and that confidentiality would be kept at all stages of the research including any publication resulting from it.

### Sampling and recruitment

The study sample consisted of 22 patients with substance dependence according to the fourth edition of the *Diagnostic and Statistical Manual for Mental Disorders (DSM-IV)* criteria. Recruiting was done by staff at the clinic where the cognitive-behavioral therapy (CBT) was done. Patients voluntarily participated and signed an informed consent agreement.

### Procedure

The CBT treatment was provided in a private clinic in Brazil with psychotherapy sessions conducted both before and after administration of ibogaine. Patients were psychologically and physically evaluated at the clinic by a multi-professional team, including psychiatrists, psychologists, nurses, physiotherapists, and music therapists. Drug dependence was established by the clinic team using diagnostic criteria from the DSM-IV. The inclusion criteria for ibogaine treatment were general conditions of good health, as measured by routine clinical exams (electrolyte levels, aspartate aminotransferase, alanine aminotransferase, bilirubin and fractions, gamma glutamyl transferase, creatinine, blood sugar, and hemogram), absence of psychiatric comorbidities, strong psychological motivation to remain abstinent and willingness to participate in the psychotherapy before and after ibogaine administration, with familial support (all qualitatively assessed during screening interviews conducted by the clinic staff, prior to the treatment and this research). Exclusion criteria were pregnancy, surgery in the last 6 months, uncontrolled high blood pressure, uncontrolled diabetes, cardiac arrhythmias, renal insufficiency, hepatic insufficiency, Alzheimer's disease, and Parkinson's disease. Patients were required to stay at least 30 days at the clinic before ibogaine administration for CBT sessions and to avoid any unwanted pharmacological interactions between ibogaine and any other drug. They were advised

to stay at the clinic or at home after the ibogaine session, away from other people, duties, or any kind of social activity for at least 7 days. Participants were only accepted into the ibogaine treatment if they agreed to comply with the psychological follow-up.

Ibogaine hydrochloride was legally imported from a Canadian provider (PhytoStan Enterprises, Inc.) and was orally administered in a private hospital in an average dose of 15 mg/kg for men and 12 mg/kg for women (Schenberg et al., 2014). Patients were continuously monitored and accompanied by a physician (BDRC) during the whole duration of ibogaine's acute effects, which lasted from 8 to 12 hr.

### Qualitative interviews

After the treatment, one-to-one interviews were personally conducted by a trained psychologist (MACC) as a research procedure unrelated to the treatment protocol. Twenty-two patients were indicated by the clinic staff to the research team for the participation in this study. They were reassured of anonymity and that the information provided would be protected at all times to encourage them to speak honestly and openly. Interviews lasted about 1 hr and were conducted in the CBT clinic where patients had previously been treated. Issues covered at the interviews included basic sociodemographic data; previous drug use patterns, including drugs previously used and main drug of choice (if any); age of onset; reasons to start using drugs; first drug used in life (including alcohol and cigarettes); number of previous treatments attempted; family issues; professional issues; and a description of the subjective features during ibogaine acute effects as well as on their perceptions if ibogaine helped them recover from drug abuse and if so, how it helped them. Specific questions related to drug abuse included the following: "Was the process to stop using drugs gradual or immediate?" "Did you feel like using drugs immediately after ibogaine?" "How different it was from before taking ibogaine?" "Where did you go to after the ibogaine session?" "What did you do after the ibogaine session?" "What were the positive and negative aspects of the ibogaine experience?" "Were there profound considerations or changes in world-view?" "After you decided to quit using drugs, did you relapse?" "If you relapsed, with what drug, and in what circumstances?" among others. The interviews were audio-recorded and later transcribed verbatim for analysis using UCLA's Center for Culture and Health Dedoose platform for analyzing qualitative research with text (Dedoose, 2014).

To better understand the content, quality, and meaning of the state of consciousness induced by ibogaine, we employed interpretative phenomenological analysis, a technique that recognizes that both researchers and participants are unable to precisely describe these subjective experiences without simultaneously interpreting them based on past knowledge and personal experiences (Giorgi & Giorgi, 2008). A recent study used this technique to address the experiences of participants of a functional neuroimaging study with psilocybin (Turton, Nutt, & Carhart-Harris, 2014). The researcher who analyzed the transcripts (EES) did not have personal contact with the participants interviewed and did not have any personal

experience with ibogaine, but had extensive knowledge of the literature of psychedelics and states of consciousness and personal experience with ayahuasca and holotropic breathwork. The researcher deeply engaged with the audio-recordings and written transcripts, first getting an overall view of the whole material. In a second stage, the researcher described categories that were conceptualized to capture themes, concepts, and ideas that appeared in many different interviews and that seem related to the overall subjective experience elicited by ibogaine ingestion. The themes are illustrated with quotations from different participants to enhance the narrative presented. Selected quotes were translated for the sole purpose of this publication. To protect privacy, pseudonyms are used.

### Sample characteristics

There were 7 women and 15 men in the sample. Participants ranged in age from 22 to 53 years, with an average age of 33 years. The age of first drug use ranged from 10 to 30, with an average of 15 years. First drug used in life were most commonly alcohol, cigarettes, and cannabis. The time since the ibogaine session ranged from 2 weeks to 4 years, with an average of 17 months. For 10 patients (45%), the primary drug was cocaine and for 9 (41%) crack cocaine. Alcohol, cannabis, and heroin were the primary drugs for one patient each. Other substances mentioned by some patients included “acid” [lysergic acid diethylamide (LSD)], “ecstasy” [3,4-methylenedioxymethamphetamine (MDMA)], mushrooms, solvents/inhalants, and amphetamines. Only one patient had previous experience with opioids. All participants were White and all but one were also Brazilians. Twenty participants (91%) previously failed drug treatments with 16 (73%) having previously undergone treatments as inpatients at other clinics, in some cases in involuntary commitments. Only two patients (9%) had the CBT–ibogaine as their first treatment for substance dependence. Six participants were unemployed (27%) at the time of the interview, nine resided with parents (41%), 10 with the spouse (45%), one was living with aunt, one with parents-in-law, and for one participant this information was missing in the transcripts. None of the participants had ever been in jail. Ten participants had university degrees, 10 were enrolled in university studies, and 2 had never started university studies. Eight patients self-referred as socioeconomic class A and 14 as class B, which in Brazil are defined as above 20 and between 10 and 20 times the minimum wage per month, respectively. Eleven participants were single and the other half were married. Six participants identified themselves as Catholics, one as Spiritist Catholic, two as Spiritists, one as Presbyterian, one as Atheist, one as Baptist, one as theist, one as Christian, four as having spiritual beliefs unrelated to any specific religion, and for four participants this information was missing in the transcripts.

## RESULTS

After the phenomenological analysis of the transcripts, the description of the ibogaine experience emerged in the following themes: physical sensations, perceptual effects,

visions, cognitive effects, emotional effects, spiritual phenomena, and comparisons to other psychoactive substances. Each theme will be described with samples of patients’ transcripts, but a summary of themes and categories is presented in Figure 1.

### Physical sensations

The onset of effects was frequently noticed through physical sensations, including general discomfort, nausea, cramps, and dizziness:

*When it hit, it came very strong and fast. [...] It is very wild, you feel the stomach heavy. (Marcio, 23)*

*It gives an initial unpleasant feeling for who takes it. (Roberto, 28)*

*I felt dizzy, dizziness is part of the process if you to go to the toilet, cause this were the moments I stood up, yeah, you get very dizzy, nauseated. (Marcos, 35)*

*I felt a lot of nausea, so when I wanted to turn myself, I felt nausea. [...] I felt the sickness coming up, but I stayed there. (Hugo, 32)*

*Like colics, it came, in a wave, strong waves, became strong and decreased, strong and decreasing. (Julio, 29)*

Physical effects continued throughout most of the acute phase and almost always were considered unpleasant and challenging.

*The whole process is uncomfortable and you can’t do anything. (Jair, 34)*

*The physical wear it provokes, it gets close to exhaustion. You need to be physically well because it exhausts you; it consumes too much energy. (Olavo, 53)*

Intense feelings of increasing or decreasing heart rate were reported:

*I thought I would have a heart attack [...] I started feeling this agony and something so big that my heart burst and then I turned to the side like this to see if it calmed down, it didn’t, I layed on my stomach, and my heart beating “boom, boom” very strong. (Luiz, 25)*

*It slows down your heart beat, slows your breathing, as if a part of you had been amputated. (Danilo, 48)*

Difficulties moving the body and controlling walking were mentioned by some patients, with few others stating these aspects were unaffected:

*I stayed with the whole body compressed; I couldn’t move myself. (Roberto, 28)*

*I couldn’t stand up alone, [...] you are trembling like this, as if you had no coordination [...] your whole body is numb, like a layer of anesthesia. (Maria, 33)*

*A very bad feeling, it pulled me strongly, like this, [it pulled] my body you know? and a headache, my*

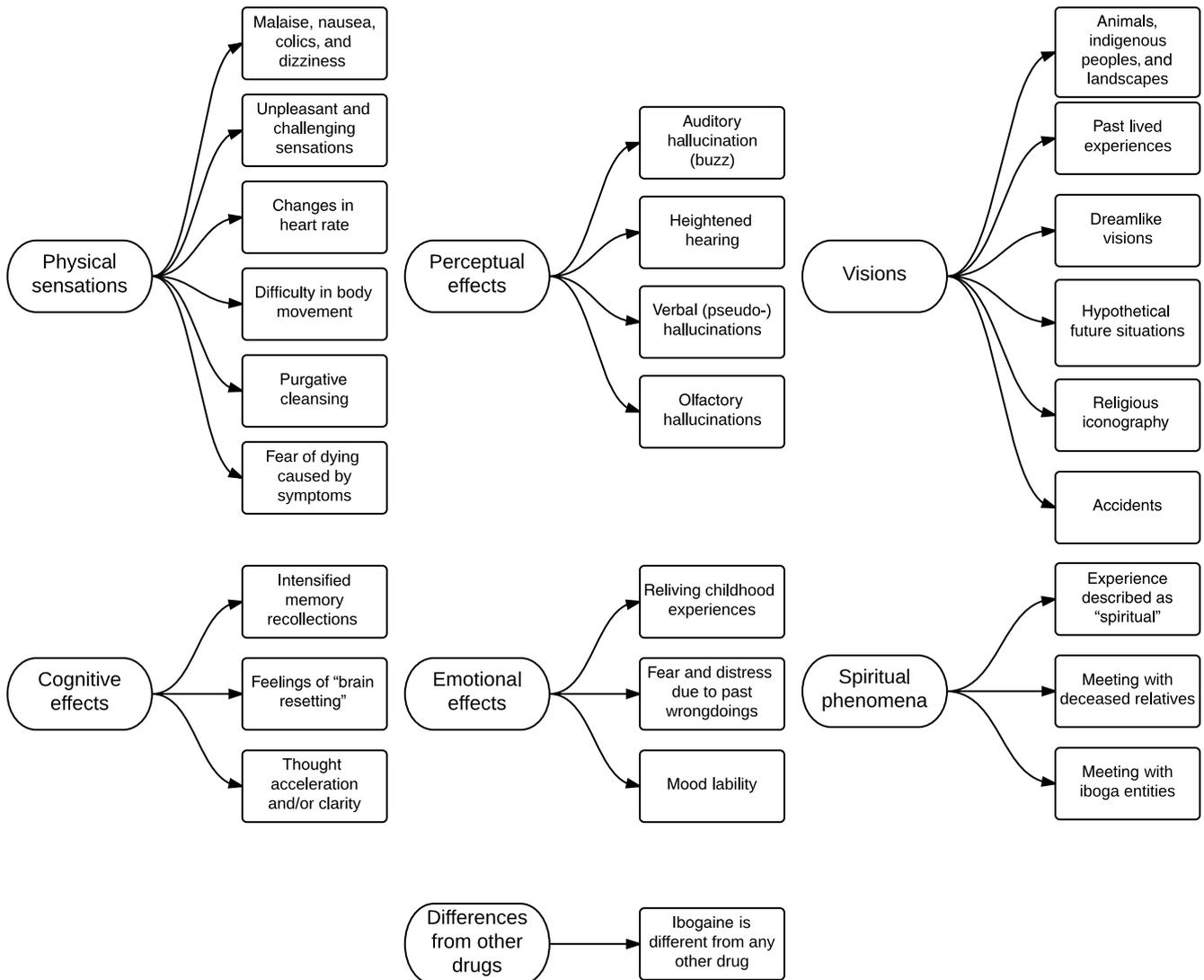


Figure 1. Themes and categories of the phenomenological description of the ibogaine experience reported by 22 patients that underwent combine ibogaine and cognitive behavior therapy in Brazil that emerged using interpretative phenomenological analysis

eyes blinking, I couldn't move and control my body. (Ana, 26)

You lose your coordination completely, you can't get up, you can't. If you get up you get dizzy, you have no control over the muscles of your body. (Danilo, 48)

I didn't feel dizzy, didn't threw up, I could go to the toilet, I ate in the same day, I slept at night. (Joana, 25)

In some cases, dizziness, nausea, vomiting, and also diarrhea were considered as cleansings:

I had diarrhea, and it is like a cleansing inside my body, very unusual [...] I threw up and then I got very sick, like really very sick, I couldn't get up, everything spinning, whirling, everything, everything, I watched, watched, I started crying, I started saying "Why did I take it?" (Julia, 26)

I got sick, vomited. But I knew why I was getting sick, it was like going through a real cleansing. (João, 26)

A few participants reported the overall physical sensations to be so strong and unpleasant that they described it as a feeling of death, sometimes to a scaring level where they needed to call the doctor to be reassured they were not really dying:

The feeling is of death. [...] I took it and during the effect I thought I was dying, like "stop it or I'll die." (Danilo, 48)

### Perceptual effects

The most common sensory modalities affected during the experience were visual and auditory. Auditory phenomena were quite common in the beginning of the experience, accompanying some of the physical sensations during the onset of effects:

It started with that noise, like a famous bike or a lawnmower. (Joana, 25)

*You start with a buzz in your ear. (Danilo, 48)*

*It starts with a noise in the head, a noise like energy, vibration around like this weird noise. Then you feel a motorbike coming, like an old bike around you, and it keeps “vroom vroom vroom vroom vroom” circling, circling and circling. (Luiz, 25)*

Auditory phenomena seems to decrease after the first stage of the experience, but some patients reported heightened hearing capacities in the final stages of the experience, when most of the psychedelic phenomena had subsided:

*Then you stay with that wizz in the ear, that silence there, where we take it it's a clinic, so birds outside are heard. It relieves you, like oh well, no, it's over. (Danilo, 48)*

*I could hear people in the corridor, I could hear people out of the window, out of the hospital, children, people. (Julia, 26)*

*The rustle, any small noise seems at your side, you get more sensitive, intensifies, intensifies [...] then noises very strong, birds, all birds singing, nature. (Maria, 33)*

*Any small noise was hellish, horrible, horrible, horrible. It seemed any small noise went inside my head. (Luiz, 25)*

A few participants reported hearing voices either with external (hallucinations) or “internal” (pseudohallucinations) characteristics. Some interpreted this phenomenon as if ibogaine was directly speaking to them:

*There was a school and I heard a child screaming, it reminded me of a little boy I cared for in a slum. (Maria, 33)*

*And there was a voice speaking in my head, saying everything I must do, what I can't do, everything I can, it said ah... don't do to others what you don't want done to you. (Luiz, 25)*

*Ibogaine's voice came to me always saying patience, patience, patience... this was echoing in my ear. (Marcos, 35)*

Only one patient explicitly mentioned olfactory sensations related to vomiting, which were interpreted as the smell of ibogaine leaving his body:

*While I was lying down it came, I breathed through my mouth and it came, a very strong smell, a smell from something bad. And it was the ibogaine leaving. (Luiz, 25)*

## Visions

Visions were the most noticeable perceptual phenomena during the ibogaine experience and deserve a separate description. We decided to name them as visions since sometimes it was not possible to distinguish whether the participants visualized these images with their eyes open (hallucinations) or closed (eidetic images and/or

pseudohallucinations). In most cases, an elaborate complexity was present, including indigenous people, animals, natural scenes, and landscapes.

*I saw an old lady [...] the spirit of ibogaine. [...] Because in Gabon, in Cameroon they have this image of this old lady which is the spirit of ibogaine, the entity of the jungle or I don't know what. (Danilo, 48)*

*I started to see a kind of transformation, in everything, in animals you know, a wolf, a jaguar, many animals, and suddenly a small indigenous man appeared to me and I noticed that it seemed like a swarm of souls, spirits and a big tribe coming. (Alex, 45)*

Some scenes were identified as pertaining to memory and past experiences of their lives:

*Since my childhood, some fights between my parents, happy moments with my sisters, for example, a parrot I did not even remember that existed. (Maria, 33)*

*You close your eyes, you dream awake, you have a series of flashes, let's say, images from your life. (Rosa, 28)*

*It is not a journey of something that does not exist. It is about things you did. (Julia, 26)*

Other images combined lived experiences, sometimes real memories, but mixed with fanciful components. These scenes were usually strongly emotional and dreamlike in nature.

*I saw many remembrances from childhood [...] I remember perfectly, it was a genealogical tree, and each one came and put his picture in the tree; it was very nice. (Joana, 25)*

*I saw the devil. I saw my mother, she had two strokes already, my dad one, I saw I was ruining my life. (Ana, 26)*

*I saw myself going in a rollercoaster and I took my head, instead of a ticket I would give them my head. (Joana, 25)*

*I started seeing a monster, it ate my brain, and I spoke, I screamed [...] Then again the little girl, I saw her and myself, then she was inside my stomach, and her, and me, we didn't let each other speak, as when you weep so deeply that you can't even speak. (Joana, 25)*

Others reported visualizing imaginary scenes of how their lives could be, both in extreme positive or negative situations. In these reports, images of a future without drug dependence were presented to patients:

*With closed eyes I saw lots of screens, and if I focused in one of those, it was like I was entering inside it. And somehow it showed how it was and how it might have been, showing me [...] where I would go with drugs, it was showing me, my family moving away, my wife leaving me and I living alone in the streets, very skinny, my head shaved. (Luiz, 25)*

*It was heaven and hell, you see a lot things [...] I saw a lot how it would be if I used or not (drugs), so there was a lot of the good side, but also darkness, darkness like hell really, you know, dirt, all dirty and I being shot, I was thrown up in front of my house. (Joana, 25)*

*I had visions playing with my son you know? [...] I thought about my girlfriend as well, lots of things you know? (Márcio, 23)*

A few other patients reported seeing religious iconography:

*I had many images, many visions, but they were all like shadows, no colors. Then three images came, in front of all the others, three colored images, Our Lady, the Sacred Heart of Jesus and Mary. (Hugo, 32)*

*I felt like if a hand of God, a protecting hand so to speak, like this in my head protecting me. (Ana, 26)*

Some patients reported scenes from accidents or illnesses related to family members:

*The truck struck the car and the car ran over my daughter and I was watching my daughter dying, or I tried to save her and the car would crash, and the truck would hit the car and the car would run over us both, I could never save her. (Jair, 34)*

### Cognitive effects

Most patients referred experiencing highly intensified memory recollections, more frequently in visual form,

*Then I had many memories, it seems like . . . almost all possible memories came, you know? It was like I relived my life. (Márcio, 23)*

Some perceptions about intellectual capacities and cognitive functioning were described by patients using computer and brain metaphors to explain how ibogaine was resetting them or organizing their brain and mind:

*Looked like a scene of The Matrix movie so I asked what is this? And I got an answer, and this was funny, the answer was this is your brain being organized. (Jair, 34)*

*It re-edits your brain, actually it is like if it was a computer right? I mean, the feelings go the feelings folder, because everything was shuffled, and this is more or less what it seems like. (Márcio, 23)*

Some people reported feelings of accelerated thinking to a degree where it was hard to be aware of all the thoughts and having the impression that many hours had passed by. In some cases, this acceleration was associated with an increase in thoughts about what they should or should not do:

*A list of everything I can do and another list of all I can't appeared [...] as if it was a total madness inside you, a war between good and evil, what's right, what's wrong, reliving [...] all your life. (Luiz, 25)*

*You feel the process speeding up a lot, lots of thoughts, lots of thoughts [...] It was a very fast thinking that I could not connect with the thoughts. (Julio, 39)*

*It seems like you're reading people's thoughts, you're hearing people's thoughts. I could hear, the thoughts. (Alex, 45)*

*It speeds up consciousness at the same speed than the unconscious, and then is when you see things clearly. (Olavo, 53)*

*You become completely lucid [...] Millions of thoughts solved, it is a life in 24 hours. (Maria, 33)*

*Because many thoughts come, and your mind doesn't stop for a minute, right? Many things come to your head. (Roberto, 28)*

### Emotional effects

Some participants reported emotional feelings similar to what they lived during their childhood, both in positive or negative connotations:

*It seemed like rescuing that childhood feeling, a feeling of being small and playing at home with my brothers, with my parents. Very impressive. (Márcio, 23)*

*I had something very bad inside me that I could understand and free with ibogaine. It was a sad little girl that I had inside me. (Joana, 25)*

*You really cry from memories of your life you know? Things you'd forgotten, you didn't remember anymore. (Daniel, 35)*

Others emphasized increased fear and suffering, sometimes related to past drug use or overdoses:

*Initially it was a fear, you know, fear. (Alex, 45)*

*I went back to my overdoses and I saw that thanks to God I am still alive, I have to thank God you know? And after that I cried a lot because I saw the devil in front of me. (Ana, 26)*

*I cried a lot and lamented for everything I did. (Daniel, 35)*

Some patients reported strong emotional lability, rapidly and intensively fluctuating between positive and negative moods:

*It flourishes in a very big feeling, of guilt, upheaval, regret, forgiveness, caress, love, to value life. These are feelings that, with [drug] use, were stagnant, were stuck! (Roberto, 28)*

*Sad thought, then I cried, then other thoughts, soon I would be laughing. Some moments I cried, laughed, all very fast. (Maria, 33)*

*It was a very deep and profound thing, you know, I can explain what I heard, but I can't explain what I felt, it's unspeakable. (Márcio, 23)*

## Spiritual phenomena

Some participants related to undergo spiritual experiences.

*It was a very spiritual experience, very good right? And I remember when the effect was diminishing that I started crying, missing my wife, crying. (Hugo, 32)*

In line with ibogaine's usage in spiritual and shamanic traditions, some participants declared having gone through experiences involving deceased relatives:

*I could know that my grandfather and my grandmother, deceased, were all right. And then I left my body, I left and went, above the roof and looking, with eyes closed, I saw the roof and went way above! (Alex, 45)*

One participant reported what was interpreted as a spirit of a woman coming to him from Gabon and doing things to his body and traveling with him to Gabon for a shamanic ritual:

*I saw a black lady, with white paintings, she danced around me and then I had sex with this woman. And I remember I entered a hut, I lowered my head and entered this tent, and it was an experience where someone was ripping something out of me. (Caio, 34)*

## Participants comparisons with other substances

All the participants had extensive experience in drug use, but they highlighted ibogaine as quite different and more unpleasant than anything else, including the closely related hallucinogens:

*It is not pleasant, an experience that "ah I want to do it again". [...] It's very different from this. (Carlos, 29)*

*Most of what you get with drugs is about pleasant sensations, you relax, you get relaxed, you feel nice, momentarily. But [...] ibogaine gives you very bad feelings, you see things you don't want to see. (Caio, 34)*

*It's a very strong experience that stirs a lot with us, very intense, very strong [...] it's not an hallucinogen, it doesn't cause hallucinations. It could give and I would prefer it because I would have a little pleasure you know? (Julio, 39)*

## DISCUSSION

The present phenomenological analysis helps to better and more comprehensively document the main characteristics of the non-ordinary state of consciousness induced by ibogaine. The visual and auditory phenomena reported here are in agreement with previous literature on iboga (Goutarel et al., 1993) and ibogaine (Frenken, 2001). The buzzing or motor-like sound at the onset of the experience is remarkably similar to earlier reports (Goutarel et al., 1993). Visions of people and animals in particular were also reported in previous studies with ibogaine (Naranjo, 1969). The personal nature of many of the present accounts, including parents, children, or significant others has also been

emphasized before as an important characteristic of the ibogaine-induced state of consciousness (Naranjo, 1969).

The auditory hallucinatory or pseudohallucinatory phenomena currently reported after ibogaine ingestion are in agreement with the description of voices heard being an important part of the phenomenological descriptions of Bwiti iboga initiation rites (Goutarel et al., 1993). This is an important distinction between ibogaine and classic psychedelics, which commonly induce more visual than auditory phenomena (Nichols, 2004), with the possible exception of ayahuasca (Shanon, 2014). Another important distinction between ibogaine/iboga from other psychedelics are the intense physical effects, with, again, the exception of the less extreme experience with ayahuasca. In the present report, these included tremors, motor incoordination, and feelings of anesthesia that are in agreement with previous reports on iboga (Goutarel et al., 1993) and ibogaine (Frenken, 2001). Furthermore, the reports of nausea and vomiting and its interpretation as physical cleansings and expiation of wrongdoings is in agreement with interpretations of iboga use among the Fang Bwiti (Goutarel et al., 1993) as well as phenomenological literature about ayahuasca (Shanon, 2014), but it clearly differentiates these from substances like LSD, psilocybin, or mescaline. Therefore, the strong and unpleasant physical effects and marked auditory phenomena seem to make ibogaine quite unique. Visual phenomena also seem partly distinct from classic psychedelics in the sense that simple hallucinations like colors, flashes of light, and basic kaleidoscopic or fractal imagery were not mentioned. Instead, the visual phenomena reported by these patients were in most of the cases highly complex and sophisticated imagery of landscapes, animals, people, and situations involving a first-person perspective. This happened both as remembrances from past situations in life or imagining future possibilities. Also, some visualizations involved imaginary realms and situations with strong characteristics of dreams, full of symbolic imagery and content, corroborating previous suggestions that ibogaine could be termed an oneiric, oneirogenic, or oneirophrenic (Goutarel et al., 1993; Turner, 1963). Thus, the terms "psychedelic" or "hallucinogen" may not be accurate enough to describe ibogaine's subjective effects.

The existence of important differences between ibogaine and the classic psychedelics is supported by explicit reports from some patients in this study who had previous experiences with LSD or mushrooms but attested to the different quality and intensity of the experience achieved with ibogaine. Furthermore, ibogaine's pharmacology is quite different from classic psychedelics' (Maciulaitis, Kontrimaviciute, Bressolle, & Briedis, 2008; Popik, Layer, & Skolnick, 1995), with possible consequences to its physical safety being decreased, mainly due to possible arrhythmic effects (Alper, Stajić, & Gill, 2012; Koenig, Kovar, Boehm, Sandtner, & Hilber, 2014; Maas & Strubelt, 2006). These cardiac effects are not induced by the classic psychedelics.

Based on the present phenomenological analysis as well as previous reports on ibogaine's subjective effects, it becomes clear that the experience include strong contributions from memory retrieval and prospective imagination, a phenomenon that is common in dreams. Also, the excerpts above indicate that the narratives of ibogaine's experiences

frequently have similarities to dream reports. Thus, the suggestion that the subjective experience induced by ibogaine has oneirogen or oneiric properties, i.e., dreamlike qualities, seems appropriate. Here it is again important to emphasize differences with the classic psychedelics, because the more basic patterns of visual imagery they frequently induce is not present in dreams nor did they seem to play an important role in the present ibogaine reports.

And indeed dreams have been shown to involve both memory consolidation and retrieval (Paller & Voss, 2004) as well as prospective imagination (Diekelmann, Wilhelm, Wagner, & Born, 2013). In one influential theory, dreams were proposed to be simulations of threats and how to avoid or defend oneself from them (Revonsuo, 2000). The strong and intense reports of reliving difficult past situations, including drug overdoses, as well as the reports about feelings of death and rebirth, suggest that during the altered state of consciousness induced by ibogaine these patients are recurrently simulating threats, both from the past as well as possible in the future. Therefore, it's plausible that the phenomenological content of the non-ordinary state of consciousness achieved with ibogaine has both ties with and consequences for the normal state of consciousness of these patients. By simulating their traumas, difficult memories, threats, and overdoses, the experience in the modified state of consciousness can have positive impact on their drug use habits, which in some case can be really life-threatening. This is important because the ibogaine experience has been shown to have positive outcomes in these patients lives, including the achievement of prolonged periods of abstinence (Schenberg et al., 2014) as well as in reducing craving and improving social relationship, self-efficacy, and quality of life (Schenberg et al., 2017).

The suggestion that the subjective aspects of the modification of consciousness induced by ibogaine can help dependent patients recover is also supported by psychotherapeutic proposals based on subjective effects of ibogaine. According to these earlier proposals, the sensoriums experienced during the effects of ibogaine include release of repressed memories and imagination of scenes characterized by personal content (Frenken, 2001; Naranjo, 1969). However, in contradiction with these earlier reports, we currently observed intense emotional states accompanying these memories, both with sadness, crying, and anxiety as well as joy, happiness, and laughter.

However, the present results must be interpreted with care if a comprehensive understanding of ibogaine and iboga experiences is to be achieved. In this sense, it is crucial to consider that the current set (drug-dependent patients seeking recovery) and the setting (a hospital environment) are markedly different from iboga's historical use in shamanic contexts, as well as other settings where ibogaine is currently offered as both a treatment or a tool for spiritual growth (sometimes illegally). For example, in the non-medical context the use of iboga includes rhythmic music and dancing, sometimes with rapid and frenetic movements, in sharp contrast with the patients' reports of physical tremors, feelings of anesthesia, and decreased motor control and coordination. Therefore, a comprehensive understanding of the state of consciousness induced by iboga needs to take set and setting into account.

But in few cases, the visions and auditory phenomena reported by patients in this study were of striking complexity, including reports of out-of-body experiences and visions of participation in initiatory rituals resembling the Bwiti culture. This happened even in situations where the patient allegedly had no previous knowledge of symbolism and imagery of this culture. This is in agreement with the proposal of a fourth stage in the iboga initiatory ritual between the Mitsogho Bwiti including "normative visions." These would be one of the most important features desired in their iboga initiation rites, including hearing voices from and sometimes seeing ancestors bringing specific messages which are interpreted as the collective visions and cultural image of the tribe, very much in a Jungian sense (Goutarel et al., 1993). In the present case, quite strikingly, some drug-dependent patients reported hearing voices telling them what to do and what to stop doing in term of drug consumption. This may be interpreted as a collective and cultural image that the patient becomes fully aware of during the ibogaine experience. This may thus influence the patient in his path to recover from drug abuse. This feature also resembles iboga use among the Ombwiri Possession Society, which focuses on revealing to the patient the nature of his affliction through the revelations brought by iboga. In this sense, during the ibogaine experience patients can become aware of the multiplicity of causes and reasons that may drive their drug abuse, as for example some reports of auditory and visual phenomena related to their ancestors, at times revealing their drug problems originated in the family much before they developed this habit. This can be interpreted as equivalent to the notion of revealing the nature of the affliction. By realizing what are the root causes of the suffering which is driving their repetitive and destructive behavior of drug consumption, patients are self-diagnosing, i.e., becoming aware of their own condition's causes in a much deeper psychological perspective. This interpretation is supported by the fact that most of these patients had previous treatments for drug dependence without success before trying the ibogaine, which helped them to recover (Schenberg et al., 2014).

Another important resemblance between some of the present reports and the Bwiti uses of iboga has to do with experiences of death and rebirth. While in the Bwiti initiation rites this seems to be one of the main goals, with many practices and symbolism having evolved to induce this kind of experience, in the present report it followed quite spontaneous patterns, but was remarkably related to drug abuse in the first place. Therefore, it is also plausible that these very challenging and unpleasant experiences of near-death situations can have important positive consequences for the patients that achieve these more intense stages of the experience. However, as already pointed before, benefiting from this kind of experience would be unlikely without professional psychotherapeutic support before and after the ibogaine experience (Frenken, 2001).

In conclusion, ibogaine induced experiences of intense and prolonged states of non-ordinary consciousness whose main phenomenological characteristics were physically unpleasant sensations, sensory phenomena in visual and auditory domains, cognitive changes, and emotional lability. Overall, the effects are in agreement with parts of the

descriptions of ancient iboga rites and seem to differentiate iboga and ibogaine from classical psychedelics like LSD, psilocybin, mescaline, and *N,N*-dimethyltryptamine (DMT). Therefore, the proposal of classifying ibogaine as oneiric, oneirophrenic, or oneirogen is supported by the phenomenological descriptions currently presented and may be more useful than psychedelic or hallucinogen. These terminology considerations are important because it values specific distinctions between substances and also stimulates more focused research on the functions of the subjective experience induced by ibogaine in the treatment of substance use disorders, possibly using the framework of threat simulations as proposed for dreams.

Finally, it must be remembered that these cases were selected by the staff of the clinic where CBT treatment was done. This sample may have had a more positive outcome than the average ibogaine patient. Even so, the phenomenological description of this sample is in accord with the report of previous ibogaine experiences and may account at least for the reported experiences of a group of patients that mostly profited from the ibogaine experience (Schenberg et al., 2014). One possible future expansion of these findings is to analyze in a more systematic way which of the described phenomena seem to be associated with better outcomes.

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