

**Ancestral Amazonian Medicine for the XXI Century:
Evidence of the impact of the ceremonial use of Ayahuasca in a healing center in Bolivia'**

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ABSTRACT

Ayahuasca is an ancestral entheogenic plant of great power and great importance among the Amazonian indigenous peoples. Despite the little recognition it enjoys in Bolivia, during the last ten years it has begun to gain increasing recognition among spiritual explorers of the Western world and scientists from the branches of neuroscience and psychiatry. It is a concoction of plants that requires proper use in order to receive its benefits for physical, mental and spiritual health, which includes a preparation based on Amazonian tradition and the guidance of a healer with extensive experience within a ritual framework. Both scientific studies and the testimonies of indigenous peoples confirm this, despite the profound differences between their respective worldviews. Scientific studies unanimously confirm the great potential of Ayahuasca as a mystical, effective and safe tool for psychological and psychiatric treatments, which can generate conscious, acute, and long-lasting changes in the well-being and life of the participants in the ceremonies, without any adverse effect. In this study we confirm the evidence of therapeutic potential through an analysis of the experiences of 40 participants in Amazonian ceremonies performed in a healing center located in the heart of Bolivia. It is highlighted that the effects in the inner world of the participants, that is to say at the level of their worldview, demonstrate a long-lasting impact that is manifested in concrete and often profound changes in the daily life of the participants, that could be further reinforced through accompaniment and subsequent exercises.

Key words: Entheogens – ayahuasca – therapeutic tool – healing center - Bolivia

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1. INTRODUCTION

Ayahuasca is considered an entheogenic plant or "plant of power" and is part of the teacher plants used by indigenous peoples and ancestral natives of Latin America, whose origin can be found in the Amazon jungle. Since prehistoric times, ancestral peoples use entheogenic plants for spiritual and initiatory reasons and to generate health (Schultes et al., 2001). The plant generates an expanded perception of consciousness, a deep introspection and mystical experiences.

Scientific studies referring to the consumption of entheogenic plants, of Ayahuasca in particular, are found above all within the branches of neuroscience and psychiatry. For anthropologists, Ayahuasca is widely recognized as the most powerful shamanic entheogen that exists (Metzner, 2006) and in the Amazonian tradition it is considered a "teacher of teachers" (Mabit, 2019).

Despite the positive affirmations of the international scientific community about the effects and safety of Ayahuasca, in Bolivian society the acceptance of the plant as a therapeutic tool remains within the sphere of ignorance, fear and social taboo³. The purpose of this article is to inform about the use and effects of Ayahuasca through the analysis of current scientific literature and the analysis of a study carried out in a healing center located in the heart of Bolivia.

2. STUDIES ON AYAHUASCA

2.1 The effects measured by science

Scientific studies carried out by internationally recognized researchers, especially in the last ten years, highlight the following benefits for human health from the use of Ayahuasca:

³ Despite few contraindications and the absence of adverse effects in case of proper use, the media receive stories of death and psychosis in people who took Ayahuasca inside and outside the Amazon (Díaz Mayorga, 2009), which generates bad publicity, taboo and sometimes prohibition regarding the use of entheogenic plants. These stories must be understood in their 21st century context in which "spiritual tourism" or "ayahuasquero tourism" is in fashion and thousands of citizens from Europe, North America, and Latin America travel in search of Ayahuasca for various reasons and they find it in towns or ceremonial centers. Unfortunately, in many of these places, the use of Ayahuasca has been commercialized and the medicine is served by people without experience, without correct preparation or without adequate ethics, especially in the Peruvian Amazon. The desecration of the sacred has a very high price (Mabit, 2016), and adverse effects can occur. However, it is a phenomenon alien to traditional proper use.

Effects on a psychospiritual level

Deeply mystical experience, analyzed through the Mystical Experiences Questionnaire (Bogenschutz et al., 2015; Garcia-Romeu et al., 2015; Majić et al., 2015; Griffiths et al., 2016; Ross et al., 2016; Palhano-Fontes et al., 2018).

Increased capacity for awareness and conscious introspection. Ayahuasca activates brain areas related to memory of personal events (called episodic memory) and awareness of emotions and internal sensations (Riba et al., 2006; de Araujo et al., 2011). In addition, it has been verified that Ayahuasca generates the extension of the conscious access to the unconscious processes of the person, without interference from the critical-analytical mind (Hoffmann, 2001). That is, during the intake, the person is his own therapist and patient at the same time. Hoffman et al. (2001) recorded profound changes in electroencephalographic (EEG) activity in the minds of participants who took Ayahuasca. The data was obtained during intake and showed a statistically significant rise in alpha and theta amplitudes. Alpha waves are indicators of conscious attention, while theta waves reflect subconscious activity that facilitates access to emotions, symbology, and memories. In this altered state of alpha and theta waves, the participant has greater conscious access to their subconscious realm, without the interference of the analytical mind, which is similar to hypnotic states and states of deep meditation.

Expansion of the belief system. Metzner (2006) concluded that most Western people who have continuous Ayahuasca practices expand their belief system, transcending the limits of the conventional materialist paradigm of Western science and psychology⁴.

Psychological and neurological effects

Increase of psychological capacities and psychological flexibility. This has been verified through tests that measured how that Ayahuasca increases the ability to think in a divergent creative way (Kuypers et al., 2016), and in parallel it improves the ability of convergent cognitive thinking (Uthaug, 2018). Consequently, Uthaug et al. (2018) described that the dissolution of the ego is recorded during the intake. These samples of psychological flexibility are beneficial for the psychological balance of the person.

⁴ Just like among indigenous peoples, Asian peoples and Western esoteric traditions, the reality of non-material spiritual beings is starting to be accepted while at the same time it is being recognized that we live in multiple worlds of consciousness.

Expanded capacities of meditative states / *Mindfulness* (Soler et al., 2015; Sampedro et al., 2017; Soler et al., 2018). Ayahuasca increases what in clinical psychology is called "decentering" (Soler et al., 2016), or the ability to observe thoughts and emotions as transitory events of the mind without getting caught up in them. This automatically reduces negative judgmental attitudes and inner reactivity, which are the classic goals of *Mindfulness* psychotherapy (Kuypers, 2016).

Therapeutic potential for the reduction of depression and mental disorders (Grob et al., 1996; Segal et al., 2010; Bouso et al., 2012; Osório, 2015; Barbosa et al., 2016; Sanchez, 2016; Palhano-Fontes et al., 2018). The measurement of antidepressant effects indicates that Ayahuasca induces neuronal changes that are sustained over time (Sampedro et al., 2017), scientifically proven up to three weeks (Osório et al., 2015, Sanches et al., 2016) and four weeks after the intake (Uthaug et al., 2018).

Therapeutic potential for the reduction of addiction (Palhano-Fontes et al., 2018; Mabit, 2007; Thomas et al., 2013; Bouso, 2014; Labate and Canvar, 2014b; Loizaga-Velder and Verres, 2014; Sampedro et al., 2017); and specifically the reduction of alcohol use (Doering-Silveira et al., 2005a; Harris, 2012).

Changes that are generated in the personality. Ayahuasca modifies the physical brain (thickness of the cerebral cortex) that produces changes in the brain that are manifested in a greater spiritual inclination (Bouso et al., 2015), and that generates changes in personality.

The healing capacity for the psyche and the human body. Ayahuasca causes a decrease in the activity of the Default Neural Network (DMN) (Palhano-Fontes et al., 2015). Abnormal increases in DMN activity have been found in a wide spectrum of neurological diseases such as autism, Parkinson's disease and Alzheimer's, and psychiatric diseases such as schizophrenia and depression (Palhano-Fontes et al., 2015). Therefore, Ayahuasca has the potential to be a medicine for these disorders.

Effects on habits and daily life

Positive effects (changes) in the emotions and in the daily life of people. It has been verified that the use of Ayahuasca generates an increase in good eating habits and a healthy diet, improvement of health, improvement of good mood and well-being, improvement in personal values, reduction in psychopathologies, increased self-acceptance as a person (Halpern et al., 2008; Bouso et al., 2012;

Ona, 2019), increased compassionate love in relationships (Harris, 2012) and reduced anxiety (Grob et al., 1996; Bouso et al., 2012; Barbosa et al., 2016).

2.2 Scientific evidence of Ayahuasca as a therapeutic tool

The following statement is formulated based on a long list of internationally recognized scientists, mainly from the branches of neuroscience, psychology and psychiatry⁵:

Scientific studies unanimously confirm the great potential of Ayahuasca as a mystical, effective and safe tool for psychological and psychiatric treatments, addiction and anxiety treatment, both in clinical and natural contexts, without any adverse effects in case of proper use. There are various investigations that affirm that the plant can help human beings to question and transcend the fundamental concepts of themselves, nature and reality, and that it can generate acute and long-lasting changes and well-being in the lives of ceremonial participants.

Adverse effects and contraindications

Several studies have shown that Ayahuasca is not addictive and that there are no adverse effects or alterations in physical or mental health (neither neuropsychological nor psychopathological) in the medium and long term related to its continued consumption, when used properly⁶. Few investigations formulate a limitation in its use due to health issues, however there are certain contraindications.

It has been suggested that Ayahuasca is, in principle, contraindicated for people with psychiatric disorders, especially in those individuals prone to psychosis (Lima and Tófoli, 2011; Dos Santos and Strassman, 2011; Mabit, 2016). Additionally, according to Mabit (2016), metabolic imbalances such as advanced diabetes or chronic renal failure represent a contraindication. In the same way, Mabit continues, heart conditions, severe respiratory insufficiencies (asthma, emphysema, etc.), mental structures classified as borderline, and delirious states represent absolute contraindications to the intake of Ayahuasca. Furthermore, as the recognition of Ayahuasca grows worldwide, more care will have to be taken to avoid inappropriate use. Considering the effects of hypersuggestibility

⁵ Hoffmann et al., 2001; McKenna, 2004; Metzner, 2006; Gable, 2007; Griffiths et al., 2008; Halpern et al., 2008; Bouso and Riba, 2011; Bouso et al., 2012; dos Santos, 2013; Thomas et al., 2013; Loizaga-Velder y Verres, 2014; Labate & Cavnar, 2014b; Soler et al., 2015; Barbosa et al., 2016; Lebedev et al., 2016; Kuypers et al., 2016; Bouso et al., 2017; Sampedro et al., 2017; Palhano-Fontes et al., 2018; Soler et al., 2018; Ona: 2019.

⁶ Grob et al., 1996; Callaway et al., 1999; da Silveira et al., 2005; Doering-Silveira et al., 2005b; Halpern et al., 2008; Dos Santos et al., 2011; Bouso et al., 2012; Bouso et al., 2015; Barbosa et al., 2016; Bouso et al.: 2017; Palhano-Fontes et al., 2018.

generated by the ingestion of the plant, there are risks when people surrender to the guidance of others with questionable integrity and limited experience (Metzner, 2006).

3. STUDY DESIGN

3.1 Methods and participants⁷

To generate reliable results, we measured the impact and persistence over time of the Amazonian ceremonies in the healing center Quinta Conciencia through a questionnaire made of 70 questions.

The questions are mostly quantitative. The questionnaire is an adaptation of three different psychological questionnaires, among the most used in studies on hallucinogens: 1) Mystical Experiences Questionnaire, by Pahnke (1963), 2) Persistent Effects Questionnaire, by Griffiths (2008), 3) After the Spiritual Experience, also adapted as Changes in Yourself and Your Life, by Harris (2017). The Mystical Experiences Questionnaire (MEQ) was developed by Pahnke in 1963 as a tool for evaluating mystical experiences caused by hallucinogens. The MEQ is based on Stace's (1960) conceptual framework and covers the most important dimensions of the classical mystical experience: unity (internal and external), transcendence of time and space, unethereal quality, sacredness, positive attitude and paradoxicality (Harris, 2017; Maclean 2012). The MEQ is widely reviewed and tested for its relevance and accuracy (Barrett, 2015). Also building on Pahnke's research, Griffiths' team developed the Persistent Effects Questionnaire (Harris, 2017). Harris (2017) adapted this questionnaire in the so-called "After the Spiritual Experience", for use in studies on the effects of Ayahuasca experiences. All of these questionnaires explore the same mystical qualities.

The method consisted of measurements on ceremonies performed in real life, not in a clinical context, without placebo control group. Due to having performed the ceremonies in a "real life" setting, a placebo control group was not introduced, also because it is difficult, or rather impossible, to develop a credible placebo for experienced participants. In any case, several other studies (Riba et al., 2003; Riba et al., 2006) have already shown that the psychological, electrophysiological and

⁷ Although experiences can be measured subjectively in their level of mysticism and impact on daily life, and objectively by brain waves, it is observed that the existential magic of deep ceremonial experience cannot be measured with words or machines, because it is kept in the intimate dialogue between the spirit of Ayahuasca -in the scientific literature frequently mentioned as a non-human being- and the spirit of the person who ingests it. When one begins to rationalize the experience, it seems that a part of the "magic" moves further back into the subconscious of the human being.

neurological changes induced by Ayahuasca are not explained by the placebo effect (Palhano-Fontes, 2015). The questionnaire was answered mainly based on the last experience that the participants had, collected after 17 different ceremonies held in the healing center.

All the participants were, to a lesser or greater extent, known by the researchers because they had participated at least in one previous ceremony at the center. The participants (N=40 with complete data) are mainly women (58%), with an average age of 36 years, within a range of 18 to 64 years. The participants have a high level of education, 90% have a university education, the majority with a bachelor's degree (51%), and a postgraduate degree (38%). The professions are diverse, among others we find: doctors, economists, psychologists, lawyers, social workers, anthropologists, publicists, and tourist guides. Being the majority of the participants Bolivian (68%) and from large cities (66% from Santa Cruz, Cochabamba and La Paz), the external participation is significant: 18% from the Northern Hemisphere, and 13% from other Latin American countries. 87% of participants have tried other psychedelics, especially marijuana (80%), Huachuma (63%), chemicals such as LSD and XTC (49%), and sacred mushrooms (40%). 65% of the sample participated in an Ayahuasca ceremony for the first time in the last three years, 88% of them have taken Ayahuasca less than six times, and 20% only once. The way to find out about the healing center was through friends and family for 83% of the participants, and the vast majority came for reasons of spiritual search and the "call of the plant", but also for reasons of emotional/spiritual discomfort and confusion in life.

3.2 The context of the ceremonies

The Ayahuasca intakes analyzed in this study were performed in traditional Amazonian-style ceremonies, for healing reasons and were not related to scientific reasons.

The internal set (predisposition) consists of the intentions, expectations and motivation of the participants. In the healing center, before starting the ceremony, work is done for several days through alternative techniques to generate clarity in the intentions⁸. The external setting (context) consists, among others, of the ceremonial space, the guide, the way of leading the ceremony, the music and the decoration of the ceremonial space⁹.

⁸ To be able to participate in the ceremonies in the healing center, a preparatory diet is required at home or in the center itself, preferably accompanied by active physical detoxification and alternative psychological therapies. The guides do not allow the participation of people taking pharmaceutical drugs or any other form of Western medication.

⁹ Most of the literature consulted on the topic was based on studies carried out in clinical conditions intended for scientific reasons, or the data was generated by measurements among the participants of the Daime tradition, originally Brazilian, which is fundamentally different from the Amazonian use of Ayahuasca. In the publications of these studies it can be observed that there is an absence of mentioning the setting: in what forms (space, ritual setting, music, etc.) and with whom (shamanic guides, researchers...) the Ayahuasca intake and the measurements were performed.

The ceremonies were performed at night within a ritually protected space and framework. The space (*kiva* or *maloca*) is located in the middle of nature, next to a river, far from the distraction of modern life. The duration of the ceremonies was between five to seven hours, and the participants ingested one or two cups of the medicine during the course of the ceremony, depending on the need to go deeper into the experience. In this study, the ceremonial form is located within the lineage of Amazonian traditions, in which the guides are trained and experienced, and from where they offer direction, healing and support¹⁰.

4. RESULTS

The answers are based on 17 different ceremonies held in the previous two years. 74% of the participants had their last experience at the healing center in the past 12 months. Participants had very different motivations for this experience, for example “to discover who I am”, “to strengthen my spiritual life”, “to heal my female lineage”, and “to heal addictions”.

4.1 Experiences of the ceremonies in the healing center

The evaluation of the experience with Ayahuasca in the center range from positive to very positive. Out of a total of five (5) points, the participants evaluated the previous diet at home as positive, giving a score of 4 points, and the previous time at the center even more positive: score 4.4. The feeling of safety and support in the ceremony by the guides is evaluated with a score of 4.7 and the experience of the ceremony in general with a 4.8 score, which leads to the conclusion that the ceremonies were of good quality. The participants felt the plant with an intense sensation: score 4.4; and consider it to be wise: score 4.5.

¹⁰ In the healing center there are two guides (healers), a woman and a man, who work alone or in complementarity, creating a space of containment and security, through a ritual framework (opening and closing the ceremony), shamanic songs, music with various instruments, prayers, cleansings and *curaciones* (healings). Symbolism of the Amazonian jungle, flora and fauna and, less explicitly, deities of the Andean world, Buddhism, Afro-Brazilian orixás, the tradition of North American Natives and European neopaganism are used, thus representing the syncretic cultural identification of the two healers, as an integration of North and South, East and West. Loaded with nationalities from both hemispheres, the two feel a sympathetic relationship due to the call of indigenous mythology of the "prophecy of the Condor and the Eagle", which can be summarized as the story that when humanity needs it most, the medicines of the northern and southern peoples come together to heal the Earth and humanity.

4.2 Effects of ayahuasca

Experiences

The main themes worked on during the ceremonies were fear with 55%; spirituality 48%; gratitude 48%; and guilt/forgiveness 45%. These are followed by doubts 40%; traumas 40%; meaning of life 40%; self-love 40%; relationships 38%; open the heart 38%; love 35%; anxiety 33%; happiness 33%; beliefs 30%; thoughts 30%; stagnation 30%; depression 28%; life orientation 28%, and finally topics such as sexuality, victimhood and confusion.

During the ceremony, 79% of the participants vomited. The ceremonies were experienced as a mystical experience (Mystical Experiences Questionnaire, MEQ) with a score of 4.3 out of 5.

Changes

The effects of the ceremony are expressed in the changes that the participants have observed in their inner world (thoughts, emotions, attitude, spiritual connection, etc.) and in their outer world (physical health, diet, habits, relationships, etc.). They evaluate the inner result very positively, such as changes in thoughts with 4.6 out of 5 points, attitude towards life: 4.6; spiritual connection: 4.5; attitude towards themselves: 4.4; emotions 4.3; sensations 4.3; mood/depression 4.3; synchronicity 4.2; the feeling of being guided in life 4.2; state of anxiety 4.1; and dreams 3.7. Changes in the inner world have an average score of 4.3 out of 5.

The participants have indicated which are the most important internal changes, among others they mention "the sensation of unconditional love", "leave the ego, live here and now", "trust, self-acceptance", "reconnection with the divine source", and "greater clarity in my purpose."

They also evaluated positively the external result such as changes in the physical body with 3.7 points out of 5; health 3.9; behavior 4.1; use of alcohol or drugs 3.6; harmful habits 3.8; and diet 3.7. Changes in the outer world average a score of 3.8 on the same scale. The participants have indicated which are the most important external changes: they mentioned, among others, "change to a healthier lifestyle", "material detachment", "physical well-being".

The vast majority of indicators has received 4.4 points out of 5 answers to their internal questions. 58% of the participants indicated that they explicitly received a message or instructions during their last ceremony at the center, such as "stop being a protective mom", "observe, do not judge, accept, trust", "practice gratitude", "breathe better", "trust that you are on the right path", "give unconditional love to your children", "you have to respect the lives of others", "I have to stop seeking approval",

and "don't use bad words not even in thought". Participants indicated that these messages were more than superficial phrases, rather they touched them precisely and deeply.

4.3 Integration and persistence of effects

The participants indicated that the integration (persistent effect) of the experiences for their inner world (thoughts, emotions, spirituality) felt very good (4.4 out of 5), while the integration of the experiences for their outer world (health, habits, relationships) felt good (4 out of 5).

Persistence over time	Inner Changes	External Changes
Nothing	0%	3%
0-1 month	23%	24%
1-3 months	8%	11%
3-6 months	20%	11%
6-12 months	20%	24%
>12 months	30%	27%

Table 1. How long did the effect of the experience last?

The participants indicated that more persistence of the effects could be generated through more inner work, performing ceremonies periodically, doing psychotherapy, and being more persistent. Many participants indicated that they have made changes in their lives after the experience (level of change: 4.2 out of 5). They mentioned testimonials of great changes in their lives, such as "Ayahuasca completely changed my life", "it is an experience for which I have no words, before that I was only asleep", and "it replaced old beliefs with which I was raised and changed them for others that I chose".

5. CONCLUSION

What is evident is the importance of the phase prior to the intake of Ayahuasca, which indicates that there is a positive correlation between good preparation through diet, fasting, therapies and physical detoxification with a deep experience, and with more lasting effects over time.

The Ayahuasca experience is evaluated as highly mystical. It is observed that the themes that the participants worked on during the ceremonies were deep and very diverse. To heal inner (thoughts and emotions) and outer (health, habits, relationships) issues, most participants had to go through

their fears. The changes that the encounter with Ayahuasca generates are characterized by new lifestyle that is healthier, with greater spiritual connection, a better state of physical and mental health, and freer from addictions and attachments.

The research demonstrated that the ingestion of Ayahuasca has no adverse effects on the physical or mental health of the participants when it is taken in a protected ceremonial environment. It is also concluded that the phenomenon of vomiting during ceremonies is appreciated as part of physical, emotional and mental cleansing, and not as a harmful effect.

The encounter with Ayahuasca generated many profound changes in the participants, which is a confirmation of the aforementioned "afterglow" in the scientific literature. It is observed that the impact usually decreases as time passes. This research shows that there is a positive correlation between the performance of subsequent practices and the persistence of the effects of an intake over time.

In general, the research shows that Ayahuasca has high potential as a therapeutic tool to generate well-being and physical, mental and spiritual balance, acutely and even over a long period of time, as it was also evidenced by many other studies, and which are manifested in concrete changes of well-being in various expression.

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