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## Therapeutic Potential Ascribed to Ayahuasca by Users in the Czech Republic

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### ABSTRACT

This article focuses on the therapeutic potential ascribed to ayahuasca by users in the Czech Republic. Following an online survey, the fieldwork among users of ayahuasca was carried out from November 2015 to December 2016. The research sample consisted of 46 persons (23 women and 23 men), who took part at least once in some type of ayahuasca ritual and/or were the facilitators of the ayahuasca sessions. We held semi-structured interviews with participants in order to discover the therapeutic potential of ayahuasca. Transcribed recordings were analyzed using the Grounded Theory Method. The results suggest that the intensity of effects produced by ayahuasca is not directly proportional to its therapeutic effect. According to the informants, ayahuasca is applicable in the treatment of drug addiction. They consider it to have a broad spectrum of therapeutic potential. This therapeutic potential could be based on memory recall.

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### KEYWORDS

Ayahuasca; Czech Republic; therapeutic potential

### Introduction

This study is an attempt to review and interpret previously non-described practices of ayahuasca use in the Czech Republic, with reference to its therapeutic potential. Ayahuasca is the herbal decoction made from *Banisteriopsis caapi* and *Psychotria viridis*. However, it can also be prepared from a variety of plants containing the same chemicals, and various additives can be added to the mixture to obtain desired effects (Ott 1994; Rátsch 1998). This may lead to risks for its users.

In the Czech Republic, however, it is possible to participate in ceremonies where a similar preparation containing beta-carboline alkaloids and dimethyltryptamine (DMT), but made from other ingredients (e.g., *Peganum harmala* for beta-carboline alkaloids, *Diplopteris cabrerana* or *Acacia* sp. for DMT), is used. This product is referred to by the same name, or another local name (e.g., *rucacha*).

The liana *Banisteriopsis caapi* contains beta-carboline alkaloids, including harmine, harmaline, and tetrahydroharmine (Ott 1996). Harmine and tetrahydroharmine are monoamine oxidase inhibitors (IMAO) and have antidepressant effects (Sanches et al. 2016). Schenberg et al. (2015) revealed the relationship between the level of harmaline and vomiting. Vomiting is considered an important part of the ayahuasca experience.

Dakic et al. (2016) found that harmine increases the number of nerve progenitor cells; i.e., cells that allow neurons to form. Human neural progenitor cells have

experienced up to a 70% increase in proliferation. The new neural cell formation involves the inhibition of DYRK1A, a gene that is over-activated in patients with Down syndrome and Alzheimer's disease. Harmine could then potentially play a role in neurogenesis and be therapeutically useful for people with cognitive deficits.

In the leaves of *Psychotria viridis*, DMT, a substance endogenously present in human urine and cerebrospinal fluid (Strassman 2001), can be found. When this substance is added to the decoction, it yields altered states of consciousness. The pharmacological efficacy of ayahuasca is determined by the synergy between the two types of substances. Beta-carboline alkaloids inhibit the monoamine oxidase enzyme (MAO) in the digestive tract and prevent oxidative deamination of DMT. Otherwise, the effects of DMT through oral administration cannot be achieved.

With regard to the possible therapeutic use of ayahuasca, it is interesting to mention that tetrahydroharmine blocks the reuptake of serotonin (5-hydroxytryptamine, 5-HT). As a result, the levels of dopamine, noradrenaline, and serotonin mediators in the central nervous system are increased. One possible application of ayahuasca is in the treatment of depression (Harris 2017). The DMT acts on 5-HT transporter proteins.

It is known as a 5-HT1A agonist and a 5-HT2 receptor antagonist. It has been demonstrated that

synaptic connections to serotonin transmission are increased in those who use ayahuasca for long periods (Beltrán Gallego 2007; Callaway 1994). Current research has shown that ayahuasca might be beneficial in certain health issues, such as chronic pain, leukemia, Parkinson's disease, and cancer (Schenberg 2013), as well as asthma, depression (Anderson 2012), or alcohol addiction. Schmid, Jungaberle, and Verres (2010) have confirmed that it can improve coping strategies against disease and increase life satisfaction.

### Sociocultural characteristics of ayahuasca

Ayahuasca constitutes a pivotal part of the worldview of some indigenous ethnicities of the Amazon (Reichel-Dolmatoff 1972). The native inhabitants traditionally used it for a variety of purposes; i.e., shamanic initiation; prevention, diagnosis, and treatment of diseases; divination; or establishment of community cohesion (Dobkin de Rios and Rumrill 2008). In the Amazon, ayahuasca is considered a key element in traditional indigenous medicine, but it is not the only plant-based medicine used. There are a variety of tonic, anti-parasitic, and antiseptic agents available. However, ayahuasca's original meaning is more magical-religious than medical (Wilbert 1994).

Ayahuasca is sometimes conceptualized as both medication and sacrament (Móró and Noreika 2011). Recently, it has been used in therapeutic and sacral contexts (Ballón 1999; Labate et al. 2009; Mercante 2010). As a therapeutic tool, ayahuasca is legally used in Peru, such as in the Takiwasi Center (Horák 2013). As a sacrament, it is commonly administered within religious ceremonies of the so-called syncretic churches in Brazil (e.g., Santo Daime, União do Vegetal, Barquinha).

Ayahuasca may be considered a safe therapeutic tool only if is administered in ritual context by an experienced facilitator who supervises its preparation and use. However, no context setting is 100% safe. According to Zinberg (1984), an individual's mental state always influences the experience in an altered state of consciousness. In the process of integrating personal experience, the quality of information provided to users before the ritual and during aftercare is inherent. Ignoring the rules of the ritual may lead to undesirable effects (Riba and Barbanoj 2005; Gable 2007). The so-called diet (i.e., a set of specific dietary prescriptions avoiding tyramines, accompanied by sexual abstinence) plays an important role in the organization of the ayahuasca ritual. Kavenská and Simonová (2015) argue that possible risks associated with the use of

ayahuasca may also be influenced by certain personality styles of participants.

In most countries, ayahuasca use is illegal because of the DMT content. However, some authors claim that ayahuasca should not be considered a drug (Fericgla 2004). Gable (2007) proves that it is impossible to create an addiction to ayahuasca based on craving and an increase in tolerance. Lanaro et al. (2015) confirm that no overdose after ingestion of ayahuasca is possible, because of serotonergic stimulation of the vagus nerve tracts, which causes vomiting and diarrhea. Neuropsychological studies have not confirmed any occurrence of cognitive deficits in long-term ayahuasca users (Bouso et al. 2013; dos Santos et al. 2016a; Ribeiro Barbosa et al. 2012, 2016).

### Motivation of participants in ayahuasca rituals

Our previous research was focused on why the inhabitants of the Czech Republic attend ayahuasca rituals. In this context, no specific ritual is taken into account. However, anecdotal evidence provided by informants shows that Santo Daime and União perform ceremonies in the country. Most organizers perform their rituals in a neoshamanic or traditional way.

The results demonstrate that ayahuasca users participate in rituals for four reasons: curiosity/experiment, personal development, spiritual and religious motives, and healing. The number of respondents who stated that they have used it for recreation was statistically insignificant (Horák, Lukášová, and Vosáhllová 2015).

As for experimental use, self-medication is considered. The administration is tied to a strict diet that excludes a variety of common foods. Violating the dietary prescriptions can enhance emetic effects of the preparation and create unpredictable effects. There have also been reports of a positive effect of ayahuasca experience observed on the personal level (Winkelman 2005; Kjellgren, Eriksson, and Norlander 2009). Changes described by participants in ayahuasca ceremonies include: increased self-confidence, improved self-esteem, improvement of interpersonal relationships, a feeling of inner peace and enjoyment of life, greater assertiveness, and independence. Spiritual motivation is, on the one hand, a response to the inadequate satisfaction of spiritual needs in the environment of institutionalized churches. As a result, some ayahuasca users tend to participate in "traditional" rituals performed by indigenous or mestizo healers because such religiosity allows a direct experience of God's existence (Fericgla 2004). Those users who identify with institutionalized churches incline to the so-called syncretic churches operating in the country because they

consider ayahuasca a sacrament (Labate, Santana de Rose, and dos Santos 2009). Recreational reasons may seem acceptable from an ethical point of view, because the use of ayahuasca contributes to the previously mentioned benefits. On the other hand, the increased public interest in participating in rituals can lead to the development of so-called “ayahuasca tourism” and inadequate appropriation of native culture (Foutiou 2016). The administration of ayahuasca for healing purposes is discussed in the following, where its therapeutic potential, ascribed by Czech users, is interpreted.

## Methodology

This section deals with the description of applied research methods. The Ethics Board of Internal Grant Agency, Faculty of Regional Development and International Studies, Mendel University in Brno, approved the protocol. The research framework is presented in Table 1.

In July and August 2015, we conducted a pilot, online, anonymous questionnaire survey, during which 1,452 participants supposed to have experience with ayahuasca were contacted by e-mail, Facebook, and Google+. These participants were related to ayahuasca interest groups in social networks. Through the questionnaire, we recruited 46 volunteers willing to participate in a personal interview. Based on semi-structured interviews with these volunteers, we mapped the network of people who attend ayahuasca rituals (Horák, Lukášová, and Vosáhlová 2015).

The difference between the number of participants in the questionnaire survey and the number of volunteers interviewed was largely influenced by the fact that ayahuasca containing DMT is illegal in the Czech Republic. The intended sample size was up to 35 informants. However, we increased the number to reach data saturation. All participants provided informed consent. The names of participants included in the research were changed to maintain anonymity.

From November 2015 to December 2016, we conducted fieldwork in the Czech Republic, during which we recorded

interviews with the ayahuasca users. The sample consisted of 23 women and 23 men who, in the past, took part at least once in some type of ayahuasca ceremony. The informants were chosen regardless of gender. The sample was not self-selected. It was selected intentionally, considering their previous experience. The ratio between ceremonial leaders and participants was 9/37. The average age was 34.5 years ( $sd = 11.8$ ). Over half of participants (58.6%) were single, 23.9% were married, and 17.4% were divorced. Most (54.3%) were university graduates, 41.3% had completed secondary education, and 4.4% had graduated from higher vocational schools. Most participants (91.3%) were of Czech nationality. In addition, citizens of Polish, Dutch, and Slovak nationality were present in the survey.

Among the informants were mayors, painters, psychologists, students, architects, administrators, women on maternity leave, academics, therapists, neurologists, professional soldiers, IT specialists, graphic designers, economists, musicians, farmers, psychotherapists, journalists, translators, doctors, technicians, and pensioners.

Interview data were analyzed based on the Grounded Theory Method (Strauss and Corbin 2002). This approach is well-suited for investigating social processes that have attracted little prior research attention, where the previous research is lacking in breadth and/or depth, or where a new point of view on familiar topics appears promising (Milliken 2010). Each audio file was transcribed manually and encoded in Google Sheets. To ensure the reliability and validity of the data, triangulation was performed. A total of seven researchers representing different scientific disciplines were included (i.e., anthropology, psychology, religious studies, and international relations) in the data collection and transcription. The data were collected at different times and locations.

For all transcripts, the coding consisted of assigning a specific code (i.e., analytical category) to units of analysis. The assignment of codes was based on semantic similarity between the units of analysis. The extent of the statement regarding the given topic did not affect the outcome of the analysis. The coding was done in three steps (i.e., open, axial, selective). Similarly, 46 transcripts with a total range of 1,044 standard pages were divided into three parts and processed sequentially. Thereafter, a coding frame was created (Schreier 2012). It was continuously specified, which helped to achieve the coding families grouping data with identical meaning.

## Results

Results represent the perceptions of ayahuasca users categorized using the Grounded Theory Method. Only

**Table 1.** Research framework.

Strategic research question	What health problems can be treated by ayahuasca according to local users?
Nature of collected data	Narratives
Subject of research	Opinions of ayahuasca users
Research sample	46 informants
Research strategy	Emic approach, qualitative endogenous
Research techniques	Semi-structured interview, qualitative content analysis
Research method	Grounded Theory
Research paradigm	Critical Theory (Guba and Lincoln 1994)

a few illustrative narratives demonstrating emergent theory are included due to the limited size of this article.

The intensity of effects produced by ayahuasca is not directly proportional to its therapeutic effect. This is indicated in the following narrative:

Yeah, I felt it... I definitely felt the energy [of the healer], but because it did not do work for me as much as with the others, or as it usually happens, that you deliberately are simply influenced by that aya[huasca], it was not like that with me.... It was much weaker for me when I compared it with other participants. It may have been good that it... that it was weaker.... What I wanted to change has finally changed.... even though I felt somehow sick in the beginning, so... so now I do not think it's something bad, or that it would be inferior because it actually healed me. (G23A229)

Respondents usually considered ayahuasca "a cure-all" (i.e., having a universal, broad-spectrum therapeutic potential). When we asked the question about what kind of illness ayahuasca could be used to treat, a professional soldier answered:

As far as depressions are concerned, I am one hundred percent sure it works perfectly for that. And generally, for this sort of different psychic blocks and, as I would say, such a negative view of life. So, certainly psychologically, and physically, I think it will work there as well. Maybe, in a ceremony, when my back stopped aching, I unblocked it. And I suffered from such pain quite often. So, I think that it has such a universal healing potential. (G20A235)

Another informant, who works in a marketing department, expressed similar opinions:

If one does not like to deal with things on their own, this really is a strong support. You can work with intentions, so the energy can be directed to some extent... I know from my own experience that ayahuasca would help people who are dealing with things like stress, depression or they feel like... some sort of emptiness in their lives and so... I think that in these cases ayahuasca can definitely help people to guide them in a way. Show them that life is actually good. (G21A587-603)

As mentioned earlier, ayahuasca may be beneficial in addiction therapy. A 32-year-old problem drinker reported that it helped him to treat overdependence on other drugs as well:

Since that time, since like the fourth ayahuasca, I do not have cravings. I used to have terrible cravings for alcohol, even like meth and weed from time to time, but those are gone. (G11A38)

There was nothing that could get me out of it. I tried absolutely everything. Martial arts, football, girls.... Totally everything. Just for a short while every time.

In regard to this herb, I notice long-term growth, joy from life, completely differently.... I do not feel addicted at all and I do not crave those substances. I mean, I know that I have an addiction but it has not influenced my private life anymore, yeah. Trembling hands, fear of people, all this is gone, yeah. I had quite severe paranoia, depression, yes. And well, ayahuasca completely changed that, it changed my outlook. Today I am pretty much stress-free. I am doing much better at work, I am doing much better in my private life, so when it comes to therapeutic use, it is immense, for my life and for myself. (G11A87-150)

Another informant described a similar experience:

Before I used to smoke for a while, then I did not, and so on. And that summer I was smoking a bit, you know, while having a couple beer, and so I rolled [tobacco]. Cigarettes, I did not like them, but I did like tobacco. And because of those ceremonies and diets and all that I realized that I can be without it. And that really is how I stopped smoking. I found out that I could even live without coffee and since then I pretty much I have not drunk coffee for a long time. (G08A512)

Another informant, who was suffering from a similar kind of problem, mentioned the synergic effect of the prescribed diet when using ayahuasca. He said:

The requirement to follow the diet plus those processes of vomiting and cleansing helped me to get rid of smoking addiction. I mean, I was not smoking cigarettes, I smoked water pipes, really damn often. (G26A175)

A 34-year-old married mother of two children, who was dealing with a prior heroin addiction, also described the positive effects of ayahuasca:

The most incredible is the feeling which occurs a month after the ceremony. When you are totally connected with yourself, with the nature, the universe, absolutely everything. You just remain serene. Happy, content. Everything now is the way it should be... It really puts one in peace. (G09A52)

According to some informants, the therapeutic potential of ayahuasca could be based on memory recall as a mechanism activating suppressed or forgotten mental contents. A 27-year-old architect told us:

In the second phase, the healer mentioned beforehand that there will be those images from the past. That they could be there. And well, I had them too, and they were depicted with the tiniest details. And actually, just by looking into the past, it was like I just found some issues within myself. (G06A282)

A Dutch organizer of ayahuasca rituals in the Czech Republic, inspired by the ideas of Carl Gustav Jung and Stanislav Grof, believes that it helps when dealing with



transgenerational issues (Shalit 2011). He clarified the therapeutic potential of ayahuasca as follows:

Ayahuasca heals memories... But we have memories on various levels. The first level involves those memories that you can remember, what happened when you were four or five years old. This applies to the majority of people... Some people, who, for example, have experienced sexual trauma when they were seven or eight, also have the memories of that, but they cannot recall them because the memories have been lost. It is also known that when it comes to painful memories, there is a tendency to... [forget them]. When you drink ayahuasca... [then they reappear]. And I say: "Look!" So, ayahuasca primarily heals memories. Memories at this level. Our memory does not reach further, we were four, three years old... But the memories are there! We do have memories as newborns, as children... There's another level of memories that stretches to the moment of conception. Every memory you have, starting with conception and ending with the present, is stored [in your memory]. When you drink it [ayahuasca], the gates of unconsciousness open and the memories from this layer enter into the consciousness. Additionally, memories [from collective unconsciousness] also enter. (G18A1061–1119)

## Conclusions

This article provides an overview of the therapeutic potential ascribed to ayahuasca by users in the Czech Republic. Our results suggest several theoretical implications. First, the intensity of effects produced by ayahuasca is not directly proportional to its therapeutic effect, which may last for a long period. Second, our respondents usually considered ayahuasca "a cure-all" (i.e., having a universal, broad-spectrum therapeutic potential). Third, according to local informants, ayahuasca has a therapeutic effect mainly in drug addiction treatment, as it may decrease craving tendencies and improve coping strategies for stress. This has also been suggested in previous studies (Thomas et al. 2013; Loizaga-Velder and Verres 2014; Tafur 2017). Fourth, the therapeutic potential of ayahuasca could be based on memory recall as a mechanism activating suppressed or forgotten mental contents that should be later integrated through some belief system or psychotherapeutic method; e.g., based on a depth psychological approach (Harris 2017).

## Discussion

Although studies focusing on the therapeutic potential of ayahuasca have already been conducted (Andritzky 1989; Labate and Cavnar 2013; dos Santos et al. 2016b, 2016c; Soler et al. 2016), our results need to be

supported by further research. To officially accept ayahuasca as a medication, it must be subjected to clinical trials. The amount of scientific evidence has not yet been able to outweigh the adversity of the dominant biomedical and legislative system, so it is still administered illegally in the Czech Republic. If the therapeutic effect of ayahuasca is long-lasting, as declared by our informants, then how long will its effects be perceived? This question should be answered by future researchers.

Users in the Czech Republic usually conceptualize ayahuasca as "a panacea." We do not use this term in this article, as it is influenced by ayahuasca politics. We also do not share the opinion of our informants, as this might prove misleading. People who are desperate for healing (e.g., from terminal illness) might be harmed by such a claim. It is not clear if consensus has been established in this way.

Currently, ayahuasca is used in various contexts. However, this does not mean that it could be applied for therapeutic purposes in all settings in which it is used. The therapeutic potential is context dependent. The importance of the integration of the ayahuasca experience should be further discussed and presented for better understanding. The methods of integration that are applied should be analyzed and presented in detail.

Ayahuasca has become a subject of tourist interest in the last few decades. The rituals are sometimes performed by people who lack the experience or correct preparation. Some of them use the healing practices of indigenous ethnic groups of the Amazon inappropriately, removing them from the ritual and ceremonial settings and perceiving them as recreational only. Ayahuasca that is traditionally considered sacred has become a product provided at exclusive private clinics and centers for personal development. As a subject of commerce, the sacred medicine is used in the spirit of economic opportunism, without considering the limitation of natural resources, and is subject to high fees. Considering the motives for using ayahuasca, curiosity is not enough in our opinion. Taking it in a "try and see" manner may involve severe risks. Therefore, ayahuasca should be used only in case of serious health problems.

The generalizability of our findings is limited. Research reported here is based on the testimonies of our informants, but they cannot be generalized to the whole Czech population. A number of ayahuasca users in the Czech Republic cannot be quantified, because the DMT containing preparation is illegal in the country according to the opinion of the Supreme Court dated March 13, 2014, sp. ref. Tpjn 301/2013, published under number 15/2014 of the Collection of Judicial Decisions and Opinions, Criminal Part. Thus, the

users remain in a grey zone, contacting each other via informal networks or encrypted online communication.

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