

AYAHUASCA

Goulburn Valley Echo 20th October 2022

SCOPE OF PRESENTATION

- History of use
- Clinical utility
- Mode of action
- Safety and risk
- Current Research
- References of interest

WHAT IS AYAHUASCA?



A hallucinogenic botanical tea made from the pounded stems of

Banisteriopsis caapi – containing beta carboline alkaloids

And the leaves of Psychotria – a plant rich in dimethyltryptamine DMT – an agonist of serotonin

MAKING AYAHUASCA TEA



- Pounded stalks of *Banisteriopsis* are boiled with the leaves from *Psychotria*.
- Why together?
- DMT is metabolised by peripheral monoamine oxidase A and does not produce any psychoactive effects. The compounds in the bark deactivate MAO A

AYAHUASCA CHURCHES

- Used for ceremonial and therapeutic purposes by indigenous groups of the north western Amazon for almost a thousand years.
- Colonisation and settling of the area led to spread of use.
- Syncretic religions developed use as sacrament - Sante Daime and UDV.
- Promote holistic life style.
- Popular culture – William Burroughs 1950s
- Exponential growth in the 90s and 00s – ayahuasca tourism and use in Western countries.
- Decades of regular use of ayahuasca
- Nausea and vomiting regarded as part of emotional and physical purging.




AYAHUASCA CEREMONIES



Highly Rated Ayahuasca Retreats

1/5



 Psychedelic & Plant Medicine

20 Day Ayahuasca Retreat & Master Plants Dieta in Peru

 BEST SELLER

 TOP RATED

 Open Dates

 Psychonauta Foundation
Nauta, Peru

\$1,900.00

☆ 4.94



 Psychedelic & Plant Medicine

30 Day Ayahuasca Retreat and Master Plants Dieta in Peru

 BEST SELLER


 TOP RATED

 Open Dates

 Psychonauta Foundation
Nauta, Peru

\$2,850.00


☆ 4.94


 Psychedelic & Plant Medicine

Ayahuasca Retreat in Hawaii? Celebrate our "Hawaiika" Sacre...


 BEST SELLER

 Open Dates

 Muaisa Hale Pule
Hawaii

\$375.00


☆ 5.00


 Psychedelic & Plant Medicine

6-night THE AWAKENING with Ayahuasca, Breathwork, Yoga,...

 LAST CHANCE

 October 26 - November 1, 2022

 Bianca Kempe
Granada, Spain

From **€1,300.00**

☆ 5.00



1/5



WHY IS IT OF INTEREST?

SCIENTIFIC RESEARCH

- Mood disorders
 - Especially treatment resistant
- Anxiety disorders
- Substance use disorders
 - Frontal inhibition
- Mechanism of action
- Altered conscious states and neurological correlates

INDIVIDUALS

- Exploring past traumas and life events
- Reconciling losses
- Understanding difficult relationships
- Insight into own emotional world
- Explore heightened and altered states of being
- Curious to explore the mind
- Enhanced sensory awareness
- Religious/spiritual awakenings and insights
- Enhanced connection with natural world.
- Substance use issues

CHEMISTRY AND MODE OF ACTION

- Plant components provide betacarbolines and DMT
- Betacarbolines (alkaloid) inhibit an enzyme MAO – A and make DMT orally active.
 - main mode of action via 5-HT_{2A} receptors
 - MAO – A inhibition increases serotonin and noradrenaline levels.
- DMT – non selective serotonin agonist
 - endogenous sigma-1 receptor ligand – whose function is not well understood. Role in depression, anxiety and cancer?

DRUG HARMS

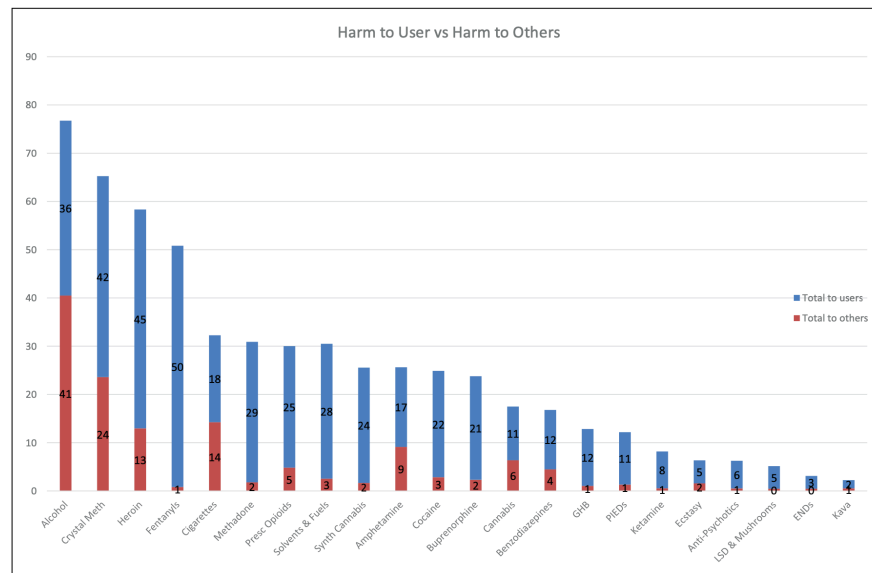


Figure 2. Contribution of harm to user and harm to others to overall harm.

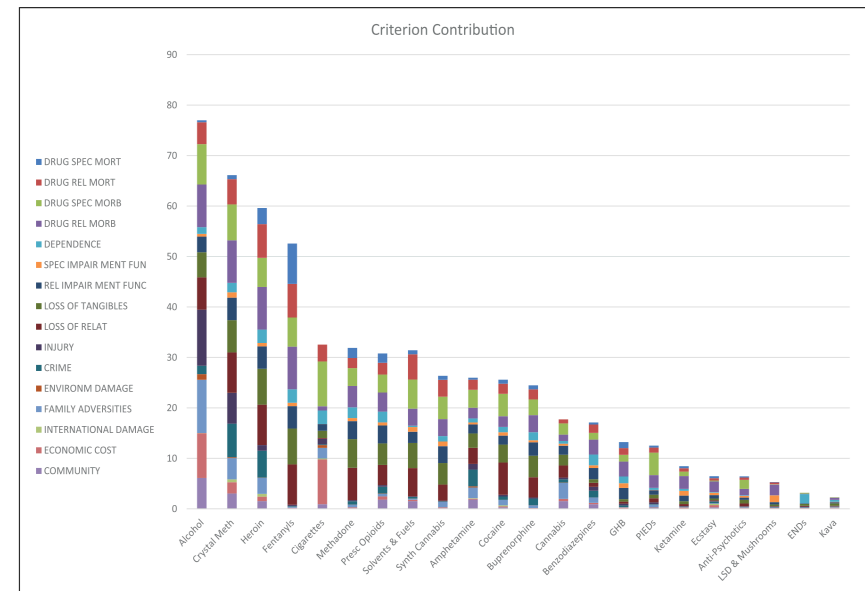


Figure 3. Contribution of criterion scores to overall harm.

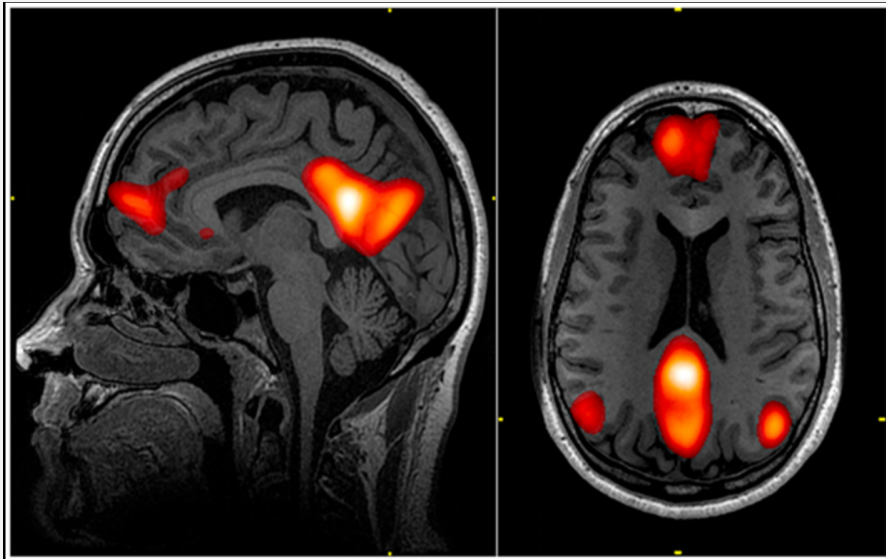
SAFETY AND TOLERABILITY

- Acute effects can include nausea, vomiting and diarrhea and psychological distress.
- Good safety and tolerability profile in controlled administration in healthy volunteers and clinical populations.
- Long term use in the setting of Ayahuasca churches is not associated with decrease in mental health or cognitive function.
- Hallucinogen persisting perception disorder not reported in experimental clinical settings.
- Risk of serotonin syndrome
- Risk of re-traumatisation

NEUROLOGICAL EFFECTS

- Modulation of brain areas associated with emotions, memories and self awareness.
- Decreased activity in key areas of the default mode network.
- Increased activation of the frontal and limbic regions.
- Promotes re-organisation of local brain networks by decoupling long range brain networks.
- Long term effects have not yet been demonstrated.

DEFAULT MODE NETWORK



- Anatomically the medial frontoparietal network (M-FPN), is a large scale brain network primarily composed of the medial prefrontal cortex, posterior cingulate cortex/precuneus and angular gyrus.
- Active when; daydreaming, when thinking about others, thinking about oneself, remembering the past, and or planning for the future

THERAPEUTIC DIRECTIONS

- Mood disorders
- Anxiety disorders
- Substance use disorders

CURRENT RESEARCH

Associations between ayahuasca consumption in naturalistic settings and current alcohol and drug use: Results of a large international cross-sectional survey

DANIEL PERKINS¹, EMERITA S. OPALEYE², HANA SIMONOVA³, JOSÉ C. BOUSO^{4,5,6},
LUÍS F. TÓFOLI⁷, NICOLE L. GALVÃO-COELHO⁸, VIOLETA SCHUBERT¹ &
JEROME SARRIS^{9,10}

- dataset relating to ayahuasca drinking (n = 10 836)

strong positive associations between

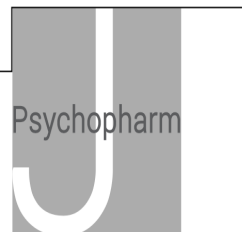
- ayahuasca consumption and the likelihood of never or rarely drinking alcohol
- never or rarely engaging in risky drinking (>4 standard drinks on one occasion) and
- having not consumed a range of drugs in the past month.
- associations remain strong even after adjusting for ayahuasca church and community membership.

SYSTEMATIC REVIEW 2016

Review

The current state of research on ayahuasca: A systematic review of human studies assessing psychiatric symptoms, neuropsychological functioning, and neuroimaging

**Rafael G dos Santos^{1,2}, Fernanda M Balthazar³,
José C Bouso² and Jaime EC Hallak^{1,4}**



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SAGE

- 21 studies
- Consistent anxiolytic and anti depressant effects
- remission of some substance use disorders in some studies.
- neuroimaging showed activation of frontal and paralimbic brain regions.
- Better performance in executive function tasks such as planning and inhibitory control (after both acute and long term use)

A REVIEW OF REVIEWS - 2018

REVIEW



Efficacy, tolerability, and safety of serotonergic psychedelics for the management of mood, anxiety, and substance-use disorders: a systematic review of systematic reviews

Rafael G. dos Santos^{a,b,c}, José Carlos Bouso^a, Miguel Ángel Alcázar-Córcoles^d and Jaime E. C. Hallak^{b,c}

^aCEERS Foundation (International Center for Ethnobotanical Education, Research and Services), Barcelona, Spain; ^bDepartment of Neurosciences and Behavior, Ribeirão Preto Medical School, University of São Paulo, Ribeirão Preto, Brazil; ^cTranslational Medicine, National Institute of Science and Technology, Ribeirão Preto, Brazil; ^dDepartamento de Psicología Biológica y de la Salud. Facultad de Psicología, Universidad Autónoma de Madrid, Madrid, Spain

ABSTRACT

Introduction: Mood, anxiety, and substance-use disorders are among the most prevalent psychiatric disorders in the population. Although several pharmacological treatments are available, they are not effective for a significant proportion of patients and are associated with several adverse reactions. Therefore, new treatments should be explored. Recent studies suggest that serotonergic hallucinogens/psychedelics including ayahuasca, psilocybin, and lysergic acid diethylamide (LSD) have anxiolytic, antidepressive, and antiaddictive effects.

Areas Covered: A systematic review of systematic reviews assessing the efficacy, safety, and tolerability of serotonergic hallucinogens/psychedelic was performed using the PubMed data base until 11 April 2018. Systematic reviews with or without meta-analysis were analyzed, but only reviews that described at least one randomized controlled trial (RCT) were included.

Expert Commentary: Psilocybin and LSD reduced anxiety and depression in cancer patients and symptoms of alcohol and tobacco dependence, and ayahuasca reduced depression symptoms in treatment-resistant depression. Although the results are promising, several studies were open label, and only few were RCTs, and most had small sample sizes and a short duration. Single or few doses of these drugs seem to be well tolerated, but long-term studies are lacking. New RCTs with bigger samples and longer duration are needed to replicate these findings.

ARTICLE HISTORY

Received 31 May 2018
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KEYWORDS

5-HT_{2A} receptor; anxiety disorders; ayahuasca; dimethyltryptamine; lysergic acid diethylamide; mood disorders; psilocybin; substance-use disorders

Ayahuasca reduced depression symptoms in treatment-resistant depression.

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Single or few doses seem to be well tolerated, but long-term studies are lacking.

New RCTs with bigger samples and longer duration are needed to replicate these findings.

AYAHUASCA AND MOOD

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Research Paper

Ayahuasca use and reported effects on depression and anxiety symptoms: An international cross-sectional study of 11,912 consumers



Jerome Sarris^{a,b,*}, Daniel Perkins^c, Lachlan Cribb^b, Violeta Schubert^c, Emerita Opaleye^d, José Carlos Bouso^e, Milan Scheidegger^f, Helena Aicher^f, Hana Simonova^g, Miroslav Horák^h, Nicole Leite Galvão-Coelho^{a,i}, David Castle^{j,k}, Luís Fernando Tófoli^d

- Large study (cross sectional analysis) of 11,912 - part of Global Ayahuasca Study (2017-2020) to study perceived effects of ayahuasca on affective symptoms. Study focused on those reporting anxiety (n = 1125) or depression (n = 1571) diagnoses at time of consumption.
- 78% reported that their depression was either 'very much' improved (46%), or 'completely resolved' (32%); 70% of those with anxiety reported that their symptoms were 'very much' improved (54%), or 'completely resolved' (16%).
- Factors associated with greater reported affective symptoms improvement, included subjective mystical experience, number of Ayahuasca sessions, and number of personal psychological insights experienced.
- 2.7% and 4.5% of drinkers with depression or anxiety, respectively, reported worsening of symptoms.

Journal of Affective Disorders Reports 4 (2021) 100098

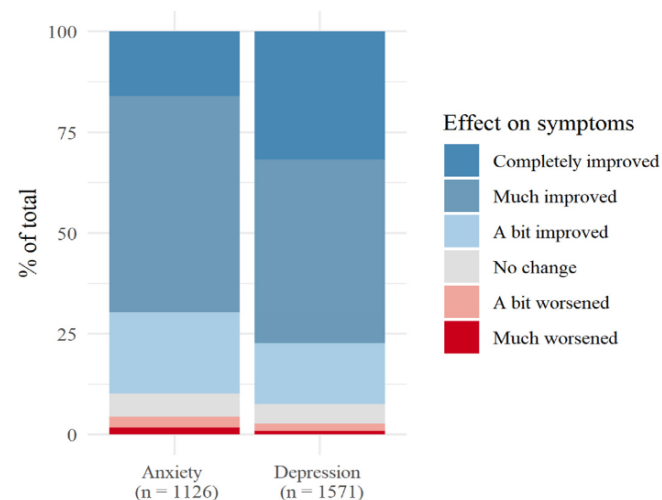


Fig. 1. Effect of Ayahuasca on anxiety and depression symptoms.

WHAT'S NEXT?

- Developing evidence base for use
- More controlled studies with clinical populations required.
- Longitudinal studies required.
- Understanding why some people in current trials report worsening of symptomatology
- Resisting pressures to extrapolate from current evidence base.

CLINICAL OUTCOMES

Medicinal Psychedelics		Conventional medications	
pre	Mental state, psychological preparation	pre	nil
post	Biological drug action/ interaction Subjective experience Context of consumption	post	Biological drug action/ interaction
acute	Psychological support with integration and assimilation.	acute	nil

Professor Jerome Sarris Melbourne
University presentation 2019

CHALLENGES

- Strong drivers and a rush to commercialise
- Populist culture overtakes scientific evidence
- Maintaining therapeutic treatment standards
- Grey market
- Lack of screening
- Quality of integration therapy
- Understanding and elucidating limitations of use

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