Position statement

Psychologists and psychedelic-assisted therapy

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Executive summary

Psychedelic substances are a group of drugs which are known for their hallmark induction of non-ordinary states of consciousness. Used by Indigenous and First Nations peoples for thousands of years, psychedelics only piqued the interest of western psycho-medico research in the mid-20th Century. Early systematic research was halted in the 1970s until the recent 'renaissance' in the past 15-20 years. Until recently, psychedelic substances have been strictly controlled outside designated clinical research trials. Psychedelics are typically separated into four groups (1) classic psychedelics, (2) empathogens or entactogens, (3) dissociative anaesthetics and, (4) other hallucinogens. Focussing on the first two classes, this position statement describes the current understanding of the cognitive, perceptual, social, and emotional effects of psychedelics, and importantly, evidence for their effect on symptoms of mental health disorders. It is well accepted that psychedelics are not treatments in and of themselves, they are an adjunct tool for (psycho)therapy.

Research is evolving quickly in this field and emerging results are promising. This, combined with global media and public interest has resulted in the regulations regarding psychedelic substances shifting. Since 1 July 2023, approved psychiatrists under the Authorised Prescriber Scheme are able to prescribe (1) MDMA for the treatment of post-traumatic stress disorder (PTSD) and (2) psilocybin for the treatment of treatment-resistant depression in combination with psychotherapy. However, more robust research is still needed to determine the longer-term effects of these treatments.

Typically, it appears that psilocybin and MDMA are well tolerated in clinical settings and result in few adverse events. Strict screening, monitoring and dose control is required which limits the settings in which psychedelic-assisted therapy should be undertaken. Cost, availability, and training also still limit the provision of psychedelic-assisted therapy to the public. The limitations of current research include, *inter alia*, (1) knowledge of appropriate dosing protocols, (2) selection bias, (3) screening and generalisability, (4) small sample sizes, (5) inadequate blinding and controls, (6) relatively short follow-ups, and the (7) unknown different effects of psychotherapy.

The APS is interested in all emerging evidence-based treatment options, particularly for patients who do not respond to current evidence-based treatments. Given this, the APS acknowledges the therapeutic potential of psychedelic-assisted therapy and supports ongoing research in this field. Until there is sufficient compelling phase 3 clinical evidence, and systematic research to overcome the current limitations, however, the APS would not, at this stage, endorse the widespread use of psychedelic-assisted therapy. Critically, as psychedelic-assisted psychotherapies become more widely available, data regarding the safety, tolerability and efficacy should be systematically recorded and evaluated. As regulated practitioners, psychologists should play a lead role in providing psychedelic-assisted therapy to vulnerable patient populations. Training and professional development should be provided in collaboration with health professional associations. This is to ensure evidence-based approaches are taken and propagated and to ensure that the strict treatment protocols are followed and necessary patient screening is undertaken.

1. Introduction

1.1 An estimated one in five Australians reported having a mental disorder in the previous 12 months, and almost half of all Australians have been affected at some point in their lifetime[1]. It is estimated that in 2018-19, mental ill-health and suicide cost the Australian economy up to $70 billion and up to an additional $150 billion when disability and premature death due to mental illness are also considered[2]. Despite the availability of evidence-based treatments, it appears that many patients (possibly up to 30%) remain 'treatment resistant' and still suffer significant burden which can have staggering quality of life and economic consequences[3–5].

1.2 Psychedelics are substances which can be divided into four types of drug: (1) classic psychedelics (e.g. 'magic mushrooms' (psilocybin) or Lysergic acid diethylamide (LSD)), (2) empathogens or entactogens (e.g. 3,4-methylenedioxymethamphetamine (MDMA)), (3) dissociative anaesthetics (e.g. ketamine) and, (4) other hallucinogens[6,7]. The current position statement will focus on the first two classes as they tend to be separated in the literature [e.g. 7] and clinical memoranda [e.g. 8]. It is important to note that MDMA is technically not a psychedelic but is similar in terms of subjective effects, potential therapeutic effects, and current Therapeutic Goods Administration (TGA)[9] and international drug scheduling[10] (the current status of psychedelic substances will be described in more detail in Section 3). A, and possibly the, defining feature of psychedelic substances is their effect in inducing a non-ordinary state of consciousness[11].

1.3 There are significant numbers of Australians already taking psychedelic substances to 'self-medicate' to treat symptoms of mental health disorders[12].

1.4 In a 2020 Global Drug Survey[13], 6,500 of 110,000 respondents stated that they were using psychedelic substances as a self-treatment of psychiatric illness or emotional distress: most commonly depression, anxiety, or relationship issues. The report suggests that the most used substances were LSD (34% of reported psychedelic use), MDMA (25.3%), psilocybin ('magic mushrooms') (20.4%), and ketamine (13%). Such underground use precludes the appropriate pharmacological, medical, and psychological safeguards which may explain the relatively high number of emergency visits of psychedelic users[13]. A 2022 survey of US citizens suggested that 28% of adults have used at least one psychedelic substance in their lifetime[14].

2. Background

2.1 Psychedelic substances have been used in spiritual and therapeutic practices by Indigenous and First Nations peoples for thousands of years[15–18]. Some argue that psychedelics may be the oldest psychoactive substances used by humans[18].

2.2 It is only in the second half of the 20th Century, that psychedelic substances piqued the interest of western psycho-medico research. LSD was first synthesised in 1938 but was largely forgotten due to it being "physiologically unremarkable"[16 (p. 2)]. In the mid-1940s the archetypical psychological effects of psychedelics were documented in western contexts[17]. Research investigating the potential therapeutic benefits of psychedelic substances steadily gained popularity in the 1950-60s. In that time, the experiences of over 40,000 patients were documented in 1,000 papers[19].

2.3 Despite emerging evidence, clinical research investigating the therapeutic potential of psychedelics was stopped due to the world-wide classification of psychedelic substances in Schedule I of the 1967 United Nations Convention on Drugs[20]. This almost eliminated clinical research into their therapeutic potential until the recent renewed interest spurred by the need to consider alternative treatment options. Termed the 'renaissance' of psychedelic research, interest in the field has been increasing steadily for the past 15-20 years. Until recently, MDMA and psilocybin were classified as Schedule 9 (prohibited) substances by the TGA as listed in the *Poisons Standard June 2023*[9] and were only administered legally in the context of clinical research trials.

3. Current status of psychedelic substances

3.1 In February 2023, the TGA announced that, from 1 July 2023, approved psychiatrists under the Authorised Prescriber Scheme can prescribe psilocybin to address treatment resistant depression and MDMA to treat PTSD in Australia[21]. In part, this decision was based on the 2021 final report from independent experts who considered current evidence regarding the safety and clinical utility of MDMA and psilocybin[22]. They concluded that "MDMA and psilocybin may show promise in highly selected populations but only where these medicines are administered in closely clinically supervised settings and intensive professional support"[22(p. 5)].Under all other circumstances, these substances are classified as Schedule 9 poisons[9] due to having a "high propensity for dependency and abuse" and are not available for clinical use outside State or Territory approved clinical research trials[23].

3.2 To prescribe psilocybin or MDMA, psychiatrists must first be approved by a registered Human Research Ethics Committee (HREC) before seeking authorisation from the TGA. This pathway is designed to ensure robust protocols are followed including, for example, patient selection and monitoring, administration setting, and reporting[24].

3.3 The USA Food and Drug Administration (FDA) has classified psychedelics as illegal Schedule 1 substances which have "no currently accepted medical use and a high potential for abuse"[10]. Psychedelic treatments in the USA are not permitted outside an Institutional Review Board approved clinical trial[25]. However, there appears to be rapid and decentralised movement towards decriminalisation as US cities and states have begun to loosen restrictions and/or legalise psychedelic-assisted therapy in certain circumstances[26].

3.4 MDMA-assisted psychotherapy for the treatment of PTSD[27,28] and Psilocybin-assisted psychotherapy for the treatment of treatment-resistant depression[7,29] have been given 'breakthrough' designation by the FDA, suggesting they have the potential to be safer and more effective than current treatments[27,29]: Breakthrough designation expedites the approval and distribution of treatments once clear evidence from controlled clinical trials is available[30,31].

3.5 In the UK, psychedelics are classified as Class A drugs which strictly prohibits their sale and possession[32,33]. Similarly, psychedelics are currently Class A controlled drugs in New Zealand[34] except ibogaine which is a prescription medicine[35,36].

4. Current evidence of psychological and therapeutic effects

4.1 Table 1 provides a detailed overview of the effects of psychedelics on psychological processes and effects on mental health disorders.

4.2 Psilocybin exerts a number of effects on cognitive and perceptual processes[37,38], has been associated with blissful feelings and a greater sense of well-being[38,39], and anxiety and confusion or thought disorder[38,40]. There have been multiple studies providing emerging evidence that psilocybin-assisted therapy had some, albeit statistically limited benefits (in some cases) in reducing symptoms of depression and/or anxiety in patients with **treatment-resistant depression**[40–42] **and cancer patients**[39,43,44].

4.3 Similarly, MDMA has been shown to affect a number of positive cognitive and emotional processes[45–51] including reported increased access to emotional material[46,52]. Unfortunately, MDMA may also induce anxiety and mild cognitive or psychomotor impairments[45,46,49,52–55]. Some of the hallmark effects of MDMA are the subjective social relatedness effects such as enhanced sociality and closeness to others[45,56] and a blunting of an ability to decode negative expressions[56].

4.4 Patients with **treatment resistant PTSD** experienced a **decrease in PTSD symptoms** after MDMA-assisted therapy[53,57–59] and the **reduction in PTSD symptoms** appear to be **sustained**[60]. In a randomised, double-blind placebo-controlled phase 3 study, MDMA-assisted therapy was found to **reduce PTSD symptoms** and **reduced functional impairment** compared to placebo with therapy in patients with **severe, including co-morbid PTSD**[61].

4.5 The evidence supporting the therapeutic applications of LSD, ayahuasca and ibogaine is less convincing although may emerge with additional research. Some early evidence is listed in Table 1.

5. Psychedelic-assisted therapy

5.1 Critically, the current evidence suggesting promising effects of psychedelics are almost solely in conjunction with psychotherapy which has led to the largely accepted view that psychedelics are not a viable treatment in and of themselves[62]. It is thought that psychedelics enable the surfacing of previously unavailable emotional material which can then be processed and integrated[40]. The precise mechanisms of each component of psychedelic-assisted therapy are still not well understood and require additional research[7].

5.2 Central to the psychedelic-assisted psychotherapeutic approach is the importance of set (i.e., psychological expectations), setting (i.e., physical environment) and having a trust-based therapeutic clinician-patient relationship. Effects of psychedelic substances, do appear to be context dependent, which is consistent with the traditional religious and spiritual uses[63]. Studies which have deemphasised the importance of context setting, have typically not reproduced the strength of positive effects, which has made it difficult for psychedelic research to demonstrate 'pure' pharmacological effects in efficacy testing[64–66]. For example, one study cited the strength of their results in affecting trait-based measures could have been due to the importance of the research context, which encouraged the integration of spiritual values into daily life (e.g. prosocial values, cultivating a sense of wonder)[38].

5.3 Typically, psychedelic-assisted therapy paradigms include very few doses of psychedelic substances and the following therapy sessions[7]:

a. **Preparatory session**(s) – which involves understanding the patient's history and intentions and educating the patient on the likely experience during the active session.

b. **Psychedelic active session**(s) – Typically, patients are accompanied by a male-female therapist dyad[67] which is unfortunately deemed necessary due to previous reports of sexual abuse during MDMA-assisted therapy[68]. Although potentially profound and leading to long-term positive effects, it is important to acknowledge that this session could be very challenging due to the emotional material that may surface.

c. **Integration session**(s) – arguably the most important step, this includes the interpretation of the material raised during the active session and the integration of this experience into long-term positive change.

5.4 The typical psychotherapeutic approach has been non-directive, supportive psychedelic or psycholytic therapy which is seen as facilitating the experience rather than directing it. Many believe in the importance of therapists undertaking the experience themselves as a personal practice[69] to fully appreciate the profundity of the psychedelic-assisted therapeutic approach[70].

5.5 Both the FDA[67] and TGA[22] acknowledge the importance of close professional involvement as being a critical component of successful psychedelic-assisted therapy. Specifically, the FDA requires that the two therapists:

- "Are mental health care practitioners and (have) a professional licence in good standing"[62 (p.4)]
- Have demonstrable clinical psychotherapy or mental health counselling experience
- Have a Masters' level qualification.

As recommended by Tai et al[67], it is not necessary that a psychiatrist is a member of the therapist dyad, but one must be present during an active psychedelic session in case of a psychiatric or medical adverse event.

6. Known risks and side effects

6.1 When considering the side effects of psychedelic substances, it is important to distinguish between use in clinical and research settings compared to street use. Research on the street use of psychedelics is fundamentally uncontrolled and the drugs are often contaminated by other substances[71].

6.2 Given the emerging nature of the field, research in clinical settings must adequately screen for high-risk individuals, including patients with:

a. **Personal or family history** of psychosis[17,72]

b. **Personal history** of mania, violence towards others, acute suicidality, current substance abuse (unless this is the target of the intervention), serious cardiovascular (including uncontrolled hypertension), liver, renal, or neurological comorbidity, current or expected pregnancy[17]

6.3 The similarity of some effects of psychedelic substances with some symptoms of psychosis[72] has been concerning for researchers and so long-term perceptual disturbances are of particular interest (e.g. hallucinogen persisting perception disorder) when evaluating their safety.

Classic Psychedelics

6.4 In clinical settings, psilocybin appears to be well tolerated[22,40,42,43], apart from transient headaches[39,40,42,73]. Importantly, adverse events with participants taking psilocybin appear to be rare[22,38,40,43,74]. An analysis of 110 healthy participants found no evidence of hallucinogen persisting perception disorder, prolonged psychosis or other long-term impairment[75]. However, psychedelic effects on personality and mood appear to be dose-dependent which suggests that care must be taken to ensure the dose is controlled[38].

6.5 Similarly, LSD appears to be well tolerated in controlled settings with healthy participants[74,76] and participants with life-threatening diseases[77].

6.6 Apart from inducing vomiting in approximately 50% of participants, ayahuasca was well tolerated in research settings[78,79]. It is important to note, however, that clinical research involving ayahuasca is still limited by the precise understanding of the ingredients and concentrations of compounds of the decoction[7].

6.7 In contrast to other psychedelics, ibogaine has the potential to generate life-threatening cardiac arrythmias[80] and so more research is required to understand its therapeutic potential, particularly in patients with pre-existing cardiovascular comorbidities[81].

MDMA

6.8 There have been many reported psychological side effects of street use of 'ecstasy' (MDMA) in the literature[82] and importantly, it appears that some of these effects are sustained after periods of abstinence[83]. Other serious physical side effects have also been observed[84]. The observed cardiovascular effects of MDMA, however, may be toxic in crowded and/or hot places or when combined with physical activity[85,86]. Other research, however, suggests that acute complications caused by ecstasy intake are epidemiologically rare, and results are often confounded by users taking multiple illicit drugs[84]. Specific does-response relationships for individuals may also vary, according to genetic differences, and previous exposure to the drug – meaning that it is difficult to predict toxic reactions of individuals[84].

6.9 Using a field study design, Halpern et al.[87] found little evidence of neurocognitive differences of users versus non-users of ecstasy who have had minimal exposure to other drugs. Apart from differences in poorer strategic self-regulation, ecstasy users did not appear to demonstrate residual neuro-toxic cognitive effects.

6.10 Studies of MDMA in animals have indicated that controlled high doses of MDMA which lead to deficits in serotonin neurons can have lingering effects on behaviour but that change is not necessarily neurotoxic (i.e. leading to cell death)[88]. Importantly, MDMA administered in controlled clinical research settings appears to be well-tolerated[22,53,59,61,89] and have few harmful side effects[22,41,48,53,54,57,61,86]. Recent phase 3 results did not indicate an increase in suicidality in patients with PTSD undergoing MDMA-assisted therapy[61].

7. Limitations of current research

Apart from the lack of detailed understanding of the psychological mechanisms underpinning psychedelic-assisted therapy, there are a number of limitations with the current research which need to be addressed:

7.1 **Knowledge of appropriate dosing protocols** – animal models have often been used as the rationale or background to studies involving psychedelic substances. Animal studies often use very high doses (per kg weight) and the results may not generalise to human populations. Although there is significant volume of literature describing the effects within the 'therapeutic window', there is still limited knowledge of the effects above and below that range. Recent research is, for example, investigating the effects of microdosing on wellbeing or creativity[90–93] and still requires further investigation[94,95].

7.2 **Selection bias** – in the limited number of active research trials, participants often volunteer or 'self-refer'[40] and contact study co-ordinators directly. Such a bias may mean that results are limited to participants who are open to psychedelic experiences [see 17] or other homogenous factors may play a role.

7.3 **Screening and generalisability** – for safety reasons, patients who have a family history of psychosis[96], may be pregnant, breastfeeding, have hypertension or heart disorders are typically excluded from clinical trials[17]. Ultimately, it means that the generalisability of results may be limited in those populations[22]. This has important implications as psychedelic treatments are becoming more widely available.

7.4 **Small sample sizes** – due to the preliminary nature of much of the research conducted to date, there are typically very small sample sizes[35,41]. If anything, however, this may under-power the ability to detect experimental effects, but is also less likely to produce robust data regarding safety and tolerability.

7.5 **Inadequate blinding and controls** – due to the often visibly evident effects of psychedelic medications, it is difficult to blind study administrators from experimental groups, which may introduce expectancy effects[17,77,97]. Similarly, it is difficult for participants to be blind to their experimental condition, as they may not experience any psychedelic effects in the control conditions. The increased use of 'active placebo' conditions may assist, as will true placebo-dose conditions to ensure that low doses of substances are psychopharmacologically active[38].

7.6 **Relatively short follow-ups** – due to the preliminary nature of the majority of the research, there are still limited longitudinal clinical studies to assess the effects of psychedelics in the long-term[97].

7.7 **Unknown differential effects of types of psychotherapy** – most psychedelic-assisted therapy research utilises non-directive, supportive psychotherapy. Future research should elucidate the utility of other guideline recommended psychotherapeutic approaches in combination with psychedelic substances[22,41,98] and investigate the mechanisms by which therapeutic effects of psychedelics are realised.

8. The future of psychedelics in Australia

8.1 There is an increasing investment in the therapeutic potential of psychedelics and a number of charities and other organisations forming in Australia which are promoting the research, and widespread adoption of psychedelic substances into mainstream healthcare.

8.2 The Australian Medical Research Future Fund - Clinical Trials Activity Initiative - 2021 Innovative Therapies for Mental Illness - Grant Opportunity released an additional $15M in March 2021 to "assess the safety and efficacy of innovative therapies using hallucinogens and stimulant drugs supported by psychological/ psychiatric care for treatment resistant mental illness, compared to standard therapies clinical trial research being undertaken in Australia"[99]. It is anticipated that additional funding will be released to support new research in this field.

8.3 Despite MDMA and psilocybin being available in Australia, a number of barriers remain which limit their widespread use:

a. **Cost** – similarly to medicinal cannabis, the manufacturing of pharmaceutical grade psychedelic substances remains highly regulated and expensive [see also 17,100].

b. **Training –** the emerging evidence suggests that the therapeutic benefits of psychedelic substances work in conjunction with psychiatric and psychological treatment to help prepare, guide, and integrate participants' psychedelic experiences[67]. As described in Sections 5 and 9, psychologists can play a crucial role in psychedelic-assisted therapy. Adequate training and professional development to prepare the psychology workforce is required to ensure that the strict treatment protocols are followed, and necessary patient screening is undertaken.

c. **Availability of appropriate settings –** at least initially, it will be important that psychedelic-assisted therapy will be conducted in hospitals and other controlled settings to enable appropriate monitoring and ensure access to medical and acute psychiatric/clinical psychological assistance if adverse effects occur.

8.4 The worldwide advancement of personalised medicine is also starting to influence healthcare in Australia. It is foreseeable that the development of individual mental health treatment plans will consider genetic information, medical and psychological history, success of previous treatments, personal preferences, and individualised risk profiles to determine the optimal treatment approach. As psychedelic-assisted therapy becomes more accessible in Australia, it is important to consider these factors in determining the suitability of the treatment for individuals.

9. The APS position

9.1 The APS welcomes the emergence of safe, evidence-based treatment options to address the shortcomings of currently available medication options for individuals with mental health disorders. Psychologists are ethically bound by the principle of beneficence[101]. The APS has a duty to support the development of emerging evidence-based treatments and clinical trial research into promising therapeutic options, provided they are conducted with patient well-being and safety being paramount.

9.2 The APS is encouraged by the emerging evidence which has led to the TGA's down scheduling of MDMA-assisted psychotherapy to treat PTSD, and psilocybin-assisted psychotherapy to manage treatment-resistant depression. Both offer many advantages over other alternate treatment options for refractory mental health conditions (e.g. electroconvulsive therapy or ketamine infusion therapy)[7].

9.3 Despite the promising early evidence from the recent 'renaissance' of scientific research into psychedelics, understanding of the psychological processes of change underlying the observed benefits is limited. Until robust and longer-term evidence is available from Phase 3 clinical randomised control trials, there is insufficient evidence for the APS to endorse the widespread adoption of psychedelic-assisted therapy, or other therapeutic options involving psychedelic substances.

9.4 It would be premature for the APS to support the widespread use of psychedelic substances without data regarding the efficacy, safety, potential for abuse, and tolerability of these substances in vulnerable patient populations. As psilocybin- and MDMA-assisted therapy become more available in Australia, data collected by the TGA and states and territories authorities must be regularly evaluated to elucidate the effects of these treatments in the broader population. The APS anticipates that it may reconsider its position on a regular basis as additional evidence becomes available.

9.5 Every therapeutic intervention carries some element of risk, however, not intervening or using ineffective treatments also carries its own risk [see 102]. Rates of suffering, relapse, and even suicide, for individuals with treatment resistant psychological disorders are still unacceptably high. It is for this reason that the APS supports ongoing systematic research investigating the therapeutic applications of psychedelics. Given the inhomogeneity of different psychedelics' effects and safety and efficacy profiles, it is not appropriate to treat them the same[103]. Specific research is required to determine each substance's therapeutic potential.

9.6 It important to consider, however, that throughout the decades, there have been a number of 'waves' of public excitement and expectation that new treatment options will be the mental illness panacea. There are valid arguments to suggest that there is a current overreliance on medications to 'fix' mental health disorders[104]. Not only do all psychoactive medications carry their own risks and side effects[105], improvements that occur as a result of taking medication can help fuel an external attribution of change (i.e. symptoms improved due to an external factor – a drug) rather than an internal one[106]. Such an attribution can help perpetuate a dependence on medications and/or result in relapse[106]. This can be further exacerbated by the anticipation of any discontinuation (e.g., withdrawal) effects or tolerance to effects with sustained use[107].

9.7 Psychedelic-assisted therapy has the potential to mitigate some issues related to tolerance and attribution as manualised protocols suggest low numbers of doses of psychedelic substances (typically 1-3 doses) and the therapy component of the treatment is emphasised[27,108]. In addition, current evidence suggests that psychedelics typically do not induce physical dependence[27,60], although tolerance to effects may be problematic in sustained use[109]. It is important that future research rigorously investigates the issues of tolerance, physical and psychological dependences when studying psychedelic-assisted therapy to treat mental health conditions.

9.8 As the interest in the therapeutic potential of psychedelic substances and their availability continues to increase in Australia, the specific role of psychologists will also evolve. As described in Section 5, only highly trained, experienced, and regulated mental health professionals should be providing psychedelic-assisted therapy. Therefore, psychologists should play a crucial, lead role due in delivering psychedelic-assisted therapy. This is due to the profundity of the experience in addressing and accessing highly emotional, and often traumatic material[67]. An in-depth understanding of psycho-emotional processes and their interaction in mental-health treatment, while undertaking a trauma-informed approach will be necessary to ensure patient safety and treatment efficacy.

9.9 As Australian psychologists' peak body, the APS aligns with the Royal Australian New Zealand College of Psychiatrists (RANZCP) and other health professionals' peak bodies to be a collaborative voice to determine how treatment is developed and regulated in Australia and what role psychologists have in providing these services. Given our evidence base, experience, and training in working with vulnerable patient populations, it is imperative that psychological expertise is utilised in the development of this emerging field. In addition to undertaking a lead role in the delivery of psychedelic-assisted therapy, we would also consider the role of psychologists would be to participate in inter-disciplinary relationships with a view to establishing joint educational opportunities and knowledge sharing. As the RANZCP[8] and other professional bodies' positions continue to evolve, we endeavour to work collaboratively to ensure the best health outcomes for Australians.

9.10 Currently, most of the training of psychedelic-assisted psychotherapists is conducted in the context of clinical trials. This has the advantage of being informed by the latest evidence-base. As psychedelic-assisted therapy becomes more accessible, training and professional development will be required to adequately prepare the workforce on a larger scale[67]. This must be undertaken in collaboration with regulated professional organisations, to ensure the best-practice, evidence- standards are maintained and propagated throughout the professions. Professional guidelines and stringent screening protocols would also need to be developed.

9.11 The cost and practical constraints related to the delivery of psychedelic-assisted therapy suggest that, currently, such treatment is unlikely to become a 'frontline' option and is more suitable for patients with treatment-resistant mental health disorders.

Table 1- The effects of psychedelics on psychological processes and effects on mental health disorders

<table>
<tr><td colspan="6">Classic psychedelics (5-HT_{2A} receptor agonists[18,110–112])</td></tr>
<tr><td rowspan="3">Psilocybin – present in the Psilocybe mushroom species[113]</td><td colspan="5">Effects on psychological processes</td></tr>
<tr><td>Cognition</td><td>Perception</td><td>Positive emotional effects</td><td>Negative emotional effects</td><td>Social relatedness</td></tr>
<tr><td>• Mystical experience[37]
• Transcendence of time and space[37]
• Sense of meaning and insight[38]
• Increased spirituality[38]</td><td>• Changes in perception e.g. synesthesia[38]
• Visual pseudo-hallucinations and illusions[38]</td><td>• Labile mood (e.g. blissful or joyful feeling)[38]
• Greater well-being or life satisfaction[38,39]</td><td>• Labile mood (e.g. anxiety)[38,40]
• Confusion or thought disorder[40]</td><td>• Increases in prosocial attitudes and behaviours[38]</td></tr>
<tr><td colspan="5">Effects on mental health disorders</td></tr>
<tr><td colspan="5">• In an open-label feasibility study, psilocybin assisted therapy had benefits in reducing depressive symptoms in patients with treatment-resistant depression[40]
• Compared to escitalopram, participants who took psilocybin showed no difference in depression score after six weeks in a phase 2 randomised trial[42]. However, this study only involved 12 participants and statistical comparisons may be underpowered.
• Similarly, other feasibility studies with minimal psychotherapy suggested that anxiety and mood were significantly improved in cancer patients after taking psilocybin[39,43]
• Using a randomised controlled crossover design, psilocybin-assisted therapy (preparation, medication dosing and postdosing integration sessions) resulted in decreased anxiety and depression in cancer patients[44].
• Combined with nondirective interpersonal support, psilocybin has been shown in an open-label pilot study to aid smoking cessation[114] and additional research is underway[115].
• In an open label proof of concept study using psilocybin-assisted therapy (motivational enhancement therapy, preparation sessions, psilocybin-assisted therapy sessions, and debriefing sessions), alcohol-dependent participants reported increased abstinence[116] sparking phase two research[117].
• Preliminary evidence suggests that psilocybin can relieve symptoms of obsessive-compulsive disorder[118]. Current research to explore this is underway[119,120].
• Additional research is investigating the use of psilocybin to treat substance use disorders[121], anorexia nervosa[122], depression in Alzheimer's disease[123] inter alia.
• Current research in Australia is focussing on the potential of psilocybin-assisted therapy in reducing anxiety in end-of-life patients[124] and the psychological and neural effects of mircodosing with psilocybin[90].</td></tr>
<tr><td rowspan="3">Lysergic acid diethylamide (LSD)</td><td colspan="5">Effects on psychological processes</td></tr>
<tr><td>Cognition</td><td>Perception</td><td>Positive emotional effects</td><td>Negative emotional effects</td><td>Social relatedness</td></tr>
<tr><td>• Increased cognitive flexibility[97]
• Increased openness[96,97,125]
• 'Loosened' cognition[97,126]
• Insightfulness[127]
• Increased suggestibility[128]</td><td>• Psychosis type symptoms[96,97,112]
• Disebmodiment[112]
• Visual hallucinations[96]
• Audio-visual synesthesia[96]</td><td>• Positive mood[66,97]
• Increased optimism[97]
• Blissful state[96,112]
• Impaired acute fear recognition[76,129]
• Enhanced wellbeing[66,96]</td><td>• Paranoia*[97]
• Delusion*[97]
• Acute anxiety*[96]

*Minor effects compared to group results</td><td>• Increased closeness to others[76,96]
• Enhance emotional empathy[76]
• Enhance sociality[76]
• Feelings of trust[96]</td></tr>
</table>

Table 1- The effects of psychedelics on psychological processes and effects on mental health disorders continued

<table>
<tr><td></td><td colspan="5">Effects on mental health disorders in conjunction with psychotherapy</td></tr>
<tr><td></td><td colspan="5">• A pilot study suggested that LSD-assisted therapy can significantly reduce anxiety in patients with life-threatening diseases[77].
• Positive and sustained effects on mood and attitudes of LSD may open possibilities for the treatment of mental health disorders[66].
• LSD may influence the processing of negative stimuli which play a role in mood and anxiety disorders[129].
• Future research will focus on LSD effects on anxiety[130] and the effects of mircodosing of LSD[91]</td></tr>
<tr><td rowspan="4">Ayahuasca – botanical brew containing dimethyltryp-tamine and harmine [7]</td><td colspan="5">Effects on psychological processes</td></tr>
<tr><td>Cognition</td><td>Perception</td><td>Positive emotional effects</td><td>Negative emotional effects</td><td>Social relatedness</td></tr>
<tr><td>• Mystical and noetic experiences[7]
• Increased mindfulness[131]</td><td>• Auditory and visual hallucinations[63,132]
• Altered spatial perceptions[63]</td><td>• Positive mood[132]
• Increased quality of life meaning and outlook[131]
• Hopefulness and empowerment[131]</td><td>• Acute psychotic episodes[132]*</td><td>• Qualitative reports of increased openness to others[131]</td></tr>
<tr><td colspan="5">Effects on mental health disorders</td></tr>
<tr><td></td><td colspan="5">• In open-label trials, patients with recurrent depression showed significantly reduced depressive symptoms after one ayahuasca dose[78,79].
• Self-reported cocaine use reduced after participation in an ayahuasca-assisted treatment program for people with problematic substance use[131].</td></tr>
<tr><td rowspan="2">Ibogaine – psychoactive plant alkaloid[81]</td><td colspan="5">Effects on mental health disorders</td></tr>
<tr><td colspan="5">• Preliminary studies investigating ibogaine treatment found reduced sustained opioid use and withdrawal symptoms[35,133] and depressive symptoms[35] in substance dependent participants.</td></tr>
</table>

Table 1- The effects of psychedelics on psychological processes and effects on mental health disorders continued

<table>
<tr><th colspan="6">Entactogens[6]</th></tr>
<tr><td rowspan="4">3,4-methylenedioxymethamphetamine (MDMA)</td><td colspan="5">Effects on psychological processes</td></tr>
<tr><td>Cognition</td><td>Perception</td><td>Positive emotional effects</td><td>Negative emotional effects</td><td>Social relatedness</td></tr>
<tr><td>• Stimulant effects[45,46]
• Increased openness[47]
• Decreases in neuroticism[47]
• Feelings of authenticity[46]
• Increased access to emotional material[46,52]
• Spatial memory deficits[55]
• Mild psychomotor impairment[49]
• Feelings of being insightful[48]
• Difficulty concentrating[54]</td><td>• Body perceptual changes[49]
• Slight perceptual alterations (not hallucinations)[48,49]</td><td>• Euphoria[48–50]
• Enhanced well-being[49]
• Sense of a greater meaning in life[51]
• Confidence[48]</td><td>• Anxiety[45,46,52–54]
• Confusion or ‘drunken’ feeling[46,49]</td><td>• Closeness to others[45,56]
• Enhanced sociability[56]
• Decreased social anxiety[46]
• Increased emotional empathy[134]
• Enhanced ratings of affective touch[135]
• Gregariousness[46]
• Increased ratings of face trustworthiness[50]
• Cooperative behaviour[50]
• Blunting of ability to decode negative expressions[56]</td></tr>
<tr><td colspan="5">Effects on mental health disorders</td></tr>
<tr><td colspan="5">• In two pilot randomised-controlled trials, patients with treatment resistant PTSD experienced a decrease in PTSD symptoms after MDMA-assisted therapy[57,58]
• Importantly, the reduction in PTSD symptoms appeared to be sustained more than a year after the MDMA session[60].
• In a phase 2 double-blind randomised-controlled trial, military veterans, firefighters, and police officers with treatment-resistant PTSD reported a reduction in PSTD symptoms and were more likely to be in remission after undergoing manualised[108] MDMA-assisted therapy[53]. The high MDMA dose group also exhibited a reduction in depression symptoms and the moderate and high dose groups reported improved sleep quality, dissociative symptoms and gains in psychological, occupational and social functioning[53]. Similar reduction in symptoms and remission rates were found in another phase 2 study[59].
• In a randomised, double-blind placebo-controlled phase 3 study, MDMA-assisted therapy was found to reduce PTSD symptoms and reduced functional impairment compared to placebo with therapy in patients with severe, including co-morbid PTSD[61].
• In another study, increased openness facilitated by MDMA-assisted therapy predicted reduction in PTSD symptoms[47]
• Results from a pilot randomised double-blind study suggest that MDMA-assisted therapy reduced social anxiety symptoms in adults with autism spectrum disorder[54]
• In a randomised pilot study, MDMA-assisted therapy trended towards reducing trait anxiety in patients with a life-threatening illness, as well as decreasing depression symptoms and improving sleep quality[89].</td></tr>
</table>

Table 1: The effects of psychedelics on psychological processes and effects on mental health disorders. This is not intended to be an exhaustive literature review. The results included have been selected to provide a sense of the effects of the substances and the current state of research investigating their impacts on mental health disorders. Layout adapted from Reiff et al.[7]

References

1. AIWH. (2023). *Prevalence and impact of mental illness*. Australian Institute of Health and Welfare. https://www.aihw.gov.au/mental-health
2. Productivity Commission. (2020). *Mental Health, Report no. 95*. Commonwealth of Australia, Canberra. https://www.pc.gov.au/inquiries/completed/mental-health/report/mental-health-volume2.pdf
3. Zhdanava, M., Pilon, D., Ghelerter, I., Chow, W., Joshi, K., Lefebvre, P., & Sheehan, J. J. (2021). The Prevalence and National Burden of Treatment-Resistant Depression and Major Depressive Disorder in the United States. *The Journal of Clinical Psychiatry*, *82*(2), 0–0. https://doi.org/10.4088/JCP.20m13699
4. Rizvi, S. J., Grima, E., Tan, M., Rotzinger, S., Lin, P., McIntyre, R. S., & Kennedy, S. H. (2014). Treatment-Resistant Depression in Primary Care across Canada. *The Canadian Journal of Psychiatry*, *59*(7), 349–357. https://doi.org/10.1177/070674371405900702
5. Keller, M. B. (2005). Issues in Treatment-Resistant Depression. *Journal of Clinical Psychiatry*, *66*(8), 5–12.
6. Garcia-Romeu, A., Kersgaard, B., & Addy, P. H. (2016). Clinical Applications of Hallucinogens: A Review. *Experimental and Clinical Psychopharmacology*, *24*(4), 229–268. https://doi.org/10.1037/pha0000084
7. Reiff, C. M., Richman, E. E., Nemeroff, C. B., Carpenter, L. L., Widge, A. S., Rodriguez, C. I., Kalin, N. H., & McDonald, W. M. (2020). Psychedelics and Psychedelic-Assisted Psychotherapy. *American Journal of Psychiatry*, *177*(5), 391–410. https://doi.org/10.1176/appi.ajp.2019.19010035
8. Royal Australian and New Zealand College of Psychiatrists. (2022). Clinical Memorandum—Therapeutic use of psychedelics. *Committee for Evidence-Based Practice and Committee for Research*.
9. Department of Health and Aged Care. (2023). *Therapeutic Goods (Poisons Standard—June 2023) Instrument 2023*. https://www.legislation.gov.au/Details/F2023L00617/Html/Text, http://www.legislation.gov.au/Details/F2023L00617
10. United States Drug Enforcement Administration. (2021). *Drug Scheduling*. https://www.dea.gov/drug-information/drug-scheduling
11. Rochester, J., Vallely, A., Grof, P., Williams, M. T., Chang, H., & Caldwell, K. (2021). Entheogens and psychedelics in Canada: Proposal for a new paradigm. *Canadian Psychology/Psychologie Canadienne*. https://doi.org/10.1037/cap0000285
12. Ratcliffe, A. (2021). *More Australians using psychedelic drugs to self-treat mental health: Survey*. https://www.rmit.edu.au/news/all-news/2021/mar/global-drug-survey-psychedelics
13. AR Winstock, C Timmerman, E Davies, LJ Maier, A Zhuparris, JA Ferris, MJ Barratt, & KPC Kuypers. (2021). *Global Drug Survey (GDS) 2020 Psychedelics*. https://www.globaldrugsurvey.com/wp-content/uploads/2021/03/GDS2020-Psychedelics-report.pdf
14. YouGov. (2022). *One in four Americans say they've tried at least one psychedelic drug*. https://today.yougov.com/topics/society/articles-reports/2022/07/28/one-in-four-americans-have-tried-psychedelic-drugs
15. Bruhn, J. G., Smet, P. A. D., El-Seedi, H. R., & Beck, O. (2002). Mescaline use for 5700 years. *The Lancet*, *359*(9320), 1866. https://doi.org/10.1016/S0140-6736(02)08701-9
16. McKenna, D. J., Towers, G. H. N., & Abbott, F. (1984). Monoamine oxidase inhibitors in South American hallucinogenic plants: Tryptamine and β-carboline constituents of Ayahuasca. *Journal of Ethnopharmacology*, *10*(2), 195–223. https://doi.org/10.1016/0378-8741(84)90003-5
17. Rucker, J. J. H., Iliff, J., & Nutt, D. J. (2018). Psychiatry & the psychedelic drugs. Past, present & future. *Neuropharmacology*, *142*, 200–218. https://doi.org/10.1016/j.neuropharm.2017.12.040
18. Nichols, D. E. (2016). Psychedelics. *Pharmacological Reviews*, *68*(2), 264–355. https://doi.org/10.1124/pr.115.011478
19. Grinspoon, L., & Bakalar, J. (1997). *Psychedelic Drugs Reconsidered*. Basic Books.
20. United Nations. (1971). *Convention on psychotropic substances*. https://www.unodc.org/pdf/convention_1971_en.pdf
21. Therapeutic Goods Administration (TGA). (2023). *Change to classification of psilocybin and MDMA to enable prescribing by authorised psychiatrists* [Text]. Therapeutic Goods Administration (TGA); Therapeutic Goods Administration (TGA). https://www.tga.gov.au/news/media-releases/change-classification-psilocybin-and-mdma-enable-prescribing-authorised-psychiatrists
22. Kisely, S., Connor, M., & Somogyi, A. (2021). An evaluation of the therapeutic value, benefits and risks of methylenedioxymethamphetamine (MDMA) and psilocybin for the treatment of mental, behavioural or developmental disorders. *Therapeutic Goods Administration*. https://www.tga.gov.au/evaluation-therapeutic-value-benefits-and-risks-methylenedioxymethamphetamine-mdma-and-psilocybin-treatment-mental-behavioural-or-developmental-disorders
23. Therapeutic Goods Administration. (2019, July 30). *Scheduling handbook: Guidance for amending the Poisons Standard* (AU) [Text]. Therapeutic Goods Administration (TGA); Australian Government

Department of Health. https://www.tga.gov.au/publication/scheduling-handbook-guidance-amending-poisons-standard
24. Therapeutic Goods Administration (TGA). (2023). *Re-scheduling of psilocybin and MDMA in the Poisons Standard: Questions and answers* [Text]. Therapeutic Goods Administration (TGA); Therapeutic Goods Administration (TGA). https://www.tga.gov.au/resources/publication/scheduling-decisions-final/notice-final-decision-amend-or-not-amend-current-poisons-standard-june-2022-acms-38-psilocybine-and-mdma/re-scheduling-psilocybin-and-mdma-poisons-standard-questions-and-answers
25. Psychwire. (2021). *Q&A with Margaret Ross on psychedelics in a palliative care setting*. ASK World-Leading Experts. https://psychwire.com/ask/topics/17gkejz/ask-margaret-ross-about-the-use-of-psilocybin-in-palliative-care-
26. Siegel, J. S., Daily, J. E., Perry, D. A., & Nicol, G. E. (2023). Psychedelics Drug Legislative Reform and legalization in the US. *JAMA Psychiatry*, *80*(1), 77–83. https://doi.org/10.1001/jamapsychiatry.2022.4101
27. Feduccia, A. A., Jerome, L., Yazar-Klosinski, B., Emerson, A., Mithoefer, M. C., & Doblin, R. (2019). Breakthrough for Trauma Treatment: Safety and Efficacy of MDMA-Assisted Psychotherapy Compared to Paroxetine and Sertraline. *Frontiers in Psychiatry*, *10*, 650. https://doi.org/10.3389/fpsyt.2019.00650
28. Multidisciplinary Association for Psychedelic Studies. (2017). *FDA Grants Breakthrough Therapy Designation for MDMA-Assisted Therapy for PTSD, Agrees on Special Protocol Assessment for Phase 3 Trials*. Multidisciplinary Association for Psychedelic Studies - MAPS. https://maps.org/news/media/press-release-fda-grants-breakthrough-therapy-designation-for-mdma-assisted-psychotherapy-for-ptsd-agrees-on-special-protocol-assessment-for-phase-3-trials/
29. COMPASS. (2018). *COMPASS Pathways receives FDA Breakthrough Therapy designation for psilocybin therapy for treatment-resistant depression*. Https://Compasspathways.Com/. https://compasspathways.com/compass-pathways-receives-fda-breakthrough-therapy-designation-for-psilocybin-therapy-for-treatment-resistant-depression/
30. Center for Drug Evaluation and Research. (2019). Fact Sheet: Breakthrough Therapies. *FDA*. https://www.fda.gov/regulatory-information/food-and-drug-administration-safety-and-innovation-act-fdasia/fact-sheet-breakthrough-therapies
31. U.S. Department of Health and Human Services, Food and Drug Administration, Center for Drug Evaluation and Research (CDER), & Center for Biologics Evaluation and Research (CBER). (2014). *Guidance for Industry Expedited Programs for Serious Conditions – Drugs and Biologics FDA Industry Guidance*. https://www.fda.gov/media/86377/download
32. Ministry of Justice. (2021). *Drugs penalties*. GOV.UK. https://www.gov.uk/penalties-drug-possession-dealing
33. The Advisory Council on the Misuse of Drugs. (1971). *Misuse of Drugs Act 1971* [Text]. Statute Law Database. https://www.legislation.gov.uk/ukpga/1971/38/contents
34. Parliamentary Council Office. (1975). *Misuse of Drugs Act 1975 No 116 (as at 08 December 2020), Public Act 2 Interpretation – New Zealand Legislation*. https://www.legislation.govt.nz/act/public/1975/0116/latest/DLM436106.html?search=sw_096be8ed81a51aab_Fungus_25_se&p=1&sr=0
35. Noller, G. E., Frampton, C. M., & Yazar-Klosinski, B. (2018). Ibogaine treatment outcomes for opioid dependence from a twelve-month follow-up observational study. *The American Journal of Drug and Alcohol Abuse*, *44*(1), 37–46. https://doi.org/10.1080/00952990.2017.1310218
36. Medsafe. (2009). *Minutes of the 42nd meeting of the Medicines Classification Committee*. https://www.medsafe.govt.nz/profs/class/Minutes/2006-2010/mccMin03Nov2009.htm
37. Nicholas, C. R., Henriquez, K. M., Gassman, M. C., Cooper, K. M., Muller, D., Hetzel, S., Brown, R. T., Cozzi, N. V., Thomas, C., & Hutson, P. R. (2018). High dose psilocybin is associated with positive subjective effects in healthy volunteers. *Journal of Psychopharmacology (Oxford, England)*, *32*(7), 770–778. https://doi.org/10.1177/0269881118780713
38. Griffiths, R. R., Johnson, M. W., Richards, W. A., Richards, B. D., Jesse, R., MacLean, K. A., Barrett, F. S., Cosimano, M. P., & Klinedinst, M. A. (2018). Psilocybin-occasioned mystical-type experience in combination with meditation and other spiritual practices produces enduring positive changes in psychological functioning and in trait measures of prosocial attitudes and behaviors. *Journal of Psychopharmacology (Oxford, England)*, *32*(1), 49–69. https://doi.org/10.1177/0269881117731279
39. Griffiths, R. R., Johnson, M. W., Carducci, M. A., Umbricht, A., Richards, W. A., Richards, B. D., Cosimano, M. P., & Klinedinst, M. A. (2016). Psilocybin produces substantial and sustained decreases in depression and anxiety in patients with life-threatening cancer: A randomized double-blind trial. *Journal of Psychopharmacology (Oxford, England)*, *30*(12), 1181–1197. https://doi.org/10.1177/0269881116675513
40. Carhart-Harris, R. L., Bolstridge, M., Rucker, J., Day, C. M. J., Erritzoe, D., Kaelen, M., Bloomfield, M., Rickard, J. A., Forbes, B., Feilding, A., Taylor, D., Pilling, S., Curran, V. H., & Nutt, D. J. (2016). Psilocybin with psychological support for treatment-resistant depression: An open-label feasibility study. *The Lancet Psychiatry*, *3*(7), 619–627. https://doi.org/10.1016/S2215-0366(16)30065-7
41. Kisely, S., Connor, M., Somogyi, A. A., & Siskind, D. (2023). A systematic literature review and meta-analysis of the effect of psilocybin and methylenedioxymethamphetamine on mental, behavioural or

developmental disorders. *Australian & New Zealand Journal of Psychiatry*, *57*(3), 362–378. https://doi.org/10.1177/00048674221083868
42. Carhart-Harris, R., Giribaldi, B., Watts, R., Baker-Jones, M., Murphy-Beiner, A., Murphy, R., Martell, J., Blemings, A., Erritzoe, D., & Nutt, D. J. (2021). Trial of Psilocybin versus Escitalopram for Depression. *The New England Journal of Medicine*, *384*(15), 1402–1411. https://doi.org/10.1056/NEJMoa2032994
43. Grob, C. S., Danforth, A. L., Chopra, G. S., Hagerty, M., McKay, C. R., Halberstadt, A. L., & Greer, G. R. (2011). Pilot Study of Psilocybin Treatment for Anxiety in Patients With Advanced-Stage Cancer. *Archives of General Psychiatry*, *68*(1), 71–78. https://doi.org/10.1001/archgenpsychiatry.2010.116
44. Ross, S., Bossis, A., Guss, J., Agin-Liebes, G., Malone, T., Cohen, B., Mennenga, S. E., Belser, A., Kalliontzi, K., Babb, J., Su, Z., Corby, P., & Schmidt, B. L. (2016). Rapid and sustained symptom reduction following psilocybin treatment for anxiety and depression in patients with life-threatening cancer: A randomized controlled trial. *Journal of Psychopharmacology (Oxford, England)*, *30*(12), 1165–1180. https://doi.org/10.1177/0269881116675512
45. Kirkpatrick, M. G., Baggott, M. J., Mendelson, J. E., Galloway, G. P., Liechti, M. E., Hysek, C. M., & de Wit, H. (2014). MDMA effects consistent across laboratories. *Psychopharmacology*, *231*(19), 3899–3905. https://doi.org/10.1007/s00213-014-3528-z
46. Baggott, M. J., Coyle, J. R., Siegrist, J. D., Garrison, K. J., Galloway, G. P., & Mendelson, J. E. (2016). Effects of 3,4-methylenedioxymethamphetamine on socioemotional feelings, authenticity, and autobiographical disclosure in healthy volunteers in a controlled setting. *Journal of Psychopharmacology (Oxford, England)*, *30*(4), 378–387. https://doi.org/10.1177/0269881115626348
47. Wagner, M. T., Mithoefer, M. C., Mithoefer, A. T., MacAulay, R. K., Jerome, L., Yazar-Klosinski, B., & Doblin, R. (2017). Therapeutic effect of increased openness: Investigating mechanism of action in MDMA-assisted psychotherapy. *Journal of Psychopharmacology (Oxford, England)*, *31*(8), 967–974. https://doi.org/10.1177/0269881117711712
48. Harris, D. S., Baggott, M., Mendelson, J. H., Mendelson, J. E., & Jones, R. T. (2002). Subjective and hormonal effects of 3,4-methylenedioxymethamphetamine (MDMA) in humans. *Psychopharmacology*, *162*(4), 396–405. https://doi.org/10.1007/s00213-002-1131-1
49. Cami, J., Farré, M., Mas, M., Roset, P. N., Poudevida, S., Mas, A., San, L., & de la Torre, R. (2000). Human pharmacology of 3,4-methylenedioxymethamphetamine ('ecstasy'): Psychomotor performance and subjective effects. *Journal of Clinical Psychopharmacology*, *20*(4), 455–466. https://doi.org/10.1097/00004714-200008000-00010
50. Stewart, L. H., Ferguson, B., Morgan, C. J. A., Swaboda, N., Jones, L., Fenton, R., Wall, M. B., & Curran, H. V. (2014). Effects of ecstasy on cooperative behaviour and perception of trustworthiness: A naturalistic study. *Journal of Psychopharmacology (Oxford, England)*, *28*(11), 1001–1008. https://doi.org/10.1177/0269881114544775
51. Jungaberle, H., Thal, S., Zeuch, A., Rougemont-Bücking, A., von Heyden, M., Aicher, H., & Scheidegger, M. (2018). Positive psychology in the investigation of psychedelics and entactogens: A critical review. *Neuropharmacology*, *142*, 179–199. https://doi.org/10.1016/j.neuropharm.2018.06.034
52. Parrott, A. C. (2014). The potential dangers of using MDMA for psychotherapy. *Journal of Psychoactive Drugs*, *46*(1), 37–43. https://doi.org/10.1080/02791072.2014.873690
53. Mithoefer, M. C., Mithoefer, A. T., Feduccia, A. A., Jerome, L., Wagner, M., Wymer, J., Holland, J., Hamilton, S., Yazar-Klosinski, B., Emerson, A., & Doblin, R. (2018). 3,4-methylenedioxymethamphetamine (MDMA)-assisted psychotherapy for post-traumatic stress disorder in military veterans, firefighters, and police officers: A randomised, double-blind, dose-response, phase 2 clinical trial. *The Lancet Psychiatry*, *5*(6), 486–497. https://doi.org/10.1016/S2215-0366(18)30135-4
54. Danforth, A. L., Grob, C. S., Struble, C., Feduccia, A. A., Walker, N., Jerome, L., Yazar-Klosinski, B., & Emerson, A. (2018). Reduction in social anxiety after MDMA-assisted psychotherapy with autistic adults: A randomized, double-blind, placebo-controlled pilot study. *Psychopharmacology*, *235*(11), 3137–3148. https://doi.org/10.1007/s00213-018-5010-9
55. Kuypers, K. P. C., & Ramaekers, J. G. (2007). Acute dose of MDMA (75 mg) impairs spatial memory for location but leaves contextual processing of visuospatial information unaffected. *Psychopharmacology*, *189*(4), 557–563. https://doi.org/10.1007/s00213-006-0321-7
56. Kamilar-Britt, P., & Bedi, G. (2015). The prosocial effects of 3,4-methylenedioxymethamphetamine (MDMA): Controlled studies in humans and laboratory animals. *Neuroscience and Biobehavioral Reviews*, *57*, 433–446. https://doi.org/10.1016/j.neubiorev.2015.08.016
57. Mithoefer, M. C., Wagner, M. T., Mithoefer, A. T., Jerome, L., & Doblin, R. (2011). The safety and efficacy of ±3,4-methylenedioxymethamphetamine-assisted psychotherapy in subjects with chronic, treatment-resistant posttraumatic stress disorder: The first randomized controlled pilot study. *Journal of Psychopharmacology (Oxford, England)*, *25*(4), 439–452. https://doi.org/10.1177/0269881110378371
58. Oehen, P., Traber, R., Widmer, V., & Schnyder, U. (2013). A randomized, controlled pilot study of MDMA (± 3,4-Methylenedioxymethamphetamine)-assisted psychotherapy for treatment of resistant, chronic Post-Traumatic Stress Disorder (PTSD). *Journal of Psychopharmacology (Oxford, England)*, *27*(1), 40–52. https://doi.org/10.1177/0269881112464827

59. Ot'alora G, M., Grigsby, J., Poulter, B., Van Derveer, J. W., Giron, S. G., Jerome, L., Feduccia, A. A., Hamilton, S., Yazar-Klosinski, B., Emerson, A., Mithoefer, M. C., & Doblin, R. (2018). 3,4-Methylenedioxymethamphetamine-assisted psychotherapy for treatment of chronic posttraumatic stress disorder: A randomized phase 2 controlled trial. *Journal of Psychopharmacology*, *32*(12), 1295–1307. https://doi.org/10.1177/0269881118806297
60. Mithoefer, M. C., Wagner, M. T., Mithoefer, A. T., Jerome, L., Martin, S. F., Yazar-Klosinski, B., Michel, Y., Brewerton, T. D., & Doblin, R. (2013). Durability of improvement in post-traumatic stress disorder symptoms and absence of harmful effects or drug dependency after 3,4-methylenedioxymethamphetamine-assisted psychotherapy: A prospective long-term follow-up study. *Journal of Psychopharmacology*, *27*(1), 28–39. https://doi.org/10.1177/0269881112456611
61. Mitchell, J. M., Bogenschutz, M., Lilienstein, A., Harrison, C., Kleiman, S., Parker-Guilbert, K., G, M. O., Garas, W., Paleos, C., Gorman, I., Nicholas, C., Mithoefer, M., Carlin, S., Poulter, B., Mithoefer, A., Quevedo, S., Wells, G., Klaire, S. S., van der Kolk, B., … Doblin, R. (2021). MDMA-assisted therapy for severe PTSD: A randomized, double-blind, placebo-controlled phase 3 study. *Nature Medicine*, 1–9. https://doi.org/10.1038/s41591-021-01336-3
62. The Royal Australian and New Zealand College of Psychiatrists. (2020). *Therapeutic use of psychedelic substances*. Clinical Memorandum. https://www.ranzcp.org/files/resources/college_statements/clinical_memoranda/cm-therapeutic-use-of-psychedelics.aspx
63. Shanon, B. (2002). *The Antipodes of the Mind: Charting the Phenomenology of the Ayahuasca Experience*. Oxford University Press.
64. Oram, M. (2014). Efficacy and enlightenment: LSD psychotherapy and the Drug Amendments of 1962. *Journal of the History of Medicine and Allied Sciences*, *69*(2), 221–250. https://doi.org/10.1093/jhmas/jrs050
65. Andersen, K. A. A., Carhart-Harris, R., Nutt, D. J., & Erritzoe, D. (2021). Therapeutic effects of classic serotonergic psychedelics: A systematic review of modern-era clinical studies. *Acta Psychiatrica Scandinavica*, *143*(2), 101–118. https://doi.org/10.1111/acps.13249
66. Schmid, Y., & Liechti, M. E. (2018). Long-lasting subjective effects of LSD in normal subjects. *Psychopharmacology*, *235*(2), 535–545. https://doi.org/10.1007/s00213-017-4733-3
67. Tai, S. J., Nielson, E. M., Lennard-Jones, M., Johanna Ajantaival, R.-L., Winzer, R., Richards, W. A., Reinholdt, F., Richards, B. D., Gasser, P., & Malievskaia, E. (2021). Development and Evaluation of a Therapist Training Program for Psilocybin Therapy for Treatment-Resistant Depression in Clinical Research. *Frontiers in Psychiatry*, *12*, 27. https://doi.org/10.3389/fpsyt.2021.586682
68. Passie, T. (2018). The early use of MDMA ('Ecstasy') in psychotherapy (1977–1985). *Drug Science, Policy and Law*, *4*, 2050324518767442. https://doi.org/10.1177/2050324518767442
69. Bennett-Levy, J. (2019). Why therapists should walk the talk: The theoretical and empirical case for personal practice in therapist training and professional development. *Journal of Behavior Therapy and Experimental Psychiatry*, *62*, 133–145. https://doi.org/10.1016/j.jbtep.2018.08.004
70. Nielson, E. M., & Guss, J. (2018). The influence of therapists' first-hand experience with psychedelics on psychedelic-assisted psychotherapy research and therapist training. *Journal of Psychedelic Studies*, *2*(2), 64–73. https://doi.org/10.1556/2054.2018.009
71. Spruit, I. P. (1999). Ecstasy Use and Policy Responses in the Netherlands. *Journal of Drug Issues*, *29*(3), 653–677. https://doi.org/10.1177/002204269902900312
72. De Gregorio, D., Comai, S., Posa, L., & Gobbi, G. (2016). d-Lysergic Acid Diethylamide (LSD) as a Model of Psychosis: Mechanism of Action and Pharmacology. *International Journal of Molecular Sciences*, *17*(11). https://doi.org/10.3390/ijms17111953
73. Johnson, M. W., Sewell, R. A., & Griffiths, R. R. (2012). Psilocybin dose-dependently causes delayed, transient headaches in healthy volunteers. *Drug and Alcohol Dependence*, *123*(1–3), 132–140. https://doi.org/10.1016/j.drugalcdep.2011.10.029
74. Johansen, P.-Ø., & Krebs, T. S. (2015). Psychedelics not linked to mental health problems or suicidal behavior: A population study. *Journal of Psychopharmacology (Oxford, England)*, *29*(3), 270–279. https://doi.org/10.1177/0269881114568039
75. Studerus, E., Kometer, M., Hasler, F., & Vollenweider, F. X. (2011). Acute, subacute and long-term subjective effects of psilocybin in healthy humans: A pooled analysis of experimental studies. *Journal of Psychopharmacology*, *25*(11), 1434–1452. https://doi.org/10.1177/0269881110382466
76. Dolder, P. C., Schmid, Y., Müller, F., Borgwardt, S., & Liechti, M. E. (2016). LSD Acutely Impairs Fear Recognition and Enhances Emotional Empathy and Sociality. *Neuropsychopharmacology: Official Publication of the American College of Neuropsychopharmacology*, *41*(11), 2638–2646. https://doi.org/10.1038/npp.2016.82
77. Gasser, P., Holstein, D., Michel, Y., Doblin, R., Yazar-Klosinski, B., Passie, T., & Brenneisen, R. (2014). Safety and Efficacy of Lysergic Acid Diethylamide-Assisted Psychotherapy for Anxiety Associated With Life-threatening Diseases. *The Journal of Nervous and Mental Disease*, *202*(7), 513–520. https://doi.org/10.1097/NMD.0000000000000113

78. Osório, F. de L., Sanches, R. F., Macedo, L. R., Santos, R. G. dos, Maia-de-Oliveira, J. P., Wichert-Ana, L., Araujo, D. B. de, Riba, J., Crippa, J. A., & Hallak, J. E. (2015). Antidepressant effects of a single dose of ayahuasca in patients with recurrent depression: A preliminary report. *Revista Brasileira De Psiquiatria (Sao Paulo, Brazil: 1999)*, *37*(1), 13–20. https://doi.org/10.1590/1516-4446-2014-1496
79. Sanches, R. F., de Lima Osório, F., Dos Santos, R. G., Macedo, L. R. H., Maia-de-Oliveira, J. P., Wichert-Ana, L., de Araujo, D. B., Riba, J., Crippa, J. A. S., & Hallak, J. E. C. (2016). Antidepressant Effects of a Single Dose of Ayahuasca in Patients With Recurrent Depression: A SPECT Study. *Journal of Clinical Psychopharmacology*, *36*(1), 77–81. https://doi.org/10.1097/JCP.0000000000000436
80. Koenig, X., Kovar, M., Boehm, S., Sandtner, W., & Hilber, K. (2014). Anti-addiction drug ibogaine inhibits hERG channels: A cardiac arrhythmia risk. *Addiction Biology*, *19*(2), 237–239. https://doi.org/10.1111/j.1369-1600.2012.00447.x
81. Alper, K. R., Stajić, M., & Gill, J. R. (2012). Fatalities temporally associated with the ingestion of ibogaine. *Journal of Forensic Sciences*, *57*(2), 398–412. https://doi.org/10.1111/j.1556-4029.2011.02008.x
82. Morgan, M. J. (2000). Ecstasy (MDMA): A review of its possible persistent psychological effects. *Psychopharmacology*, *152*(3), 230–248. https://doi.org/10.1007/s002130000545
83. Gouzoulis-Mayfrank, E., & Daumann, J. (2006). Neurotoxicity of methylenedioxyamphetamines (MDMA; ecstasy) in humans: How strong is the evidence for persistent brain damage? *Addiction (Abingdon, England)*, *101*(3), 348–361. https://doi.org/10.1111/j.1360-0443.2006.01314.x
84. Schifano, F. (2004). A bitter pill. Overview of ecstasy (MDMA, MDA) related fatalities. *Psychopharmacology*, *173*(3–4), 242–248. https://doi.org/10.1007/s00213-003-1730-5
85. Cole, J. C., & Sumnall, H. R. (2003). Altered states: The clinical effects of Ecstasy. *Pharmacology & Therapeutics*, *98*(1), 35–58. https://doi.org/10.1016/s0163-7258(03)00003-2
86. Mas, M., Farré, M., de la Torre, R., Roset, P. N., Ortuño, J., Segura, J., & Camí, J. (1999). Cardiovascular and neuroendocrine effects and pharmacokinetics of 3, 4-methylenedioxymethamphetamine in humans. *The Journal of Pharmacology and Experimental Therapeutics*, *290*(1), 136–145.
87. Halpern, J. H., Sherwood, A. R., Hudson, J. I., Gruber, S., Kozin, D., & Pope, H. G. (2011). Residual neurocognitive features of long-term ecstasy users with minimal exposure to other drugs. *Addiction (Abingdon, England)*, *106*(4), 777–786. https://doi.org/10.1111/j.1360-0443.2010.03252.x
88. Baumann, M. H., Wang, X., & Rothman, R. B. (2007). 3,4-Methylenedioxymethamphetamine (MDMA) neurotoxicity in rats: A reappraisal of past and present findings. *Psychopharmacology*, *189*(4), 407–424. https://doi.org/10.1007/s00213-006-0322-6
89. Wolfson, P. E., Andries, J., Feduccia, A. A., Jerome, L., Wang, J. B., Williams, E., Carlin, S. C., Sola, E., Hamilton, S., Yazar-Klosinski, B., Emerson, A., Mithoefer, M. C., & Doblin, R. (2020). MDMA-assisted psychotherapy for treatment of anxiety and other psychological distress related to life-threatening illnesses: A randomized pilot study. *Scientific Reports*, *10*(1), 20442. https://doi.org/10.1038/s41598-020-75706-1
90. Macquarie University. (2021). *Psychedelic microdosing study to reveal what really happens in brains* ((Commonwealth of) Australia) [Web_content]. The Lighthouse. https://lighthouse.mq.edu.au/article/july-2021/psychedelic-microdosing-study-to-reveal-what-really-happens-in-brains
91. Murphy, R. J., Sumner, R. L., Evans, W., Menkes, D., Lambrecht, I., Ponton, R., Sundram, F., Hoeh, N., Ram, S., Reynolds, L., & Muthukumaraswamy, S. (2021). MDLSD: Study protocol for a randomised, double-masked, placebo-controlled trial of repeated microdoses of LSD in healthy volunteers. *Trials*, *22*(1), 302. https://doi.org/10.1186/s13063-021-05243-3
92. Polito, V., & Stevenson, R. J. (2019). A systematic study of microdosing psychedelics. *PLOS ONE*, *14*(2), e0211023. https://doi.org/10.1371/journal.pone.0211023
93. Anderson, T., Petranker, R., Rosenbaum, D., Weissman, C. R., Dinh-Williams, L.-A., Hui, K., Hapke, E., & Farb, N. A. S. (2019). Microdosing psychedelics: Personality, mental health, and creativity differences in microdosers. *Psychopharmacology*, *236*(2), 731–740. https://doi.org/10.1007/s00213-018-5106-2
94. Kuypers, K. P., Ng, L., Erritzoe, D., Knudsen, G. M., Nichols, C. D., Nichols, D. E., Pani, L., Soula, A., & Nutt, D. (2019). Microdosing psychedelics: More questions than answers? An overview and suggestions for future research. *Journal of Psychopharmacology (Oxford, England)*, *33*(9), 1039–1057. https://doi.org/10.1177/0269881119857204
95. Anderson, T., Petranker, R., Christopher, A., Rosenbaum, D., Weissman, C., Dinh-Williams, L.-A., Hui, K., & Hapke, E. (2019). Psychedelic microdosing benefits and challenges: An empirical codebook. *Harm Reduction Journal*, *16*(1), 43. https://doi.org/10.1186/s12954-019-0308-4
96. Schmid, Y., Enzler, F., Gasser, P., Grouzmann, E., Preller, K. H., Vollenweider, F. X., Brenneisen, R., Müller, F., Borgwardt, S., & Liechti, M. E. (2015). Acute Effects of Lysergic Acid Diethylamide in Healthy Subjects. *Biological Psychiatry*, *78*(8), 544–553. https://doi.org/10.1016/j.biopsych.2014.11.015
97. Carhart-Harris, R. L., Kaelen, M., Bolstridge, M., Williams, T. M., Williams, L. T., Underwood, R., Feilding, A., & Nutt, D. J. (2016). The paradoxical psychological effects of lysergic acid diethylamide (LSD). *Psychological Medicine*, *46*(7), 1379–1390. https://doi.org/10.1017/S0033291715002901
98. Varker, T., Watson, L., Gibson, K., Forbes, D., & O'Donnell, M. L. (2021). Efficacy of Psychoactive Drugs for the Treatment of Posttraumatic Stress Disorder: A Systematic Review of MDMA, Ketamine, LSD and

Psilocybin. *Journal of Psychoactive Drugs*, *53*(1), 85–95. https://doi.org/10.1080/02791072.2020.1817639
99. Australian Government. (2021). *MRFF - Clinical Trials Activity Initiative—2021 Innovative Therapies for Mental Illness—Grant Opportunity*. Current Grant Opportunity View - GO4726: GrantConnect. https://www.grants.gov.au/Go/Show?GoUuid=ac4aaf8d-bea4-400e-9ee2-c783c6a81e31
100. Williams, M., & Bright, S. (2021). *Will Australia legalise ecstasy and magic mushrooms to treat mental illness? Here's why it's still too soon*. The Conversation. http://theconversation.com/will-australia-legalise-ecstasy-and-magic-mushrooms-to-treat-mental-illness-heres-why-its-still-too-soon-150448
101. Australian Psychological Society. (2010). *Ethics and practice standards | APS*. https://www.psychology.org.au/About-Us/What-we-do/ethics-and-practice-standards
102. Doblin, R., Greer, G., Holland, J., Jerome, L., Mithoefer, M. C., & Sessa, B. (2014). A reconsideration and response to Parrott AC (2013) 'Human psychobiology of MDMA or "Ecstasy": An overview of 25 years of empirical research'. *Human Psychopharmacology*, *29*(2), 105–108. https://doi.org/10.1002/hup.2389
103. Sellers, Edward. M., Romach, M. K., & Leiderman, D. B. (2018). Studies with psychedelic drugs in human volunteers. *Neuropharmacology*, *142*, 116–134. https://doi.org/10.1016/j.neuropharm.2017.11.029
104. Alduhishy, M. (2018). The overprescription of antidepressants and its impact on the elderly in Australia. *Trends in Psychiatry and Psychotherapy*, *40*(3), 241–243. https://doi.org/10.1590/2237-6089-2016-0077
105. Anderson, K. (2021). *Psychiatric medications kill more Americans than heroin*. American Addiction Centers - National Rehabs Director. https://rehabs.com/pro-talk/psychiatric-medications-kill-more-americans-than-heroin/
106. Biondi, M., & Picardi, A. (2003). Attribution of improvement to medication and increased risk of relapse of panic disorder with agoraphobia. *Psychotherapy and Psychosomatics*, *72*, 110–111.
107. Rizq, R., Guy, A., & Stainsby, K. (2020). *A short guide to what every psychological therapist should know about working with psychiatric drugs*. APPG for Prescribed Drug Dependence.
108. Mithoefer, M. C. (2015). A Manual for MDMA-Assisted Psychotherapy in the Treatment of Posttraumatic Stress Disorder. *Multidisciplinary Association for Psychedelic Studies (MAPS)*, 69.
109. Alcohol and Drug Foundation. (2021). *Psychedelics*. https://adf.org.au/drug-facts/psychedelics/
110. Rickli, A., Moning, O. D., Hoener, M. C., & Liechti, M. E. (2016). Receptor interaction profiles of novel psychoactive tryptamines compared with classic hallucinogens. *European Neuropsychopharmacology: The Journal of the European College of Neuropsychopharmacology*, *26*(8), 1327–1337. https://doi.org/10.1016/j.euroneuro.2016.05.001
111. Johnson, M. W., Hendricks, P. S., Barrett, F. S., & Griffiths, R. R. (2019). Classic psychedelics: An integrative review of epidemiology, therapeutics, mystical experience, and brain network function. *Pharmacology & Therapeutics*, *197*, 83–102. https://doi.org/10.1016/j.pharmthera.2018.11.010
112. Kraehenmann, R., Pokorny, D., Aicher, H., Preller, K. H., Pokorny, T., Bosch, O. G., Seifritz, E., & Vollenweider, F. X. (2017). LSD Increases Primary Process Thinking via Serotonin 2A Receptor Activation. *Frontiers in Pharmacology*, *8*, 814. https://doi.org/10.3389/fphar.2017.00814
113. Schenberg, E. E. (2018). Psychedelic-Assisted Psychotherapy: A Paradigm Shift in Psychiatric Research and Development. *Frontiers in Pharmacology*, *9*. https://doi.org/10.3389/fphar.2018.00733
114. Johnson, M. W., Garcia-Romeu, A., Cosimano, M. P., & Griffiths, R. R. (2014). Pilot study of the 5-HT2AR agonist psilocybin in the treatment of tobacco addiction. *Journal of Psychopharmacology (Oxford, England)*, *28*(11), 983–992. https://doi.org/10.1177/0269881114548296
115. Johns Hopkins University. (2020). *Psilocybin-facilitated Smoking Cessation Treatment: A Pilot Study* (Clinical Trial Registration No. NCT01943994). clinicaltrials.gov. https://clinicaltrials.gov/ct2/show/NCT01943994
116. Bogenschutz, M. P., Forcehimes, A. A., Pommy, J. A., Wilcox, C. E., Barbosa, P., & Strassman, R. J. (2015). Psilocybin-assisted treatment for alcohol dependence: A proof-of-concept study. *Journal of Psychopharmacology*, *29*(3), 289–299. https://doi.org/10.1177/0269881114565144
117. NYU Langone Health. (2021). *A Double-Blind Trial of Psilocybin-Assisted Treatment of Alcohol Dependence* (Clinical Trial Registration No. NCT02061293). clinicaltrials.gov. https://clinicaltrials.gov/ct2/show/NCT02061293
118. Moreno, F. A., Wiegand, C. B., Taitano, E. K., & Delgado, P. L. (2006). Safety, tolerability, and efficacy of psilocybin in 9 patients with obsessive-compulsive disorder. *The Journal of Clinical Psychiatry*, *67*(11), 1735–1740. https://doi.org/10.4088/jcp.v67n1110
119. Kelmendi, B. (2021). *Psilocybin Treatment in Obsessive-Compulsive Disorder: A Preliminary Efficacy Study and Exploratory Investigation of Neural Correlates.* (Clinical Trial Registration No. NCT03356483). clinicaltrials.gov. https://clinicaltrials.gov/ct2/show/NCT03356483
120. Moreno, F. A. (2021). *Psilocybin for Treatment of Obsessive Compulsive Disorder* (Clinical Trial Registration No. NCT03300947). clinicaltrials.gov. https://clinicaltrials.gov/ct2/show/NCT03300947
121. University of Wisconsin, Madison. (2021). *Phase I Study of the Safety and Adjunctive Effects of Psilocybin in Adults With Opioid Use Disorder Maintained on Buprenorphine/Naloxone* (Clinical Trial Registration No. NCT04161066). clinicaltrials.gov. https://clinicaltrials.gov/ct2/show/NCT04161066

122. Johns Hopkins University. (2020). *Effects of Psilocybin in Anorexia Nervosa* (Clinical Trial Registration No. NCT04052568). clinicaltrials.gov. https://clinicaltrials.gov/ct2/show/NCT04052568
123. Johns Hopkins University. (2021). *Pilot Study of Serotonin 2A Receptor (5-HT2A) Agonist Psilocybin for Depression in Patients With Mild Cognitive Impairment or Early Alzheimer's Disease* (Clinical Trial Registration No. NCT04123314). clinicaltrials.gov. https://clinicaltrials.gov/ct2/show/NCT04123314
124. St Vincent's Hospital Melbourne. (2020). *Australia's first psychedelic clinical trial commences recruitment*. St Vincent's Hospital Melbourne. https://www.svhm.org.au/newsroom/news/australia-s-first-psychedelic-clinical-trial-commences-recruitment
125. Lebedev, A. V., Kaelen, M., Lövdén, M., Nilsson, J., Feilding, A., Nutt, D. J., & Carhart-Harris, R. L. (2016). LSD-induced entropic brain activity predicts subsequent personality change. *Human Brain Mapping*, *37*(9), 3203–3213. https://doi.org/10.1002/hbm.23234
126. Carhart-Harris, R. L., Leech, R., Hellyer, P. J., Shanahan, M., Feilding, A., Tagliazucchi, E., Chialvo, D. R., & Nutt, D. (2014). The entropic brain: A theory of conscious states informed by neuroimaging research with psychedelic drugs. *Frontiers in Human Neuroscience*, *0*. https://doi.org/10.3389/fnhum.2014.00020
127. Liechti, M. E., Dolder, P. C., & Schmid, Y. (2017). Alterations of consciousness and mystical-type experiences after acute LSD in humans. *Psychopharmacology*, *234*(9–10), 1499–1510. https://doi.org/10.1007/s00213-016-4453-0
128. Carhart-Harris, R. L., Kaelen, M., Whalley, M. G., Bolstridge, M., Feilding, A., & Nutt, D. J. (2015). LSD enhances suggestibility in healthy volunteers. *Psychopharmacology*, *232*(4), 785–794. https://doi.org/10.1007/s00213-014-3714-z
129. Mueller, F., Lenz, C., Dolder, P. C., Harder, S., Schmid, Y., Lang, U. E., Liechti, M. E., & Borgwardt, S. (2017). Acute effects of LSD on amygdala activity during processing of fearful stimuli in healthy subjects. *Translational Psychiatry*, *7*(4), e1084–e1084. https://doi.org/10.1038/tp.2017.54
130. University Hospital, Basel, Switzerland. (2020). *LSD Treatment in Persons Suffering From Anxiety Symptoms in Severe Somatic Diseases or in Psychiatric Anxiety Disorders: A Randomized, Double-blind, Placebo-controlled Phase II Study* (Clinical Trial Registration No. NCT03153579). clinicaltrials.gov. https://clinicaltrials.gov/ct2/show/NCT03153579
131. Thomas, G., Lucas, P., Capler, N. R., Tupper, K. W., & Martin, G. (2013). Ayahuasca-assisted therapy for addiction: Results from a preliminary observational study in Canada. *Current Drug Abuse Reviews*, *6*(1), 30–42. https://doi.org/10.2174/15733998113099990003
132. Dos Santos, R. G., Balthazar, F. M., Bouso, J. C., & Hallak, J. E. (2016). The current state of research on ayahuasca: A systematic review of human studies assessing psychiatric symptoms, neuropsychological functioning, and neuroimaging. *Journal of Psychopharmacology (Oxford, England)*, *30*(12), 1230–1247. https://doi.org/10.1177/0269881116652578
133. Brown, T. K., & Alper, K. (2018). Treatment of opioid use disorder with ibogaine: Detoxification and drug use outcomes. *The American Journal of Drug and Alcohol Abuse*, *44*(1), 24–36. https://doi.org/10.1080/00952990.2017.1320802
134. Kuypers, K. P. C., Dolder, P. C., Ramaekers, J. G., & Liechti, M. E. (2017). Multifaceted empathy of healthy volunteers after single doses of MDMA: A pooled sample of placebo-controlled studies. *Journal of Psychopharmacology (Oxford, England)*, *31*(5), 589–598. https://doi.org/10.1177/0269881117699617
135. Bershad, A. K., Mayo, L. M., Van Hedger, K., McGlone, F., Walker, S. C., & de Wit, H. (2019). Effects of MDMA on attention to positive social cues and pleasantness of affective touch. *Neuropsychopharmacology*, *44*(10), 1698–1705. https://doi.org/10.1038/s41386-019-0402-z

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