



EVIDENCE-BASED PSYCHOLOGY IN PRACTICE

Persistent Altered States: Psychological Treatment of Psychedelic Adverse Effects

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The authors have completed the ICMJE form. KAAA reports being the owner of Psykolyse, a private company that offers talk therapy and courses on psychedelics for health professionals. BH is employed by Psykolyse. The cases are fictitious.

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Abstract



Interest and use of psychedelic substances is on the rise in the general population. Research has mainly focused on therapeutic applications in formal treatment settings, and little is known about persistent negative effects in naturalistic use. The aim of this paper is to present a clinically relevant overview of the phenomenology and symptoms of enduring mental health problems after psychedelic use. Three central domains of post-psychedelic difficulties are presented, informed by clinical work on this subgroup and a narrative literature review: (a) anxiety and feelings of unreality, (b) persistent changes in perception, and (c) existential distress. These are broad groupings and intended as suggestive rather than authoritative on the breadth and nature of complications after recreational psychedelic use. Challenges and recommendations for psychotherapeutic work with this subgroup is discussed in the context of principles for evidence-based practice.

Keywords: psychedelics, negative effects, adverse reactions, HPPD, existential distress

In the past decade, interest in the effects of psychedelic substances on consciousness, brain function and psychological suffering has grown markedly among researchers and clinicians (Carhart-Harris & Friston, 2019; Preller & Vollenweider, 2018). Promising treatment effects have been found for mental disorders, addiction, and existential distress in the context of life-threatening illness (Andersen et al., 2021). At the same time, several authors have pointed to uncritical media coverage and methodological weaknesses in the research, including limited attention to potential adverse effects (Hinkle et al., 2024; van Elk & Fried, 2023; Yaden et al., 2022). An ongoing discussion in the scientific literature concerns the quality and safety of the psychotherapy models that are used in clinical trials of both classical psychedelics and MDMA-assisted psychotherapy (Cristea et al., 2024; McNamee et al., 2023). Nevertheless, in the general population, interest in and use of psychedelics seems to be increasing, both internationally and in Norway (Jacobsen et al., 2021; Rockhill et al., 2025). This kind of use receives relatively little attention, despite being far more common than participation in research or experimental treatment.

Population studies show conflicting findings as to whether psychedelic use is associated with increased, decreased or unchanged rates of mental health problems (Hendricks et al., 2015; Johansen & Krebs, 2015; Yang et al., 2022). This discrepancy is partly due to variable control for pre-existing mental disorders and other substance use (Nesvåg et al., 2015), where researchers want to separate the effect of psychedelics from other user characteristics. Statistical control for underlying mental health problems helps assess the substances' overall population effects, but it also makes it harder to discern how vulnerable individuals are affected, since the factor that may increase their susceptibility is being adjusted away.. Studies of users who report negative effects show that pre-existing psychological vulnerability influenced their outcomes (Barrett et al., 2017; Bremler et al., 2023; Marrocu et al., 2024). In prospective studies of risk groups, however, no consistent association have been found between psychedelic use and subsequent deterioration in mental health (Gordon et al., 2024; Zhou et al., 2025). Taken together, this suggests that individual outcomes following psychedelic use vary among people at higher risk, where positive, neutral and negative outcomes all occur in naturalistic contexts.

A non-trivial number nevertheless describe long-lasting difficulties with negative impact on functioning (Evans et al., 2023; Simonsson et al., 2023). We have run a private psychotherapy clinic for people who want to discuss psychedelic experiences with health professionals who are familiar with the research field. We have neither encouraged nor facilitated psychedelic use, but focused on



conversations about substance use and general psychotherapy. In particular, we have aimed to help people who experience adverse effects from psychedelics. In this paper, we present characteristics of persistent negative effects as they appear among the users we have seen and in the research literature. We then discuss challenges and recommendations for psychological treatment for this group.



Methods

The literature for this article was identified through partly systematic searches in PubMed and PsychINFO. The search string we used for PubMed was ('Negative effects' OR 'adverse effects' OR 'adverse events' OR 'side effects' OR 'dissociation' OR 'depersonalization' OR 'HPPD') AND ('psychedelics' OR 'LSD' OR 'psilocybin' OR 'mescaline' OR 'Dimethyltryptamine' OR 'psychedelic») AND 'survey'. The final search was conducted in June 2025 and resulted in 105 articles. In addition, relevant peer-reviewed literature already known to the authors was included, even if it was not identified through the systematic PubMed search.

This article presents what we consider the most central research on negative effects of psychedelics. We chose to focus on 'classical psychedelics' (LSD, psilocybin, DMT and mescaline), as these substances produce prototypical psychedelic effects and have the same pharmacological mechanism of action (5HT_{2A} agonists). We present three fictitious cases inspired by patients we have treated, to highlight central difficulties and representative clinical presentations.

Results

Anxiety and Feelings of Unreality

Over the past eight months 'Petter' has struggled with increased anxiety and an altered experience of himself and the world. His symptoms developed gradually after a chaotic experience with psilocybin (mushrooms/truffles) in Amsterdam with friends. During the trip, he experienced an overwhelming loss of control and fear of dying, in an unsafe public setting where he felt helpless. His group of friends responded in a belittling way when he tried to share his experience, and he has therefore kept his difficulties hidden. After the trip, he was frightened by a strange sensation of not being present in his own body and of the world seeming dreamlike – as if he were an actor in an artificial reality. This disconnected state occurs periodically and varies in intensity, often exacerbated by stress and

poor sleep. He is troubled by nervousness, racing thoughts and excessive self-monitoring in social situations. He feels distressed and increasingly hypervigilant toward his inner experiences.



Persistent difficulties after psychedelics often occur in connection with particularly distressing experiences. In a large study of psilocybin users about their most difficult experience with the drug, 39% reported that the experience was among the 5 most challenging in their life. Among those who still had difficulties more than 1 year later, 7.6% had sought psychological or medical help (Carbonaro et al., 2016). A representative population-based study found that 8.9% of users of classical psychedelics reported impaired functioning for more than a day after a difficult experience (Simonsson et al., 2023). Among people with persistent difficulties, a large study found that the majority had experienced problems for more than a year and that greater distress during the psychedelic experience predicted longer duration and increased intensity of symptoms (Evans et al., 2023). At the same time, difficult experiences do not necessarily lead to negative outcomes, and many report that they also had positive after-effects (Carbonaro et al., 2016; Johnstad, 2021). In line with this, the field has increasingly adopted the term ‘challenging experience’ instead of the more negative ‘bad trip’. A challenging experience suggests the possibility of personal growth rather than a primarily nightmarish or harmful episode, but critics argue that it obscures negative effects and risk (Strassman, 2018).

The content of difficult experiences varies, but common themes are loss of control, helplessness, painful memories, a sense that others mean harm, and existential or spiritual distress (Barrett et al., 2016; Schutt et al., 2025). We have recently translated and validated the ‘Challenging Experience Questionnaire’ (CEQ) into Norwegian, which measures difficult/challenging experiences across seven factors: fear, grief, physical distress, fear of losing one’s mind, isolation, death and paranoia (Andersen et al., 2025). A recent survey of a convenience sample of Norwegian psychedelic users found a weak negative association between high levels of challenging experience (measured with the CEQ) and subjective well-being (Tunstad et al., 2025). Furthermore, factors such as emotional resolution (‘breakthrough’) were associated with positive effects from challenging experiences, suggesting that the outcome of such experiences is influenced by how they are processed as they unfold.

In recreational contexts, challenging experiences may occur in settings that do not allow for adequate support during this vulnerable state. Patients have described highly distressing situations, such as suddenly re-experiencing memories of abuse in a crowd at a music festival. The risk of

overwhelming and confusing experiences increases if the user does not know the substances' unpredictable effects and their tendency to increase receptivity to external stimuli (Haijen et al., 2018). Other risk factors are high doses, combining different substances, psychological vulnerability and younger age (Carbonaro et al., 2016; Simonsson et al., 2023). A recent longitudinal study found a positive association between negative psychedelic experiences and subsequent increases in depressive symptoms. This association was strongest when the use took place in a 'risky setting', characterized by a negative mental state and lack of psychological support (Simonsson, Hendricks, Swords et al., 2025). At the same time, distressing experiences and persistent problems can occur despite good preparation, which stands in contrast to how these substances are often portrayed as inherently therapeutic in user communities (Holm et al., 2023). Several people have reported condescending or dismissive responses that reinforce their burden, where negative outcomes are ascribed to personal shortcomings, such as having 'misunderstood the message' or lacking aptitude for personal development.



The symptom pattern we most often see is a combination of anxiety, sleep difficulties and dissociative phenomena. Many describe strong physiological arousal and problems falling asleep afterwards, sometimes accompanied by panic attacks. The risk of this is higher if the psychedelic experience was frightening, but sometimes there is no clear link to characteristics of the experience. We do, however, often see that the experience becomes mentally intrusive, even if the memories are fragmented. This can involve specific sequences that have been etched into memory, intense bodily sensations, a feeling of acute loss of control or horrific inner images. In our experience, the intensity of symptoms fluctuates, with shifting complaints, confusion and sudden anxiety. Both our clinical experience and the literature suggest that anxiety occurs more frequently than depression (Robinson et al., 2025; Simonsson et al., 2023), with the latter emerging in the context of prolonged struggle with symptoms and compounding life stressors.

A frequent phenomenon is the sense of being mentally detached from one's body and identity, including periods of global unreality (Evans et al., 2023; Robinson et al., 2024). Depersonalization and derealization (DP/DR) refers to persistent feelings of disconnection, where the self and surroundings feel artificial or devoid of meaning. Reality testing remains intact, but the person may ruminate excessively about how existence feels dreamlike or inauthentic (Ciaunica et al., 2022). It is paradoxical that substances that usually enhance awareness of the present moment can trigger disconnection, but it is known that DP/DR can arise when the psychological and neural systems that

underpin our usual sense of self and reality are disrupted (Gatus et al., 2022). The phenomenon is also associated with stress, sleep deprivation and exhaustion, all of which can occur after psychedelic use, and it is more common among younger people (Yang et al., 2023) – which overlaps with the main user group. When DP/DR is long-lasting and distressing, it constitutes a condition in its own right, but it can also be one aspect among other difficulties.



An observation from our patients is that anxiety and DP/DR following psychedelics often lead to a kind of ‘mental health anxiety’. Many fear losing their grip on reality, ‘going crazy’ or developing schizophrenia. In most cases, it is unlikely that the person is becoming psychotic, and it is more reasonable to understand this as excessive worry about mental health. This often occurs after distressing experiences with altered states of consciousness, either during the acute drug effect or in the period afterwards. Many also grew up with exaggerated warnings, such as ‘taking LSD is like playing Russian roulette with your brain’, which can reinforce fears about severe mental illness. As with other forms of health anxiety, the person usually knows that the fear is disproportionate, but this insight weakens during episodes of increased anxiety. The anxiety can thus become highly uncomfortable, dominant and limiting.

Persistent Changes in Perception

‘Tarjei’ is in his early 20s and feels that life is on hold. Since high school, he has been troubled by altered visual perception, which began during a period when he took high doses of LSD several weekends in a row, often combined with cannabis, alcohol or MDMA. After an intense experience – during which he was also confronted by his parents – he noticed that visual effects from the LSD trip persisted in a sober state: objects that change size, ‘melt’ or ‘breathe’, afterimages from movements, bright halos, pixelated static and colorful flashes. This has been frightening, confusing and lonely. The intensity has subsided, but it is still present. The uncertainty about what has happened to him and whether he will ever get rid of it is a real burden. He has found a diagnosis that fits what he is experiencing and seeks information from online forums rather than health professionals. Knowing that others have the same condition has eased his fear of going crazy, but he feels hopelessness and ruminates a great deal about whether this will be a permanent handicap.

Persistent changes in perception after consumption of psychedelic substances is included in DSM-5 under the diagnosis ‘Hallucinogen Persisting Perception Disorder’ (HPPD). The condition is characterized by enduring alterations in sensory experience that differ qualitatively from the

hallucinations or impaired reality-testing characteristic of psychotic disorders (Martinotti et al., 2018). HPPD prominently features altered visual impressions that partly overlap with the acute drug effect (Vis et al., 2021). The duration and severity of HPPD vary, but a subgroup reports symptoms that persist for years and cause significant distress (Martinotti et al., 2018; Vis et al., 2021). Users with HPPD whom we have met experience the symptoms as an impediment to normal functioning and psychologically burdensome.



The prevalence of HPPD is uncertain. In a self-selected survey, 4.2% of psychedelic users reported nearly constant visual changes that they perceived as unwanted and disturbing (Baggott et al., 2011), while 1.3% of users in a representative population-based study reported that they had received the diagnosis from a health professional (Simonsson, Goldberg, Chambers et al., 2025). At the same time, research suggests that transient and mild visual changes after psychedelics are common and rarely associated with significant distress or impaired functioning (Müller et al., 2024; Baggott et al., 2011). Perceptual changes during the acute psychedelic state are characterized by dissolved boundaries, increased sensory intensity and the experience of alternative patterns in familiar stimuli (Preller & Vollenweider, 2018), which is thought to be caused by reduced control and categorization in the brain's processing (Carhart-Harris & Friston, 2019). Normally, this subsides in step with the drug effect, with only slight visual after-effects for a short period; in HPPD, however, a persistent and distressing alteration of consciousness occurs.

The term 'LSD flashback' was historically used to denote both visual changes and emotional re-experiencing and can be seen as a precursor to the current diagnostic label (Abraham, 1983; Horowitz, 1969). Long duration and marked visual effects may correspond to LSD as the triggering factor, as it may have an especially strong impact on visual systems, but HPPD also occurs with other psychedelics (Vis et al., 2021). Factors that likely increase risk are frequent use, polysubstance use, high doses and underlying sensory sensitivity (Halpern et al., 2018). The mechanism behind HPPD is unknown, but a central hypothesis is a reduced filtering of sensory data due to 'cortical disinhibition' (Vis et al., 2021). Overactivation in visual processing can produce unstable perception of objects, faces or lighting. The world can then be experienced as flickering, undifferentiated, distorted or full of colors, and, over time, sensitization to altered perception can amplify symptoms (Halper et al., 2018).

HPPD also shares features with other conditions. For example, persistent postural-perceptual dizziness ('chronic subjective dizziness') produces similar sensory changes (Popkirov et al., 2018),

and during panic attacks, altered vision and feelings of unreality commonly occur (Hunter et al., 2003). Furthermore, in many cases, HPPD is accompanied by DP/DR and anxiety (Martinotti et al., 2018), and anecdotally, several patients have described brain fog, concentration difficulties and racing thoughts. It is possible that anxiety contributes to the development of HPPD, which could explain a potential relationship between negative drug experiences and long-term perceptual changes. Non-visual perceptual disturbances such as tinnitus, migraine with aura and vertigo are also common among people with HPPD (McConnell et al., 2025; Vis et al., 2021). The visual symptoms thus seem to be part of a broader pattern of perceptual, cognitive and affective side effects, which can strengthen the feeling of being trapped in an altered state.



Existential Distress

'Felix' has led an exploratory lifestyle characterized by involvement in alternative communities. He has taken ayahuasca (a brew from the Amazon in which DMT is an active substance) at retreats in South America and in local ceremonies in Norway, and became fascinated by DMT, which he has smoked several times. This has given him both therapeutic experiences and some terrible ones, such as the feeling of being possessed by demonic forces and thoughts of a cosmic curse. He frequently senses 'energy' in his body that doesn't feel like his own and he is plagued by intense nightmares. During a period of high stress, these reactions contributed to borderline psychotic symptoms. Even though it never developed into a persistent psychotic disorder, the experiences still drive his ongoing preoccupation with spiritual themes and the feeling of being existentially lost. He feels a strong need to understand and resolve this inner pressure and is tempted by new psychedelic and religious ceremonies. In parallel, there have been many life stressors, such as loss of close relationships and difficult childhood experiences, which have never been fully resolved.

The triggering of persistent psychotic disorders and severe manic episodes are likely the greatest concern in regards to the normalization of psychedelics and their increased use among vulnerable patient groups. In clinical trials, individuals with high risk of psychosis or bipolar disorder are usually excluded, based on anecdotal reports and research from the 1950s and 60s (Yildirim et al., 2024; Johnson et al., 2008; Cohen, 1960). The level of risk is unclear, but some recent studies support a precautionary attitude towards high-risk groups. For example, one third of users with bipolar disorder reported increased manic symptoms, anxiety and sleep difficulties after psilocybin intake (Morton et al., 2023). Some longitudinal population studies have found increases in psychotic and

manic symptoms after use, but the findings are inconsistent (Honk et al., 2024; Simonsson, Goldberg, Osika et al., 2025). Recreational use can involve co-occurring risk factors, such as particularly vulnerable individuals, polysubstance use and unfortunate circumstances.



At our clinic, we do not have experience with psychotic disorders or mania, but we do occasionally meet people with adjacent problems where psychedelics have been problematic. These include tendencies towards magical ideation, unusual sensory experiences, an unclear sense of identity, and intense preoccupation with existential or spiritual issues. The causal direction between these traits and psychedelic use is unclear (Dourron et al., 2025). Our experience suggests that these are people who were already interested in mystical phenomena and who have also had powerful experiences with psychedelics. Both the quality of the experiences and the after-effects can contribute to becoming preoccupied with making sense of distressing psychedelic experiences. Several patients have described how this search for meaning involved profound disillusionment, despair or confusion (Argyri et al., 2025; Schutt et al., 2025). The themes vary widely, but may, for example, involve feeling that one has lost oneself as a person or doubting the true nature of reality.

Increased interest in existential and spiritual topics is relatively common after psychedelic use and should not be pathologized. Several studies have found a tendency towards altered metaphysical beliefs, often in the direction of a less materialistic perspective, and this has been linked to positive impacts on mental health (Timmermann et al., 2021). For example, more than half of DMT users reported that they no longer identified as atheists after encounters with ‘entity beings’ – a characteristic effect of the substance (Davis et al., 2020). For some, however, the intensity and qualities of such experiences become difficult to relate to afterwards. The concept of ‘ontological shock’ describes a shift in philosophical or religious assumptions after especially powerful experiences and can be associated with confusion, fear or other complicated reactions. In studies of people with persistent difficulties after psychedelics, at least half report challenges with existential and spiritual themes (Robinson et al., 2025; Evans et al., 2023), and these themes are often interwoven with complaints like anxiety, compulsive rumination, perceptual changes or depression.

Extraordinary experiences often generate a need to understand what one has gone through. Among ayahuasca users, more than 1 in 10 reported experiences of being ‘attacked by energy or beings from a spiritual dimension’ (Bouso et al., 2022). Patients have described strange and overwhelming bodily sensations, such as ringing sounds and an internal restlessness that does not feel like their own. Some report thoughts of being possessed by an alien or demonic force and experience

difficulty returning to everyday life because they feel overwhelmed by the phenomenon and unsure of the cause. Aixalà (2024) has described how some people become fixated on altered states of consciousness and repeatedly seek them out, even when it has negative consequences. Frequent use to cope with negative feelings has been found to predict mental health problems (St. Arnaud & Sharpe, 2023). Maladaptive coping through repeated use may relate to the observed phenomenon of ‘spiritual bypassing’, where spiritual seeking serves to avoid or circumvent difficult emotions and real-life problems (Picciotto et al., 2018).



There are several similarities between the adverse effects of meditation and of psychedelics. In meditation, there have been reports of feeling a loss of control during altered states of consciousness, intense emotional reactions, dissociation, depersonalization, perceptual phenomena and re-experiencing of traumatic memories (Goldberg et al., 2022; Lambert et al., 2021). One potentially important social difference is that psychedelic use is more often linked to individual exploration of mystical experiences, while meditation tend to involve active practice and formal meditation-based communities. This may mean that psychedelic users with distressing symptoms are more vulnerable to extreme interpretations of their experience, social isolation and maladaptive coping strategies.

Table 1

Three main categories of difficulties after psychedelics

	Theme	Symptoms	Challenges	Needs
Anxiety and unreality	Loss of control, shock, sense of distance from oneself or the environment.	Heightened anxiety and worry, depersonalization and derealization, emotional numbing, distressing memories.	Fear of «going crazy,» overwhelmed when reminded of the experience, feeling stuck in a sense of unreality.	Normalization, counter unrealistic catastrophic appraisals, emotional processing of the experience, anxiety-focused treatment.
Persistent perceptual changes	Altered sensory experience, concerns about neurological damage.	Visual phenomena in sober state, other perceptual changes, psychological reactions.	Rumination about the condition, hopelessness about prognosis, feelings of loneliness and shame.	Diagnostic clarification, psychoeducation about maintenance factors and adaptive management strategies.
Existential distress	Fundamental doubt about existence or the nature of reality, loss of meaning.	Feeling deeply changed, preoccupation with spiritual themes, alternative belief systems.	Difficulty letting go, sense of being lost, struggle to resume ordinary life.	Recognition of complex challenges, support in regaining a sense of belonging and

Theme	Symptoms	Challenges	Needs
			meaning in everyday life.



Note. A simplified overview of problem domains, clinical features and treatment needs. It is not exhaustive and the suggested areas of difficulty may overlap in many cases.

Discussion

In this section, we discuss recommendations and challenges for clinical practice which, based on our clinical experience and the available research literature, are considered particularly relevant when working with this group. The Declaration of Evidence-Based Psychological Practice constitutes a common foundation for clinical psychology in Norway (Norsk Psykologforening, 2007). It is based on the integration of (a) the best research evidence, (b) clinical expertise and (c) patient characteristics, values and context. The discussion of psychotherapy with negative psychedelic after-effects will be informed by these three points. Two areas of difficulty – ‘anxiety and feelings of unreality’ and ‘persistent changes in perception’ receive the most attention in the discussion of therapeutic recommendations, as these symptoms are more clearly linked to existing and empirically supported interventions. ‘Existential distress’ is considered closely tied to the patient’s characteristics, values and context, and is primarily discussed in light of particular challenges.

Recommendations for Evidence-Based Psychological Practice

Neither our experience nor the literature suggests that difficulties after psychedelics require a separate or unique form of psychotherapy. There is limited research on the psychotherapy component in psychedelic-assisted psychotherapy (Hinkle et al., 2023; van Elk & Fried, 2022), and its primary purpose is not treatment of negative effects. While the concept of ‘psychedelic integration therapy’ focuses on the processing of difficult experiences and reactions to psychedelics, it does not constitute a unified approach. In practice, a wide range of conventional and alternative therapeutic approaches are offered under this umbrella (Glynos et al., 2024). For the most part, difficulties after psychedelics involve psychological reactions that can occur independently of the substances, and we believe psychotherapeutic approaches with broad empirical support should be prioritized. It is also worth noting that negative effects from classical psychedelics generally do not resemble addiction. Their pharmacological and subjective properties are generally not reinforcing or habit-forming (Johnson et

al., 2018), and decisions on treatment strategies should not be based on the assumption that the person has a primary substance use disorder linked to psychedelics.



Meaningful application of evidence-based psychotherapy for this subgroup requires that psychological approaches be informed by the characteristic challenges encountered after psychedelic use. Thus, for clinicians to make appropriate adaptations in their practice, it is important to understand the subjective phenomena with which patients struggle. The common denominator is intense experiences with altered states of consciousness, while individual treatment needs will vary depending on how each person understands and relates to their after-effects.

Excessive Worry

In cases of excessive worry about psychosis or losing control over one's mind, it is helpful to disconfirm this suspicion and normalize the patients' experiences whenever appropriate. Both intense and unusual experiences during and after the drug effect can be natural, given known mechanisms of action (Carhart-Harris & Friston, 2019). Reassuring patients that such experiences can be common and do not necessarily indicate severe mental illness is often enough for them to let go of unrealistic fears. If the problem is more entrenched, principles of cognitive behavioral therapy (CBT) for anxiety disorders may be relevant. The CBT model of depersonalization (Hunter et al., 2003) targets catastrophizing about altered subjective experience, based on the idea that fear-based interpretation of sensations serves to maintain or amplify the disorder. In our experience, this can be a useful frame for challenging excessive worry about the meaning of psychedelic after-effects through cognitive reinterpretation or deliberate exposure to anxiety-provoking external situations and internal sensations.

Unprocessed Experiences

Others may benefit from emotional processing of distressing or unresolved psychedelic experiences, where the symptoms are understood as trauma-related (Calder et al., 2025). In some cases, long-term therapy may be indicated to address underlying psychological vulnerabilities that may have influenced the psychedelic experience or contributed to reactions afterwards: for example, if tendencies towards generalized anxiety disorder make experiences of a loss of control unbearable and require continual mental monitoring. Such a tendency to monitor one's state of consciousness can potentially reinforce or maintain negative after-effects, via heightened anxiety and self-focused attention. For others,

the experience may have made painful events or periods from the past more mentally accessible and resurfaced emotional reactions that otherwise felt resolved. We find it important to clarify with the patient when the focus of therapy shifts from helping them with psychedelic after-reactions to addressing general psychological vulnerabilities. Formulating a shared understanding with the patient about the psychological issue at hand is standard in good practice, but the clinician should explicitly discuss therapy goals in light of the typical context for help-seeking regarding psychedelic adverse reactions. In general, patients initially seek consultation about specific psychedelic experiences and associated symptoms, rather than present with a desire for extended therapy. In addition, it is particularly important to clarify therapy frameworks and boundaries, as some patients may want to use the therapy to integrate future psychedelic experiences.



Persistent Perceptual Changes

In HPPD, it is useful to assess whether there are comorbid psychological problems. Emotional distress can make altered perception harder to live with and may possibly influence the perceptual disturbance itself. There are similarities between HPPD and so-called ‘somatic symptom disorders’, where the person struggles with bodily symptoms without a known physiological cause (Löwe et al., 2022). Many report that stress and anxiety increase symptom intensity. It is possible that nocebo effects can occur, where the condition worsens due to worry, attentional bias and overly negative assumptions about prognosis (Bălăeț, 2024). It therefore seems important to strike a balance in how the phenomenon is discussed: Acknowledge it as a real disorder with a possible neurological basis, while also preventing excessive fear or hopelessness.

People whom we have met with HPPD often describe a gradual normalization of perception over time, even in the absence of particular interventions, and sometimes more rapid symptom reduction occurs through deliberate use of adaptive coping strategies. Many find it useful to accept variation in their inner experiences, which could be reinforced via approaches such as Acceptance and Commitment Therapy and Metacognitive Therapy. Techniques like cognitive defusion and detached mindfulness can be concrete tools in this regard. A possible avenue for research is interventions that have proven very promising for chronic pain conditions, such as ‘Pain Reprocessing Therapy’ (Ashar et al., 2022). This therapy aims to eliminate the symptoms themselves based on the idea that psychological factors more or less fully maintain the pain state.

Challenges for Evidence-Based Psychological Practice



Although we find that therapy sessions are often helpful for people reporting persistent difficulties, it is important to assess whether psychotherapy in itself can produce negative effects. Many of those who seek ‘psychedelic integration therapy’ are in crisis following transformative experiences with which they struggle to understand. This requires awareness about the risk of unintended effects, as the therapist may be particularly influential given the increased sensitivity of the person seeking help. For example, it may be unclear whether the person needs to process the experience more deeply or help with letting go and moving on, where excessive rumination can hinder natural recovery (Watkins & Roberts, 2020). This also applies to existential or spiritual themes: Is this something the person is distressed by because it is avoided, or has the person become too preoccupied with it? While there are no universal answers to such clinical dilemmas, an appreciation of the possibility of iatrogenic harm from therapy can facilitate understanding of how patient needs vary based on individual characteristics and circumstances.

Many hesitate to seek help with difficulties that have arisen due to psychedelic use. An obvious reason is that, in doing so, they would be admitting to illegal actions and thus wonder if this openness may have negative personal consequences. Low confidence in the clinician’s attitudes and level of knowledge can also make people reticent to disclose about psychedelic experiences. For example, some worry that the health professional will assume they have a substance use disorder because illegal substances are involved or that depersonalization and altered perception will be interpreted as signs of psychosis. In HPPD, many report not finding a specific cause of the symptoms in assessments by neurologists and ophthalmologists and have felt dismissed or disbelieved because the phenomenon is relatively unknown. Avoidance or negative encounters with health services can contribute to shame over ‘self-inflicted’ harm and to seeking out alternative sources for diagnosis and self-help (Kruger et al., 2023).

Many factors influence what each individual needs, and in a naturalistic setting, there are different pitfalls. Some have felt poorly understood in encounters with the healthcare system, where a narrow disease model can feel alienating and hinder the processing of their experiences. Others have already tried alternative therapeutic models, and have engaged deeply with new-age perspectives without improving, and find benefit from conventional psychoeducation and mainstream approaches. An interview study among users with persistent difficulties characterized by existential or spiritual themes found that helpful factors included cognitive normalization of experiences, social support and

focusing on present-moment awareness (Argyri et al., 2024). Sometimes, patients describe encounters with clinicians who hold such positive views of the therapeutic properties of psychedelics that the possibility of negative effects is not acknowledged. Even in clinical trials, concerns have been raised about overenthusiastic therapists who impose their own beliefs about spirituality and philosophies on patients (Johnson, 2020). As a general principle, a cautious approach to interpreting psychedelic experiences is recommended, as well as a sober, professional stance in encounters with altered understandings of reality or existential reorientation.



A particular challenge arises in cases that resemble schizotypal functioning or psychotic states. Within the psychedelic therapy tradition, the psychiatrist and LSD therapist Stanislav Grof introduced the concept of ‘spiritual emergencies’ for states at the intersection of psychosis and religion. He argues that psychedelics can trigger disorienting crises with potential for deep personal development, where habitual assumptions about meaning and reality are dismantled. According to Grof, the phenomenon can superficially resemble psychosis, but a purely medical approach can be harmful (Grof & Grof, 1992). A strength of his model is its rich descriptions of subjective experiences and non-pathologizing language. At the same time, it is unclear how to distinguish between persistent spiritual emergencies and severe mental illness. The concept is also based on speculative ideas derived from Grof’s own practice, such as lingering psychological effects from experiences during fetal life and birth. In addition, little emphasis is placed on risks. Such interpretive frameworks are widespread in user communities and can influence how experiences are understood (Holm et al., 2023).

Bridging professional perspectives with the patient’s understanding can be difficult in practice. It is rarely helpful to determine what counts as a ‘real’ or ‘profound’ insight on behalf of the patient, and it is usually more constructive to facilitate balanced reflection through a humble and curious stance. Psychedelic experiences may also involve personally significant and emotionally charged themes in an unexpected or symbolic form. The factual validity of reinterpretations of one’s past and ‘recovered memories’ nevertheless remains uncertain (McGovern et al., 2024). From experimental research on the constructive nature of human memory, there is convincing evidence that false memories can feel as genuine as real memories. Further, false memories become more likely to occur when the person is in an impressionable state during retrieval (Schacter, 2022). Psychedelic substances are known to induce a state of high suggestibility, in which what is experienced in the present moment *feels* especially meaningful (Carhart-Harris & Friston, 2019). Trauma as a primary explanatory model for mental health problems is widespread in psychedelic therapy circles. The

possibility of false memories should, however, encourage caution when encountering reports of memories that are reported to have re-emerged during a psychedelic experience.



An important part of the wider context is that many users turn to alternative services, including ceremonial use and underground psychedelic therapy. There have been reports of cases of sexual assault, violence and self-harm at psychedelic retreats (Grierson & Siddique, 2016; Kruger et al., 2025). A more common issue is emotional destabilization and difficulties resuming normal life (Bouso et al., 2022; Lutkajtis & Evans, 2023). Typical ayahuasca stays in South America last one to two weeks and include three to six ceremonies, conducted in groups with participants from different countries and led by local ‘shamans’. It is unclear whether the intensive dosing increases risk, and competence among the guides in handling negative reactions varies. Similarly, underground therapy by definition lacks formal evaluation of safety and standards of care, and serious cases of harmful practice have been uncovered (Ross & Nickles, 2021–2022). This does not mean that retreats or underground therapy are generally harmful, but it highlights recurring issues: Who is at high risk, what is an acceptable level of risk and what can be learned from particularly severe cases?

Conclusion

Psychedelic substances produce powerful experiences and increased psychological sensitivity afterwards. Most use takes place in unregulated settings where the lack of safety measures, such as screening for vulnerability and psychological support, can increase the risk of negative outcomes. At the same time, many people have a therapeutic intention for their use, often inspired by positive media coverage, and sometimes as a ‘last attempt’ to resolve long-standing suffering. The purpose of this paper is to provide an overview of central areas of difficulty and practical considerations regarding psychotherapy with such challenges. Overarching themes include experiences of losing control, the feeling of having been fundamentally changed and difficulties with resuming life as before the experience. We consider it likely that such issues will become more common to encounter among psychotherapists in the years to come. Based on the existing literature and clinical experience with this user group, we argue that evidence-based psychotherapies can be integrated with knowledge about subjective experiences. On this basis, psychologists are well equipped to help people who experience negative effects after psychedelic use.

References



- Abraham, H. D. (1983). Visual phenomenology of the LSD flashback. *Archives of General Psychiatry*, 40(8), 884–889. <https://doi.org/10.1001/archpsyc.1983.01790070074009>
- Aixalà, M. (2024). Deepening psychedelic integration: Exploring complex settings, understanding user's struggles, and implementing safe interventions. In *Current Topics in Behavioral Neurosciences*. Springer. https://doi.org/10.1007/7854_2024_532
- Andersen, K. 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>
- Andersen, K. A. A., Holmøy, B., Kvam, T. M., & Johnson, M. W. (2025). Adverse reactions among psychedelic users: Norwegian validation of the Challenging Experience Questionnaire. *Journal of Psychiatric Research*, 189, 18–25. Advance online publication. <https://doi.org/10.1016/j.jpsychires.2025.05.062>
- Argyri, E. K., Evans, J., Luke, D., Michael, P., Michelle, K., Rohani-Shukla, C., Suseelan, S., Prideaux, E., McAlpine, R., Murphy-Beiner, A., & Robinson, O. C. (2025). Navigating groundlessness: An interview study on dealing with ontological shock and existential distress following psychedelic experiences. *PLOS ONE*, 20(5), e0322501. <https://doi.org/10.1371/journal.pone.0322501>
- Ashar, Y. K., Gordon, A., Schubiner, H., Uipi, C., Knight, K., Anderson, Z., Carlisle, J., Polisky, L., Geuter, S., Flood, T. F., Kragel, P. A., Dimidjian, S., Lumley, M. A., & Wager, T. D. (2022). Effect of pain reprocessing therapy vs placebo and usual care for patients with chronic back pain: A randomized clinical trial. *JAMA Psychiatry*, 79(1), 13–23. <https://doi.org/10.1001/jamapsychiatry.2021.2669>
- Baggott, M. J., Coyle, J. R., Erowid, E., Erowid, F., & Robertson, L. C. (2011). Abnormal visual experiences in individuals with histories of hallucinogen use: A web-based questionnaire. *Drug and Alcohol Dependence*, 114(1), 61–67. <https://doi.org/10.1016/j.drugalcdep.2010.09.006>
- Bălăeț, M. (2024). Considering the nocebo effect in the psychedelic discourse. *Journal of Psychedelic Studies*, 8(2), 286–291. <https://doi.org/10.1556/2054.2024.00365>
- Barrett, F. S., Bradstreet, M. P., Leoutsakos, J. M. S., Johnson, M. W., & Griffiths, R. R. (2016). The Challenging Experience Questionnaire: Characterization of challenging experiences

- with psilocybin mushrooms. *Journal of Psychopharmacology*, 30(12), 1279–1295. <https://doi.org/10.1177/0269881116678781>
- Barrett, F. S., Johnson, M. W., & Griffiths, R. R. (2017). Neuroticism is associated with challenging experiences with psilocybin mushrooms. *Personality and Individual Differences*, 117, 155–160. <https://doi.org/10.1016/j.paid.2017.06.004>
- Bouso, J. C., Andi n,  ., Sarris, J. J., Scheidegger, M., T foli, L. F., Opaleye, E. S., Schubert, V., & Perkins, D. (2022). Adverse effects of ayahuasca: Results from the Global Ayahuasca Survey. *PLOS Global Public Health*, 2(11), e000438. <https://doi.org/10.1371/journal.pgph.0000438>
- Bremner, R., Katati, N., Shergill, P., Erritzoe, D., & Carhart-Harris, R. L. (2023). Case analysis of long-term negative psychological responses to psychedelics. *Scientific Reports*, 13(1), 15998. <https://doi.org/10.1038/s41598-023-41145-x>
- Calder, A. E., Diehl, V. J., & Hasler, G. (2025). Traumatic psychedelic experiences. In *Current Topics in Behavioral Neurosciences* (pp. 1–26). Springer. https://doi.org/10.1007/7854_2025_579
- Carbonaro, T. M., Bradstreet, M. P., Barrett, F. S., MacLean, K. A., Jesse, R., Johnson, M. W., & Griffiths, R. R. (2016). Survey study of challenging experiences after ingesting psilocybin mushrooms: Acute and enduring positive and negative consequences. *Journal of Psychopharmacology*, 30(12), 1268–1278. <https://doi.org/10.1177/0269881116662634>
- Carhart-Harris, R. L., & Friston, K. J. (2019). REBUS and the anarchic brain: Toward a unified model of the brain action of psychedelics. *Pharmacological Reviews*, 71(3), 316–344. <https://doi.org/10.1124/pr.118.017160>
- Ciaunica, A., Seth, A., Limanowski, J., Hesp, C., & Friston, K. J. (2022). I overthink—Therefore I am not: An active inference account of altered sense of self and agency in depersonalisation disorder. *Consciousness and Cognition*, 101, 103320. <https://doi.org/10.1016/j.concog.2022.103320>
- Cohen, S. (1960). Lysergic acid diethylamide: Side effects and complications. *The Journal of Nervous and Mental Disease*, 130(1), 30–40. <https://doi.org/10.1097/00005053-196001000-00005>
- Cristea, I. A., Cuijpers, P., & Halvorsen, J.  . (2024). The psychotherapy in MDMA-assisted psychotherapy. *JAMA Psychiatry*, 81(11), 1053–1054. <https://doi.org/10.1001/jamapsychiatry.2024.2887>
- Davis, A. K., Clifton, J. M., Weaver, E. G., Hurwitz, E. S., Johnson, M. W., & Griffiths, R. R. (2020). Survey of entity encounter experiences occasioned by inhaled N, N-dimethyltryptamine:



- Phenomenology, interpretation, and enduring effects. *Journal of Psychopharmacology*, 34(9), 1008–1020. <https://doi.org/10.1177/0269881120916143>
- Dourron, H. M., Bradley, M., Simonsson, O., Copes, H., Grossman, D., Shallcross, R. A., & Hendricks, P. S. (2025). Naturalistic psychedelic use and psychotic symptoms: A cross-sectional study of individuals with a personal or family history of psychotic or bipolar disorders. *Psychedelic Medicine*, 3(2), 93–102. <https://doi.org/10.1017/S0033291725000716>
- Evans, J., Robinson, O. C., Argyri, E. K., Suseelan, S., Murphy-Beiner, A., McAlpine, R., Luke, D., Michelle, K., & Prideaux, E. (2023). Extended difficulties following the use of psychedelic drugs: A mixed methods study. *PLOS ONE*, 18(10), e0293349. <https://doi.org/10.1371/journal.pone.0293349>
- Gatus, A., Jamieson, G., & Stevenson, B. (2022). Past and future explanations for depersonalization and derealization disorder: A role for predictive coding. *Frontiers in Human Neuroscience*, 16, 744487. <https://doi.org/10.3389/fnhum.2022.744487>
- Glynos, N. G., Baker, A., Aday, J. S., Pouyan, N., Barron, J., Herberholz, M., Kruger, D., & Boehnke, K. F. (2024). Going underground: Demographics, services, and best practices endorsed by practitioners providing support for naturalistic psychedelic use. *Journal of Psychoactive Drugs*, 1–11. <https://doi.org/10.1080/02791072.2024.2405685>
- Goldberg, S. B., Lam, S. U., Britton, W. B., & Davidson, R. J. (2022). Prevalence of meditation-related adverse effects in a population-based sample in the United States. *Psychotherapy Research*, 32(3), 291–305. <https://doi.org/10.1080/10503307.2021.1933646>
- Gordon, A. R., Carrithers, B. M., Pagni, B. A., Kettner, H., Marrocu, A., Nayak, S., Weiss, B. J., Carhart-Harris, R. L., Roberts, D. E., Erritzoe, D., & Zeifman, R. J. (2024). The effect of psychedelics on individuals with a personality disorder: Results from two prospective cohort studies. *Research Square*. <https://doi.org/10.21203/rs.3.rs-4203641/v2>
- Grierson, J., & Siddique, H. (2016, January 13). Canadian who killed Briton at Peru retreat says it was «kill or die.» *The Guardian*. <https://www.theguardian.com>
- Grof, C., & Grof, S. (1992). *The stormy search for the self: A guide to personal growth through transformational crisis*. Penguin.
- Haijen, E. C. H. M., Kaelen, M., Roseman, L., Timmermann, C., Kettner, H., Russ, S., Nutt, D., Daws, R. E., Hampshire, A. D. G., Lorenz, R., & Carhart-Harris, R. L. (2018). Predicting



- responses to psychedelics: A prospective study. *Frontiers in Pharmacology*, 9, 897. <https://doi.org/10.3389/fphar.2018.00897>
- Halpern, J. H., Lerner, A. G., & Passie, T. (2018). A review of hallucinogen persisting perception disorder (HPPD) and an exploratory study of subjects claiming symptoms of HPPD. In *Behavioral Neurobiology of Psychedelic Drugs* (pp. 333–360). Springer. https://doi.org/10.1007/7854_2016_457
- Hendricks, P. S., Thorne, C. B., Clark, C. B., Coombs, D. W., & Johnson, M. W. (2015). Classic psychedelic use is associated with reduced psychological distress and suicidality in the United States adult population. *Journal of Psychopharmacology*, 29(3), 280–288. <https://doi.org/10.1177/0269881114565653>
- Hinkle, J. T., Graziosi, M., Nayak, S. M., & Yaden, D. B. (2024). Adverse events in studies of classic psychedelics: A systematic review and meta-analysis. *JAMA Psychiatry*. <https://doi.org/10.1001/jamapsychiatry.2024.2546>
- Honk, L., Stenfors, C. U. D., Goldberg, S. B., Hendricks, P. S., Osika, W., Dourron, H. M., Lebedev, A., Petrovic, P., & Simonsson, O. (2024). Longitudinal associations between psychedelic use and psychotic symptoms in the United States and the United Kingdom. *Journal of affective disorders*, 351, 194–201. <https://doi.org/10.1016/j.jad.2024.01.197>
- Holm, S., Petersen, M. A., Enghoff, O., & Hesse, M. (2023). Psychedelic discourses: A qualitative study of discussions in a Danish online forum. *International Journal of Drug Policy*, 112, 103–112. <https://doi.org/10.1016/j.drugpo.2022.103945>
- Horowitz, M. J. (1969). Flashbacks: Recurrent intrusive images after the use of LSD. *American Journal of Psychiatry*, 126(4), 565–569. <https://doi.org/10.1176/ajp.126.4.565>
- Hunter, E. C. M., Phillips, M. L., Chalder, T., Sierra, M., & David, A. S. (2003). Depersonalisation disorder: A cognitive-behavioural conceptualisation. *Behaviour Research and Therapy*, 41(12), 1451–1467. [https://doi.org/10.1016/S0005-7967\(03\)00066-4](https://doi.org/10.1016/S0005-7967(03)00066-4)
- Jacobsen, H. B., Stubhaug, A., Holmøy, B., Kvam, T. M., & Reme, S. E. (2021). Have Norwegians tried psilocybin, and do they accept it as a medicine? *Journal of Psychedelic Studies*, 5(1), 33–36. <https://doi.org/10.1556/2054.2021.00167>
- Johansen, P. Ø., & Krebs, T. S. (2015). Psychedelics not linked to mental health problems or suicidal behavior: A population study. *Journal of Psychopharmacology*, 29(3), 270–279. <https://doi.org/10.1177/0269881114568039>



- Johnson, M. W. (2020). Consciousness, religion, and gurus: Pitfalls of psychedelic medicine. *ACS Pharmacology & Translational Science*, 4(2), 578–581. <https://doi.org/10.1021/acspsci.0c00198>
- Johnson, M. W., Griffiths, R. R., Hendricks, P. S., & Henningfield, J. E. (2018). The abuse potential of medical psilocybin according to the 8 factors of the Controlled Substances Act. *Neuropharmacology*, 142, 143–166. <https://doi.org/10.1016/j.neuropharm.2018.05.012>
- Johnson, M. W., Richards, W. A., & Griffiths, R. R. (2008). Human hallucinogen research: Guidelines for safety. *Journal of Psychopharmacology*, 22(6), 603–620. <https://doi.org/10.1177/0269881108093587>
- Johnstad, P. G. (2021). Day trip to hell: A mixed methods study of challenging psychedelic experiences. *Journal of Psychedelic Studies*, 5(2), 114–127. <https://doi.org/10.1556/2054.2021.00155>
- Kruger, D. J., Aday, J. S., Fields, C. W., Kolbman, N., Glynos, N., Barron, J., Herberholz, M., & Boehnke, K. F. (2025). Psychedelic therapist sexual misconduct and other adverse experiences among a sample of naturalistic psychedelic users. *Psychedelic Medicine*, 3(1), 41–47. <https://doi.org/10.1089/psymed.2024.0011>
- Kruger, D. J., Enghoff, O., Herberholz, M., Barron, J., & Boehnke, K. F. (2023). «How do I learn more about this?»: Utilization and trust of psychedelic information sources among people naturalistically using psychedelics. *Journal of Psychoactive Drugs*, 55(5), 631–639. <https://doi.org/10.1080/02791072.2023.2201263>
- Lambert, D., Van Den Berg, N. H., & Mendrek, A. (2021). Adverse effects of meditation: A review of observational, experimental and case studies. *Current Psychology*, 1–14. <https://doi.org/10.1007/s12144-021-01503-2>
- Löwe, B., Levenson, J., Depping, M., Hüsing, P., Kohlmann, S., Lehmann, M., Shedden-Mora, M., Toussaint, A., Uhlenbusch, N., & Weigel, A. (2022). Somatic symptom disorder: A scoping review on the empirical evidence of a new diagnosis. *Psychological Medicine*, 52(4), 632–648. <https://doi.org/10.1017/S0033291721004177>
- Lutkajtis, A., & Evans, J. (2023). Psychedelic integration challenges: Participant experiences after a psilocybin truffle retreat in the Netherlands. *Journal of Psychedelic Studies*, 6(3), 211–221. <https://doi.org/10.1556/2054.2022.00232>



- Marrocu, A., Kettner, H., Weiss, B., Zeifman, R. J., Erritzoe, D., & Carhart-Harris, R. L. (2024). Psychiatric risks for worsened mental health after psychedelic use. *Journal of Psychopharmacology*, 38(3), 225–235. <https://doi.org/10.1177/02698811241232548>
- Martinotti, G., Santacrose, R., Pettorruso, M., Montemitro, C., Spano, M. C., Lorusso, M.,... & Lerner, A. G. (2018). Hallucinogen persisting perception disorder: Etiology, clinical features, and therapeutic perspectives. *Brain Sciences*, 8(3), 47. <https://doi.org/10.3390/brainsci8030047>
- McConnell, A., He, W., McConnell, H., Sperandei, S., & Sowman, P. F. (2025). The neverending trip: Associations between hallucinogen persisting perception disorder (HPPD) and non-visual perceptual disturbances. *Journal of Psychedelic Studies*. <https://doi.org/10.1556/2054.2024.00408>
- McGovern, H. T., Grimmer, H. J., Doss, M. K., Hutchinson, B. T., Timmermann, C., Lyon, A.,... & Laukkonen, R. E. (2024). An integrated theory of false insights and beliefs under psychedelics. *Communications Psychology*, 2(1), 69. <https://doi.org/10.1038/s44271-024-00120-6>
- McNamee, S., Devenot, N., & Buisson, M. (2023). Studying harms is key to improving psychedelic-assisted therapy—Participants call for changes to research landscape. *JAMA Psychiatry*, 80(5), 411–412. <https://doi.org/10.1001/jamapsychiatry.2023.0099>
- Morton, E., Sakai, K., Ashtari, A., Pleet, M., Michalak, E. E., & Woolley, J. (2023). Risks and benefits of psilocybin use in people with bipolar disorder: An international web-based survey on experiences of «magic mushroom» consumption. *Journal of Psychopharmacology*, 37(1), 49–60. <https://doi.org/10.1177/02698811221131997>
- Müller, F., Kraus, E., Holze, F., Becker, A., Ley, L., Schmid, Y., Vizeli, P., Liechti, M. E., & Borgwardt, S. (2022). Flashback phenomena after administration of LSD and psilocybin in controlled studies with healthy participants. *Psychopharmacology*, 239(6), 1933–1943. <https://doi.org/10.1007/s00213-022-06066-z>
- Nesvåg, R., Bramness, J. G., & Ystrom, E. (2015). The link between use of psychedelic drugs and mental health problems. *Journal of Psychopharmacology*, 29(9), 1035–1040. <https://doi.org/10.1177/0269881115596156>

- Norsk Psykologforening. (2007). Prinsipperklæringen om evidensbasert praksis. *Tidsskrift for Norsk Psykologforening*, 44 (9), 1127–1128. www.psykologtidsskriftet.no/artikkel/2007as08ae-Prinsipperklaering-om-evidensbasert-psykologisk-praksis
- Picciotto, G., Fox, J., & Neto, F. (2018). A phenomenology of spiritual bypass: Causes, consequences, and implications. *Journal of Spirituality in Mental Health*, 20(4), 333–354. <https://doi.org/10.1080/19349637.2017.1417756>
- Popkirov, S., Staab, J. P., & Stone, J. (2018). Persistent postural-perceptual dizziness (PPPD): A common, characteristic and treatable cause of chronic dizziness. *Practical Neurology*, 18(1), 5–13. <https://doi.org/10.1136/practneurol-2017-001809>
- Preller, K. H., & Vollenweider, F. X. (2018). Phenomenology, structure, and dynamic of psychedelic states. *Behavioral Neurobiology of Psychedelic Drugs*, 221–256. https://doi.org/10.1007/7854_2016_459
- Robinson, O. C., Evans, J., McAlpine, R. G., Argyri, E. K., & Luke, D. (2025). An investigation into the varieties of extended difficulties following psychedelic drug use: Duration, severity and helpful coping strategies. *Journal of Psychedelic Studies*, 9(2), 117–125. <https://doi.org/10.1556/2054.2024.00420>
- Rockhill, K. M., Black, J. C., Ladka, M. S., Sumbundu, K. B., Olsen, H. A., Jewell, J. S., Hunt, J., Wolf, R. C., Nerurkar, K., Dart, R. C., & Monte, A. A. (2025). The rise of psilocybin use in the United States: A multisource observational study. *Annals of Internal Medicine*. <https://doi.org/10.7326/ANNALS-24-03145>
- Ross, L. K., & Nickles, D. (Producers), & Tillett Wright, I. (Host). (2021–2022). *Cover story: Power trip* [Audio podcast]. New York Magazine; Psymposia; Vox Media. <https://www.psymposia.com/powertrip-2/>
- Schacter, D. L. (2022). The seven sins of memory: An update. *Memory*, 30(1), 37–42. <https://doi.org/10.1080/09658211.2021.1873391>
- Schutt, W. A., Exline, J. J., & Pait, K. C. (2025). How psychedelic experiences can cause, worsen, or resolve spiritual struggles: A mixed-methods study of psychedelic users. *Psychology of Religion and Spirituality*. <https://dx.doi.org/10.1037/rel0000562>
- St. Arnaud, K. O., & Sharpe, D. (2023). Contextual parameters associated with positive and negative mental health in recreational psychedelic users. *Journal of Psychoactive Drugs*, 55(1), 30–39. <https://doi.org/10.1080/02791072.2022.2039815>

- Simonsson, O., Goldberg, S. B., Osika, W., Stenfors, C. U. D., Chaturvedi, S., Swords, C. M., Narayanan, J., & Hendricks, P. S. (2025). Longitudinal associations of naturalistic psychedelic use with psychotic and manic symptoms. *Psychological Medicine*, 55, e99. <https://doi.org/10.1017/S0033291725000716>
- Simonsson, O., Hendricks, P. S., Swords, C. M., Osika, W., & Goldberg, S. B. (2025). Naturalistic psychedelic use and changes in depressive symptoms. *Journal of Affective Disorders*, 119 857. <https://doi.org/10.1016/j.jad.2025.119857>
- Simonsson, O., Goldberg, S. B., Chambers, R., Osika, W., Simonsson, C. & Hendricks, P. S. (2025). Psychedelic use and psychiatric risks. *Psychopharmacology*, 242(7), 1577–1583. <https://doi.org/10.1007/s00213-023-06478-5>
- Simonsson, O., Hendricks, P. S., Chambers, R., Osika, W., & Goldberg, S. B. (2023). Prevalence and associations of challenging, difficult or distressing experiences using classic psychedelics. *Journal of Affective Disorders*, 326, 105–110. <https://doi.org/10.1016/j.jad.2023.01.073>
- Strassman, R. (2018, April 3). We now call «bad trips» «challenging experiences.» Here’s why that’s misguided. *Psymposia*. <https://www.psymposia.com/magazine/bad-trips-challenging-experiences-misguided/>
- Timmermann, C., Kettner, H., Letheby, C., Roseman, L., Rosas, F. E., & Carhart-Harris, R. L. (2021). Psychedelics alter metaphysical beliefs. *Scientific Reports*, 11(1), 22 166. <https://doi.org/10.1038/s41598-021-01209-2>
- Tunstad, P. A., Kvam, T. M., Uthaug, M. V., Stewart, L. H., Andersen, K. A. A., & Grønnerød, C. (2025). Contextual and experiential aspects of the psychedelic experience predicting improvement in subjective wellbeing: Results from a Norwegian internet convenience sample. *Frontiers in Pharmacology*, 16, 1 556 299. <https://doi.org/10.3389/fphar.2025.1556299>
- van Elk, M., & Fried, E. I. (2023). History repeating: Guidelines to address common problems in psychedelic science. *Therapeutic Advances in Psychopharmacology*, 13, 20 451 253 231 198 466. <https://doi.org/10.1177/20451253231198466>
- Vis, P. J., Goudriaan, A. E., Ter Meulen, B. C., & Blom, J. D. (2021). On perception and consciousness in HPPD: A systematic review. *Frontiers in Neuroscience*, 15, 675 768. <https://doi.org/10.3389/fnins.2021.675768>



- Watkins, E. R., & Roberts, H. (2020). Reflecting on rumination: Consequences, causes, mechanisms and treatment of rumination. *Behaviour Research and Therapy*, 127, 103–113. <https://doi.org/10.1016/j.brat.2020.103573>
- Yaden, D. B., Potash, J. B., & Griffiths, R. R. (2022). Preparing for the bursting of the psychedelic hype bubble. *JAMA Psychiatry*, 79(10), 943–944. <https://doi.org/10.1001/jamapsychiatry.2022.2546>
- Yang, K. H., Han, B. H., & Palamar, J. J. (2022). Past-year hallucinogen use in relation to psychological distress, depression, and suicidality among US adults. *Addictive Behaviors*, 132, 107–113. <https://doi.org/10.1016/j.addbeh.2022.107343>
- Yang, J., Millman, L. M., David, A. S., & Hunter, E. C. (2023). The prevalence of depersonalization-derealization disorder: A systematic review. *Journal of Trauma & Dissociation*, 24(1), 8–41. <https://doi.org/10.1080/15299732.2022.2079796>
- Yildirim, B., Sahin, S. S., Gee, A., Jauhar, S., Rucker, J., Salgado-Pineda, P., Pomarol-Clotet, E., & McKenna. (2024). Adverse psychiatric effects of psychedelic drugs: A systematic review of case reports. *Psychological Medicine*, 1–13. <https://doi.org/10.1017/S0033291724002496>
- Zhou, K., de Wied, D., Carhart-Harris, R. L., & Kettner, H. (2025). Prediction of hallucinogen persisting perception disorder and thought disturbance symptoms following psychedelic use. *PNAS Nexus*, 4(4), pgae560. <https://doi.org/10.1093/pnasnexus/pgae560>

