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# A double-edged sword: Insights from practitioners on the short and long-term negative effects of psilocybin-assisted psychological interventions

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## ORIGINAL RESEARCH PAPER



### ABSTRACT

*Background and aims:* Interest in psychedelic research has grown significantly in recent years and the naturally derived substance psilocybin, in combination with therapy, has shown promising results as a treatment for a range of psychiatric conditions. However, the negative effects and risks of psilocybin-assisted treatment are not well-established. The purpose of this study was to investigate the potential negative effects of psilocybin-assisted psychological interventions in both the short and long term. *Method:* Semi-structured interviews were conducted with eight psychedelic treatment providers and facilitators. Their content was thematically interpreted. *Results:* Three themes of short-term negative effects were identified. They included negative reactions to psilocybin dosing sessions, undesirable processes in the therapeutic relationship, and difficult self-experiences. Four themes of long-term negative effects were identified. They included destabilization of the client, difficulties adapting to life post-treatment, complications in the treatment relationship, and undesirable outcomes. *Conclusions:* These results highlight the multifaceted challenges clients may face, emphasizing the need for thorough pre-intervention assessment and post-intervention support. The findings both confirm previous research and highlight new aspects that can contribute to increased safety and be relevant for clinical implementation. Further rigorous research is needed to ensure safety, establish ethical guidelines, and optimize the positive effects of these experimental medicines. Integrating various research approaches and types of measurements will be vital to further our understanding of negative effects of psychedelic-assisted therapy.

### KEYWORDS

psilocybin-assisted therapy, thematic analysis, short-term negative effects, long-term negative effects

## INTRODUCTION

Psychedelic-assisted therapy studies increasingly evoke the interest of researchers and clinicians due to their potential for treating various mental disorders (Andersen, Carhart-Harris, Nutt, & Erritzoe, 2021; Crowe, Manuel, Carlyle, Thwaites, & Lacey, 2023). Promising evidence supports its use for treating depression, anxiety, substance use disorder (Carhart-Harris et al., 2016, 2018; Garcia-Romeu, Griffiths, & Johnson, 2014; Ross et al., 2016; Rucker, Iliff, & Nutt, 2018), with preliminary evidence for posttraumatic stress disorder, obsessive-compulsive disorder, and eating disorders (Andersen et al., 2021; Rucker et al., 2018). Large-scale epidemiological studies corroborate these findings, indicating lifetime recreational use of psychedelics to be associated with reduced recent psychological distress and suicidality (Hendricks, Thorne, Clark, Coombs, & Johnson, 2015; Johansen & Krebs, 2015; for conflicting results, see Goodwin et al., 2022).

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Previous findings suggest that psychedelic substances do not pose serious physiological risks (Wiepking, Bruin, & Ghiță, 2023). Indeed, serotonin 5-HT<sub>2A</sub> agonists like psilocybin are relatively safe substances pharmacologically (Nichols, 2016). However, due to their mind-altering capabilities, risks incurred with psychedelics are predominantly psychological (Anderson, Danforth, & Grob, 2020; Nichols, 2016; Thakur, 2022). For instance, psychedelics appear to increase suggestibility and affective instability (Anderson et al., 2020). Moreover, psychedelics can alter the perceptual framework individuals use to interpret their experiences, both during and post-treatment (cf. hallucinogen persistent perception disorder; American Psychiatric Association, 2022; Müller et al., 2022). Indeed, serious psychological adverse effects have been documented in the literature previously. For example, Goodwin et al. (2022) found psilocybin dosage to dose-dependently predict suicidality and self-harm. As such, how psychological safety can be ensured during psilocybin-assisted therapy has yet to be fully illuminated (Thakur, 2022).

Nonetheless, the psychological safety profile of psilocybin is promising when combined with psychotherapy in controlled environments (Nutt, Erritzoe, & Carhart-Harris, 2020; Rucker et al., 2018). However, although there is a low incidence of severe adverse effects (Andersen et al., 2021; Thakur, 2022), many studies lack both appropriate follow-up sessions that would facilitate our understanding of potential long-term adverse effects (for a notable exception, see Carhart-Harris et al., 2018) and adequate considerations for ethical problems posed by psychedelic research (Beckman, Poulsen, Doss, & Stenbæk, 2023). Indeed, psychedelics can have detrimental effects even when used with caution (Anderson et al., 2020; Thakur, 2022).

### Aim of the present study

As of January 2024, approximately 163 clinical trials are registered on [ClinicalTrials.gov](https://clinicaltrials.gov) aiming to investigate psilocybin's therapeutic potential in humans. Despite some reports of adverse events (Simonsson et al., 2023), comprehensive data on the negative effects of psychedelic-assisted therapy is still needed. Thus, this study aims to qualitatively assess the potential drawbacks of psychedelic usage in therapy from the treatment providers' viewpoint, focusing both on potential negative short- and long-term effects psilocybin-assisted therapy. Treatment providers, such as therapists, bring their training and experience to bear on the estimation of therapeutic effectiveness, offering a unique perspective through their broad understanding of psychopathology which can facilitate the identification of patterns and variations in experiences. Short-term effects are those occurring during the acute treatment phase and the following day, while long-term effects last beyond one day.

Negative effects, distinct from negative outcomes and non-improvement, were conceptualized as any unwanted events or outcomes that may be perceived negatively by clients, potentially exacerbate their condition, or lead to emergent issues (cf. Bystedt, Rozental, Andersson, Boettcher,

& Carlbring, 2014; Rozental et al., 2014). This study takes a broad approach in investigating psilocybin interventions, including both therapists providing treatment legally and outside of research and legal programs.

The following questions guided the analysis:

1. How do therapists perceive potentially negative short-term effects of psilocybin-assisted psychological interventions?
2. How do therapists perceive potentially negative long-term effects of psilocybin-assisted psychological interventions?

## METHOD

### Study design

The present study is exploratory, utilizing a qualitative thematic analysis to provide an in-depth understanding of the potential negative effects of psilocybin-assisted therapy from the perspective of therapists. The design takes advantage of the qualities of therapist's subjective experiences rather than quantitative information (cf. Clarke & Braun, 2013; Eatough, 2012), thereby avoiding expectancy effects and demand characteristics from participants receiving psilocybin-assisted treatment by providing a descriptive analysis that closely aligns with therapists' accounts of treatment. To ensure consistent data collection among participants, we conducted semi-structured interviews, which made a thorough examination of different experiences (cf. themes), expressed idiosyncratically, possible without compensating interview reliability. The study team consisted of two clinical psychology students and two faculty experts with academic and clinical backgrounds. The principal investigators, together with the team, collaborated on the study's design, data collection, and analysis. One team member was responsible for conducting and analyzing the interviews, while another focused on translating the findings into English and leading the publication preparation efforts.

### Sample characteristics

The study was advertised on social media sites with assistance from The Network for Psychedelic Science (Nätverket för Psykedelisk Vetenskap), although most eligible participants were recruited based on suggestions from previously recruited participants.

The sample consisted of eight psilocybin-assisted treatment providers, based in Scandinavia. All participants had experience of providing psilocybin-assisted treatment in varying contexts but had differing educational backgrounds (i.e., ranging from clinical training in cognitive behavioral therapy, acceptance and commitment therapy, psychodynamic therapy, intensive short-term psychodynamic therapy, and internal family systems therapy). The sample included five males and three females (mean age = 39.8), consisting of licensed psychologists, therapists, a psychology student without certification, and an individual without formal training in psychology or therapy. Four participants had prior research experience with psilocybin-assisted



therapy research, four participants were currently engaged in research assessing psilocybin-assisted therapy and/or legal treatment provision, and four participants provided treatment illegally.

Inclusion criteria necessitated experience with structured, psilocybin-assisted psychological interventions, executed at least semi-professionally (e.g., research studies, legally arranged activities, and illegal treatment provision); provided that participants had experience of structured psilocybin-assisted treatment that included preparatory sessions, dosing sessions, and follow-up integration sessions. The treatment provision experience spanned from two cohesive treatment-provision efforts (i.e., cohesive preparation, dosing, and integration sessions) coupled with relevant experience in the field of psychedelics (e.g., via research endeavors) to over 200 sessions across multiple years, with the majority having several years of experience, although the duration of these sessions could vary.

### Procedure

Primarily using an inductive approach, qualitative semi-structured interviews were conducted (see the [Appendix](#) for the semi-structured interview guide). A pilot interview on January 2nd, 2023, corroborated the study design, requiring no substantial changes in the interview structure. As such, we included the pilot interview in the analysis. Subsequent interviews conducted between January 9th and April 17th, 2023, in varying locations. One interview was conducted in a participant's home, another at a participant's workplace, two at Stockholm University, and four via Zoom. All interviews, lasting 45–60 min, were audio recorded and transcribed verbatim. Participants were invited to read the final aggregated report and in-person interviewees were compensated with food and coffee.

### Ethical considerations

Throughout this study, we upheld stringent ethical standards. To maintain confidentiality in the budding field of psychedelic research in Scandinavia, limited information about participants is provided in this paper. Before commencing the interviews, informed consent was obtained from all participants. Participation was voluntary and the interviews non-intrusive, with minimal emotional and no physical risks. No personal or sensitive data was collected from participants, thus, approval from the Swedish Ethical Review Authority was not warranted ([Riksdagsförvaltningen, 2003](#)). Measures were taken to anonymize participant identities and any unsolicited sensitive client information. The advantages of this study, particularly in terms of augmenting safety protocols, markedly surpass the potential risks involved.

### Analysis

Transcribed interviews were thematically analyzed in six phases using [Braun and Clarke's \(2006\)](#) qualitative research model: (1) data familiarization, (2) preliminary code

generation, (3) code sorting under potential themes, (4) theme revision, (5) further theme and subtheme definition and labelling, and (6) analysis completion (for a detailed overview of the analysis procedure, see [Braun & Clarke, 2006](#); [Clarke & Braun, 2013](#)). See [Table 1](#) for an example from the analysis.

## RESULTS

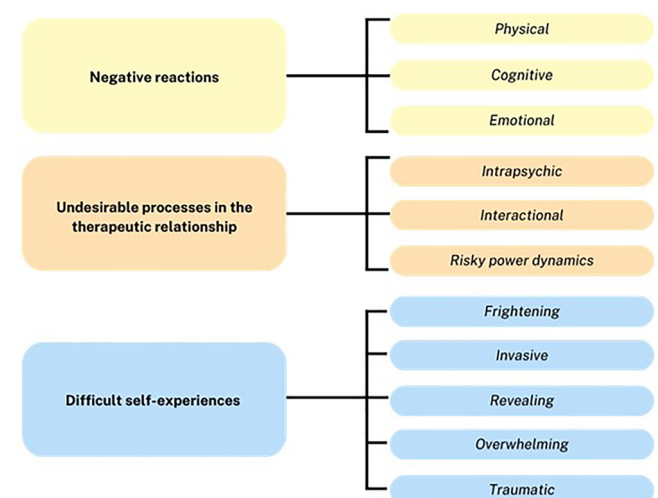
### Potential negative short-term effects of psilocybin-assisted psychological interventions

Therapists generally reported psilocybin-assisted treatments to be effective, safe, and meaningful when properly administered. However, the thematic analysis revealed three themes in potential short-term negative effects of psilocybin-assisted interventions: (1) negative reactions, (2) undesirable processes in the therapeutic relationship, and (3) difficult self-experiences (see [Fig. 1](#)).

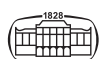
**Negative reactions.** Negative reactions include the negative experiences that clients may follow from the altered state of consciousness induced by psilocybin. Therapists reported

*Table 1.* Thematic analysis coding and theme construction example

Quote	Code	Subtheme	Theme
“If you think that in regular therapy you have a position of power, this is completely absurd! I mean, you have a... you have a baby with you!”	Absurd position of power	Risky power dynamics	Undesirable processes in the therapeutic relationship



*Fig. 1.* Themes and subthemes in the potential negative short-term effects of psilocybin-assisted psychological interventions



varied client reactions to dosing, with common negative reactions being physical, cognitive, and emotional. Physical reactions, reported by five therapists, included nausea, bodily discomfort, and headaches. Cognitive reactions, reported by four therapists, included impaired mental abilities, disorientation, and paranoia. Emotional reactions, reported by five therapists, included fear, anxiety, discomfort, and intense painful emotions. Several therapists noted that voluntarily exposure to and experience of painful emotions may be necessary to achieve positive long-term treatment outcomes.

From our side as facilitators, if someone starts crying or screaming, we see it as something positive. It may sound sadistic, but when we talk to participants, many are there because they have some form of emotional blockage, so they also want to cry or scream (Respondent (R) number 8).

**Undesirable processes in the therapeutic relationship.** The potent emotional and cognitive effects of psilocybin introduce complexities that influence both therapists and clients more intricately than in conventional psychotherapy. A secure therapist-client attachment was emphasized by therapists, although negative reactions such as cognitive decrements and communicative obstacles can undermine therapeutic alliance. The undesirable processes identified were intersubjective, interactional, and risky power dynamics. Intersubjective processes, reported by five therapists, involve maladaptive psychological exchanges between therapist and client, including projection, idealization, and complex transference-countertransference phenomena. For instance, one therapist noted that

the patient may believe that they are in love, for example, or that the therapist is a demi-god or some kind of divinity. Or a villain! (R5).

Interactional processes, reported by six therapists, refer to tangible behavioral patterns emerging within the therapeutic dyad, often precipitated by intersubjective dynamics. These factors can lead to client-therapist misunderstandings, hinder help-seeking behaviors, disrupt therapeutic alliance, and result in inappropriate boundary crossings (e.g., unsolicited touch). Additionally, clients may manifest relational distress through maladaptive behaviors, such as withdrawal or excessive dependence. Finally, risky power dynamics, reported by five therapists, refer to the exacerbated vulnerability and exploitability of clients during psilocybin dosing. The psilocybin drug state can facilitate a rapid therapist-client attachment akin to a parent-child bond, concurrently elevating the risk of power imbalances within the therapeutic relationship and the prioritization of therapist agenda over client well-being. Moreover, clients in this state are easily manipulated, which further elevates exploitability. Thus unsurprisingly, therapists frequently used the word “extreme” to characterize the vulnerability, power imbalance, and liability accompanying psilocybin dosing. Even for experienced therapists, resisting romantic transference is challenging, as “strong emotions in the

therapist” (R8) make “[it] difficult to resist romantic advances” (R5).

**Difficult self-experiences.** Difficult self-experiences encapsulate difficult and overwhelming self-experiences observed by therapists. Although difficult self-experiences were reported by most as desirable for long-term treatment efficacy, many also noted their negative aspects. Frightening self-experiences, reported by six therapists, often occur during psilocybin onset and can induce existential fears in clients. Invasive self-experiences, reported by six therapists, involuntarily puncture emotional defenses, in turn reducing the clients’ ability to use avoidance as a coping strategy. Notably, invasive self-experiences were perceived as completely real by clients, thus differing from both dreams and experiences occurring in conventional therapy. All six therapists endorsing this subtheme raised concerns about the inadequate ability to interrupt or adapt the pressure that otherwise exists in conventional psychotherapy. One therapist claimed music perpetuates invasive self-experiences.

Revealing self-experiences, reported by five therapists, expose the client’s unconscious self to both themselves and the therapist, raising questions of ontological authenticity (i.e., involving both an aspect of involuntarily revealing oneself to another person, and of something revealing itself to the client themselves, which they may not be ready for). Overwhelming self-experiences, reported by six therapists and characterized by their unpredictability, challenge the efficacy of pre-session preparation. That is, clients commonly have no memory or genuine practical understanding of pre-treatment preparation. Finally, difficult self-experiences were characterized as traumatic by five therapists, either manifesting as inherently traumatic or reactivating prior traumas, complicating their phenomenological interpretation (i.e., uncertainty about whether they represent real memories or symbolic representations). The inability to modulate these difficult self-experiences, unlike in conventional psychotherapy, constitutes a noted risk factor.

### Potential negative long-term effects of psilocybin-assisted psychological interventions

The thematic analysis revealed four themes in potential long-term negative effects of psilocybin-assisted interventions: (1) destabilization, (2) adaptation difficulties, (3) treatment relationship complications, and (4) undesirable outcomes of treatment (see Fig. 2).

**Destabilization.** Destabilization encapsulates disruptions in clients’ cognitive and emotional processing following the psilocybin dosing session. This can involve a transition from a stable state to a state where the client loses recognition of themselves, inhibiting self-regulatory strategies. Destabilization was characterized in terms such as disorientation, increased sensitivity, and changes of defense/avoidance mechanisms. Disorientation, reported by five therapists, refers to feelings of confusion and emotional regulation



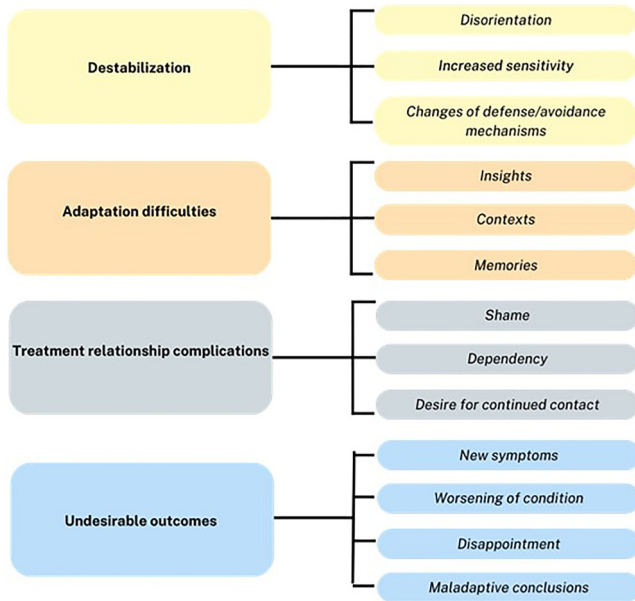


Fig. 2. Themes and subthemes in the potential negative long-term effects of psilocybin-assisted psychological interventions

deficits. Some clients undergo a supernatural shift in perspective, transitioning from atheism to experiencing a spiritual awakening which was described in terms such as “unsettling” (R3) where clients may “lose their footing” (R6) in life. Such disorientation can potentially affect clients’ sense of identity permanently, “... especially the weeks afterwards, all the way up to maybe 2 months” (R2), making it difficult to form and maintain a positive sense of self. Finally, five therapists even mentioned clients reassessing their worldview following psilocybin dosing.

If I try to quote what they usually say, they express, ‘What I used to consider important is no longer important, I would like it to still be important.’ Something like that. And ‘now I don’t care about those superficial and silly things that I used to get a lot out of in my previous life, and now I don’t get anything out of it anymore.’ (R2)

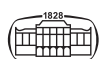
Five therapists described increased sensitivity among clients to sensory input, emotions, and bodily signals, as well as increased openness to novel ideas following psilocybin-assisted therapy. Increased sensitivity may constitute a core therapeutic mechanism. However, concerns about increased openness relate to the risk of clients becoming more susceptible to negative environmental influences. Some clients even became hypersensitive to sound and light to the point of requiring sick leave; others became less aversive to cognitive dissonance. Four therapists noted that clients accustomed to relying on defense mechanisms may revert to suboptimal coping strategies, such as experiential avoidance, to suppress their emotions. Humans require defense mechanisms. Removing them without providing clients the opportunity rebuild new and adaptive defense mechanisms in a safe environment with a therapist can leave clients more vulnerable to risks. This issue relates to the short duration of treatment.

**Adaptation difficulties.** Clients often face challenges when readjusting to life and daily routines following challenging insights gained in psilocybin-assisted therapy. Difficult adaptation to insights, reported by six therapists, relates to the revealing nature of challenging self-experiences in the short-term. However, this challenge not only involves unpreparedness to receive insights; it also encapsulates the lack of resources to act on and process them. Clients often have insights that are difficult to integrate, with some even feeling worse after realizing how their lives could be better. Unconscious revelations can exceed a client’s readiness for change, leading some clients to feel unable to take action despite these painful insights. For instance, one therapist noted a client taking extended time off work (i.e., more than one year), after having “powerful realizations about going back to a life that no longer feels genuine” (R7).

Difficult adaptation to the context, reported by six therapists, involves clients facing a lack of understanding when reintegrating into their microsystem following a psilocybin intervention, especially if they lack social connections and face “[n]egative reactions from one’s social group or spouse if one starts to change” (R6), which can precipitate depression (Beck & Bredemeier, 2016). Therapists also noted that stigma often prevents clients from openly discussing their experiences. Finally, difficult adaptation of memories refers to challenges that arise when clients interact with their environment based on memories formed during challenging self-experiences. Two therapists described the struggles of living with doubts about the accuracy of these memories, “I experienced this, it must be true” (R2), particularly for clients who have painful relational memories or memories of abuse.

**Treatment relationship complications.** Long-term effects can arise in psilocybin-assisted therapy due to complications in the therapist-client relationship such as shame, dependency, and desires for continued contact. Clients may experience “shame following the expression of intense emotions” (R5), leading to negative reactions and unwanted psychological processes. One therapist noted that clients, while under the influence of psilocybin, might feel as if they have inappropriately touched the therapist. Some clients exhibit signs of dependency on the therapist, which can lead to increased idealization and idolization. This may lead clients to construe their personal insights and therapeutic progress as contingent upon the therapeutic relationship. Such dependency, reported by four therapists, can attenuate the client’s sense of agency and prolong the need for continued therapy. The subsequent formation of a “strong therapist-client attachment can pose challenges for both the therapist and client to navigate” (R3). Finally, four therapists noted that clients may desire continued contact after treatment ends. While this desire can be related to dependency, it can also stem from romantic transferences and blurred professional boundaries.

**Undesirable outcomes of treatment.** Several unintended consequences and undesirable outcomes can arise following



psilocybin-assisted treatment. Some clients may respond unfavorably to psychedelic dosing, while others experience new or exacerbated symptoms (e.g., existential anxiety and ruminative brooding). These symptoms may be linked to destabilization and ontological uncertainty mentioned above. However, they are not merely transient; clients may grapple with them for extended periods (i.e., months).

It can simply be a sensation of something moving in the periphery, those types of things that one usually experiences while intoxicated can subsequently trigger waves of anxiety in individuals afterwards. (R2)

Sleep difficulties and nightmares were also reported. Two therapists noted that ruminative brooding, initiated during a psychedelic experience, can persist and lead to ongoing challenges. Some clients even experience a worsening of pre-existing conditions, including increased anxiety and hopelessness. This deterioration can be attributed to various factors, such as a lack of social networks and limited access to material resources.

The lack of social support after treatment due to weak social networks can worsen feelings of loneliness and depression symptoms. (R8)

Disappointment with the psychedelic session, reported by five therapists, often stemmed from unmet expectations about the intervention's effects (i.e., feeling let down if treatment does not yield immediate benefits or align with preconceived notions). Finally, maladaptive conclusions, reported by six therapists, refer to worldview alterations following treatment that either become excessively positively or negatively valenced. For instance, excessive self-criticism due to unmet treatment expectations can lead to cynicism; however, this is not always the case, as a cynical worldview often also arises from more extensive disillusioning experiences. Some therapists argued that excessive self-criticism stemmed from clients erroneously attributing the lack of desired outcomes to personal failures. Conversely, when treatment surpassed clients' expectations, their worldview was oftentimes characterized by excessively hopeful optimism, characterized in terms like "I will never ever feel bad again!" (R6).

## DISCUSSION

The purpose of this study was to investigate the potential negative effects of psilocybin-assisted psychological interventions. The results indicate such interventions to be associated with various negative effects, of which some are temporary and relatively harmless (e.g., nausea), while others are rare but more serious (e.g., adaptation difficulties leading to social isolation). Three themes of short-term negative effects were identified: negative reactions to psilocybin dosing sessions, undesirable processes in the therapeutic relationship such as risky power dynamics, and difficult self-experiences (e.g., self-revealing experiences). Four themes of long-term negative effects were identified:

destabilization of the client, difficulties adapting to life post-treatment, complications in the treatment relationship including a desire to maintain contact with the therapist post-treatment, and undesirable outcomes (e.g., worsening of the condition that the treatment was intended to ameliorate). Alarming, even experienced therapists reported that resisting romantic transference can be challenging. It bears mentioning that several of the negative effects identified in this study are also commonly found in studies researching negative effects of conventional psychotherapy (Bystedt et al., 2014; Rozental et al., 2014).

While reports of negative effects varied and all therapists were aware of potential risks, many noted that clients often reframe initially unpleasant experiences positively. However, such positive reframing of negative dosing-related experiences was not ubiquitous. Therapists agreed that short-term experiences could lead to long-term effects. However, some short-term effects such as nausea and bodily discomfort were deemed unavoidable byproducts of psilocybin dosing. Finally, certain negative short-term effects were reported to yield positive long-term outcomes, such as improved emotion regulation via voluntary exposure to painful emotions.

This study underscores the unresolved issue of defining and measuring negative effects of psychotherapy in general (Rozental et al., 2018). While this study found numerous potential negative effects of psychedelic-treatment, several questions remain. For instance, how should treatment risks and benefits be balanced? People undergo risky treatment interventions every day (e.g., surgery), despite potentially severe side effects. Should psychedelic therapy be evaluated like high-risk medical treatments? Preparing clients for profound changes in consciousness and worldview also remains challenging, as evidenced by reports of difficult self-experiences being more intense than expected, despite pre-session preparation. A related question is how treatment providers should approach the extent and manner in which risks are communicated, especially considering potential expectancy and nocebo effects (Faria et al., 2017; Sloschower et al., 2023). While transparency is essential, excessive or improper communication may lead to negative priming or skewed treatment expectancy. Finally, it is crucial to address the lack of standardized length and format in psychedelic-assisted therapy. Therapists noted that current approaches encourage clients to rely on self-guidance and effectively become their own therapists. While this allows for greater personal exploration, it also increases the risk of clients attributing treatment failure to themselves rather than the treatment or therapist.

## STRENGTHS AND LIMITATIONS

This study has several strengths. Its qualitative nature offers a descriptive analysis that aligns closely with therapists' accounts, thereby mitigating expectancy effects and demand characteristics. It benefits from an open approach in a field with a reasonably unestablished theoretical framework and maintains objectivity through systematic conduct involving



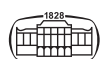
multiple researchers (cf. Clarke & Braun, 2013). However, its limitations are noteworthy: it only includes therapists open to such treatment, potentially offering a skewed perspective. The study's reliance on treatment providers' experiences, without client interviews, suggests possible biases in theme extraction (e.g., undesirable processes in the therapeutic relationship refer to processes that were undesirable from the treatment provider's point of view; completely different themes may have emerged if clients had been interviewed), and the lack of follow-up measures limits insights into long-term effects. Additionally, recall bias might be present due to therapists' anecdotal recollections, and the study's failure to control for set and setting, elements previously found to be vital in shaping the therapeutic impact of psychedelic-assisted interventions (Andersen et al., 2021), further constrains its conclusions.

## FUTURE STUDIES

Several intriguing points can be addressed with continued research building on this study. Firstly, our preliminary results indicate that music, although commonly used in psychedelic-assisted therapy (e.g., Slosower et al., 2023), may exacerbate negative reactions to dosing, in turn warranting a closer investigation and disaggregation from other known effects of music (Kaelen et al., 2018). Secondly, since clients commonly report overwhelming and unexpected self-experiences despite ample pre-dosing preparation, an empirically-derived treatment protocol manual is needed to help better prepare clients for dosing. Thirdly, difficult self-experiences can be traumatic and rekindle past trauma. However, the truthfulness of memories originating during dosing remains unclear. Future studies must assess both whether psychedelics can generate false memories and if so, how therapists should approach them. Fourthly, future research should mitigate the potential recall bias of therapists in assessing psychedelic-assisted therapy's long-term effects. Extended data collection will clarify the frequency and duration of psilocybin therapy's potential negatives, through qualitative methods as used in this study or via self-report questionnaires. Finally, examining the working environment of psychedelic therapists warrants further investigation, particularly regarding therapist-client attachment and exposure to tactile touch that would normally be considered inappropriate.

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## Appendix

### The Interview Guide: Questions

1. Are there any negative psychological effects associated with psychedelic treatment using psilocybin?
2. Have you observed any adverse effects during treatment that you believe were related to the psychedelic treatment? Follow-up question: Please elaborate.
3. What unique psychological effects can you envision that may not occur in conventional treatment?
4. Are there specific aspects that psychedelic treatment has the potential to change? Follow-up question: What are the associated risks?
5. What do you anticipate could be the psychological effects if the client perceives the treatment (and its outcomes) as overwhelming?
6. What vulnerabilities or challenges might a client undergoing psychedelic treatment encounter in their relationship with a therapist?
7. What other risks do you perceive in the interaction between the client and therapist?
8. What potential risks do you see with group administration compared to traditional individual administration?
9. What are your thoughts on potential adverse effects on the client's perceptions? (Perceptions of self, others, the world, etc.)
10. What are your thoughts on potential adverse effects on the client's relationships and sense of connection? (Relationship with self and others)
11. What are your thoughts on potential adverse effects on the client's emotions and emotional experiences?
12. What are your thoughts on potential adverse effects on the client's bodily experiences?
13. What are your thoughts on potential adverse effects on the client's personality traits?
14. Based on current treatment practices, are there any other psychological aspects that could be negatively affected or any other negative effects to consider?

