JOURNAL OF PSYCHOACTIVE DRUGS
https://doi.org/10.1080/02791072.2026.2696253

Mystical Experiences as Catalysts in Ketamine-Assisted Psychotherapy: A Case Study

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ABSTRACT

This case study explores the potential role of mystical-type experiences in ketamine-assisted psychotherapy (KAP). A patient with generalized anxiety disorder and migraines underwent four intramuscular KAP sessions (0.5–0.9 mg/kg). Outcomes were assessed using the Outcome Questionnaire-45 (OQ-45), the Hood Mysticism Scale (HMS), and interviews. Greater therapeutic gains followed sessions with higher HMS scores. The patient attributed improvements to the psychological and spiritual impact of the experiences, emphasizing the therapeutic relationship and integration process. In this case, these experiences appeared to play a meaningful role in therapeutic change, contributing to the discussion on the role of subjective effects in KAP.

ARTICLE HISTORY
Received 22 January 2025
Revised 4 February 2026
Accepted 20 May 2026

KEYWORDS
Ketamine-assisted psychotherapy; mystical experiences; anxiety; spiritual transformation; therapeutic outcomes

Introduction

Originally developed as an anesthetic in the 1960s, ketamine has since attracted sustained scientific and clinical interest not only for its rapid-acting antidepressant effects but also for its broader applications across clinical and non-clinical populations (Kangaslampi 2023; Li and Vlisides 2016; Walsh et al. 2022; Zanos and Gould 2018). Alongside biomedical research, therapeutic applications involving altered states of consciousness have long been explored, giving rise to what is now known as Ketamine-Assisted Psychotherapy (KAP), a model that integrates ketamine administration with psychological support. KAP can induce non-ordinary states of consciousness which, in some cases, resemble those reported with serotonergic psychedelics, and it is often described as an atypical psychedelic (Breeksema et al. 2020). As such, KAP has come to be understood as part of the broader field of psychedelic-assisted psychotherapy (PAP) (Greenway, Seymour, and Carhart-Harris 2020).

While ketamine's pharmacological mechanisms are central to its antidepressant efficacy (Zanos and Gould 2018), an increasing number of studies suggest that its psychoactive properties may also play a substantial role in therapeutic outcomes, especially when involving altered states of consciousness (Yaden and Griffiths 2021). Several reviews have examined whether these acute subjective experiences play a causal role in recovery. Ko et al. (2022), for instance, systematically reviewed studies on various psychedelics, including ketamine, and found consistent associations between mystical-type experiences and improvements in depression, substance use disorders, and cancer-related distress. Similarly, Dakwar et al. (2014), and Sumner et al. (2021) reported that meaningful subjective experiences, such as mystical-type phenomena, may positively impact clinical trajectories. Roseman, Nutt, and Carhart-Harris (2018) showed that the quality of the acute mystical experience was strongly associated with therapeutic success. However, Kangaslampi (2023) reviewed studies across clinical and non-clinical populations and, while confirming mostly positive associations, noted results were more mixed in clinical samples, particularly regarding depression. The author also highlighted the potential relevance of other experiential components, such as emotional breakthroughs and psychological insights, underscoring the need to better understand their specific therapeutic contributions. Recent evidence suggests that the quality of subjective experience in KAP may influence treatment outcomes. Mystical-type experiences, marked by emotional depth and insight, have been linked to greater clinical improvement (Dakwar et al. 2014), whereas dissociative states show weaker or inconsistent associations (Grabski

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Supplemental data for this article can be accessed online at https://doi.org/10.1080/02791072.2026.2696253.

et al. 2020; Mathai et al. 2020). These findings underscore the need to clarify which altered states are most therapeutically relevant.

Mystical experiences are peak states of consciousness typically marked by feelings of unity, sacredness, timelessness, ineffability, and a sense of contact with ultimate reality (Griffiths et al. 2006). Their theoretical and clinical relevance has motivated the development of psychometric instruments such as the Hood Mysticism Scale (Hood 1975; Savoldi et al. 2023), enabling empirical investigation of these phenomena. The role of such altered states in KAP remains debated. Some authors emphasize pharmacological mechanisms and view these states as secondary or even adverse effects (Diep et al. 2025; Grabski et al. 2020), while others, particularly within the KAP framework, argue that altered states, especially mystical-type phenomena, may facilitate core therapeutic processes (Ko et al. 2022; Sumner et al. 2021). However, purely pharmacological approaches have shown mostly transient benefits: for instance, Mansoor, Khan, and Faridi (2023) reported rapid but short-lived improvement after a two-week IV ketamine protocol, with depressive symptoms rebounding by one month post-treatment. This divergence underscores the need for studies integrating quantitative and qualitative data to clarify how specific phenomenological features contribute to clinical change.

Central to the KAP model is the process of integration, in which the content and meaning of non-ordinary experiences are explored and translated into therapeutic insight and behavioral change. Unlike purely pharmacological approaches, KAP explicitly includes preparatory and integrative phases aimed at maximizing the therapeutic value of the altered states. While still under-researched, integration is increasingly recognized as essential to sustaining long-term benefits in PAP (Bathje, Majeski, and Kudowor 2022; Phelps 2017). In clinical practice, integration offers a structured opportunity to revisit, articulate, and contextualize subjective experiences, helping patients to derive meaning and implement lasting change. This emphasis on integration distinguishes KAP from more reductionist approaches and reinforces the relevance of experiential factors in psychotherapeutic outcomes.

Although recent comprehensive reviews have consolidated the evidence for ketamine's rapid antidepressant and anti-suicidal effects, they also underscore the limited understanding of the subjective and psychotherapeutic dimensions of treatment, including how altered states are integrated into ongoing care (Grabski et al. 2020; Walsh et al. 2022). Meta-analyses show a positive association between mystical type experiences and therapeutic improvement across PAP, including ketamine (Ko et al. 2022). While mixed-methods research has begun to explore these experiential factors (e.g., Cornfield et al. 2024; Sumner et al. 2021), most studies used highly controlled settings, limiting insight into individual meaning-making in psychotherapy. The present single-case, mixed-methods study provides an in-depth look into therapeutic processes in a single individual undergoing KAP. Integrating quantitative data from the HMS and OQ-45 with qualitative interviews, it examines how mystical-type experiences may unfold and be integrated within a naturalistic clinical setting.

Method

Participants

This single-case study involved a male patient diagnosed with GAD, who also reported experiencing chronic migraines multiple times per week. In addition to seeking relief from these conditions, the patient expressed a strong motivation to explore altered states of consciousness in order to connect with his spirituality and discover a sense of life purpose. The intervention took place at The Clinic of Change, a specialized center for KAP in Portugal, and spanned a total of six weeks. Prior to the initiation of the study, the patient provided written informed consent both for participation and for the publication of anonymized data and clinical observations. Ethical procedures adhered to international standards for research with human subjects, including the right to withdraw from the study at any time and the protection of the patient's confidentiality.

Instruments

Three instruments were employed to assess both the therapeutic progression and the subjective intensity of the patient's experiences throughout KAP.

First, the OQ-45 was administered to evaluate clinical outcomes across three core dimensions: Symptom Distress (SD), Interpersonal Relations (IR), and Social Role (SR). The OQ-45 is a validated and widely used self-report tool in psychotherapy research and practice (Da Silva et al. 2016; Lambert et al. 1996), allowing for the monitoring of therapeutic effectiveness over time. Higher total and subscale scores indicate greater psychological distress and functional impairment, whereas lower scores reflect clinical improvement. The clinical cutoff point at 64 help identify meaningful changes during treatment.

Second, the HMS was used to measure the intensity and quality of mystical-type experiences reported by the

patient after each session. Originally developed to study religious and transcendental experiences (Hood 1975), the HMS has been adapted in psychedelic research to quantify altered states of consciousness and their potential therapeutic significance (Savoldi et al. 2023). Higher scores indicate more profound mystical states, which have been associated with therapeutic breakthroughs in PAP.

Finally, a series of semi-structured interviews were conducted before, during, and after the intervention. These interviews aimed to explore the patient's subjective experiences in depth, offering qualitative data that complemented the quantitative measures and provided a rich narrative account of the therapeutic process.

Procedures

The therapeutic process unfolded over a six-week period, during which the patient underwent four KAP sessions. Ketamine was administered intramuscularly following a progressive dosing strategy across the first three sessions: 0.5 mg/kg (Session 1), 0.7 mg/kg (Session 2), and 0.9 mg/kg (Session 3). This gradual increase was intended to explore dose-related variations in subjective experience and clinical response. However, as dosage increased, the patient reported stronger anesthetic effects and a reduced intensity of psychedelic phenomena, particularly during the third session. As the therapeutic objective included eliciting a meaningful mystical-type experience, the clinical team opted to deviate from the initially planned dose escalation. Instead of administering 1.1 mg/kg in the fourth session, the dose was reduced to 0.8 mg/kg. This adjustment was based on clinical judgment and patient feedback, which indicated that higher doses were diminishing the quality of the subjective experience, perceived as essential for therapeutic benefit in this case. Quantitative outcome measures were collected after each KAP session, once the acute psychoactive effects of ketamine had fully subsided. The patient completed the OQ-45 and the HMS within 24 hours following each session, typically prior to the integration session, which was held between 24 and 48 hours post-administration. Semi-structured interviews were conducted at multiple time points: prior to the initiation of treatment, within 48 hours after each KAP session, and at a six-month follow-up.

These combined data sources allowed for the assessment of both short-term and longer-term therapeutic effects, as well as the phenomenological quality of each session.

Data analysis

Quantitative analysis

The OQ-45 and HMS scores were analyzed descriptively to examine variations in psychological functioning and mystical-type experience across the different stages of treatment. Score trajectories were evaluated in relation to the dosage adjustments and the patient's subjective responses during each session, allowing exploration of potential associations between mystical experience intensity and therapeutic progress.

Qualitative analysis

The semi-structured interviews were subjected to deductive thematic analysis, following the framework outlined by Braun and Clarke (2006). A descriptive and interpretive approach was favored over formal coding to preserve the coherence of the patient's narrative. The qualitative insights were used to contextualize and deepen the understanding of the quantitative outcomes, enabling a more integrative view of the therapeutic process.

Results

Quantitative analysis

The OQ-45 scores revealed a consistent and clinically meaningful reduction in psychological symptoms from baseline (IMA) through the fourth session (Integration4). The total score dropped from 64 to 13, falling below the clinical cutoff of 63 and indicating substantial improvement. At the six-month follow-up (FU), the score slightly increased to 19 but remained well below the baseline, suggesting a sustained therapeutic effect. Symptom Distress decreased from 35 to 8, rising modestly to 12 at FU. Interpersonal Relations improved from 12 to 1 and remained stable, while Social Role declined from 17 to 4 and increased slightly to 6 at FU. Overall, these findings reflect substantial clinical progress, with most therapeutic gains maintained over time despite minor fluctuations Supplementary Figure S1.

At the item level, several clinically relevant improvements were observed between baseline and FU. The patient reported a reduction in excessive stress at work or school, changing from frequently to rarely (item 4), and less frequent irritability, shifting from frequently to rarely (item 6). Satisfaction with life increased, going from sometimes to almost always (item 31), and difficulties at work or school became less frequent, changing from sometimes to rarely (item 38). Sadness diminished

to the point of being absent, with the response moving to never (item 42), and episodes of intense anger at work or school capable of leading to regrettable actions resolved completely, shifting from sometimes to never (item 44). Additionally, headaches became less frequent, improving from frequently to rarely (item 45).

Despite the overall maintenance of therapeutic gains, a few items showed slight increases in symptom frequency between the fourth session and the six-month FU. For example, "I feel hopeless about the future" (item 23) improved from sometimes at baseline to never at session 4, but rose to rarely at FU. A similar pattern was observed in "Work/Study too much," which shifted from frequently at baseline to rarely at session 4, then increased to sometimes at FU. The item "I have difficulty concentrating" (item 22) also improved from sometimes to rarely, but returned to sometimes at FU. In "My work/schoolwork is satisfying" (item 12), the response improved from frequently to almost always, then decreased back to frequently. Lastly, the item "I have sore muscles" showed a progression from rarely to never by session 4, then returned to rarely at FU.

HMS scores reflected marked variation in the intensity of mystical experiences reported across sessions. During the preparatory session, the patient referred to a previous meditative experience – described as an out-of-body state – which was retrospectively rated with a score of 93. The first and fourth ketamine sessions reached the maximum score of 160. The second session was also associated with a high mystical experience (135), while the third session yielded a substantially lower score (59) Supplementary Figure S2.

Qualitative analysis

Preparation interview

In the initial interview, the patient expressed openness to the treatment, with no fixed expectations. He reported a desire to explore spiritual aspects of life and find a greater sense of purpose. He also hoped to address chronic migraines and anxiety symptoms.

Main theme: expectations and therapeutic goals

Subthemes

The patient described two central expectations for treatment. First, a search for a greater purpose: "I think everyone would like to know what their role is in this entire universe. Well, that would be the most important thing for me." Second, the resolution of anxiety and migraines: " ... dealing with anxiety problems was already a solved issue. If I could get rid of the migraines, then two problems would be solved."

Session 1: profound mystical experience

The patient reported an intense mystical-type experience, marked by a sense of peace, belonging, and spiritual clarity. He described the session as a reunion with his spiritual "home," reinforcing his belief in a transcendent reality. He also noted increased calmness and reflection in his daily life following this session (Table 1).

Session 2: spiritual cleansing

The patient reported a multi-phase experience described as a spiritual cleansing, initially marked by discomfort that was later replaced by a sense of trust. He also described a form of "telepathic" communication and emphasized the value of meditation. He expressed comfort with the therapeutic setting and felt supported by the clinical team (Table 2).

Session 3: frustration and acceptance

The patient reported an experience marked by physical discomfort, including drowsiness, confusion, and a persistent urge to urinate. He described the absence of mystical experiences and expressed feelings of sadness and frustration (Table 3).

Session 4: consolidation of transformation

The patient reported a renewed sense of clarity and focus on emotional and spiritual priorities. He associated this shift with the mystical experiences in Sessions 1 and 4, noting decreased attachment to material possessions and reduced anxiety about death. He emphasized the continued use of meditation to sustain inner peace (Table 4).

Follow-up: sustaining the transformation

At six-month FU, the patient reported sustained improvements attributed to the mystical experiences during KAP. He described integrating principles such as belief, trust, acceptance, and accomplishment into daily life, noting reduced stress, fewer migraines, and greater emotional balance. He continued to prioritize spiritual development and emotional regulation (Table 5).

Table 1. Themes and quotes from session 1.

Main theme	Mystical experience and spiritual transformation
Subtheme	**Quotes**
Sense of Peace and Belonging	"That feeling is so true to me that I really believe my home is there, and it's a good place to return to."
Confirmation of Transcendent Reality	"Basically, what this experience confirmed for me is that I am more than just flesh and bone."
Behavioral Integration and Reflexivity	"After that session . . . I started thinking of other ways to approach the issue. I'm very aggressive in my defense . . . almost as if I'm outraged."
Feeling of Universal Unity	"It's like we are all part of a whole, of something greater."
Spiritual Comfort and Clarity	"But on the other side, it was a feeling of peace, spiritual comfort, exactly what I needed, that lightness."

Note. Quotes were extracted from semi-structured interviews conducted within 48 hours of each session. Themes and subthemes were identified using deductive thematic analysis. All content has been anonymized and translated from Portuguese.

Table 2. Themes and quotes from session 2.

Main theme	Spiritual cleansing and therapeutic process
Subtheme	**Quotes**
Spiritual Cleansing and Challenges in the Consistency of Mystical Experiences	"The best word is kind of the cleansing they were doing . . . In the second session, I was a bit confused . . . that place where I went is not easy to reach again."
Blind Trust and Surrender to the Process	"It wasn't a voice, but a feeling that I could move forward . . . if they told me to lie down in the sea, I would lie down in the sea."
Recognition of the Therapeutic Importance of Both Sessions	"I'll be very honest. Both sessions were important . . . The first session was so mystical and remarkable that the second one was too. Both were significant to me."
Subtle Mystical Experience and Internal Work	"In the second, I felt treatment, I felt some work and a mystical part . . . especially the sound of the bell, I felt that inside me."
Respect and Support from the Clinical Team in the Process	"I feel that you respect everyone's vision and path . . . Your job is to help in the best way, but you are also part of the process."

Quotes were extracted from semi-structured interviews conducted within 48 hours of each session. Themes and subthemes were identified using deductive thematic analysis. All content has been anonymized and translated from Portuguese.

Table 3. Themes and quotes from session 3.

Main Theme	Acceptance of frustration and adversities
Subtheme	**Quotes**
Confusion and Perception of Lack of Therapeutic Depth	"It was more a feeling of drowsiness and confusion than a revealing experience . . . Almost like anesthesia. If the third session had been the first, I would have thought they gave me a substance, I was anesthetized and that's it. Nothing else happened."
Frustration and Self-Blame	"I felt frustrated and sad, like during the pandemic. I thought it was my fault for not controlling the situation, like the urge to urinate."
Reframing Acceptance	"I understood that it wasn't my fault . . . That message of acceptance was important. It taught me that not everything goes as we expect, but we must accept and learn from it. Accepting is not giving up . . . Sometimes, acceptance is realizing that it's out of our hands and moving forward."
Positive Influence of the First Session	"Without a doubt, if it weren't for that first session . . . I wouldn't be as excited about the treatment . . . because that's what's making an impact. The first session was spectacular . . . And even if something I want doesn't happen, I accept it and keep going . . . Someone is in charge of this, and I have to trust in that process."
Trust, Connection, and Support in the Therapeutic Process	"I feel that you respect each person's vision and path, and that creates a special connection between us. I have never liked people who try to impose their way." "Whenever the three of us are in the room, I feel a special connection between us."

Quotes were extracted from semi-structured interviews conducted within 48 hours of each session. Themes and subthemes were identified using deductive thematic analysis. All content has been anonymized and translated from Portuguese.

Table 4. Themes and quotes from session 4.

Main Theme	Paradigm shift, acceptance of death and redefinition of priorities
Subtheme	**Quotes**
Paradigm Shift and Life Perspective	"For me, what worked was a shift in my perspective . . . looking at the bigger picture and realizing what's truly important. Those experiences, especially the first and the last, were very powerful. Now, when something frustrates me, I don't dwell on it for long. I remind myself what really matters, and the frustration fades."
New Spiritual Perspective and Acceptance of Death	"This fourth session was a complete revelation . . . I felt that it was much better than here, a much better experience. It was completely spiritual. It took away my anxiety about death and gave me a new perspective on life."
Redefinition of Goals and Detachment from Materialism	"After this experience . . . I ordered this car last year. If it were today, I wouldn't have ordered it. It doesn't have the same value as before. I'd prefer something simpler."
Culmination and Future Work	"Yes, I feel it culminated in a beautiful way and I don't feel the need for more sessions. Now, it's about working with this knowledge."

Quotes were extracted from semi-structured interviews conducted within 48 hours of each session. Themes and subthemes were identified using deductive thematic analysis. All content has been anonymized and translated from Portuguese.

Table 5. Themes and quotes from follow-up.

Main Theme	Continuity of transformation and personal growth
Subtheme	**Quotes**
Integration of Well-being Principles and Continuous Search for Balance	"It's a unique feeling of well-being. Now, that feeling gradually fades over time. In other words, these four principles had great significance for me, and I use them in all aspects of my life today." "After all these months, I ended up feeling this: the need to look for tools, ways to balance myself in my daily life."
Adoption of a Lighter Attitude	"I used to take things very seriously. Now, I take things more lightly, not so seriously."
"Improved Coping and Reduced Anxiety through Acceptance"	"I used to have a lot of control issues, planning everything, having a plan B. In the past, when things were out of my control, I'd get extremely anxious and have trouble sleeping for days. But now, I can sleep, knowing I'm doing everything with a clear conscience, feeling like I'm on the right path."
Continuity of Personal and Spiritual Development	"This gave me great encouragement and now a pursuit of my personal development, of the spiritual part." "I have my profession, I have things, but this is almost like a hobby. It's not a hobby, it's a part that fills my soul, this parallel part, exactly."
Improved Self-Control and Calmer Interactions	"If it had been another time, I would have reacted explosively. But this time, I simply said, 'You both need to respect each other,' and they were disarmed. I didn't fuel the argument any further, I left and moved on. Later, in the car, I started laughing. Really, it was the best thing I could have done." "Before, there was more impulsiveness, with full force."

Quotes were extracted from semi-structured interviews conducted within 48 hours of each session. Themes and subthemes were identified using deductive thematic analysis. All content has been anonymized and translated from Portuguese.

Personal transformations and central themes

Interviews conducted during and after treatment revealed recurring themes related to the patient's emotional, spiritual, and psychological changes. These themes reflect how the patient described the impact of KAP on various areas of his daily life:

Integration of experiences into daily life

The patient reported applying lessons from the sessions in daily life, including the use of meditation and wellness tools. He adopted a personal motto – "Believe, Trust, Accept, Fulfill" – which he described as guiding his responses to challenges and opportunities.

Paradigm shift: life perspective and detachment from materialism

The patient described a shift toward greater acceptance, emotional stability, and alignment with personal values. He reported reduced concern with material possessions and increased focus on spiritual and emotional well-being.

Spiritual awareness and acceptance of mortality

From the first session, the patient reported a sense of connection to what he described as his "spiritual home." This contributed to a new understanding of life and death and reduced his fear of mortality.

Learning to cope with frustration and managing expectations

The patient described the third session as a turning point, where the absence of expected effects led to frustration. He later reported gaining awareness of his tendency to seek control and described learning to tolerate unmet expectations.

Improved self-control, calmer interactions, and reduced rumination

The patient reported greater emotional regulation in interpersonal situations, with fewer impulsive reactions. He also noted a reduction in rumination, improved sleep, and better stress management.

Acceptance and trust in the therapeutic process

The patient described a strong sense of trust in the therapeutic team, which he viewed as essential for navigating challenges. He also reported increased acceptance of emotional fluctuations throughout the sessions.

Discussion

This case study highlights the potential therapeutic value of integrating mystical type experiences within a KAP framework. Beyond viewing ketamine as a purely pharmacological intervention, our findings align with literature indicating that psychoactive and subjective effects, when explored and integrated psychotherapeutically, may contribute meaningfully to psychological, emotional, and existential change (Kangaslampi 2023; Ko et al. 2022; Roseman, Nutt, and Carhart-Harris 2018; Walsh et al. 2022; Yaden and Griffiths 2021). Although the patient presented with generalized anxiety and chronic migraines rather than treatment-resistant depression, a notable shift occurred in mood-related items: from "I am happy sometimes"

and "I feel sad sometimes" at baseline to "I am almost always happy" and "I never feel sad" at six-month FU. Quantitatively, OQ-45 scores improved from 64 (baseline) to 13 (Integration4), stabilizing at 19 at FU. This contrasts with trials using ketamine without psychotherapeutic support, where improvements at two weeks were not sustained at one month (Mansoor, Khan, and Faridi 2023), suggesting that integration and psychotherapeutic support may help maintain gains over time (Yaden and Griffiths 2021).

The first session (HMS 160) was a profound mystical experience with strong emotional and existential impact. Subthemes included peace and belonging ("my home is there"), spiritual comfort and clarity ("exactly what I needed, that lightness"), and a sense of universal unity ("we are all part of a whole"). The patient also reported a confirmation of transcendent reality and greater behavioral reflexivity in response to interpersonal conflict. These features map onto canonical dimensions of complete mystical experiences (Griffiths et al. 2006) and appear to have initiated therapeutic change early in the process by providing an existential anchor and spiritual insight. The second session (HMS 135), although less intense, extended this trajectory through "spiritual cleansing" and active therapeutic process: blind trust and surrender ("if they told me to lie down in the sea, I would lie down"), subtle mystical elements ("I felt treatment, I felt the bell inside me"), and an explicit sense of being held by the team ("you are also part of the process"). Consistent with proposals that outcomes in psychedelic therapy can arise not only from peak states but also from emotionally complex or ambiguous experiences when properly integrated (Kangaslampi 2023; Phelps 2017), the patient recognized the importance of both sessions, underscoring relational trust, emotional processing, and embodied insights as part of change.

The third session (HMS 59) was experienced as dissociative and confusing – "anesthesia" – and initially associated with frustration and sadness. Sessions dominated by dissociative content may confer limited immediate therapeutic value (Mansoor, Khan, and Faridi 2023), yet subsequent integration shifted appraisal and meaning. Guided reflection supported reframing, acceptance of variability across sessions, and trust in the process – "someone is in charge." This evolution illustrates how therapeutic containment, expectation management, and meaning-making can transform challenging experiences into catalysts for growth. Without such integration, difficult material may remain unprocessed or misinterpreted, blunting its potential (Bathje, Majeski, and Kudowor 2022; Phelps 2017).

The fourth session (HMS 160) marked a pivotal expansion. The patient described a "complete revelation," with pronounced spiritual salience, reduced death anxiety, and a re-ordered sense of priorities. He reported decreased attachment to material possessions ("If it were today, I wouldn't have ordered [the car] … I'd prefer something simpler") and a pragmatic reframing of daily frustrations ("I remind myself what really matters, and the frustration fades"). These shifts are consistent with research linking spiritually substantial experiences to durable improvements in well-being and values (Griffiths et al. 2006) and with emerging evidence that psychedelic-occasioned experiences can alleviate existential distress, including fear of dying (Ko et al. 2022). The patient's statement – "Now, it's about working with this knowledge" – further emphasizes the role of post-session meaning-making and the clinical importance of structured integration (Phelps 2017).

At six-month FU, the OQ-45 remained markedly improved (19), indicating maintenance of clinically substantial gains from baseline (64). The patient attributed enduring change to the combined psychotherapeutic process and profound perspective shift catalyzed by intense mystical experiences during KAP, while recognizing that ongoing well-being required active work and integration. The initial sense of well-being faded over time, consistent with reports that the acute pharmacological effects of ketamine wane quickly (Mansoor, Khan, and Faridi 2023), yet the profound reorientation in life perspective endured. To sustain well-being, he emphasized applying principles in daily life and seeking "tools to balance myself." He also described reduced anxiety, greater cognitive flexibility, and a move from rigid planning and control toward acceptance – "Now I can sleep, knowing I'm doing everything with a clear conscience." Headaches, frequent at baseline, became rare by the end of treatment and were not mentioned at six-month FU. Spiritual orientation remained central – "this is almost like a hobby … it fills my soul" – illustrating how value alignment and meaning-making can support durable change (Phelps 2017). Behaviorally, he noted improved self-control and calmer, less impulsive responses in interpersonal situations. Taken together, this single-case pattern suggests that, for this patient, intense mystical experiences may have functioned as catalysts within the therapeutic process, while psychotherapeutic integration and self-regulation remained central to the consolidation of therapeutic change (Bathje, Majeski, and Kudowor 2022; Kangaslampi 2023; Phelps 2017).

This case underscores the importance of a flexible, patient-centered KAP protocol that integrates pharmacological, experiential, and psychotherapeutic

dimensions. The therapeutic team intentionally adjusted ketamine dosing to align with the patient's wish for a more spiritually oriented, psychedelic-type experience, after higher doses had produced a predominantly dissociative state with perceived limited therapeutic value. This adaptive strategy, grounded in continuous dialogue and shared decision-making, proved critical for facilitating deeply meaningful experiences while maintaining psychological safety. It illustrates how KAP can benefit from a responsive, titrated approach rather than rigid dosing schedules, particularly when mystical type experiences are sought to catalyze transformation.

The case also highlights the centrality of integration: gains were sustained through structured post-session reflection, alignment with personal values and spirituality, and the patient's active self-regulation. Such findings support calls for KAP protocols that extend beyond drug administration to include preparation, meaning-making, and long-term support (Bathje, Majeski, and Kudowor 2022; Phelps 2017). Clinicians should help patients work with both peak mystical content and challenging or ambiguous sessions, using the therapeutic relationship to reframe frustration, foster trust, and anchor new perspectives in daily life.

This case study offers valuable insights into the relationship between mystical experiences and therapeutic outcomes, but several limitations must be acknowledged. First, it describes a single patient, which limits the generalizability of the findings. The patient's strong openness to spirituality and psychedelics may have facilitated the emergence of mystical type experiences and contributed to the observed improvements. In addition, although he presented with persistent anxiety and migraines, his baseline OQ-45 scores indicated moderate – not severe – distress, suggesting that these results may be more applicable to individuals with moderate symptomatology than to those with severe or treatment-resistant conditions. Another consideration is the intensive psychotherapeutic support and deliberate dose adjustments used to optimize subjective experience. While clinically valuable, these factors may not be present in all settings and could have amplified the therapeutic effects. Future research should use larger, controlled, and longitudinal designs to clarify the relationship between ketamine dose, mystical experience intensity, and clinical improvement. While clinical practice may benefit from tailoring, research comparing patients receiving standardized integration with those receiving adaptive, patient-centered approaches could help refine KAP models and optimize treatment planning.

This case illustrates how intense mystical experiences, when safely supported and facilitated by dose adaptation to patient needs, can act as powerful catalysts for psychological and existential transformation. In this case, sustained benefit depended not only on the acute experience but also on psychotherapeutic integration and ongoing self-regulation, underscoring the need for flexible, value-sensitive KAP models that combine pharmacological knowledge with skilled psychological support to maintain and translate profound experiences into lasting mental health improvement.

Acknowledgments

This article was developed with the support of AI tools, specifically ChatGPT, which provided linguistic assistance and organizational refinement. The AI was employed to assist in structuring initial drafts and identifying preliminary patterns in thematic analysis, akin to "code generation," always under the strict supervision and guidance of the authors. All decisions regarding the final themes, interpretations, and conclusions were made collectively by the authors, ensuring the intellectual and scientific rigor of the manuscript. The use of AI was solely intended to enhance linguistic clarity and efficiency, without replacing the essential responsibilities of the authors.

Funding

This work was supported by the ISPA - Instituto Universitário de Ciências Psicológicas, Sociais e da Vida.

Data availability statement

Data available from corresponding author on request.

References

Bathje, G. J., E. Majeski, and M. Kudowor. 2022. Psychedelic integration: An analysis of the concept and its practice. *Frontiers in Psychology* 13:824077. doi: 10.3389/fpsyg.2022.824077.

Braun, V., and V. Clarke. 2006. Using thematic analysis in psychology. *Qualitative Research in Psychology* 3 (2):77–101. doi: 10.1191/1478088706qp063oa.

Breeksema, J. J., A. R. Niemeijer, E. Krediet, E. Vermetten, and R. A. Schoevers. 2020. Psychedelic treatments for psychiatric disorders: A systematic review and thematic synthesis of patient experiences in qualitative studies. *CNS Drugs* 34 (9):925–46. doi: 10.1007/s40263-020-00748-y.

Cornfield, M., S. McBride, J. La Torre, D. Zalewa, J. Munro, T. Ryan, and B. Waters. 2024. Exploring effects and experiences of ketamine in group couples therapy. *Journal of Psychedelic Studies* 8 (2):233–47. doi: 10.1556/2054.2024.00302.

Dakwar, E., F. Levin, R. W. Foltin, E. V. Nunes, and C. L. Hart. 2014. The effects of subanesthetic ketamine infusions on

motivation to quit and cue-induced craving in cocaine-dependent research volunteers. *Biological Psychiatry* 76 (1):40–6. doi: 10.1016/j.biopsych.2013.08.009.

Da Silva, S. M., I. C. B. Alves, E. M. Peixoto, G. M. A. Rocha, and T. D. C. Nakano. 2016. Outcome Questionnaire (OQ-45.2): Avaliação das propriedades psicométricas via modelo bifactor e tri. *Psico* 47 (4):298. doi: 10.15448/1980-8623.2016.4.24600.

Diep, D., S. de la Salle, J. T. Lévesque, M. Lifshitz, N. Garel, and K. T. Greenway. 2025. The ketamine chameleon: History, pharmacology, and the contested value of experience. *Expert Review of Clinical Pharmacology* 18 (3):109–29. doi: 10.1080/17512433.2025.2459377.

Grabski, M., A. Borissova, B. Marsh, C. J. A. Morgan, and H. V. Curran. 2020. Ketamine as a mental health treatment: Are acute psychoactive effects associated with outcomes? a systematic review. *Behavioural Brain Research* 392:112629. doi: 10.1016/j.bbr.2020.112629.

Greenway, K. T., M. Seymour, and R. L. Carhart-Harris. 2020. A qualitative study of the therapeutic mechanisms of psychedelic-assisted therapy in patients with treatment-resistant depression. *Frontiers in Psychology* 11:2402.

Griffiths, R. R., W. A. Richards, U. McCann, and R. Jesse. 2006. Psilocybin can occasion mystical-type experiences having substantial and sustained personal meaning and spiritual significance. *Psychopharmacology* 187 (3):268–83. doi: 10.1007/s00213-006-0457-5.

Hood, R. W. 1975. The construction and preliminary validation of a measure of reported mystical experience. *Journal for the Scientific Study of Religion* 14 (1):29. doi: 10.2307/1384454.

Kangaslampi, S. 2023. Association between mystical-type experiences under psychedelics and improvements in well-being or mental health: A comprehensive review of the evidence. *Journal of Psychedelic Studies* 7 (1):18–28. doi: 10.1556/2054.2023.00243.

Ko, K., G. Knight, J. J. Rucker, and A. J. Cleare. 2022. Psychedelics, mystical experience, and therapeutic efficacy: A systematic review. *Frontiers in Psychiatry* 13:917199. doi: 10.3389/fpsyt.2022.917199.

Lambert, M. J., G. M. Burlingame, V. Umphress, N. B. Hansen, D. A. Vermeersch, G. C. Clouse, and S. C. Yanchar. 1996. The reliability and validity of the outcome questionnaire. *Clinical Psychology and Psychotherapy* 3 (4):249–58. doi: 10.1002/(SICI)1099-0879(199612)3:4<249::AID-CPP106>3.0.CO;2-S.

Li, L., and P. E. Vlisides. 2016. Ketamine: 50 years of modulating the mind. *Frontiers in Human Neuroscience* 10:612. doi: 10.3389/fnhum.2016.00612.

Mansoor, S., K. H. Khan, and M. A. Faridi. 2023. Tolerance and acceptability of intravenous ketamine therapy for treatment resistant depression: A mixed methods assessment. *Journal of Pakistan Psychiatric Society* 20 (1):13–17. doi: 10.63050/jpps.20.01.189.

Mathai, D. S., M. J. Meyer, E. A. Storch, and T. R. Kosten. 2020. The relationship between subjective effects induced by a single dose of ketamine and treatment response in patients with major depressive disorder: A systematic review. *Journal of Affective Disorders* 264:15–23. doi: 10.1016/j.jad.2019.12.023.

Phelps, J. 2017. Developing guidelines and competencies for the training of psychedelic therapists. *Journal of Humanistic Psychology* 57 (5):450–87. doi: 10.1177/0022167817711304.

Roseman, L., D. J. Nutt, and R. L. Carhart-Harris. 2018. Quality of acute psychedelic experience predicts therapeutic efficacy of psilocybin for treatment-resistant depression. *Frontiers in Pharmacology* 8:974. doi: 10.3389/fphar.2017.00974.

Savoldi, R., A. Roazzi, A. Costa, M. M. Nour, and R. Carhart-Harris. 2023. The structural organization and construct validity evidence of the Brazilian versions of the mysticism scale and the ego-dissolution inventory in a major religion of the ayahuasca. *International Journal of Latin American Religions* 7:521–49. doi: 10.1007/s41603-023-00203-y.

Sumner, R. L., E. Chacko, R. McMillan, M. J. Spriggs, C. Anderson, J. Chen, A. French, S. Jung, A. Rajan, G. Malpas, et al. 2021. A qualitative and quantitative account of patient's experiences of ketamine and its antidepressant properties. *Journal of Psychopharmacology* 35 (8):946–61. doi: 10.1177/0269881121998321.

Walsh, Z., O. M. Mollaahmetoglu, J. Rootman, S. Golsof, J. Keeler, B. Marsh, D. J. Nutt, and C. J. A. Morgan. 2022. Ketamine for the treatment of mental health and substance use disorders: Comprehensive systematic review. *BJPsych Open* 8 (1):e19. doi: 10.1192/bjo.2021.1061.

Yaden, D. B., and R. R. Griffiths. 2021. The subjective effects of psychedelics are necessary for their enduring therapeutic effects. *ACS Pharmacology and Translational Science* 4 (2):568–72. doi: 10.1021/acsptsci.0c00194.

Zanos, P., and T. D. Gould. 2018. Mechanisms of ketamine action as an antidepressant. *Molecular Psychiatry* 23 (4):801–11. doi: 10.1038/mp.2017.255.