

Patient Experiences of Psilocybin-Assisted Psychotherapy: An Interpretative Phenomenological Analysis

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Abstract

The psychological mechanisms of action involved in psilocybin-assisted psychotherapy are not yet well understood. Despite a resurgence of quantitative research regarding psilocybin, the current study is the first qualitative study of participant experiences in psilocybin-assisted psychotherapy. Semistructured interviews were carried out with 13 adult participants aged 22 to 69 years ($M = 50$ years) with clinically elevated anxiety associated with a cancer diagnosis. Participants received a moderate

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dose of psilocybin and adjunctive psychotherapy with an emphasis on the process of meaning-making. Verbatim transcribed interviews were analyzed by a five-member research team using interpretative phenomenological analysis. General themes found in all or nearly all transcripts included relational embeddedness, emotional range, the role of music as conveyor of experience, meaningful visual phenomena, wisdom lessons, revised life priorities, and a desire to repeat the psilocybin experience. Typical themes found in the majority of transcripts included the following: exalted feelings of joy, bliss, and love; embodiment; ineffability; alterations to identity; a movement from feelings of separateness to interconnectedness; experiences of transient psychological distress; the appearance of loved ones as guiding spirits; and sharing the experience with loved ones posttreatment. Variant themes found in a minority of participant transcripts include lasting changes to sense of identity, synesthesia experiences, catharsis of powerful emotion, improved relationships after treatment, surrender or “letting go,” forgiveness, and a continued struggle to integrate experience. The findings support the conclusion that psilocybin-assisted psychotherapy may provide an effective treatment for psychological distress in cancer patients. Implications for theory and treatment are discussed.

Keywords

anxiety, psychosocial distress, cancer, psilocybin, psychedelic, hallucinogens, qualitative, spirituality, interpretative phenomenological analysis

In the past 15 years, there has been a renaissance of quantitative research evaluating the safety and efficacy of substances used to alter consciousness, namely those called hallucinogens and psychedelics (Friedman, 2006; Studerus, Kometer, Hasler, & Vollenweider, 2011). One of these studied, psilocybin, is a naturally occurring serotonergic (4-phosphoryloxy-N,N-dimethyltryptamine) compound found in over 180 species of mushrooms that has been used in religious and healing practices in various cultures for centuries (Allen & Arthur, 2005; Stamets, 1996; Wasson, 1980). In a series of double-blind placebo-controlled trials using quantitative research methods, the provision of psilocybin-assisted psychotherapy was associated with decreased levels of anxiety among cancer patients (Grob et al., 2011), reductions in depressive symptoms among patients with treatment-resistant depression (Carhart-Harris et al., 2016), positive changes in personality, such as increases in openness to new experience (MacLean, Johnson, & Griffiths, 2011), and profound spiritual and mystical experiences (Griffiths, Richards, Johnson, McCann, & Jesse, 2008).

The current study draws from a subsample of participants from a recently completed trial conducted by Ross et al. (2016) at New York University (NYU). In this double-blind placebo-controlled randomized trial, psilocybin-assisted psychotherapy was investigated as a treatment for patients with cancer and concomitant anxiety and depression. The NYU study and a similar trial completed by Griffiths and colleagues at Johns Hopkins University suggest that a single administration of moderate to high-dose psilocybin, when combined with psychotherapy, led to rapid, substantial, and enduring decreases in depression and anxiety, as well as improvements in cancer-related demoralization and hopelessness, spiritual well-being, and quality of life (Griffiths et al., 2016; Ross et al., 2016). In the trial conducted at NYU, the administration of psilocybin generated very large anxiolytic and antidepressant effects, with 83% of participants in the psilocybin-first group, as compared with 14% in the placebo-first group, demonstrating antidepressant response after 7 weeks. These large magnitude effects were enduring: At 6½-month follow-up, antidepressant and anxiolytic response rates were 60% to 80% (Ross et al., 2016). Additionally, more than two thirds (70%) of the study participants rated their experience of psilocybin to be among the top five most spiritual experiences of their lives. Despite the profound and singular experiences reported in these quantitative studies (Griffiths et al., 2008; Griffiths et al., 2011; Griffiths et al., 2016; Ross et al., 2016), we found no qualitative studies of patient experiences of psilocybin-assisted psychotherapy in clinical trials in the published literature.

A review of the qualitative literature regarding subjective psychedelic experiences reveals a variety of studies, although most involve noncomparable participant populations and contexts. Relevant research includes analyses of interviews with substance users in uncontrolled recreational settings (Beck & Rosenbaum, 1994; Comis & Noto, 2012; Pennay & Moore, 2010; Singer & Schensul, 2011), user experience reports found on online message boards (Bersani et al., 2014; Kjellgren & Soussan, 2011), or interviews of participants involved in non-Western treatment settings (Loizaga-Velder & Verres, 2014; Presser-Felder, 2013; Shanon, 2002). Various substances have been investigated using qualitative methods, including ayahuasca (Loizaga-Velder & Verres, 2014; Presser-Felder, 2013; Shanon, 2002), salvia divinorum (Addy, Garcia-Romeu, Metzger, & Wade, 2015); 25C-NBOMe (Bersani et al., 2014), 4-HO-MET (Kjellgren & Soussan, 2011), MDMA (Passie, 2012; Comis & Noto, 2012; Singer & Schensul, 2011; Beck & Rosenbaum, 1994), and polysubstance use (Pennay & Moore, 2010). Other qualitative research with psychedelic substances has focused on religious/spiritual/mystical experiences (Yaden et al., 2016) or self-transcendent experiences occasioned by hallucinogens (Garcia-Romeu, Himmelstein, & Kaminker, 2015).

Although there are beginning efforts using qualitative inquiry into the nature of psychedelic experience, rigorous qualitative investigations of the subjective effects of serotonergic hallucinogens in clinical treatment settings are rare. In one trial, Turton, Nutt, and Carhart-Harris (2014) conducted an interpretative phenomenological analysis (IPA) of the subjective experiences of psilocybin as administered via intravenous injection to healthy psychedelic-experienced volunteers within a unique setting, an fMRI scanner. In a second study, Gasser, Kirchner, and Passie (2014) conducted a qualitative content analysis of LSD-assisted psychotherapy for anxiety associated with a life-threatening disease. Finally, in their research regarding the administration of psilocybin to healthy normal volunteers, Griffiths et al. (2008, 2011) have provided excerpted verbatim comments from participants, and they are currently pursuing qualitative research with psilocybin (Noorani, Garcia-Romeu, Griffiths, & Johnson, 2015).

Current theoretical conceptualizations regarding the psychological mechanisms of action involved in psychedelic-assisted psychotherapy remain underdeveloped. Some have proposed that a psychedelic-occasioned mystical or peak experience is a mediating factor fostering highly salient spiritual/mystical states of consciousness associated with enduring positive effects in cognition, affect, behavior, and spirituality (Gasser, Kirchner, & Passie, 2014; Griffiths et al., 2008; Griffiths et al., 2011; Griffiths, Richards, McCann, & Jesse, 2006; Pahnke, 1969; Studerus et al., 2011). While there is empirical support for this conceptualization (Griffiths et al., 2008; Griffiths et al., 2016; Ross et al., 2016), alternative hypotheses regarding other possible mediating factors and psychological mechanisms of action have not yet been evaluated.

Quantitative methods are well suited for *hypothesis testing*, but such methods may be limited by preconceptions regarding the phenomena under study. Alternatively, qualitative methods provide a *hypothesis-generating* mode of inquiry that is appropriate to address research questions in a nascent field such as psychedelic science where theoretical models are not yet well formed. While both modes of inquiry provide value, qualitative inquiry can complement existing quantitative research regarding psychedelic-assisted treatments as it is well suited to address questions of meaning, inner experience, and behavioral change within complex multidimensional contexts (McAdams, 1999) and may help elucidate underlying mechanisms of action.

Our study is perhaps the first formal qualitative inquiry regarding participant experiences in psilocybin-assisted psychotherapy. Per inclusion criteria, all study participants had elevated clinical anxiety and psychological distress associated with a diagnosis of cancer. The interviews with participants elicited substantial experiences related to cancer, death, and spirituality that have

been analyzed and submitted for other publication (Swift et al., 2017), but our current research question is not focused on oncological concerns. In the current analysis, we address research questions regarding the form and content of participant experiences during the psilocybin dosage sessions, descriptions of their subjective experiences of this psychological intervention in context, and their understandings of the embedded meanings of their lived experiences.

Method

Thirteen participants were recruited who had previously been enrolled in a Phase II clinical trial approved by the institutional review board of the NYU School of Medicine. The primary objective of this quantitative double-blind, crossover, placebo-controlled pilot study was to assess the efficacy and safety profile of psilocybin in conjunction with psychotherapy on psychosocial distress associated with cancer. Secondary data were also gathered using measures of depression, existential/psychospiritual distress, pain, attitudes toward disease progression, quality of life, and spiritual/mystical states of consciousness.

Participants underwent 3 months of treatment, which included the following: two drug administration sessions, separated by 7 weeks, a total of nine sessions of adjunctive psychotherapy with two licensed psychotherapists conducted before, between, and after the two 8-hour drug administration sessions, and 6 months of follow-up assessment. Regarding the two drug administration sessions: Participants were randomly assigned to one of two oral dosing sequences: first, psilocybin (0.3 mg/kg) and second, niacin (250 mg) or first, niacin (250 mg) and second, psilocybin (0.3 mg/kg). During the drug administration sessions, participants were encouraged to lie comfortably on a couch wearing eyeshades and to listen to preselected music. Two study therapists remained with the participant throughout the entire 8-hour sessions.

Participants

Eligible participants were between 18 and 76 years of age ($M = 50$ years), had a projected life expectancy of at least 1 year, and a primary diagnosis of acute stress disorder, generalized anxiety disorder, anxiety disorder due to cancer, or adjustment disorder with anxiety, as assessed by the *Structural Clinical Interview for DSM-IV-TR Axis I Disorders—Patient Version* (First, 2005). We selected a subsample of 13 participants from this quantitative study for inclusion in the qualitative study based on the date of their final drug administration session. We approached the 14 participants who had most recently completed drug administration sessions, of which 13 agreed to participate in

the qualitative study as described in Table 1. Five of these participants were interviewed within 1 week following their second psilocybin dosage session, and eight of these participants were interviewed at approximately 1-year follow-up. Participants were informed that agreeing to be interviewed was entirely optional and would have no effect on their involvement in the quantitative study. They were offered no financial compensation, and there were no penalties for declining to participate. All volunteers gave their informed consent prior to participation. The study was approved by the institutional review board of the NYU School of Medicine.

Interviews

One member of the research team (ABB) conducted all 13 semistructured interviews, which lasted approximately 1½ to 2 hours, using the interview protocol in the appendix. The interview consisted of questions regarding the participant's experiences before, during, and after their involvement in psilocybin-assisted psychotherapy. As the drug administration sessions were blinded, participants were first asked to identify which session they believed to be the psilocybin dosage session, then asked a series of questions related to that psilocybin session. Specific questions addressed perceptual, emotional, and memory experiences as well as expectations before the treatment and effects posttreatment. Questions included in the semistructured interview guide are provided in the appendix. All interview sessions occurred in person, except for one that occurred via video linkup. Each interview was audio recorded in its entirety and then transcribed verbatim. All participant data were subsequently deidentified to maintain anonymity.

Data Analysis

We explored participants' experiences using a qualitative method, namely in-depth interviews employing IPA, "a qualitative research approach committed to the examination of how people make sense of their major life experiences" (Smith, Flowers, & Larkin, 2009, p. 1). In IPA, semistructured interviews are analyzed through a systematic, qualitative analysis that draws from phenomenological, heuristic, and narrative theoretical foundations. Unlike other phenomenological methods, IPA concerns both the description of experience and understanding of that experience.

Our interpretative team consisted of four doctoral students and an individual with a master's degree. Our group was guided by a consensus decision-making process (Schweiger, Sandberg, & Ragan, 1986) with members rotating in the role of the facilitator. We used a computer-assisted qualitative

Table 1. Participant Demographic Information.

	%
Age, years, <i>M</i> ± <i>SD</i>	50 ± 15.77
Gender	
Male	54
Female	46
Race	
White	92
Multiracial	8
Diagnosis	
Adjustment disorder with anxiety, chronic	77
Adjustment disorder with anxiety and depressed mood, chronic	15
Generalized anxiety disorder	8
Cancer stage	
Stage I	31
Stage II	15
Stage III	31
Stage IV	15
Other	8
Site of cancer	
Breast	23
Lymphoma	15
Other	31
Ovarian	31
Marital status	
Cohabitation	8
Divorced	8
Married	46
Never married	38
Education	
Completed graduation/professional school	54
Graduated 4-year college	31
Part college	15
Religious affiliation	
Atheist/agnostic	38
Other Christian	15
Jewish	15
Catholic	8
Other faith/tradition	8
Unitarian	8
Methodist	8
Previous hallucinogen use	
Yes	46
No	54

data analysis software (CAQDAS) package with collaborative capabilities, ATLAS.ti 7.5.4, to analyze the interview transcripts (Muhr, 2014). The analytic process proceeded as follows. (1) Each interview transcript was read and reread by two independent reviewers, who made notes that included descriptive comments, linguistic comments, and conceptual comments. The reviewers also independently coded the transcript, leading to the development of a study codebook using “tags or labels for assigning units of meaning to the descriptive or inferential information compiled during a study” (Miles & Huberman, 1994, p. 56). (2) Each transcript was subsequently reviewed by two independent auditors. The role of the auditors was to review the transcript, check the coding and commenting of the two reviewers, and respond to the coders with feedback about any deviations in terms of coded themes based on their review. The auditors suggested additional codes or comments as appropriate and provided feedback to the interpretive team, resulting in the refinement of the study codebook to accommodate the emerging interpretative framework. (3) Each transcript was subsequently read by an additional reader, such that all five members of the interpretative team became familiar with each of the 13 participant transcripts. The roles of (a) reviewers, (b) auditors, and (c) reader were rotated for the 13 transcripts. (4) Emergent themes were identified and tentatively organized. (5) Themes were then defined in greater detail, subthemes were articulated, and interrelationships among themes were established. In this way, each transcript was independently noted by two independent reviewers and audited by two independent auditors. These cross-check and independent auditing procedures were designed to maximize analytic rigor and validity.

Results

Themes were assigned frequency labels of “general,” “typical,” or “variant” depending on the frequency of occurrence. Themes labeled *general* occurred in 12 or 13 of the 13 cases, *typical* themes occurred in 7 to 11, and *variant* themes occurred in a minority (2-6 cases; Hill et al., 2005). A number of themes were discovered through our analysis, as described in Table 2. The results described in this publication do not include substantial cancer-related experiences that are currently being analyzed for other publication.

Relational Embeddedness

All 13 participants described remarkable insights or transformations involving a significant personal relationship. Once under the influence of psilocybin, participants described seeing their loved ones in a new way, often an emotional

Table 2. Theme Frequencies.

	Case occurrence
General themes	
Relational Embeddedness	13
Emotional Range	13
Role of Music as Conveyor of Experience	13
Meaningful Visual Phenomena	13
Wisdom Lessons	13
Revised Life Priorities	13
Desire to Repeat the Psilocybin Experience	12
Typical themes	
Exalted Feeling of Joy or Bliss	11
Feeling Love	11
Ineffability	10
Alterations to Identity During Psilocybin Experience	9
Embodiment	7
From Separateness to Interconnectedness	7
Difficult Struggle: Experiences of Transient Psychological Distress	7
Loved Ones as Guiding Spirits	7
Sharing the Experience With Loved Ones	7
Variant themes	
Lasting Changes to Sense of Identity	6
Synesthesia Experiences	6
Catharsis of Powerful Emotion	5
Improved Relationships After Treatment	5
Surrender or "Letting Go" Following Transient Psychological Distress	4
Forgiveness	4
Integration: Continued Struggle	3

process laden with both grief and hope. There were no questions in the interviews regarding relationships, but, without prompting, all the interviewees addressed crucial relational aspects of their experiences. These relationships were most likely to concern the participant's father or mother (seven participants), or romantic partner (five participants). Children also figured prominently: four participants spoke of their relationship with their daughter or son. Other significant relationships with grandparents, siblings, and previous romantic partners were also described. Relationships were woven throughout participant narratives—throughout the histories, memories, hopes, feelings,

visions, and realizations as reported by the participants. In this way, the psilocybin experience may be conceived as relationally embedded. Mike, a father of three daughters, described how he was able to more deeply empathize with and understand the anxieties and fears with which they struggled. He relates the following transformative vision of his daughters:

Bit by bit, my daughters were turning into these radiant beings, cleansed of all these fears. It was incredibly emotional, because it was something I have, as their father, long known, but it's a very great pain when you see your children being victimized by fears . . . to see these beautiful beings not realizing their essence.

Later that night, after the psilocybin session, Mike had a powerful moment of connection with his daughter. He explained the vision he had to one of daughters, "And she started crying. She came over, and she hugged me and was just holding onto me, and I knew that I had reached the place that I knew I could reach in her." These relational visions brought about catharses, feelings of forgiveness, and were often emotional catalysts, allowing participants to move into more expansive feelings of love and peace for themselves and for the people in their lives.

Sharing Experiences With Loved Ones. Occasionally, participants described how, in sharing aspects of their experience with loved ones, they drew closer in their relationships with their daughters, mothers, husbands, or wives. For example, one participant's daughter cried when he told her how he had seen her during the session. When another participant described to his parents his psilocybin experience, his mother, who had cared for him during his years of sickness with cancer, began to cry: "It was amazing. It was cathartic. She was so moved by how moved I was. I think she could tell that it had changed something profoundly in me."

Forgiveness. Through the process of coming to see their loved ones in a new way and with deeper clarity, four participants were able to transform feelings of frustration, anger, and disappointment toward important people in their lives into acceptance and forgiveness. One participant described coming to "an acceptance of the human experience." This acceptance allowed her to release long-held resentments about past actions committed by her family and others. She said,

I felt like my family was doing their best and that people tried as hard as they could. And that even people that weren't there for me did their best, and certain things from the past were in the past. [pause] And that was okay.

Another participant talked about the shortcomings of her parents. She described reaching a place of acceptance of and forgiveness for her parents' mistakes, to which she had felt "like a total stranger." After her psilocybin session, she said,

I felt like I let go of a lot of anger and resentment towards my parents. I mean, I thought I had already done that, but I really hadn't, and I kind of saw them more as, like, these flawed human beings who did the best they could.

A third participant described how during the psilocybin session, she was able to forgive her husband who, while she was sick with cancer, had pursued a secret affair with another woman. This participant suggested that by coming to a deeper understanding, she was able to stop "carrying this anger" and "open up more" to "feeling closeness and love" not only toward him but also herself. "I allowed myself to just not carry that weight of everything, and to forgive. . . . And to forgive myself," she said.

Improved Relationships After Treatment. Five participants described how their ways of relating to other people changed as a result of their involvement in the study. One participant said that he "stayed in touch with more people as a result of the study" and strove to "show people that you care about them, be kind to other people, take care of the people in your life." Another described how she now spends more time being with her daughter, talking to her: "I changed. I just was different. I just felt happier." Edna described "a greater understanding of the people around me"; she speaks of a lasting shift in how she relates to people she encounters in the world:

People can genuinely care about you even though they really aren't your loved ones, and they are not your good friends. Still, they really, you know, they would miss you if something bad happened to you. And they really, when they say, "how are you doing?" they really mean that and, and when they say, "Oh you look great, and I'm so glad you are doing well," they mean that. Umm, to be able to accept that—I think to accept that people love me—that, yeah, that I'm worthy of being loved.

Here, Edna's ability to love and be loved has changed the deeper meaning of the everyday pleasantries she exchanges with other people.

Dan, a former bank employee and real-estate investor, described how he felt a "very blissful connection" to his brother, with whom he was close during childhood. He said,

just the way that I was connected to my brother felt very intense in a way that I don't feel now, day to day, but—and I remember feeling that way. It was very strong, and it was very loving, and very like “everything is okay.” It was almost exciting, this very blissful connection.

Dan also described feeling “a deeper connection with my girlfriend,” who had, in fact, moved into his apartment the day before his psilocybin session. He described coming home directly from the session and sitting on his couch with her. He said:

I was appreciating the pureness of her, if you will, her being, in a way. In a way, I had not allowed myself, or not realized, or whatever the case was. And so that was pretty much immediate, but I felt like that had a lasting effect. I feel that kind of changed my perception of our relationship over the ensuing weeks in a way. It allowed me to be more open with her, express my appreciation a lot for her in way that I had not. I think it had a positive effect—kind of a bit of a snowball effect.

Dan reflected that the state of mind into which he entered helped him become “more emotionally open” to his girlfriend. Within 3 months, Dan bought an engagement ring and proposed marriage to her.

Loved Ones as Guiding Spirits

Seven participants described being visited by guiding spirits who helped them move through their psilocybin experiences; they typically manifested in the form of visions of loved ones providing guidance or reassurance. Participants described hearing a guiding voice or seeing a spirit that was a “being” who aided them along their inner journeys. These guides were described as recognizable familial figures: In one case, daughters were described as guiding angels, and in another, a father appeared in visions as a psychopomp, a guide on the journey. Male participants were more likely to encounter the presence of such a guide.

One participant, Victor, a young man in his 20s who was diagnosed with leukemia in high school, described being guided by a spirit that “took the form of my dad.” This guide propelled Victor through a variety of visionary landscapes, from “eroded burnt deserts” to sewers and caves. When Victor became scared, his father reassured him that “everything was going to be okay” and brought him to a beautiful garden. With the help of his “spirit guide,” Victor had another powerful vision of affirmation from loved ones who had passed:

I was flying through space with the spirit guide, and I encountered three people who are dead who were very close to me. My dad's dad, my mom's mom, and my best friend in college who died. And they all gave me reassuring messages in space. From my friend Tim, "I'm sorry for everything that has happened. I just wanted you to know I love you, man." My grandfather gave me a hug, and my grandmother kissed me on the cheek. That was powerful.

In Victor's narrative and in other participant encounters with spirit guides, what is remarkable is the interpersonal nature of these encounters; just as Virgil guided Dante through the realms of *The Divine Comedy*, the participants in this study were not always solo travelers in their journeys. Rather, their experiences were often mediated by the presence of a guiding spirit who helped them navigate novel landscapes and inner realms.

Emotional Range and Catharsis

The emotional experiences reported by participants were notable for their depth, breadth, number, and cathartic release. All 13 participants reported having significant emotional experiences during the psilocybin session that were singular or beyond what they were able to access in their daily lives. Most described experiencing paramount emotional experiences: 11 participants reported exalted moments of joy and bliss, and an equal number reported a deep feeling of love. Concomitantly, participants also described moments of emotional difficulty like despair, fear, sadness, and grief (see *The Difficult Struggle: Experiences of Transient Psychological Distress* section). Many of the participants commented not only on the wide range of emotions they accessed but also the sheer multitude of feelings. One participant said he "experienced all the emotions I know how to experience," and another said she felt, "all of them, all of them. Every possible emotion." Six participants shed tears during the interview itself when revisiting their experiences.

Participants often experienced widely disparate emotions quickly evolving from one into another. One participant, for example, traveled in rapid succession to many different visual scenes and places, from witnessing his own funeral to climbing a sacred mountain, with a wide range of associated emotional experiences:

When I was at my funeral there was this tremendous sadness, just like mourning, collective mourning. When I went through this hellish place, emotion of despair. When I landed in the garden, I felt relief. At this ball, this profound joy. When I was shot down to the sewer, I was confused. When I got shot up to the empire state building, I felt empowered. And then—I don't know

if it's an emotion—but once I accepted my body and started climbing this mountain to try to find this entity, I would say I experienced yearning, yearning for something higher, something greater, something beyond me. And then at the very end . . . there was a lot of comfort and relief and reassurance.

This participant came to understand this emotional lability as a meaningful experience—the feelings that arose were not random but rather situated within his personal narrative and the arc of his psilocybin experience.

Five participants reported having access to long-held strong or repressed emotions such as grief, sadness, and traumatic pain. Adam, a young medical student, had previously dismissed the feeling emotions altogether because “it doesn't solve anything, and you have to be strong, or that is what I used to think.” During his psilocybin session, Adam grieved a broken relationship with his father. For the first time since he was 6 years old, Adam cried, weeping tears of grief and sadness, which he had held in abeyance for nearly two decades. This catharsis provided him with a profound sense of relief. Another participant reported having had, unexpectedly and for the first time in her life, access to emotions related to childhood sexual trauma. She came to realize the emotional “weight” and “baggage” she was carrying and “had not dealt with” because “it was too painful, and it was too awful.” In the psilocybin session, with the support of her therapists, she was able to feel and then release these painful affects. She said, “I feel like what happened was that in a very short period of intense time I dealt with some really powerful things and put it behind me.”

The Difficult Struggle: Experiences of Transient Psychological Distress

Seven participants reported experiences of transient psychological or emotional struggle often characterized by acute reactions of fear, confusion, panic, or paranoia. There were no serious adverse events, either medical or psychiatric, in the trial that were attributed to psilocybin. There was no need for the administration of pharmacologic interventions (such as benzodiazepines or antipsychotic medications) and no psychiatric hospitalizations. These reactions were transient and dissipated or resolved within the supportive treatment context. For example, Edna experienced a “very sudden onset” of the effects of the psilocybin medication. She emphasized the importance of her therapists' presences and the rapport they had developed prior to the session.

It really hit me very strong. And um, it was terrifying. It was just terrifying. It was, um, I was completely disoriented . . . I was really, maybe, in the hold of a

ship at sea. Rocking. Absolutely nothing, nothing to anchor myself to, nothing, no point of reference, nothing, just lost in space, just crazy, and I was so scared. And then I remembered that Tony and Michelle were right there and suddenly realized why it was so important that I get to know them and they to get to know me. And reached out my hand and just said "I'm so scared." And I think it was Tony who took my hand . . . and said "It's all right. Just go with it. Go with it." And um, and I did.

Here, Edna described feeling unmoored with "no point of reference" and concomitant feelings of panic and fear. She described how it was important to have established rapport with her two therapists in the sessions preceding the psilocybin administration session. The mutual trust they had developed in the therapeutic relationship helped Edna weather the stormy seas of her experience.

A total of 9 of 13 participants described the experience of losing their sense of self. One participant felt himself "losing the firm grasp on sort of 'me-hood,'" including "my past, my relationships, my personality." Another described a vision of sets of green eyes seeking him out; he came to the realization that they're "not going to find me" since "there's no one to be found." The dissolution of normal boundaries of the self sometimes led to a sense of identity separate from the body: "I didn't have a body . . . I was just like this soul, this entity." One participant described "my consciousness, or my soul, or whatever, was flying out of my body."

Only some participants experienced this dissolution of their normal sense of self as disturbing or arousing of feelings of momentary paranoia that they would not return. One participant described having the thought that he would never "get back to normal." Another participant, Dan, described a disturbing period of fearfulness and "disintegration" of his identity. For him, this period of "deadness, of complete disconnectivity" became a "turning point" to becoming more present in the moment. For Dan, the period of frightening disintegration was one stage in an unfolding process. Following this turning point, Dan's account rings with what he described as "complete clarity," saying,

I knew exactly who I was, I knew exactly what I was doing here, and beyond that I was augmented . . . I was just really enthralled . . . everything was delicate and again, it was not blurry, it was not clouded. Everything was heightened.

Surrender or "Letting Go" Following Transient Psychological Distress. Four participants recounted that in the midst of intense periods during the psilocybin experience, their experiences of struggle gave way to an experience variously

described as “surrender” or a “letting go.” They described moving from defensive resistance into a deeper phase of the experience marked by feelings of relief, wholeness, freedom, and affirmation. One participant described a very strong feeling of self-hatred, which resolved by means of a confrontation. She asked herself: “Why would you hate yourself? You’re wonderful, it makes no sense . . . then there was an immediate relief. It was an awareness.” Two participants experienced strong feelings of self-doubt that yielded shortly thereafter to feelings of relief. The sequential progression of these experiences suggests an arc of experience or a necessary sequence; a participant’s capacity to surrender in the face of a struggle or frightening encounter may facilitate an unfolding therapeutic process. In this way, the “incredible struggle” that is a hallmark of the psilocybin experience may not be an undesirable side effect, but rather a central and necessary feature of participants’ healing narratives.

From Separateness to Interconnectedness

The dissolution of normal identity often led to a feeling of interconnection with other people, the entire planet, or even the universe at large. Chrissy came to the realization that life and death are part of one circle, stating “we’re all kind of a greater whole” and “we’re all going to be connected again in the universe.” She accessed “a great plane of consciousness” in which “I felt like I could reach out to anybody and connect with them.” Another participant described his own feeling of connection to all of humanity: “An overarching theme of this psychedelic spiritual realm is just like the interconnectedness of things.” Another participant achieved “a greater understanding of global connectedness . . . It just opens you up and it connects you.” She described the realization that “everything is connected—you know, it’s not people—it’s animals, it’s trees—everything is interwoven, and that’s a big relief. It’s a big comfort.” Others described a feeling of connection to nature and to the greater world.

Rather than feeling disempowered from being subsumed within a greater whole, many participants reported new feelings of empowerment and personal agency to live meaningful lives, and a sense of belonging and acceptance within their communities and the larger universe. During his experience, Mike who experienced a “sense of alienation and separation” in his life prior to the study described a process of being “welcomed into a group” during his session and noted, “I was very aware that I belonged there” and “the strength I derived from that was incredible.” Other participants reported that they had found their “place in the cosmos” or that they felt “more contented and happy about my place in the world, in all the things I’m doing.”

One participant received an explicit message of belonging: "I kept hearing we are here all together, we are here all together," which brought her "great comfort." An "understanding of global connectedness" led Erin to "a feeling that I wasn't alone." This was significant, as Erin had previously felt a great deal of isolation: "All my life before that, I felt like I was alone." After the treatment, this sense of belonging even extended to times when she was physically alone: "I have kept that feeling ever since." She added, "It's the first time I ever really felt like I was part of the world instead of separate from it."

Embodiment

The majority of participants described the pernicious effects of cancer and cancer treatments, such as chemotherapy and surgery, on their bodies. They describe their difficulty adjusting to physical debilitations and losses, including incontinence and premature menopause, as well as the visceral effects of surgeries and chemotherapy on their bodies. Six participants described complex visions in which their cancer was physically ejected from their bodies or accepted as part of their physical form. In the former, three participants described the ejection of cancer, released from their ribcages, abdomen, and through the tips of their fingers. In the latter, participants described seeing their physical bodies in a vision, and of choosing to accept their bodies, cancer, and all. One participant described a vision in which he saw vestigial "lumps" of cancerous tumors, now benign, as clear and harmless tissue.

A number of participants described using their hands, breath, voice, or entire body to physically express or manifest their inner psilocybin experience. During his experience, one participant moved his hands expressively in what his therapist described as a "hand ballet." Another participant described how his "body was resonating . . . like a string on a violin." A third participant described the intentional use of his breath as a "washing element." Finally, one participant recounted a moment in her experience when she felt that "physically . . . most perceptions of my body had just disappeared."

Wisdom Lessons

Every participant expressed gaining transpersonal insights into the nature of the universe or existence during the course of their psilocybin session. These feelings of insight or perceived wisdom lessons were described as extending beyond participants' personal histories. The most prominent experiences pertained to experiences of direct knowing that were either difficult or impossible to convey in words. Five participants attested to experiencing revelations that made metaphysical concepts tangible where they had previously seemed

vague, uncertain, or overly abstract, as one participant stated: “Long have I known the theory of it, but now I know I feel it.” Among these experiential understandings were the nature of space-time, the foundational role of love in the universe, the interconnectedness of all things, and the importance of experiential understanding. In addition to providing new insights about old ideas, five participants described arriving at new ideas with a felt sense of conviction. Among these perceptions were the existence of a parallel level of reality and the possibility of discarnate perception. These insights were often described as nonverbal: “You don’t understand it strictly in your head. You understand it as a being, as a body.”

Ineffability. The nonverbal nature of certain psilocybin-occasioned insights appeared foundational to many participants, with 10 participants alluding to ineffability or difficulty characterizing their experiences in words. For example, one participant noted: “words fail me,” and another stated, “It’s hard to describe.” Erin, a woman in her 50s said, “I mean, it’s really hard to describe. You just know, but you feel it in a very intense way because part of it is in the process of knowing, you realize that you didn’t know before.” Four participants described encountering a spiritual reality beyond the capacity of language to describe. Meanwhile, seven participants attempted to describe significant aspects of their experience while simultaneously insisting that those descriptions did not adequately capture them: “You cannot express what is happening. You have a complete blockage, because there is no vocab, there is no word.” Three participants relied on paradoxical juxtapositions of words to compensate for the limitations of language, using poetic phrases like “formless mass,” “indescribable confluence of joy and sorrow,” and “wonderful nothingness.” Augusta vividly embraced simile and metaphor to communicate her experience:

It was like being inside of nature, and I could’ve just stayed there forever—it was wonderful. All kinds of other things were coming, too, like feelings of being connected to everything, I mean, everything in nature. Everything—even like pebbles, drops of water in the sea . . . it was like magic. It was wonderful, and it wasn’t like talking about it, which makes it an idea, it was, like, experiential. It was like being inside a drop of water, being inside of . . . a butterfly’s wing. And being inside of a cheetah’s eyes.

Despite this difficulty in accurately articulating each experience, eight participants felt that their insights arrived from an inner or otherwise enduring source, to which they could return in ordinary states of consciousness. Three participants expressed the need to actively integrate their psilocybin insights into their daily lives in order to continue deriving meaning from them.

Phenomenology

Meaningful Visual Phenomena. All 13 participants described perceiving closed-eye visual phenomena, with varying degrees of complexity. In simpler forms, participants described seeing “patterns on my eyelids,” “the phosphorous that you see when you are falling asleep,” and “wonderful computer graphics.” While aesthetically compelling, these simpler visualizations remained transient phenomena. Participants also reported seeing more complex visual phenomena described as “visions”—these are contingent, unique, and subjective phenomena, each of which requires idiographic contextualization to understand the vision’s significance.

To illustrate the range of complex visual phenomena, a catalog of experiences is provided. Participants reported seeing various animal figures, including “a gorilla face,” “a horse’s eye,” two “serpents,” and “two-colored cow heads.” The visions often took the form of moving through vast or grand scenes, such as flying high through the rafters of a Gaudi cathedral; traversing a roller coaster’s hills and valleys in varicolored cars; or gazing on a blue placid lake with a boatman wearing a white hat on the sandy shore. Some participants described generating their own worlds through a creative process. For example, one participant, while listening to the music soundtrack, described inventing a massive three-dimensional chessboard world to match the music—to create a “place where such a song would be played.” Other participants described reinhabiting vivid scenes from their past, from decades-old treks through canyons to gazing at a meaningful painting hanging in a museum.

Certainly, this short catalog is neither complete nor does it convey the richly contextualized meanings (biographical, relational, affective, and psychospiritual) which are associated with these closed-eye visions. These visions provided multilayered phenomena that became integral to participants’ meaning-making processes. The visions often became central organizing motifs through which the participants could draw disparate elements of their lived experiences into coherent self-narratives.

Synesthesia Experiences. Synesthesia is a perceptual condition in which a stimulus in one sensory modality, such as hearing, elicits a sensation in another sensory modality, such as sight. Although we did not ask specifically about synesthetic experiences, six participants reported having some form of synesthesia. These include one or more of the four following subtypes: visual–auditory synesthesia, somatic–auditory synesthesia, gustatory–auditory synesthesia, and visual–somatic synesthesia. Examples of the four subtypes follows:

(1) *Visual–auditory synesthesia*

I see every note, every sound and it was mostly like in three major primary colors blue, green, and red most of the time and it was three dimensional . . . almost like flax in the wind but ah almost maybe like northern lights.

I could see music . . . I don't remember what it looked like, and I was thinking I gotta remember what this looks like because it's so beautiful, and the music was wonderful because it anchors you and yet it propels you.

(2) *Somatic–auditory synesthesia*

my entire body was musical instrument for every sound, which was coming through my head, and it eviscerated from top to bottom . . . I know what a grand piano feels like when it is played.

(3) *Gustatory–auditory synesthesia*

I started tasting music . . . some of Indian instruments have very sharp cords, those felt metallic in my mouth.

(4) *Visual–somatic synesthesia*

[one participant described simultaneously seeing a cloud and feeling] “the dampness of the cloud” [against her arms; later, she described seeing a yellow sun and feeling the] “heat of that yellow” [on her body].

Role of Music as Conveyor of Experience

A playlist of prerecorded music was played during the participants' psilocybin session. The musical selections and the order of the playlist had been arranged by study staff to complement the arc of intensity of the effects of psilocybin. All 13 participants described how the music that was played during their psilocybin session took on a central role in their phenomenal experience. Participants described the music as a conduit, vehicle, or carrier of their experience. For example, one participant remarked,

that music was really how everything was conveyed to me, it all came through the music . . . like everything that I experienced did not really happen in the English language, it kind of happened through the music, like the music was the conduit for this experience to happen.

Other participants said that they were “really living in the music,” or that their experience matched “the rhythms within the music, ebbing and flowing.” The music was sometimes described as a transformative substrate of the experience. For example, one participant concluded: “the music was the single thing that really transformed this from a hospital room or whatever it is into an experience that was rich for this kind of exploration.”

Although all the participants described the centrality of music in their experiences, five participants described a deeper, more significant experience of the music as an agentic guide or ally that helped them navigate through difficult experiences. These participants talked about the music as if it had some agency: “The music was fantastic, actually—the music that they had. I remember at one point, I thought, ‘It’s not the drug doing this—it’s the music.’ The music felt like it was what was making things happen.” These participants recounted working with the music as a “guide” or a “coauthor” of their experiences. One participant, Caleb, marveled at his experience of “one great musical journey following another.” He understood the music as a sort of guide, each track providing “another turn in the road.” Caleb began to hear the music as an ally, stating, “I almost worked *with* the music, like the music felt like an *ally*.” Similarly, another participant described acting as the “coauthor” of “almost each and every sound.”

Four participants similarly described experiences in which their sense of selfhood melded with the music being played. Allison commented,

I felt that I was part of the music and I was in the music, it was me. It was it just me listening to music. I was the music. I was the drum, or the flute, or the violin, and I was really part of that.

Of her experience, Augusta recalled: “Music is sort of like going in your ears but it’s inside, and it’s outside, and you can’t tell the difference.”

Lasting Impact

Revised Life Priorities. All study participants reported experiencing benefits related to their lifestyle and quality of life after the treatment sessions. Some of the participants expressed coming to honor a different side of themselves, a more still, emotional, or spiritual side that involved connecting to the simplicity of the present moment:

The percentage of my life that I am able to be present in just a moment has increased dramatically, and it’s really just been restored from almost nonexistent to often existent . . . it is unique and monumental in a way.

Participants described a shift in their life priorities away from the busy demands of modern work life, to find a deeper or more authentic mode of existence: “It has made me more aware that: I cannot just live for material stuff and success.” These participants came to “remember” during their psilocybin session what to them was most important about life: “It felt whole and complete and at peace. . . . We forget what’s really important; we get carried away with work and making our money and paying our bills, and this is just not what life is about.” Participants were compelled to reorient their lives afterward in a way that continued to connect them to a similar place and nourish that part of themselves. Augusta said:

I feel like a whole bunch of crap has been dumped off the surface. This stuff that made my world shut down so much and made me look at the ground and watch the clock numbers clicking by. There’s life and so many things going on, just watching that tree over there blowing in the breeze, seeing people in the street, and all the different people in vehicles rushing by! I just feel good about being alive. . . . It’s always there; we just don’t notice, and I’m trying to notice and not forget that I can see it at any time. I can hear it any time. It’s like waking up in the most profound way, that this is really what life is, it’s really like this. We’re just not noticing.

Here, Augusta shares how participating in the study has helped her “wake up in the most profound way.” She also reported better practical outcomes, like feeling less alone, having less “tunnel vision” and feeling more confident.

Lasting Changes to Sense of Identity. Similar to providing a shift toward what is most meaningful in life, some participants reported that the psilocybin experience afforded them greater confidence to put up boundaries against various stressors in their life and the ability to overcome barriers that were impeding life goals, allowing a greater sense of peace and freedom. When one participant was asked, in what ways you feel the study has affected your life since undergoing the sessions, she replied:

Just tremendously, tremendously. I am so much more able to do things that I wanted to do, and didn’t feel I could, something always holding me back . . . I really want to enjoy every minute. I want to enjoy being alive, and I knew that before the study, but afterwards I became able to do it much more often. I have found ways to make that happen.

This participant, who struggled with emotional/compulsive eating following her cancer diagnosis, reported gaining confidence to commit to dietary goals and a YMCA membership, losing 30 pounds as a result, an outcome she attributed directly to her psilocybin session.

Some participants described the sense of empowerment lasting well after their psilocybin experience: "I am so much more able to do things that I wanted do, and didn't feel I could, um something always holding me back." Participants described other ways in which they connected to a new sense of themselves as a result of the treatment. One participant concluded that after her treatment, "for me everything has changed . . . I feel more contented and happy about my place in the world in all the things I'm doing," adding, "I've really connected with a spiritual side in myself." Another participant attested to feeling a new kind of "resonance" with herself: "I feel more in touch with who I really am—my real self, myself that's connected to everyone and everything." One participant stated, "I kind of felt reborn in a way . . . I do feel different. And I think that's kind of what the next part of the process is, to figure out what that means."

Integration: Continued Struggle. Three participants continued to struggle with the integration of their experiences after the study concluded. They report that their lives have not been made miraculously easy or perfect. One reported ambiguity regarding his experience, saying, "I still have to work on my problems myself . . . [the psilocybin experience] confirms certain thoughts and hopes, ah, about who we are. Who I am. What's important to me." Another participant reported persisting anxiety: "I still worry. It's not like life is so perfect now, but it's better. It's just better . . . I just don't think that I feel as sad as I used to feel." A third participant reported prolonged difficulty following her session, which required intensive support in integration psychotherapy sessions with her therapists to process a childhood trauma. Of these three participants who continued to struggle to integrate their experiences, all three reported that they would repeat the psilocybin dosage session.

Desire to Repeat Psilocybin Experience

Study participants were only granted a single psilocybin administration session. When asked if, given an opportunity, they would repeat the experience, 12 of the 13 participants reported that they would do so. The responses were overwhelmingly positive: "I would definitely go through another experience, fully knowing that it might be equally as much of a struggle and a battle." Another replied, "Yes. Absolutely. I would do it in a heartbeat." In addition, one participant reported, "there are certain things I know now, I would, I would kind of stop wondering around and would go through the particular experience and explore them more." What he described is typical, as seven of the participants described a feeling that had they been familiar with the terrain of the psilocybin experience, they might have been able to go further with the experience. Other participants cited this phenomenon as an argument for repeat dosage sessions.

Four participants stated that a given period of time would be optimal before repeating the psilocybin experience. One participant said, “I’d do it again, but not anytime soon,” a sentiment echoed by another participant, who said, “I wish I could do it twice, not necessarily today or tomorrow but maybe sometime in the future.” One participant thought a year would be an ideal period of time. Only one participant, Adam, who at 21 years old was the youngest participant in the study, was not eager to repeat the dosing session, owing to the challenging nature of his experience. He suggests psilocybin is vastly different from fun “party drugs” and that he would not repeat the experience given the amount of psychological “work” involved in processing the vast amounts of information he learned about himself:

It is not fun, that is the thing. It is a hard experience; it is a very rich experience. You have a lot of things to learn from it, but how much fun is learning, you know? It is not that fun especially when you have to face some hard things . . . you start putting everything together, and at the end you are a better person because you know more. You know, but the experience itself is not fun, it is a hard experience. It is like studying. It’s like going to school. It’s hard, you know?

Discussion

Psilocybin-assisted psychotherapy is a promising combination intervention for the treatment of psychological distress, psychiatric conditions, and “the betterment of well people” (Bob Jesse, cited in Pollan, 2015). Despite the resurgence in research using psilocybin in recent years, the psychological mechanisms of action involved in psilocybin-assisted psychotherapy are not yet well understood. Current theory regarding psychotherapeutic and pharmacotherapeutic mechanisms of action posits that the occasion of a mystical experience is the primary mediating factor leading to positive treatment outcomes. While the construct of a “complete mystical experience,” for example, as defined by exceeding a cutoff score on the Pahnke–Richards Mystical Experience Questionnaire (Griffiths et al., 2006) has been shown to be one mediator of positive outcomes in randomized controlled trials (Bogenschutz et al., 2015; Griffiths et al., 2008; MacLean et al., 2011), the findings of this study suggest a more complex topography. It is conceivable that a single mediating factor is insufficient to account for multilevel phenomena that carry cognitive, emotional, behavioral, psychodynamic, spiritual, existential, and/or experiential components of significance.

The current study appears to be the first qualitative study of participant experiences in psilocybin-assisted psychotherapy. The findings of this

study suggest that there are important relational, bodily, affective, and other aspects of participant experiences that may play critical roles. First, participants universally described deeply meaningful attachments to important family members and significant others. Relationships were woven throughout participant narratives, with themes of forgiveness of others, loved ones as spirit guides, the importance of narrating one's experience with loved ones, and improved relationships posttreatment. In this way, the psilocybin experience may be conceived as relationally embedded. In many ways, this is unsurprising, given the important contributions of attachment theory (Ainsworth, Blehar, Waters, & Wall, 2014; Bowlby, 1980, 2005), relational theory (Mitchell, 1988; Wachtel, 2010), and interpersonal theory (Sullivan, 2013) to human development, which have yet to be thoroughly integrated into psychedelic research paradigms. Nearly all participants reported having an experience of love and joy, though these exalted experiences arose primarily through a specific human relationship with another person, whether it was a parent, child, or partner. As Anais Nin (1971) once wrote, "The personal, if it is deep enough, becomes universal, mythical, symbolic" (p. 153). These findings indicate that a relational theoretical framework may have utility in assessing the importance of transformed interpersonal and intrapsychic configurations occasioned by psilocybin-assisted psychotherapy.

Second, the findings of the current study also suggest that embodiment, and especially alterations or transfigurations of normally felt embodied states, is a critical feature of participant experiences. Although participants did describe discarnate phenomena, some of the most compelling accounts spoke of bodily ejections of cancer and visions of accepting their bodies. Participants described enhanced interoceptive awareness, somatic synesthetic experiences, and alterations to their sense of self as embodied beings. Despite a trend toward embodiment as a broad interpretative framework in the social and behavioral sciences (Csordas, 1994; Gibbs, 2005; Niedenthal, Barsalou, Winkielman, Krauth-Gruber, & Ric, 2005), subjectively experienced body states are not currently being assessed in clinical trials with psilocybin-assisted psychotherapy.

Third, slightly more than half of participants recounted acute reactions of fear, confusion, panic, or paranoia during the psilocybin dosage session. These were transient processes, and no serious adverse events attributable to the study treatment occurred during the course of this trial. The findings presented here suggest that transient periods of distress, even intense experiences of fear and panic, can be well tolerated by study participants in a supportive therapeutic milieu. The development of a trusting therapeutic alliance between the participant and the study

therapists before the psilocybin administration session, followed by adequate integration psychotherapy sessions afterward, provides a crucial supportive context. While a straightforward review may deem experiences of transient psychological distress as undesirable side effects, both participants and the research team came to understand these difficult experiences as part of a necessary and ultimately beneficial process. In the midst of fear and dysphoria, participants described how they came to surrender or “let go,” leading from a defensive posture of emotional or psychological resistance to an accepting posture characterized by feelings of relief, wholeness, freedom, and affirmation. Through a collaborative interpretative process, our research team generated a variety of ways of labeling these transient phenomena, including the following: the shadow, the difficult struggle, the dark night of the soul, wrathful guardians of the gates of the mandala, ego death, heaven and hell, and existential collapse. Each offered certain advantages but also brought with them unwanted baggage from the psychological, theological, and psychedelic traditions from which they were borrowed. Such periods of transient distress may serve as a necessary “turning point” in an unfolding process, as feelings of fear, panic, and anxiety transmute into feelings of love, joy, and forgiveness.

Fourth, these findings indicate that psilocybin occasions a rich and complex range of human emotions. Participants described powerful and healing catharses suggesting an emotional trajectory. Participant affects have either not been assessed formally in clinical trials of psilocybin-assisted psychotherapy, or the range of assessment is limited, as with the use of visual analogue scales assessing feelings of fear, paranoia, and joy (Turton et al., 2014). Our findings suggest that participants may emerge from this treatment having experienced profound emotional depths and expanded affective boundaries. Future research may evaluate cathartic release and the depth and breadth of affect states occasioned during psilocybin-assisted psychotherapy.

Fifth, participant accounts reveal a colorful, even fantastical range of complex closed-eye visual phenomena. These visions are ideographically instantiated within subjective processes. These complex visualizations are not merely interesting scenes painted on the proscenium curtain of the theater of the mind. Rather, among study participants, these visions served as principle organizing motifs of subjective experience with multifold vectors (e.g., audiovisual, relational, autobiographical, spiritual, epistemological, ontological). Such visions were often deeply coded with layers of meaning by participants.

Sixth, study participants described lasting impacts to their quality of life, life priorities, and their sense of identity. During their psilocybin experiences, many participants “remembered” aspects of themselves that had been forgotten. They recovered a sense of what is most important and vital in their lives, such as being present in the moment or being kind to other people. Participants described feeling “reborn,” more expansive, more confident, more connected, and more alive. They described a feeling of empowerment and being “unstuck,” with resulting healthier behaviors. As two participants reported significant weight loss, future research regarding the efficacy of psilocybin-assisted psychotherapy as an intervention for obesity and eating disorders may be warranted.

A number of limitations to this study should be noted. The interview guide focused primarily on the participant experiences during the psilocybin dosage session rather than the preparatory and integration psychotherapy sessions, which we see as essential components. The timing of the interview poses certain concerns, as approximately half the sample were interviewed within 1 week following their second psilocybin dosage session, which allowed little time to review lasting impacts of their experiences but afforded at least one integration psychotherapy session to help consolidate memory and meaning. Conversely, as eight participants were interviewed at approximately 1-year follow-up, the clarity of their recall regarding specific phenomenal experiences a year earlier may have been subject to distortion or clouding. Additionally, the current analysis does not formally address participant–therapist interactions or the nature of therapeutic action as experienced by the patients nor does it address the variety of experiences related to cancer, death, and spirituality reported by this cohort of cancer patients, which is documented in a subsequent article (Swift et al., 2017).

This is perhaps the first qualitative study to explore the subjective inner texture of participant experiences of psilocybin-assisted psychotherapy. The findings of the study support the conclusion that psilocybin-assisted psychotherapy is well accepted by participants and constitutes a promising intervention for the treatment of existential and psychological distress provoked by a cancer diagnosis. An IPA revealed a complex, multilevel set of processes. Participants experience this treatment as relationally embedded, physically embodied, affect laden, deeply meaningful, and biographically instantiated, with lasting impacts to their experience of themselves and the world. Future research is warranted to attend to these and other possible mediating factors in the design of clinical trials to better articulate psychological mechanisms of action and maximize therapeutic benefit.

Appendix

Questions Included in the Semistructured Interview Guide.

Presession

How did you come to participate in the study?

What were your expectations?

What were you hoping for or looking for?

The treatment session

As a participant in this study, you have now participated in two treatment sessions. According to your best guess, do you think you received the psilocybin medication in the first or the second treatment session?

For the following questions, please consider the treatment session in which you believe you received the psilocybin medication.

Can you describe in detail your experiences during this treatment session?

What perceptual changes did you experience (see, feel, hear)?

What internal changes did you experience?

What insights or new understandings did you gain?

What emotions arose during your experiences?

What memories arose during your experience?

How would you describe your experiences after the session ended and later that evening?

Postsession questions

In what ways do you feel the study has affected your life since the sessions?

In what ways has do you feel your participation in the study has changed your anxiety level?

How has the experience changed your perception of or attitude toward the cancer?

In your experience, how do you think the substance works to create such changes?

Other questions

Two study therapists were with you in the room during the treatment sessions.

What was your experience of the therapists and how did they affect your session?

Is there anything you wish had been different?

If given an opportunity, would you repeat the experience?

Is there anything else that you would like to share?

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Alexander B. Belser, MPhil, is a fellow and adjunct instructor in the Department of Applied Psychology at New York University (NYU). He cofounded the NYU Psychedelic Research Group in 2006. He is an investigator of a qualitative study exploring how patients with cancer experience psilocybin-assisted psychotherapy. He serves as a scientific collaborator for the NYU Psilocybin Alcohol Dependence Qualitative Study, a study investigating psilocybin treatment for alcohol addiction. He is also helping conduct a qualitative study of religious leaders who are administered psilocybin. He graduated from Georgetown University, and pursued graduate studies at Cambridge University, NYU, and Columbia University. He is a member of the Research Advisory Board of Compass Pathways, a medical research foundation that supports innovation in mental health through translational research. He currently works at Mount Sinai Beth Israel Hospital, and lives in Brooklyn, New York. His website is <http://alexbelser.com>.



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T. Cody Swift, MA, MFTI, received his degree in existential–phenomenological psychology from Seattle University and is currently perusing clinical licensure in California. He has worked as a guide at Johns Hopkins University in the psilocybin cancer–anxiety study, and is currently conducting qualitative research into the nature of healing with psychedelics in a clinical context, with MDMA and psilocybin. He is also a current director of the Riverstyx Foundation which has been dedicated to advancing opportunities for psychological growth and healing in the areas of end-of-life care, addiction recovery, and the criminal justice system.



Sara Terrana is a doctoral student at UCLA–Luskin, School of Public Affairs in the Department of Social Welfare. Her research interests are in nonprofit human service organizations, founders of such organizations, and neighborhoods of concentrated disadvantage; she also specializes in qualitative methodology and advanced CAQDAS (computer-assisted qualitative data analysis software) technologies.



Neşe Devenot, PhD, graduated from the University of Pennsylvania in 2015 with a doctorate in comparative literature, and she currently serves as Andrew W. Mellon Postdoctoral Fellow in Digital Humanities at the University of Puget Sound in Tacoma, WA. She was a 2015-2016 Research Fellow at the New York Public Library’s Timothy Leary Papers, and she was awarded Best Humanities Publication in Psychedelic Studies from *Breaking Convention* in 2016. Her research explores the function of metaphor and other literary devices in verbal accounts of psychedelic experiences.



Harris L. Friedman, PhD, is retired research professor of psychology at University of Florida, and is professor emeritus of Humanistic and Transpersonal Psychology at Saybrook University and Distinguished Professor of Integral and Transpersonal Psychology at the California Institute of Integral Studies. He now teaches at Goddard College, supervises dissertations at several universities, and also practices as a clinical psychologist and organizational consultant. He has written extensively on transpersonal assessment and psychotherapy, as well as on culture and change. He is a prolific author with over 200 professional publications, and his recent books, with other authors/

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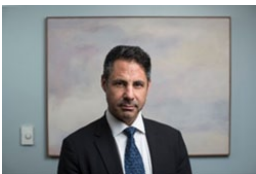


Jeffrey Guss, MD, is a psychiatrist, psychoanalyst, and researcher with specializations in psychoanalytic therapy and the treatment of substance use disorders. He is coprincipal investigator and director of Therapist Training for the NYU School of Medicine's study on psilocybin-assisted psychotherapy in the treatment of cancer-related existential distress. He is interested in the integration of psychedelic therapies with contemporary psychoanalytic theory and has published in *Studies in Gender and Sexuality* and *Psychoanalysis, Culture & Society*. He is an instructor and mentor with the California Institute of Integral Studies' Center for Psychedelic Therapies and maintains a full-time private practice.



Anthony Bossis, PhD, is a clinical assistant professor of psychiatry at New York University School of Medicine and a founding member of the NYU Psilocybin Research Group, which in 2009 began FDA-approved scientific research into the therapeutic efficacy of psilocybin, a naturally occurring psychedelic compound found in specific species of mushrooms. He was director of Palliative Care Research, coprincipal investigator, and psilocybin session guide for the NYU clinical trial investigating the

efficacy of a psilocybin-generated mystical experience on the existential and psycho-spiritual distress in persons with cancer. Subjective features of a mystical experience include unity, sacredness, transcendence, and a greater connection to deeply felt positive emotions including that of love. The study results were published in the *Journal of Psychopharmacology* in December 2016. He is a clinical supervisor of psychotherapy training and cofounder and former codirector of the Palliative Care Service at Bellevue Hospital. He has a long-standing interest in comparative religion, consciousness research, and the interface of psychology and spirituality. He maintains a private consulting and psychotherapy practice in New York City.



Stephen Ross, MD, is associate professor of Psychiatry and Child and Adolescent Psychiatry at the New York University (NYU) School of Medicine and associate professor of oral and maxillofacial pathology, radiology, and medicine at the NYU College of Dentistry. He is the director of the Division of Alcoholism and Drug Abuse in the Psychiatry Department at Bellevue Hospital

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