Article

Potential Use of Ayahuasca in Grief Therapy

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Abstract

The death of a loved one is ultimately a universal experience. However, conventional interventions employed for people suffering with uncomplicated grief have gathered little empirical support. The present study aimed to explore the potential effects of ayahuasca on grief. We compared 30 people who had taken ayahuasca with 30 people who had attended peer-support groups, measuring level of grief and experiential avoidance. We also examined themes in participant responses to an open-ended question regarding their experiences with ayahuasca. The ayahuasca group presented a lower level of grief in the Present Feelings Scale of Texas Revised Inventory of Grief, showing benefits in some psychological and interpersonal dimensions. Qualitative responses described experiences of emotional release, biographical memories, and experiences of contact with the deceased. Additionally, some benefits were identified regarding the ayahuasca experiences. These results provide preliminary data about the potential of ayahuasca as a therapeutic tool in treatments for grief.

Keywords

grief, ayahuasca, peer-support group, therapy, continuing bonds

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Grief associated with the death of a loved one is nearly universal, being one of the most painful experiences we will all likely have at some point in our lives. In the early aftermath of a death, people can experience feeling stunned or shocked, emotionally numb, difficulty accepting the loss, mistrust of others, bitterness over the loss, confusion about one's role in life, a diminished sense of self, and difficulty moving on with life (Prigerson et al., 2009). Healthy and adaptive people typically find the uncontrollable emotionality of acute grief disconcerting or even shameful or frightening (Zisook & Shear, 2009). When some of these symptoms persist for at least 6 months and are associated with significant functional impairment, they have been called prolonged grief disorder (PGD; Prigerson et al., 2009).

Interventions available to providers to target grief include pharmacotherapy, counseling, peer-support groups, and psychotherapy interventions. There is a growing interest in the development of new intervention models for PGD that show potential as effective interventions to ameliorate the prolonged grief response (Peri, Hasson-Ohayon, Garber, Tuval-Mashiach, & Boelen, 2016; Wenn, O'Connor, Breen, Kane, & Ress, 2015). These cases represent the extreme end of a continuum of bereavement responses that affects 9.8% of the population (Lundorff, Holmgren, Zachariae, Farver-Vestergaard, O'Connor, 2017). However, qualitative (Jordan & Neimeyer, 2003; Schut & Stroebe, 2005; Schut, Stroebe, Van den Bout, & Terheggen, 2001) and quantitative reviews (Currier, Neimeyer, & Berman, 2008; Murphy, Lipp, & Powles, 2012; Waller et al., 2015) have found that little empirical support exists for the effectiveness of universal interventions employed with the majority of people who suffer from uncomplicated grief.

Peters, Cunningham, Murphy, and Jackson (2016) have reviewed harmful and beneficial interventions reported by family members affected by the suicide of a loved one. Peer-support groups were among the higher rated interventions because they allow sharing memories of their loved ones with others, and participants can reconstruct meaningful relationships with their inner and social worlds. Walter (1999) claims that the purpose of grief is to enable bereaved individuals to construct a durable autobiography, so they can integrate the memories of the deceased into their continuing lives. The benefits of peer-support groups have been reflected in other studies, which claim that peer-support groups allow people to express their feelings without judgment, feel less lonely and isolated (Aho Åstedt-Kurki & Kaunonen, 2013–2014; Murphy, 2000; Stevenson et al., 2016), maintain attachment to the deceased (McCreight, 2004), and deal with spiritual issues (Geron, Ginzburg, & Solomon, 2003; Reilly-Smorawski, Armstrong, & Catlin, 2002). However, those experiencing grief also indicate that they did not feel ready or emotionally capable of participating in a peer-support group because it was emotionally difficult or they simply did not want to share their experiences or feelings (Stevenson et al., 2016).

These findings reflect how highly personal in nature reactions to loss are and how each person copes with the loss in qualitatively different ways. The intensity and duration of grief can vary not only in different people dealing with ostensibly similar losses but also in the same individual over time or after different losses. Multiple factors determine the intensity and duration of the grief, such as the individual's genetic makeup and unique vulnerabilities; preexisting personality; attachment style; the nature of the relationship; the number of losses, support, and resources; and type of loss, age, health, cultural identity, or spirituality (Zisook & Shear, 2009). Given the wide range of ways one may experience grief, our efforts have focused on the search for potential new tools for assisting the bereaved in clinical practice.

Ayahuasca as a Therapeutic Tool

The word "ayahuasca" is derived from Quechua language—*aya* meaning "dead person, spirit, soul, or ancestor" and *huasca* meaning "rope or vine" (Metzner, 2005). Ayahuasca is a pan-Amazonian botanical psychoactive concoction, which traditionally has been used by indigenous and mestizo populations of Amazonian countries as a herbal medicine for magical–religious and therapeutic purposes (Schultes & Hofmann, 1992). The concoction is produced by boiling the stems of the *Banisteriopsis caapi* liana with the leaves of the *Psychotria viridis* shrub (Schultes & Hofmann, 1992). *B. caapi* is rich in beta-carbolines, which have monoamine oxidase-inhibiting properties, the main pharmacological mechanism of many antidepressants currently used in clinical practice (Meister et al., 2016). *P. viridis* contains the hallucinogenic tryptamine N,N-dimethyltryptamine (DMT) that acts as an agonist of 5-HT-2A receptor sites, also associated with antidepressant and anxiolytic effects (Domínguez-Clavé et al., 2016). Moreover, the agonist at this receptor increases glutamatergic transmission that stimulates brain-derived neurotrophic factor release, promoting neurogenesis and neural plasticity (Baumeister, Barnes, Giaroli, & Tracy, 2014). Recent research has also shown the cerebral neuroplasticity triggered by DMT via activating the sigma-1 receptor (Fontanilla et al., 2009). However, clinical research about the therapeutic effects of ayahuasca is still incipient, even if studies regarding its therapeutic potential on emotional symptoms are rapidly growing (Osório et al., 2015; Sanches et al., 2016), as well as on other types of psychopathological symptomatology (Bouso et al., 2012; Dos Santos, Landeira-Fernandez, Strassman, Motta, & Cruz, 2007; Halpern, Sherwood, Passie, Blackwell, & Ruttenber, 2008). Regardless of this scenario, there is abundant evidentiary literature of ayahuasca's pharmacological safety in healthy users (Dos Santos, 2013; Dos Santos et al., 2012; Riba et al., 2003).

The phenomenology of the experience of ayahuasca has been thoroughly described (Riba et al., 2001, 2003). Forty-five minutes after taking ayahuasca, people tend to feel the necessity to close their eyes and experience the onset of

visual imagery, similar to a dream-like state. However, the awareness that the visions are drug induced is never lost which is why they should not be considered ''hallucinations.'' In this introspective state, people tend to reflect on meaningful personal themes, interlacing memories, thoughts, and emotions in a spontaneous way. This type of experience holds great value for people who drink ayahuasca, as they may be able to unlock emotions as well as have new insights into personal concerns. It is not uncommon that ayahuasca-induced experience is characterized as analogous to a psychotherapeutic intervention. After this initial onset, the overall intensity then gradually decreases, returning to baseline at between 4 and 6 hr after intake. However, one clinical trial in patients with depression found that the antidepressant effects of ayahuasca are maintained up to 3 weeks after intake of a single dose, especially with regard to symptoms referring to a depressed mood, feelings of guilt, suicidal ideation, and difficulties at work (Sanches et al., 2016).

Given the growing interest in alternative medicines and therapeutic practices, ayahuasca use has expanded across the world (Labate & Feeney, 2012). Ayahuasca is used by Western and Amazonian people as a medicine, a sacrament and a ''teacher plant'' (Tupper, 2008). This means that ayahuasca use has been exported to the West while maintaining a ceremonial and ritual context based on indigenous or religious traditions. These traditions often get intertwined with Western cultural elements related to therapeutic or personal growth purposes (Sánchez & Bouso, 2015).

The principal objective of this study was to explore the effects of ayahuasca on grief and to compare its potential therapeutic benefits with peer-support groups in a sample of grieving people.

Material and Method

Study Design

This study was a mixed method, cross-sectional study, using an online survey method. To develop it, we used the platform operated by Limesurvey (https://www.limesurvey.org), which allowed the collection and preservation of the data on a secure server that is accessible only to the researchers via a password. Participants interested in participating could follow a link to enter the research page, which included an introduction of the study and participants' rights and obligations. Participants then provided consent by clicking on corresponding buttons on the page and then began completing the online questionnaire.

Participants

Participants who were taking ayahuasca during their grief process were recruited via ICEERS' blog (http://news.iceers.org/). The survey was created in Spanish

(40%) and in English (60%) because this nonprofit organization has access to a large international community who speak these two languages. Participants who attended peer-support groups were recruited through the social media (Facebook) pages of several organizations that deal with the theme of grief, such as "Duelo compartido" (shared grief), "Grupos de ayuda mutua en duelo" (grief support groups), "Creciendo a través del duelo" (growing through grief), "Tanatología: muerte, duelo y aceptación" (thanatology: death, grief, and acceptance; 100% Spanish). Finally, the Foundation Hospital Sant Jaume i Santa Magdalena (Spain) also facilitated the collection of a pencil and paper version of the interview protocol from participants of their peer-support groups.

The inclusion criteria included having been confronted with the loss of a first-degree relative (spouse, parent, child, or sibling) within the last 5 years (60 months). In order to increase group homogeneity participants who rated very low on the Past Feelings Scale were excluded, using a cut off of *Texas Revised Inventory of Grief* (TRIG) Past Feelings Scale ≥ 13, which was the minimum obtained in the ayahuasca group. We excluded 32 participants (14 from the ayahuasca group and 18 from the peer-support group) who did not fill the criteria or presented over 25% incomplete answers. We identified $n = 60$ participants ($n = 30$ ayahuasca group; $n = 30$ peer-support group) who met the required inclusion criteria.

Measures

General Characteristics Bereavement Questionnaire. We designed a questionnaire for online completion, drawing on topics that emerged from grief literature (Prigerson et al., 2009; Zisook & Shear, 2009). We sent this questionnaire to a preliminary group of 10 people to facilitate revisions. The final questionnaire contained 30 closed-ended questions and one open-ended question. Closed-ended questions covered respondents' sociodemographics, bereavement characteristics in subset of grievers, early treatments, and psychological and interpersonal dimensions influenced by the treatment (ayahuasca or peer-support groups). The last variable was dichotomous (yes/no items).

At the end of the questionnaire, participants in the ayahuasca group were asked one open-ended question—"Finally, we would appreciate it if you described in your own words your personal experience of how ayahuasca influenced your grieving process"—a method has been used by other researchers (Davis, Nolen-Hoeksema, & Larson 1998; Uren & Wastell, 2002). The purpose of this question was to collect data about the most significant components of the ayahuasca experience related by the grievers. Participants could elect to not answer this question and still be included in the study.

Texas Revised Inventory of Grief. The TRIG was designed by Faschingbauer (1981) to evaluate the level of grief in bereavement from the loss of a loved one.

This questionnaire includes two scales: Past Feelings Scale, which uses 8 items to measure the initial grief response following the death of a loved one, and Present Feelings Scale, which uses 13 items to measure the current emotional state at the time of completion of the questionnaire. Participants indicate their response to each question using a 5-point scale (1 = *completely false*; 5 = *completely true*). The TRIG was scored by calculating the average scores in each subscale corresponding to a higher level of grief in bereavement. The validation of the instrument in Spanish was done by García, Petralanda, Manzano, and Inda (2005). It showed a high internal consistency of both scales. In the present study, the English and the Spanish versions of the questionnaire were used.

Acceptance and Action Questionnaire (AAQ-II). The AAQ-II was developed by Bond et al. (2011) to measure experiential avoidance. The AAQ-II contains seven items that assess only one scale called experiential avoidance. Participants indicate their response to each question using a 7-point scale (1 = *never true*; 7 = *always true*). The AAQ-II was scored by adding all the items, with higher scores corresponding to greater experiential avoidance. The validation of the instrument in Spanish was done by Ruiz, Luciano, Cangas, and Beltrán (2013). In the present study, the English and the Spanish versions of the questionnaire were used.

Ethical Considerations

The protocol was approved by a local research Ethics Committee (CEIC-Parc de Salut Mar, Barcelona, Spain), and the study was conducted in accordance with the Declaration of Helsinki. Participants signed an informed consent and were not financially compensated for their participation.

Data Analysis

Quantitative data analysis. The data were analyzed using the SPSS 15.0 statistics package. Results are presented as means and percentages. Differences between groups were analyzed using a t test in the case of continuous variables (or Mann–Whitney U test) and using a χ^2 test for categorical variables (in some cases Fisher's test). A value of $p < .05$ was considered statistically significant.

Qualitative data analysis. Qualitative data from the only open-ended question generated a rich amount of data. These data were analyzed with qualitative content analysis (Graneheim & Lundman, 2004). We used directed content analysis—the deductive use of existing theory or prior research to better understand a previously explored phenomenon and establish key concepts or variables as initial coding categories (Potter & Levine-Donnerstein, 1999)—to validate or conceptually extend a theoretical framework (Hsieh & Shannon, 2005). The first and

second authors analyzed the qualitative data from the questionnaires independently. The analysis was performed in several steps. First, the text was read several times, and text relevant to the research was marked. Meaning units were then identified, condensed, and grouped together into subthemes and themes through an inductive and deductive approach (Graneheim & Lundman, 2004; Patton, 2002). Thus, units were counted at the level of the respondent, so that participants who provided longer written narratives were not given more weight in the analyses. Throughout the analysis, themes and subthemes were discussed between the authors to ensure the results were interpreted as objectively as possible. Any differences were discussed until a consensus was reached. This method leads to a deeper understanding of the results by allowing us to identify the most relevant aspects of the ayahuasca experience. It is important to note that eight participants mentioned aspects from more than one experience with ayahuasca that related to their grief process. Finally, we identified $n = 180$ independent meaning units across participants' responses.

Results

Quantitative Findings

Sixty participants were included in the final analysis ($n = 30$ ayahuasca group; $n = 30$ peer-support group). Demographic characteristics were similar between groups (Table 1). We noted no significant differences in age, sex, university degree, and religion.

No differences were found in death-related variables, such as time since death (ayahuasca group: 33.17 months (*SD* 18.64; 6–60 months); peer-support group: 28.10 months (*SD* 20.87; 4–60 months; $p = .224$), and number of losses of significant people (ayahuasca group: 2.93; *SD* 2.203 (1–7); peer-support group: 3.00; (*SD* 1.82; 1–8; $p = .887$). Bereavement characteristics in subset of grievers are displayed in Table 2.

For the ayahuasca group, the average number of ayahuasca sessions whose content had direct repercussions on their process of grief was 6.07 (*SD* 7.64; [range: 1–30]). Of the 30 participants, 18 (60%) took ayahuasca with the intention of addressing the issue of grief, six people (20%) were not sure about their intentionality and for six participants (20%) the content related to grief arose spontaneously. Twenty-five participants (83.3%) believed their ayahuasca-drinking experience had a very positive influence on their grieving process and five (16.7%) felt it had a positive influence. Of the seven participants who attended psychotherapy, four did it before taking ayahuasca, two participants were participating in both psychotherapy and ayahuasca sessions during the same period of time, and just one attended psychotherapy after doing ayahuasca.

With the peer-support group, participants attended a peer-support group during a mean of 12.18 months (*SD* 9.5 [range 1–36]). Seventeen participants

Table 1. Demographic Data of the Study Sample.

Variable	Ayahuasca group	Peer-support group
Age (year; mean [*SD*]; range)	42.33 (8.79); (25–62)	46.43 (11.196); (26–70)
Gender (female) (%)	66.7	76.7
University degree (%)	70	60
Marital status (Column %)		
Single	46.7	3.3
Married	43.3	60
Separated	10	10
Widowed	0	26.7
Number of children (mean; [*SD*]; (range)	0.73 (0.907); (0–2)	1.53 (1.14); (0–4)
Number of cohabiting people	1.33 (1.32); (0–5)	1.80 (1.5); (0–7)
Religion (Column %)		
Atheist	90	83.3
Catholic	0	16.7
Santo Daimes	6.7	0
Sikhs	3.3	0

Note. Patients who had taken ayahuasca ($n = 30$) or attended a peer-support group ($n = 30$).

(56.7%) believed it had a very positive influence on their grieving process and 13 (43.3%) a positive influence.

Psychological and interpersonal dimensions influenced by ayahuasca or by the peer-support group for grief are shown in Table 3.

Differences were found regarding preoccupations with thoughts and memories ($p \leq .01$), ability to forgive oneself and others ($p \leq .05$), self-conception ($p \leq .01$), recoding life history ($p \leq .01$), the ability to give sense to their life ($p \leq .01$), and the integration of transcendental dimension of life and death ($p \leq .01$). In these items, the ayahuasca group obtained higher benefits compared with the peer-support group.

Outcomes in TRIG show differences in the current emotional Present Feelings Scale ($p \leq .001$). AAQ-II shows no differences in experiential avoidance between groups ($p > .05$) (Table 4).

Qualitative Findings

We identified two different themes in the narratives that emerged from the open-ended question asked to the ayahuasca group, regarding:

1. The content of the experience, and
2. The benefits of the ayahuasca experience related to the grief process.

Table 2. Loss-Related Characteristics of Grievers Who Had Taken Ayahuasca ($n = 30$) or Attended a Peer-Support Group ($n = 30$).

Variable	Ayahuasca group (%)	Peer-support group (%)
Relationship to respondents		
Father	40	6.7
Mother	23.3	10
Sibling	16.7	6.7
Child	10	50
Partner	10	26.6
Quality of the relationship		
Positive	76.7	89.7
Ambiguous	23.3	10.3
Cause of death		
Suicide	6.7	3.3
Miscarriage	10	26.7
Accident	13.3	16.7
Illness	70	43.3
Homicide	0	6.7
Medical negligence	0	3.3
Current pain		
None at all	18.5	3.6
A little	48.2	39.2
Quite a bit	25.9	28.6
A lot	7.4	28.6
Attended psychotherapy	24.1	63
Impact of the psychotherapy		
Scarcely	28.6	0
Positively	71.4	95.8
Negatively	0	4.2
Medication	6.9	85.7
Impact of the medication		
Scarcely	100	28.6
Positively	0	71.4

Content of the experience. Three subthemes were identified within the narratives of the ayahuasca experience: *emotional release, biographical memories,* and *contact with the deceased.* Another subtheme emerged to agglomerate other themes that did not fit any of the major themes: *others.*

Table 3. Percentages of Participants Who Responded Affirmatively to the Items Included in the Survey.

Items During the grieving process . . . (ayahuasca or peer-support group) had a direct beneficial impact on . . .	Ayahuasca group (%)	Peer-support group (%)	*p* Value
. . . accepting the loss	80	65.5	.211
. . . my emotional state	83.3	85.7	>.999‡
. . . my preoccupation with thoughts and memories	93.1	62.1	.005
. . . my ability to appreciate human relationships	72.4	55.2	.172
. . . my ability to forgive myself and others	66.7	34.5	.013
. . . the conception I had of myself or of the roles I had . . . adopted in my life	93.1	63.0	.006
. . . the way I perceived my past or my life history	71.4	35.7	.007
. . . my attitude and my outlook on the future	92.6	75.0	.143‡
. . . my ability to make sense of my life and life itself	86.2	53.6	.007
. . . my ability to integrate a transcendental dimension . . . of life and death	76.7	42.9	.009

‡Fisher's exact test.

Table 4. Outcomes in the Survey Response.

Measures	Ayahuasca group	Peer-support group	*p* Value
TRIG Past Feelings Scale (*SD*)	22.68 (7.7)	19.7 (5.5)	.082
TRIG Present Feelings Scale (*SD*)	43.51 (9.1)	34.3 (11.0)	.001***
AAQ-II (*SD*)	2.52 (1.03)	2.77 (1.39)	.433

Note. AAQ = Acceptance and Action Questionnaire.
***$p \leq .001$.

Emotional release. Almost to all participants (22/23) referred to an emotional dimension of the ayahuasca experience. The tonality of those emotional dimensions varies being in some cases a positive emotion such as *extremely happy* or amazing joy and in other cases a more negative emotion such as *confusion* or *fear*. About a third of the participants (8/23) refer to experiences of confrontation with grief, sadness and suffering, expressing themselves in terms of *grief, struggle, pain* or sorrow. Further, some participants recognized they had been

avoiding their feelings (3/23) and were confronted with their emotions during the ayahuasca experience.

> I was partying to forget until I drank ayahuasca, [. . .] confronting me with my grief and loss. It was comforting and felt good to let the emotions flow, letting go of everything. (12)

As exemplified in this excerpt, the references to the positive impact emerging from emotional release are frequent. A woman who lost her mother expressed herself more abstractly and metaphorically:

> In this process, I cried a lot out of love and in every cry I placed my mom in my heart and soul, and all that good will be passed on generation to generation. (6)

Some findings refer to experiencing deep emotional empathy regarding the life circumstances and the emotions experienced by the deceased (3/24). In these experiences, the intensity of the emotional component promotes closeness and understanding toward the loved one. A woman had lost her brother who had bipolar and substance abuse disorder explains:

> I could feel the pain he experienced when he was alive. It was the worst kind of psychological, emotional and physical pain imaginable. (9)

Two participants describe unique experiences. Under the effects of ayahuasca, they experienced archetypal visions and the emotional burden the griever carried seemed to be transferred to the archetype. In one of these cases, we identified a single example of psychosomatic healing described. This category was not anticipated in the analysis since there are no references to this kind of experience in the theoretical framework of conventional psychotherapy. Therefore, this category emerged inductively from the data. Both participants were women:

> I had one ceremony when a wolf came to me and somehow I turned into this wolf and the anger I was feeling was given a container in this animal spirit. It's hard to explain but it helped enormously. (4)

> I had a vision of a giant black Buddha/ Hindu-like God reach down and suck the pain from my heart. I had been experiencing physical tenderness and pain in my chest area for over two years (yes, my broken heart). After this ceremony, it was completely gone. (10)

Biographical memories. Some participants (6/23) refer to having reexperienced biographical memories. Some of them refer to reexperiencing death-related

events. However, others refer to reexperiencing long-forgotten events involving the deceased or reviewing their personal history to arrive at new meanings for their own life history. This process seems to promote the understanding of meaningful life events from a different point of view, regarding the deceased as well as oneself. A young man who had struggled during childhood with the feelings of being neglected by his family because of his father's marriage to another woman decided to take ayahuasca following his father's traumatic death, with the intention of finding answers for his painful process:

> Aya [ayahuasca] took me back to my childhood and showed me memories of times with my parents and other family members, a time when I was loved and accepted. They were good memories and reminded me I had a good foundation to go back to. It helped me see that subsequent events (losing my mom at age 10 and sick sister) affected my father and how he coped and found new love and how that is what he needed. He did not love me less, he just needed a woman more. Hard lesson, but aya transmitted this to me in a gentle way. (11)

Experiences of contact with the deceased. Surprisingly, over half of the participants (15/23) shared having experienced *direct contact* with the *presence, essence, soul* or *energy* of the deceased, having been able to establish some form of *communication* with them. In some cases, this communication allowed for the resolution of issues that had remained unresolved, in a way that was seen as potentially affecting the future: "He [the deceased] told me some profound things that could occur in the future for our family." In other cases, the encounter allowed a farewell that wasn't possible in real life. The following participant describes:

> 'I had the feeling of losing consciousness, but I did not lose it. [. . .] A force drew from my chest a heart-wrenching cry when I felt that caress on my fist, which made me let go of the shawl I was holding. There was a breath of life and of death, that led me to a perfect connection of my being with that of my father. And, like the flight of a hummingbird, it left with the soft perfume of pipe tobacco (my father smoked it). I had the real sensation that my father had come to say goodbye to me physically on earth with that last caress. (17)

Others. Other types of experiences were found in the data. An experience occurred with purging and no visions and two experiences were focused on love.

Benefits from the ayahuasca experience related to grief. All participants indicated perceived benefits related to the loss that had resulted from the ayahuasca experience. In fact, eight participants mentioned that the experience was an *opportunity*, a *great help,* or a *blessing* that marked their lives very significantly, as if it were possible to define a *before and after* in life, offered by ayahuasca.

Six subthemes emerged from the ayahuasca experience: *positive feelings, forgiveness and family healing, reorganizing identity and sense of self, changes in the internal representation of the deceased and maintenance of connection, and changes in global beliefs and personal growth*

Positive feelings. Over half of the participants (7/23) expressed that ayahuasca had helped them accept the loss of their loved one as *part of a process,* as *something natural* or as *part of the cycle of life*. The use of expressions to describe their emotional states was also common (16/23), such as *celestial peace, love, tranquility, understanding, enlightenment, quietness, thankfulness* and *happiness*. In the words of a woman who had lost her mother:

> We had a difficult relationship but by the end I had dropped into a very simple, profound love for her and I am profoundly grateful to ayahuasca for that. (4)

Forgiveness and family healing. Several participants (6/23) expressed having been able to forgive the deceased, themselves or their family members through the ayahuasca experience: ''I found true forgiveness for my brother for his suicide. I also found true forgiveness for myself for not being able to stop him.'' In some cases, forgiveness seems to emerge following the resolution of past issues during the experiences of contact with the deceased and, in other cases, it seems to emerge after having empathized with the life circumstances or the feelings the deceased expressed during his or her own life.

Family healing is also a recurring theme (5/23), which is sometimes expressed as a *long process,* which originates in the ayahuasca sessions, through a deepened understanding of the significant aspects of family relationships and, other times, as a result of experiencing ''insights.'' The following participant expresses it in this way:

> In all these sessions, I healed a lot of the relationship with my whole family especially regarding the relationship with my parents and things from the past and childhood. (6)

Reorganizing identity and sense of self. More than a third of participants (8/23) refer to a personal change in self-concept through the experience with ayahuasca that manifests in different facets. Some people refer to seeing themselves through others' eyes, having discovered unknown parts of themselves. Another way in which the change is expressed is becoming aware of the roles that they had adopted in the past and embarking on a new way of relating to others. Other people express that ayahuasca has ''shown them who

they really are". One of the participants explained her experience in the following way:

> I have died and been resurrected, all of my traumas wiped clean and I was given a chance to start again [. . .]. I am finally back to my essence and there is no way that is good enough to express my deep gratitude. (5)

Changes in the internal representation of the deceased and maintenance of connection. Experiences of contact with the deceased often foster a change in the internal representation of the loved one (10/23), shifting from being dead to being a spiritual guide or a teacher. In cases in which the death occurred due to miscarriage, these experiences allow the conception of an external representation of the baby, as this woman explains:

> I met my baby who died (he was stillborn) so I had never seen him animated and experiencing this vision was very healing for me. (23)

Depending on the beliefs of the participant, these experiences allow one to have the certainty that the person *is ok after leaving their body*, that he or she *is happy* or *resting in peace*. For those who comprehend the experience with the deceased as a subjective reality, this type of experience also has a therapeutic impact. The following participant had the experience of his deceased father stroking him with his hand trying to heal his endless grief and explains the experience in the following way:

> Of course, it was me that was stroking my head, but I understood that my father was in me, in the form of my blood, my cells, as irreversible as death itself, as transcendent as the very essence of life. [. . .] I understood that my father would never be here again but that he once was, and that I was an unquestionable part of his presence. [. . .] I now know that I will never be with my parents again but that, at the same time, they will never stop being with me. (18)

All the experiences of contact with the deceased allowed the final development of positive internal representation and the maintenance of a connection.

> I feel like his help is always accessible now and I also know he has important work where he is to continue with. Things are easier. (8)

Changes in global beliefs. Several participants (7/23) report how the experience with ayahuasca caused a change in their beliefs and the way in which they had perceived the world, primarily referring to spiritual matters. Some refer to being

able to see that there are *different levels of existence*, that there is *life after death*, that *bonds are eternal*, or feeling that they *belong to something greater than oneself*. Others refer to more existential matters such as the fact that a *singular meaning does not exist, rather a consciousness that asks and responds*, or that *one chooses one's own life*.

Personal growth. Finally, there are frequent (7/23) allusions to personal growth, describing the positive ways in which their lives have changed as a result of their ayahuasca experiences related to grief. People refer to being *more positive,* being *more centered, aware*, more *connected, highly creative, more assertive*, to having confronted their fears, of having reached *new spaces of comprehension and understanding*.

They also refer to an increased appreciation of personal relationships and of having learned to relate with others in a new way. One father who had lost his daughter explains his experience with ayahuasca:

> I cried from the grief, the loss, the shock, the sadness, the emptiness, but I also cried in gratitude for having been able to have my wife by my side during the entire process, appreciation for that wondrous "other side" that this painful experience resulted in, since it made us grow as individuals and as a couple. (21)

Finally, reference is also made to an enrichment of life that happens through changes in the manner of relating to the earth or plants, by appreciating the *beauty of life* and perceiving its *mystery*.

> It [ayahuasca] has given me an expanded view of my existence in this world. My whole life is richer because of what I have experienced in ceremony, even my sadness is a richer emotion than the debilitating grief I had been experiencing. (7)

Discussion

This is the first study to explore the therapeutic potential of ayahuasca in grieving processes. The findings from this study indicate that people who used ayahuasca reported lower level of grief than people who attended a peer-support group. This result stems from the fact that although both groups were comparable in the level of grief at the moment of death, the level of grief presented in the Present Feelings scale (TRIG) was lower in the ayahuasca group. Also, a significantly greater proportion of ayahuasca participants reported direct benefits on some of the psychological and interpersonal dimensions that are central to grief processes. In this discussion, we elaborate on these findings in terms of the relevant theories, empirical research in the field, and protocols for manuals of

treatment, while highlighting the clinical implications of the qualitative results and the theoretical models to which they relate.

The scores concerning the Past Feelings scale from the Revised Inventory of Grief are within the range of scores obtained by other studies (Grabowski & Frantz, 1993). Nevertheless, when we compare our results obtained from the Present Feelings scale with those originally obtained by Faschingbauer (1981), the peer-support group scored within normal range, while the ayahuasca group scored above this range. Therefore, we questioned how the griever can best get out of this state, as the adaptive model of grief suggests. The adaptive model of grief is focused on identifying key personal growth aspects despite complications (Gamino, Sewell, & Easterling, 2000). Variables such as positive changes in self-perception, closer family and interpersonal relationships, ability to make sense of the world or a richer existential and spiritual life have been identified as important domains of posttraumatic growth (Tedeschi & Calhoun, 2004). Our study found differences regarding the impact of both resources (ayahuasca and peer-support group) on self-conception, ability to forgive others, ability to make sense of life, as well as to integrate a transcendent dimension. It is possible that the differences found in these variables might have impacted the scores obtained from the questionnaire. The fact that the peer-support group presented a higher percentage of loss of children, and a higher presence of deaths by homicide, traumatic death and younger age of the deceased did not influence the ability for personal growth (Gamino et al., 2000).

The qualitative analysis of the experiences with ayahuasca reveals that emotional confrontation with the reality of loss is a common experience in the bereaved, including in those who avoided connecting with their feelings. However, despite the pain and sadness that can be felt under the acute effects of ayahuasca, this type of experience often leads to feelings of peace and acceptance of the death. Emotional confrontation is at the heart of the majority of the contrasted models in grief intervention, utilizing techniques such as imaginal revisiting (Shear, 2010), exposure (Boelen, de Keijser, van den Hout, & van den Bout, 2007; Rosner, Pfoh, & Kotoučová, 2011), retelling the narrative of the death (Neimeyer, 2012), or written disclosure (Lichtenthal & Cruess, 2010a; Wagner, Knaevelsrud, & Maercker, 2006). Through these techniques, patients are exposed to the most difficult internal pictures, or cognitions, surrounding the death of their loved ones (Rosner et al., 2011). These techniques are used in order to process the loss at an emotional and cognitive level, promoting mastery of difficult material (Wetherell, 2012). Consequently, it increases recognition of the reality of the loss and reduced intrusive memories (Boelen, Van Den Hout, & Van Den Bout, 2006). Nevertheless, in our accounts, we also find the description of experiences in which the emotional burden of the loss is transferred to an archetype, or is purged, partly relieving this grief. These types of experiences provide a psychosomatic therapeutic value that has not been described by any therapeutic models to date.

However, beyond reliving the traumatic experience of the moment of death, several participants mentioned recalling memories they had forgotten or experiencing autobiographical reviews that allowed them to understand specific episodes from another point of view. This type of experience could facilitate the redefinition of their relationship with the deceased and of their own life history. Constructivist grief therapy seeks this same result using biographical techniques, such as narrative writing (Neimeyer & Sands, 2011). Through these techniques, ''significant life chapters'' are captured, where one can trace strands of consistency between the life of the patient and the deceased, in order to reaffirm secure attachment (Neimeyer, 2006, 2004; Neimeyer & Sands, 2011). Furthermore, according to autobiographical memory theorists, the way we compose our life stories is closely related to the way we understand ourselves (Fitzgerald, 1988). Thus, the reconstruction of one's life history can prevent the consolidation of internal, stable and global attributions, in which the trauma will be related to stable characteristics of the self that pertain across situations (Gillies & Neimeyer, 2006). Our results reflect this type of process, since most people who recount experiences of biographical memories also allude to experiencing a change in their own identity.

As we have seen, under the effects of ayahuasca, people can feel confronted with their emotions and reorganize their identity recalling their biographical memories, not being exclusive categories within the same experience. In either case, these experiences lead to the revitalization of an adaptive regulatory process for the mourner, just as the dual process model predicts (Stroebe & Schut, 1999). Although this model introduces a dichotomous concept such as that of *oscillation*, it takes into account the natural fluctuation that occurs in the grieving process between loss-oriented coping (such as crying about the deceased or yearning for the person) and restoration-oriented coping (such as developing new identities). With the aim of accompanying this process, modules for narrative reconstruction have recently begun to be included in the cognitive behavioral therapy protocols (Peri et al., 2016). Thus, in addition to the emotional confrontation that exposure to the traumatic memory involves, the experience facilitates its integration into the individual's life history, including psychodynamic references to the subjective personal meaning of the event for the patient, associated with their past experiences.

However, it is possible that the greatest therapeutic impact of ayahuasca comes from the experiences of contact with the deceased, as they promotes a new representation of the loved one and facilitate maintenance of the bond through the establishment of a new relationship. This type of experience has also been described in a case of grief resolved spontaneously under an altered state of consciousness induced with ketamine (Gowda et al., 2016). Attachment theory (Bowlby, 1977) and the construct of continuing bonds (Field, 2006; Russac, Steighner, & Canto, 2002) are an underlying component of bereavement and an important element of coping with the grief (Barrera et al., 2009; Darbyshire et al., 2013; Klass, 2006; Neimeyer, 2006). Furthermore, these

experiences permit the resolution of outstanding issues, such as saying goodbye to the loved one or communicating matters that were left unsaid. Unfinished business is thought to be one possible manifestation of difficulties in the continuing bond, being one prominent risk factor for developing PGD and lowered meaning made of the loss (Klingspon, Holland, Neimeyer, & Lichtenthal, 2015). For this reason, various forms of imaginal psychotherapeutic dialogues with the deceased have been incorporated into the cognitive behavioral therapy protocols (Shear, 2010), in the constructivist model, through the writing of letters to the deceased (Neimeyer, 2016) or in integrative cognitive behavioral therapy, through the empty chair technique (Rosner et al., 2011). Rosner (2015) has identified including confronting painful aspects and allowing reconciliation and integration of the new and changed relationship to the bereaved among the "ingredients" of successful intervention of grief therapy.

The benefits obtained through the experiences of grief with ayahuasca are similar to those described in cases of posttraumatic growth (Calhoun, Tedeschi, Cann, & Hanks 2010) or stress-related growth (Park, Cohen, & Murch, 1996). These terms refer to positive psychological change that goes beyond adaptation, and it is an experience of improvement that for some people is deeply profound (Tedeschi & Calhoun, 2004). For this reason, based on the model of growth in the context of grief (Calhoun et al., 2010) and in the theory of shattered assumptions (Janoff-Bulman's, 2010), constructivist therapy has developed a meaning-oriented approach to grief therapy to reaffirm or reconstruct a world of meaning that has been challenged by loss (Neimeyer, 2016, 2001; Neimeyer & Sands, 2011). The benefits discovered in our reports, such as acceptance, changes in identity, changes in global beliefs, personal growth, changes in family bonds, valuing relationships and spirituality, are ways of bringing meaning to stressful life experiences (Bogensperger & Lueger-Schuster, 2014; Gillies, Neimeyer, & Milman, 2014; Lichtenthal, Currier, Neimeyer, & Keesee, 2010b; Park, 2010). However, as far as our knowledge reaches, other benefits such as forgiveness of oneself, or of others, as well as the change in the internal representation of the deceased, have been scarcely described in the literature as such. Several studies of Western people who have used ayahuasca show that these types of benefits are common after experiences with ayahuasca, especially those related to changes in the way one relates to oneself or promoting "self-acceptance," feeling more loving and compassionate in their relationships, gaining a new perspective on life and spiritual development (Harris & Gurel, 2012; Kavenská & Simonová, 2015; Prayag, Mura, Hall, & Fontaine, 2015; Trichter, Klimo, & Krippner, 2009).

Furthermore, we cannot ignore that ayahuasca is a natural compound that has antidepressant and anxiolytic effects mediated by the agonist action of DMT on 5-HT 1A/2A/2C receptors (Dos Santos et al., 2007; Sanches et al., 2016). In addition, the intake of ayahuasca is usually carried out as part of a ritual or ceremony where the use of music and singing is common. Performing a ritual that symbolizes the passage from one phase to another, as well as the use of

music therapy, is also beginning to be incorporated into more current treatment protocols (Neimeyer, 2016; O'Callaghan, McDermott, Hudson, & Zalcberg, 2013; Smid et al., 2015).

However, despite these benefits, there are risks to be considered when planning a therapeutic model for grief with ayahuasca. First, several cases have been described of crises caused by the lack of a theoretical model or worldview that supports the integration of these experiences (Lewis, 2008). Additionally, the active component of ayahuasca, DMT, is capable of inducing aversive psychological reactions that resolve spontaneously in a few hours (Gable, 2007). Such experiences can be traumatic if not properly understood and integrated. Secondly, there is a lack of knowledge about clinical diagnoses with which ayahuasca could be contraindicated (Szmulewicz, Valerio, & Smith, 2015). Thirdly, ayahuasca increases diastolic blood pressure (Riba et al., 2003), so extreme caution should be taken in those suffering from cardiovascular problems or diseases that may affect the heart. Finally, potential adverse health effects can be derived from the use of ayahuasca in combination with other serotonergic substances (Boyer & Shannon, 2005). Nevertheless, we believe that if the risks mentioned above are considered, new treatment protocols for grief where ayahuasca is integrated as a therapeutic tool could be successful.

Limitations

There are several limitations that should be addressed. Firstly, this study is a cross-sectional retrospective design, so it does not allow us to draw conclusions about causality. Future studies with longitudinal designs are needed to confirm current findings. Second, our analyses relied on a small sample size, some self-selected and heterogeneous samples, where the groups differ in terms of relationship to respondent, in that there were more children in the peer-support group. This group is also affected by unnatural death causes such as homicide, whereas the ayahuasca group presents a higher percentage of death following a disease. The fact that the peer-support group has suffered with more unnatural deaths might have a direct influence in the presence of traumatic grief in this group.Future studies are needed to examine the generalizability of the present findings to more homogenous and larger samples. A third limitation is that the participants belong to different samples. This could cause the samples to not be comparable. A fourth limitation is the lack of an assessment of Complicated Grief, or PGD, having used self-report measures rather than clinical interview. It would be relevant for future studies to examine the effectiveness of ayahuasca on people with these diagnoses. Regarding the qualitative analysis, several of the reports are limited, and since the sample is self-selected, it is likely that the only people to have responded are motivated to do so because their experience has been positive. To reach generalizable conclusions randomized, placebo-controlled trials should be conducted that would include a wider sample of participants.

Conclusions

These preliminary findings show the therapeutic potential of ayahuasca in the grieving process. We obtained similar scores following the death of a love one in the TRIG in both groups but a reduction in the level of grief at Present Feelings scale in people who used ayahuasca. Also, ayahuasca intake during a grieving process can evoke experiences whose contents could facilitate the intrinsic natural regulation of the grieving process, promoting posttraumatic growth. These preliminary findings can inform future research to develop refined intervention protocols that can be put into clinical practice.

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María Carvalho is a clinical psychologist and a doctor and MSc in Psychology. She is a lecturer at the Faculty of Education and Psychology—Catholic University of Porto and a researcher at the Centre for Studies in Human Development at the same University. She has been vice-president of the International Center for Ethnobotanical Education Research and Service since 2008 and Kosmicare project manager (Crisis Intervention in Situations Related to Psychoactive Substance Use in Recreational Environments) since 2010. She has been lecturing and researching in the field of Qualitative Research and Nvivo Software for qualitative data analysis since 2006. She is an author of a number of publications about psychoactive substance uses especially among.

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Marc Aixalá is a telecommunication engineer and psychologist with post degree studies in Integrative Psychotherapy and Strategic Therapy, and is trained in the therapeutic use of Non-Ordinary States of Consciousness, and in MDMA assisted-psychotherapy for PTSD. He works as a psychotherapist in Barcelona, is a Holotropic Breathwork facilitator, and a member of the staff for Grof Transpersonal Training.

Magí Farré is medical doctor and specialist in Clinical Pharmacology. Actually, he is the head of the Clinical Pharmacology Unit at Hospital Universitari Germans Trias I Pujol in Badalona and professor of Pharmacology at the School of Medicine of the Universitat AutŒnoma de Barcelona. During the last 20 years has worked in the human pharmacology of different substances including MDMA, GHB, flunitrazepam, tramadol, cannabis, and alcohol and its interactions. In recent years, he has collaborated in some European projects about Novel/New Psychoactive Substances. His recent investigations include the acute pharmacological effects of 2C-B and mephedrone in humans. In addition, he has been interested in the pharmacological treatment of addictions (mainly cocaine) and the therapeutic use of cannabis and hallucinogen drugs.