Chapter 6
Ayahuasca and Childhood Trauma: Potential Therapeutic Applications

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Childhood Trauma and Adverse Experiences

The last 20 years have seen major developments in the understanding of how childhood trauma (negative events that cause distress and overwhelm a person's ability to cope) can have long-term effects on the health and well-being of adults who have experienced this. Child sexual abuse was first included in global burden of disease and disability estimates in 2004, and there has been a steady accumulation of research and evidence identifying the public health issues and costs associated with various traumatic childhood experiences.

Much of this research has used the framework of adverse childhood experiences or ACEs, which encompass emotional, physical, and sexual abuse, as well as various other adverse events, including growing up in a household in which there is domestic violence, alcohol or drug abuse, or a member with mental illness; criminal behavior or incarceration of a family member; caregiver separation or divorce; and neglect, both physical and emotional (Anda et al. 2010; Felitti et al. 1998). Such experiences have been found to be associated with higher rates of physical and mental illness, disability, and premature death in adulthood (Anda et al. 2010).

It is parents who are responsible for the large majority of these traumas, around 80%, and while some exposure is not uncommon, it is multiple traumatic experiences that result in a compounding of negative effects and the greatest damage to

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future life outcomes (van der Kolk 2005). International data suggest that between 50 and 70% of adults have experienced at least one form of childhood adversity and 30–40% two or more forms (Herringa 2017; Ronald et al. 2006; Rosenman and Rodgers 2004). Such experiences also tend to occur in clusters, with the presence of one adverse experience significantly increasing the likelihood of additional such events (Dong et al. 2004).

The individual and societal costs of adverse childhood experiences are substantial and include increased childhood and adult medical costs, productivity losses, additional child welfare and criminal justice costs, and costs associated with an increased need for special education. In 2010 in the United States, individual lifetime costs related to childhood maltreatment were estimated at $210,000, with the total US economic burden assessed at up to $585 billion (Fang et al. 2012).

This chapter focuses on the use of the Amazonian psychoactive plant brew ayahuasca (typically made from *Banisteriopsis caapi* and *Psychotria viridis*) as a potential therapeutic tool to support the treatment of individuals that have experienced multiple or chronic adverse childhood experiences. Ayahuasca contains dimethyltryptamine (DMT), along with harmala alkaloids, and is currently being investigated for therapeutic efficacy in the treatment of mood, anxiety, and addictive disorders, with further research exploring a range of other medical applications (Frecska et al. 2016). Features of ayahuasca consumption that may be particularly useful with this group include profound psychological insights (often relating to early life events); potential therapeutic efficacy in the treatment of depression, anxiety, and addictions; possible therapeutic neurobiological effects; and enhanced self-awareness. Here we review the nature and impacts of childhood trauma and outline a rationale for considering the therapeutic use of ayahuasca with this group, drawing on existing evidence and early responses to a global survey of ayahuasca consumption.

Effects of Early Trauma on Health and Well-being

The ACE Study (Adverse Childhood Experiences Study), undertaken in the United States by the Centers for Disease Control and Prevention and Kaiser Permanente, was a pivotal study in this area that investigated adverse childhood experiences among 17,337 people aged 50 or older (Felitti et al. 1998). The study found that adverse experiences were far more common than previously recognized and that these had a powerful impact on adult health many decades later, which was cumulative in nature. Those who experienced four or more exposures had a 4 to 12 times increased risk of alcoholism, depression, drug abuse, and attempted suicide compared to those with no exposures. The likelihood of smoking, poor self-rated health, and having had a sexually transmitted disease increased by two to four times, and physical inactivity and obesity 1.4–1.6 times among those with four or more

exposures. This group also reported rates of physical health problems including skeletal fractures, hepatitis, ischemic heart disease, cancer, stroke, emphysema, and diabetes 1.6–3.9 times higher than among those with no traumatic childhood exposures (Felitti et al. 1998).

The mechanism of these adult effects was suggested to involve impairment to social, emotional, and cognitive development, which, in turn, led to increased adoption of health risk behaviors and, finally, elevated rates of disease, disability, social problems, and premature death (Felitti et al. 1998).

Since the ACE Study, a multitude of research has obtained similar results in a variety of populations around the world (Norman et al. 2012). These studies confirm serious long-term impacts on adult survivors of multiple or chronic childhood trauma across a wide range of domains, with neglect being as damaging as abuse, despite lower public and research attention. As in the ACE Study, exposure has been found to have a compounding effect with the overall level of impact dependent on the number of childhood adverse experiences. Further, childhood trauma exposure displays a powerful impact in increasing symptom complexity in adults, which does not occur after exposure to adult traumas, with a linear relationship between symptom complexity and the number of traumas experienced prior to 18 (Banducci et al. 2014; Briere et al. 2008; Cloitre et al. 2009).

Exposure to significant early trauma has been found to substantially increase the risk of experiencing various mental health conditions, including anxiety, depression, and personality disorders, as well as the likelihood of developing PTSD following adult trauma exposure. Risk is also elevated for antisocial or violent behavior, suicidality, self-harm, somatization, and sexual disorders (Bellis et al. 2017; Giovanelli et al. 2016; Van der Kolk 2014).

A similar picture is evident for a wide range of physical health conditions including coronary heart disease, stroke, and diabetes (Campbell et al. 2016). An important pathway for these effects is the increased participation in various health risk behaviors. Strong associations have been identified between multiple early traumas and smoking, problematic alcohol and drug use, poor diet, obesity, and physical inactivity (Bellis et al. 2017; Giovanelli et al. 2016; Van der Kolk 2014).

Broader impacts on well-being have also been reported, which span almost all aspects of life and have cumulative impacts over the life course. These included a greater likelihood of not graduating from high school, having a low-skilled job, living in a poor household, impaired parenting and work functioning, being a victim of physical assault or abuse, criminal behavior, and incarceration (Gilbert et al. 2015; Giovanelli et al. 2016; Lee and Tolman 2006; Metzler et al. 2017). General well-being is negatively impacted in areas such as reduced life satisfaction, lower optimism about the future, and not feeling close to other people (Bellis et al. 2017; Hughes et al. 2016). Unsurprisingly, adults in this group also record an overutilization of health care, particularly emergency and specialist health services (Chartier et al. 2010).

Additional Pathways

Although the original pathway theorized for the impacts of trauma on later life health outcomes (social, emotional, and cognitive impairments leading to the adoption of health risk behaviors and ultimately increased morbidity and mortality) has been confirmed in subsequent research, more recent studies have proposed additional more direct routes by which childhood trauma can affect health and well-being.

Inflammation There is evidence that the exposure to multiple or chronic childhood trauma itself may contribute to an increased risk of physical and mental illness by the inducement of chronic immune system inflammation and heightened inflammatory reactivity, which is visible in biomarkers such as elevated C-reactive protein among adult survivors (Danese et al. 2008) (Baumeister et al. 2016). Such inflammation has been associated with a range of physical comorbidities, as well as broad negative effects on cognition, emotional processing, and emotional reactivity, as well as increasing the tendency to aggression (Danese and Baldwin 2017; Fanning et al. 2015). It has even been proposed that increased inflammation may contribute to health risk behaviors such as compensatory overeating (Schrepf et al. 2014). The presence of inflammation among childhood trauma survivors may be another factor explaining the complexity of symptom presentation as well as the increased likelihood of treatment failure (found to be higher where chronic inflammation is present) among this group (Danese and Baldwin 2017; Strawbridge et al. 2015).

Neurobiological Development Other recent research has explored the impact of multiple early traumas on brain development and identified that early adverse experiences are associated with long-term changes in brain structure, function, and foundational rhythms. These changes have impacts on multiple brain regions and networks that are associated with various functions including emotional regulation, somatic signal processing, threat detection, memory, pleasure and reward systems, and arousal (Fisher 2014; Teicher et al. 2016) (Bellis et al. 2017). Again, the number of childhood traumatic exposures is closely linked with the cumulative neurological impact (Anda et al. 2010).

Particularly important appear to be the effects on the amygdala and other limbic structures. Evidence suggests that early adverse events lead to hyperactivity of the amygdala and greater activation when exposed to negative or neutral (but not positive) emotional stimuli, with similar effects observed in some connected brain areas (Dannlowski et al. 2013; McLaughlin et al. 2015; Suzuki et al. 2014). Reductions in gray matter volumes have also been identified in the hippocampus, insula, orbitofrontal cortex, anterior cingulate gyrus, and caudate (Dannlowski et al. 2012; Hein and Monk 2017; McLaughlin et al. 2015; Suzuki et al. 2014). Connected with these changes is an upregulation of the hypothalamic–pituitary–adrenal (HPA) axis, which alters the regulation of glucocorticoids, such as the stress hormone cortisol, and dysregulation of the dopamine system (Cross et al. 2017; Gerra et al. 2009).

These childhood trauma-induced changes have been associated with a wide range of impacts including impeded threat processing and emotional regulation, greater propensity for antisocial behavior and violence, difficulties feeling close to other people, diminished reward sensitivity, and cognitive deficits and impaired executive function (Bellis et al. 2017; Cross et al. 2017; Fortenbaugh et al. 2017; Gould et al. 2012; Hanson et al. 2010; Herringa 2017; Marusak et al. 2015). Further, it appears that some effects, such as increasing threat reactivity and weaker emotional regulation, may increase, not diminish, with age (Herringa 2017). These brain-level changes are likely an important additional pathway between childhood experiences and later life psychiatric illnesses.

Self-Awareness Another area that has gained increased attention is the effect of childhood trauma on self-awareness and self-care. Research with people who have experienced significant early trauma has identified brain regions responsible for essential functions connected with self-awareness, such as the sense of physical orientation, sensory integration, coordination of emotion and thinking, connecting the viscera and emotions, and decision-making, to display substantially reduced activity compared to those without a trauma history. Areas affected include the orbital prefrontal cortex, medial prefrontal cortex, anterior cingulate, posterior cingulate, and insula (Bluhm et al. 2009; Van der Kolk 2014).

The reduced activity in these regions is suggested to be an adaptive response to shut off painful sensations, which also has profound impacts in reducing the capacity to be aware of internal states, emotions, and sensations. The effects of this can be seen in reduced proprioceptive awareness, difficulty distinguishing between what is harmful and healthy, impeded regulation of emotional states, reduced ability to be aware of personal needs and preferences, and, commonly, a loss of sense or purpose and direction (Bellis et al. 2017; Cross et al. 2017; Van der Kolk 2014).

An additional frequent effect for this group is dissociation, which occurs as an escape from physical or emotional distress associated with traumatic experiences (Lanius et al. 2010). This can involve compartmentalizing aspects of psychological functioning and detachment, such as depersonalization, derealization, and emotional numbing. For some people that have experienced childhood trauma, dissociation can result in almost complete avoidance of thoughts, sensations, and emotions associated with traumatic memories. Commonly, this can also include feelings of bodily disconnection and substantial impairments to interoception (Cross et al. 2017).

Diagnosis

Although PTSD is the primary trauma diagnosis in the DSM-5, this does not capture many of the broad impacts associated with multiple or chronic adverse childhood experiences, as described by van der Kolk:

> PTSD diagnosis does not capture the developmental effects of childhood trauma: the complex disruptions of affect regulation; the disturbed attachment patterns; the rapid behavioral regressions and shifts in emotional states; the loss of autonomous strivings; the aggressive behavior against self and others; the failure to achieve developmental competencies; the loss of bodily regulation in the areas of sleep, food, and self-care; the altered schemas of the world; the anticipatory behavior and traumatic expectations; the multiple somatic problems, from gastrointestinal distress to headaches; the apparent lack of awareness of danger and resulting self-endangering behaviors; the self-hatred and self-blame; and the chronic feelings of ineffectiveness. (van der Kolk 2005, p.406)

Recognizing the utility of evaluating the impact of childhood trauma in its cumulative form, a number of frameworks have been proposed to capture the broad and multifaceted effects (Cloitre et al. 2009). These include complex PTSD, complex trauma, disorders of extreme stress otherwise not specified (DESNOS), and developmental trauma disorder (DTD) (Briere and Spinazzola 2009). These constructs attempt to group together the range of symptoms that can be experienced as a result of such exposures and typically include things such as changes to affect and impulse regulation, cognitive disturbances (such as low self-esteem, dissociation, and shame), somatization (pain or physical symptoms), chronic relationship difficulties, and mood disturbances (Ford 2010; van der Kolk 2005).

In practice, although some children that experience traumatic adverse events will develop diagnosable PTSD, other diagnoses are more common, in particular separation anxiety disorder, oppositional defiant disorder, and phobic disorders (van der Kolk 2005). In adulthood, again, diagnostic labels other than PTSD, such as borderline and antisocial personality disorders, and dissociative disorders, are commonly used (Herringa 2017; van der Kolk 2005). However, some researchers suggest that childhood trauma can actually be the underlying cause of these and other common psychiatric conditions (Kilrain 2017).

Treatment Complexity

The high complexity of symptoms among adults who have experienced multiple childhood traumas creates significant challenges for treatment. Such exposure is associated with a more severe and chronic course of illness for people with depression, greater symptom severity, and a more unfavorable prognosis among those with bipolar disorder, and greater complexity and poorer outcomes for individuals with substance use disorder, with similar outcomes also likely with other psychiatric conditions (Agnew-Blais and Danese 2016; Gawrysiak et al. 2017; Hyman et al. 2008; Liu 2017; Nelson et al. 2017). While pharmacotherapies are sometimes able to lessen symptoms or arousal, they cannot permanently address underlying dysregulation or lack of self-awareness and can have detrimental effects in blocking the dopamine system (which plays an important role in engagement, motivation, and pleasure), as well as potentially causing weight gain, and increasing the risk of diabetes and physical inactivity (Van der Kolk 2014).

Ayahuasca as a Potential Therapeutic Intervention

The consideration of ayahuasca as a therapeutic tool to assist adults that have experienced multiple or chronic adverse childhood experiences relates to the potential for benefit across a number of areas relevant to the difficulties commonly experienced by this group. These include the potential to revisit, reconceptualize, and resolve adverse childhood experiences; possible therapeutic benefits relating to depression, anxiety, and substance use disorders; potential neurobiological and physiological benefits; as well as enhanced self-awareness and broader well-being.

These areas will be discussed further below, along with other published research and some relevant early qualitative data from a multidisciplinary research project examining the use of ayahuasca in different contexts of consumption globally. This project is using an online survey in six languages (English, Portuguese, Spanish, German, Czech, and Italian) to collect detailed cross-sectional data regarding motivations, patterns, and practices of use and reported effects on health and well-being. The study is being undertaken by researchers from Australia, Brazil, Spain, Switzerland, and the Czech Republic, with respondents to date having consumed ayahuasca across traditional, neo-shamanic, and religious contexts.

Revisit, Reconceptualize, and Resolve Adverse Childhood Experiences

A focus on the resolution of childhood trauma has been identified as a common motivation for people to participate in ayahuasca ceremonies, and this is also the case in our survey with over 20% of 600 respondents listing it as a primary motivation. A likely rationale for this is that a core characteristic of the ayahuasca experience is a type of biographical review of important and defining life events. Among these, events in childhood often take a prominent place. These experiences during ayahuasca sessions can include images, recollections, and a revisiting or re-experiencing of early events, sometimes allowing individuals to speak or communicate with the people involved.

A number of researchers have reported these processes to allow ayahuasca drinkers to connect with or uncover previously forgotten traumatic childhood events with a level of distance or perspective that facilitates reconceptualization and new understandings. Although this can be challenging to go through at the time, it can often lead to catharsis, healing, and new levels of empathy and acceptance for themselves and others (Cavnar 2011; Fernández and Fábregas 2014; Gastelumendi 2010; Ventegodt and Kordova 2016). Early data from the survey also confirms these processes with around 50% of respondents reporting “new understanding of childhood events or situations” as one of the insights or learnings they received during their ayahuasca experiences.

For people with childhood trauma, who, as discussed earlier, commonly suffer from high emotional reactivity as well as dissociation related to their early childhood exposures, ayahuasca may provide a rare opportunity to bring such experiences into consciousness. As Echenhofer (2011, p.165) describes, ayahuasca may be effective in these cases by supporting "an unfolding of spontaneous visual and kinesthetic waking transformative imagery narrative that otherwise is very difficult to bring oneself to experience."

These processes were described by numerous survey respondents with responses such as:

> I now understand more about the traumatic events of my childhood, and how they affected my development as a person, both emotionally and physically, but particularly emotionally. I was given clarity about my past that did not exist before, despite many years of psychotherapy. Although from therapy and other spiritual practices, I knew there had been childhood sexual and other trauma, and had made some progress in coming to terms with this, I still did not know exactly what had happened, why it happened, and how it had affected me. In my first ceremony, I was shown exactly what happened, why it happened, and what the consequences were. Consequently, I became more accepting of myself and more able to make positive changes in my life. I had previously been suicidal but the intense love I felt from the plants and the understanding of life that they gave me made it impossible for me to ever seriously consider this again.

One identified characteristic is that, rather than traumatic childhood experiences being seen in isolation, they are often understood as part of a process, which the individual becomes aware and empowered to change (Fotiou 2012). One survey respondent described this as follows, when answering a question about the most important benefits they received from drinking ayahuasca:

> The understanding of self and the fact that I am me and the negativity I had before that led to self-abuse and depression was a direct result of childhood abuse. I now realize that is not who I am. It is only something that happened to me.

It seems that this reprocessing is facilitated during the ayahuasca experience by the activation of neural systems associated with emotional processing and memory, which enable access to deeply stored emotional trauma, while higher cortical areas are stimulated allowing for the processing and reconceptualizing of such events (Nielson and Megler 2014; Riba et al. 2006).

Healing Depression, Anxiety, and Substance Use Disorders

Although not focused specifically on adult survivors of childhood trauma, there is a growing body of evidence supporting the potential therapeutic use of ayahuasca with depression, anxiety, and substance use disorders: an area of high importance for people with childhood trauma histories due to their heightened risk of these conditions and poorer prognosis. A recent review of 21 ayahuasca studies, including experimental research with animals and humans, and psychological assessments of ayahuasca drinkers, reported evidence that consumption was associated with

reductions in both depression and anxiety (dos Santos et al. 2016b). In addition, recent open-label and randomized double-blind placebo-controlled trials of ayahuasca administration to hospital in-patients with treatment-resistant major depression have identified evidence of rapid anti-depressant effects after a single dose (de L Osório et al. 2015; Palhano-Fontes et al. 2017).

Looking at effects on drug or alcohol dependence, another systematic review found strong evidence of improvement in biochemical and behavioral parameters related to drug-induced disorders (Nunes et al. 2016). It is suggested that in the appropriate settings, ayahuasca-assisted treatment can catalyze neurobiological and psychological processes that support substance dependence treatment and prevent the likelihood of relapse (Loizaga-Velder and Verres 2014).

Interestingly, for people with a childhood trauma history, changes in alcohol and drug use appear to partly come about from a new awareness of the development of these behaviors as a response to early traumatic events. This was described as follows by one survey respondent:

> (Ayahuasca) helped to revisit childhood traumas that I had already long forgotten, this helped me to understand the harmful patterns I developed during my life, like alcoholism, and an eating disorder. I implemented this knowledge in my everyday life, which resulted in a great improvement in my relationships and my health.

Potential Neurobiological and Physiological Benefits

The adverse effect of early trauma on neurobiological functioning and physical health is another potential area in which ayahuasca may contribute to improved outcomes. Emerging research indicates that the serotonergic psychedelics, including DMT in ayahuasca as well as LSD, psilocybin, and mescaline, may comprise a powerful new class of anti-inflammatory agents with potential efficacy against a range of physical and mental health inflammatory related diseases—which is relevant, given associations between early abuse and chronic inflammation (Kyzar et al. 2017).

Studies examining the role of DMT in regulating the sigma-1 receptor also indicate it may provide powerful immunomodulatory effects that could potentially be harnessed for the treatment of neurogenerative and autoimmune diseases, as well as for chronic inflammation of the central nervous system and more general cellular protection (Frecska et al. 2013; Szabo et al. 2014).

There are reports of individuals using ayahuasca for the treatment of a wide range of physical health issues, and models of action have been advanced for cancer and Parkinson's disease (Djamshidian et al. 2015; Schenberg 2013; Schmid et al. 2010).

Reported neurobiological effects of ayahuasca of interest include beneficial effects relating to trauma and depression via the regulation of the HPA axis, long-term modulation of serotonin and dopamine systems (which play a key role in various psychiatric disorders), and possible neuroplastic changes underpinning positive

long-term behavioral modification (Callaway et al. 1994; Galvao et al. 2018; Nielson and Megler 2014). Alkaloids present in *Banisteriopsis caapi* in ayahuasca have also been found to stimulate neurogenesis in vitro, and imaging studies have reported metabolic and connectivity changes associated with increased psychological capacities 24 h after ayahuasca consumption (Morales-García et al. 2017; Sampedro et al. 2017).

Enhanced Self-Awareness and Well-Being

Particularly important in this area are effects that may assist in increasing self-awareness among people with an early trauma history. For such individuals, low self-awareness can be due to changes in brain function or dissociation, which then manifests in poor self-definition, health risk behaviors, difficulties feeling close to people, and impaired interoception.

Enhanced physical awareness, or interoception, is an important therapeutic element allowing greater connection to bodily sensations and subtle messages in a way that can support self-understanding and the integration of ordinary experience. Experimental ayahuasca research has identified significant activation of the neural systems involved with interception and emotional processing, particularly frontal and paralimbic areas, while qualitative studies have reported increased sensory awareness and an ability to be aware of and reduce dissociative behaviors among drinkers with early trauma (Espinoza 2014; Kaufman 2015; Riba et al. 2006). This was also present among our survey respondents:

> After extreme child abuse, which led to severe complex PTSD, I had dissociated to such a degree that I did not even recognize that I did not consider other people to "exist" in the sense I did. Nor did I possess a concrete sense of self. My name had as much significance as the breath of the wind. Ayahuasca led me to the horrifying realization that these things did in fact exist, which, while tremendously appreciated and invaluable, still has not been fully integrated.

The response of another participant, who felt that their ayahuasca consumption had been positive overall, highlights that such rapid removal of dissociative blockages can also involve an element of risk if not well supported:

> First time I experienced her (ayahuasca) in Peru, 5 ceremonies. Here, Aya (ayahuasca) removed all the blocks that I had which were preventing me to feel the childhood traumas. It did a great job removing the blocks and because my environment was perfect at that time, I felt like in heaven. I felt one with the universe and I obtained a great physical health. I was feeling more, seeing more, all my senses were amplified. I was able to see how I can be in life. After returning home, life was not so perfect anymore, and I started to feel all the traumas and now there was no block, nothing to stop me to FEEL the pain caused by traumas. I was completely unprepared for this and had no idea how to deal with any trauma ... so I went almost crazy and destroyed some relationships with people around me. I was able to put some blocks back after some time. Second time I took Aya in Europe and the same story happened: all blocks removed and felt all the pain possible:) Then finally I met someone who taught me how to deal with these traumas and finally reached a good mental, emotional and also spiritual state.

Reports of enhanced self-awareness in other research identify this across a wide range of areas, such as personal health and desire for a healthy lifestyle, including diet, alcohol consumption, and exercise; enhanced feelings of connection with others; strengthened decision-making; and a greater sense of life purpose and direction (Espinoza 2014; Frecska et al. 2016; Kavenská and Simonová 2015). For example, "After taking ayahuasca I feel less inclined to drink alcohol. I have started meditating, eating healthier and taken steps to build a healthier and happier life. I feel a greater sense of connectedness with everything and everyone around me" (Kaufman 2015, p.125).

A number of studies have also reported broader well-being effects, including profound spiritual experiences of drinkers, often associated with reoriented personal values and life directions (Harris and Gurel 2012; Kaufman 2015; Kavenská and Simonová 2015). One of the largest and most detailed of these identified spiritual effects resulting in radical transformations of peoples' lives. Common themes included new understandings of their own personality and life, deeper appreciation of the divine and sacred, and reflections on and commitment to values, particularly personal responsibility, justice, and love (Shanon 2002). This was described as follows by one of our survey respondents:

> It has greatly increased my self-confidence. It has increased the seriousness with which I conduct my life, examine my values, and choose my actions. My journeys showed me spiritual visions. This has added to my sense of who I am.

Reported effects from people with childhood trauma have included developing a new awareness of their treatment of others, enhanced personal values and integrity, and improvement in interpersonal relationships, a highly problematic area for this group (Kaufman 2015). These themes were also present among our survey respondents, for example:

> A healing with the shaman (during a ceremony) allowed me to "step up" and become more fully present in myself. As a result of this healing, many aspects of my life fell into place on my return, including the resolution of financial issues, greater success in my business, the resolution of a feeling of disassociation, which I had experienced for many years, increased happiness, greater feeling of connection to daily life, and an increased sense of belonging in the world. I also experienced the healing of resentment towards my parents and was able to forgive many childhood instances of emotional abuse.

And,

> It has released deep and profound childhood trauma that affected my adult life, by cheating, stealing, being unfaithful with my girlfriend, nervous or unstable with friends, and always wanting to consume soft drugs.

Broader well-being effects are also confirmed in findings of a recent review of 28 human ayahuasca studies that concluded that, in addition to antidepressant and anti-addictive effects, long-term consumption was associated with enhanced mood and cognition, increased spirituality, and reduced impulsivity, with no evidence of increased psychopathology or cognitive deficits (dos Santos et al. 2016a, b).

Safety

Although there is good evidence that the use of ayahuasca in structured settings is relatively safe, some authors have raised questions about risks for certain individuals who may not possess the psychological resilience required to withstand the powerful psychoactive effects, an issue particularly relevant for those who have experienced significant childhood trauma (Bouso et al. 2017; Trichter 2010). The revisiting of past traumas can lead to new traumatic experiences that may be difficult to assimilate, and psychological distress following ayahuasca ceremonies has been reported, with a small number of case reports of severe depression and psychotic states (Warren et al. 2013). As described earlier, for people exposed to childhood trauma, the rapid deconstruction of dissociative patterns protecting them from overwhelming emotions can be a further risk. Adequate psychosocial supports outside the context of consumption appear particularly important; however, identifying therapists with expertise in the treatment of childhood trauma who are also open to and skilled in working with and integrating psychedelic experiences is a likely challenge.

Final Remarks

Adverse childhood experiences can result in enormous lifetime consequences for exposed individuals, influencing their emotional and physical well-being as well as interpersonal relationships and life directions. The high complexity of symptoms among this group presents a major challenge to standard therapeutic approaches, and there is evidence that ayahuasca may be a useful adjunct to such treatments. Particularly beneficial could be its ability to simultaneously address a broad range of emotional, cognitive, and neurobiological impacts. However, the highly vulnerable nature of this group confirms the need for caution. Although offering promise, there is a need for further research investigating the extent to which proposed benefits occur in practice, as well as potential risks and strategies to best minimize these.

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