Psychedelics, Well-Being, and Work

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Abstract

We study the effects of psychedelics on well-being and economic behaviors, in the context of group ayahuasca ceremonies in Brazil. Our partner center randomized first-time ayahuasca users to receive ayahuasca or a non-psychoactive placebo tea. Relative to placebo, assignment to ayahuasca increases happiness through two years and reduces psychological distress through six months. In contrast, flourishing – a broader measure of meaning, relationships, and purposeful life functioning – is initially unaffected, but becomes higher among treated participants two years after the ceremony. The delayed emergence of flourishing coincides with later changes in economic outcomes: ayahuasca recipients report working more hours, earning higher income, and experiencing greater job satisfaction. These effects occur despite null effects on job transitions, while ayahuasca recipients are also more likely to decide against major life changes, suggesting that psychedelics help participants find greater satisfaction in what they already have. We estimate the distress-reduction benefits of attending the ayahuasca ceremony to be roughly 200 times the 24 USD price. Our results show that a low-cost, non-clinical psychedelic treatment can durably improve well-being while also increasing long-term engagement and satisfaction with paid work.

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1 Introduction

Psychedelics are substances that "reliably...induce states of altered perception, thought, and feeling that are not experienced otherwise except in dreams or at times of religious exaltation" (Jaffe 1990). Humans have ingested psychedelics for millennia in their search for healing, spiritual connection, and insight (Nichols and Nichols 2025), and at times in the face of colonial suppression and legal prohibition (Davis 2014; Pollan 2018). For example, consider the ritualistic use of psychoactive plants in the Peruvian Andes in the first millennium BCE (Rick et al. 2025), the use of peyote for spiritual and communal healing among Native Americans (Calabrese 2013), and the countercultural LSD consumption of millions of Americans during the 1960s and early 1970s (Gfroerer and Brodsky 1992). More recently, a new wave of clinical trials has begun to establish beneficial effects of psychedelic-assisted therapy on depression, post-traumatic stress disorder, and other mental health disorders (Griffiths et al. 2016; Goodwin et al. 2022; Mitchell et al. 2023). Yet these clinical trials leave two important questions unanswered. First, how do psychedelics affect mental health when taken outside of controlled clinical settings, as is the norm for much of the usage of psychedelics throughout history? Second, how do psychedelics affect decision-making and economic behaviors? Do they cause disengagement from conventional economic activity, as the famous counterculture phrase "turn on, tune in, drop out" might predict?

We offer initial answers to these questions through a partnership with a psychedelic center in Brazil, where ayahuasca, a psychedelic tea, is legal for ritual use (Labate and Feeney, 2012).[1] Our partner center enrolled 429 first-time ayahuasca users in group ceremonies and randomly assigned ceremony-attending participants to receive either ayahuasca or a placebo tea. We surveyed participants at baseline and three days, six weeks, six months, and two years after the ceremony. Our surveys measure psychological distress, happiness, and flourishing; labor market outcomes including employment, hours worked, and income; major life decision-making; saving behavior; and a range of other outcomes. We also surveyed the 144 participants who signed up but did not attend their assigned ceremony ("no-shows") through six months, which allows us to estimate the well-being effects of attending the ceremony with a difference-in-differences design.

The group ceremonies include 32 to 60 people, with the center owners beginning by giving a brief lecture on what effects to expect and on general life lessons. Participants are given up to two servings of tea (ayahuasca or placebo), and largely stay silent during a four-hour ceremony

[1] Ayahuasca is a traditional Amazonian psychedelic tea containing N,N-dimethyltryptamine (DMT) that has been used in indigenous ceremonies for centuries (Labate and Cavnar 2014), and produces hours-long alterations in perception, emotion, and cognition.

in which music is played. In contrast to typical clinical trials, there is no accompanying psychotherapy, and participants are not selected based on mental health. Nevertheless, we classify 58% of participants as moderately or severely psychologically distressed at baseline. Perhaps reflecting this, 62% say that they are trying ayahuasca because they are looking for healing, while the most common reason given for trying ayahuasca is to improve spirituality (82% of participants).

Participants who took ayahuasca report visual effects, profound emotions, deep insights into the self, and feelings of peace, self-love, and forgiveness of others. Three days after the ceremony, 36% report that the experience was the single most meaningful experience in their entire lives, while a further 40% report that the experience ranks among their top five. These are not ephemeral feelings – we see similar numbers in subsequent follow-up surveys – and the high numbers do not reflect a lack of meaningful experiences at baseline. The most common "most meaningful experience" reported at baseline is the experience of parenthood (32% of responses). Even restricting to these participants who found the most meaning in parenthood, 42% reported their ayahuasca experience to be their new most meaningful experience.

Reports of placebo-taking participants are more neutral. We estimate a roughly one standard deviation effect of ayahuasca, relative to placebo, on a range of "first stage" outcomes: perceived meaningfulness of the experience, a mystical experience score, an ego dissolution score, the number of words written when describing the experience, and whether the participant had visions. On the other hand, ayahuasca also increases immediate negative side effects, especially vomiting and diarrhea, along with the frequency of reported challenging and bad trips. Given the noticeable subjective effects of ayahuasca, most participants correctly infer the treatment they received (i.e., there is functional unblinding, as in most psychedelic clinical trials). Our placebo-controlled design then serves to shut down some confounds (e.g., participation in a ritualized ceremony), but does not hold beliefs about treatment constant across treatment groups.

Ayahuasca improves well-being, with positive initial effects on happiness and distress, and positive effects on flourishing that only emerge after two years. Relative to placebo, participants assigned to ayahuasca report higher happiness at all four post-treatment surveys, and the effect at two years remains economically meaningful, with an instrumental variables (IV) Cohen's d of roughly 0.4. Ayahuasca reduces psychological distress up to six months after, but this effect attenuates and is no longer statistically significant by the two-year point. Flourishing, which captures meaning, purpose, and social relationships, displays yet another pattern. Flourishing is unaffected through six months, but by the two-year follow-up, participants assigned to ayahuasca report substantially higher flourishing than those assigned to placebo. We also

find suggestive evidence that the ceremony (and placebo) improves well-being by comparing ceremony attendees with no-shows.

The delayed flourishing effect coincides with delayed effects on economic behaviors. Employment, hours worked, and monthly income are unaffected six months after the ceremony. But at the two-year follow-up, participants assigned to ayahuasca report having worked seven more hours in the preceding week, and having earned 23% higher gross monthly income, with the increase in hours roughly accounting for the increased income. These economic gains do not reflect an increase in job transitions, but rather seem to reflect ayahuasca recipients finding greater satisfaction in the work they already do. This pattern runs against the stereotype of psychedelics as antithetical to mainstream economic activity, namely the 1960s counterculture image popularized by psychologist Timothy Leary's injunction to "turn on, tune in, drop out." One interpretation is that psychedelics first change how participants experience and evaluate their lives, while broader changes in purpose, work engagement, and financial gains accumulate gradually.

To explore how psychedelics influence decision-making more generally, we asked participants at baseline to list which major life decisions they were currently considering, following Levitt (2021). Common decisions included whether to move house, whether to open a business, whether to go back to school, and whether to quit one's job. After the ceremony, we asked participants about the decisions they made. They could report whether they had decided to carry out a decision (moving away from the status quo), not to carry it out, or whether they were still undecided. A prominent conjecture is that psychedelics spur major decisions away from the status quo. It is supported by self-reports post-ayahuasca consumption (Perkins et al. 2023), and via self-reports of increased incidence of major life changes following variegated psychedelic consumption (Carlisle et al. 2026 and Aday et al. 2026). But the widespread notion that psychedelics can be catalysts for important life decisions remains largely untested experimentally. Our causal estimates suggest the opposite. Six months after the ceremony, treated participants are more likely to have decided *not to* carry out their pending decisions. As with the evidence on work satisfaction, ayahuasca appears to help people find happiness in what they already have.

Given the uncertainty that still surrounds the risks of psychedelic use, particularly in lightly regulated settings, we pay close attention to possible adverse effects. We find little evidence of persistent harms. Ayahuasca increases immediate unpleasant experiences, as mentioned above. But we find little evidence of (i) negative tail events concerning well-being following ingestion, (ii) negative well-being effects following challenging or bad trips, (iii) treatment increasing subsequent drug use, or (iv) long-term negative health symptoms. We emphasize, however, that

our sample is not large enough to detect rare adverse events.

Beyond our core well-being and economic outcomes, we also explore the effects of ayahuasca on a range of other preferences and behaviors that have been connected to psychedelic usage, typically in small-N trials, correlational studies, and anecdotal reports. Among other results, we find that ayahuasca increases an index measuring saving behavior – combining survey measures which we pre-registered as secondary outcomes – by 0.23 standard deviations after six months. Given null effects on reported income at this point, the increase in savings is more likely to reflect greater future orientation in time preferences than income effects. On the other hand, we do not find effects of ayahuasca on prosocial behaviors or creativity.

Turning to policy, we quantify the benefits of ayahuasca by assigning a dollar value to the reductions in distress that occur up to the six-month mark, following the approach of *Coefficient Giving*. We estimate the benefits to be roughly 200 times the ceremony price of 24 USD. These estimates would be even higher if we also quantified the additional benefits beyond six months, including increases in flourishing and income. The benefit-cost ratio here is notable given that clinical regimens, involving psychotherapy, are orders of magnitude more costly, without correspondingly larger benefits (BrainFutures 2022; Marseille et al. 2023).[2]

Our findings on economic behaviors and decision-making are without precedent in the experimental literature on psychedelics. Existing randomized trials of psychedelics primarily focus on psychological and substance-use outcomes, including depression, post-traumatic stress disorder, anxiety, and alcohol use. We discuss this literature in detail in Section 2.1. No prior randomized study of a psychedelic has measured economic outcomes such as employment, hours worked, earnings, savings, and work satisfaction. The closest antecedent is Goodwin et al. (2023), which shows that psilocybin reduces the number of lost days at work and unproductive days three weeks later. Beyond the randomized studies, survey evidence suggests that past psychedelic use does not predict employment status (Viña and Stephens, 2023), and that past users report changes in goals and values, but less often in careers or jobs (Aday et al., 2026; Carlisle et al., 2026).

Second, we contribute to work by economists on low-cost mental health treatment in the Global South (Table A1 summarizes this literature). Recent work finds short- and long-term mental health benefits of cognitive behavioral therapy (Baranov et al., 2020b; Barker et al., 2022; Bhat et al., 2022), and positive effects of pharmacotherapy combined with counseling (Angelucci and Bennett, 2024). Other lighter-touch interventions find no or short-lived effects of psychotherapy (Blattman et al., 2017; Haushofer et al., 2020; McKelway et al., 2023; Hidrobo

[2]Reports of high costs of administering psychedelics are also common in non-clinical settings, see: https://www.theguardian.com/us-news/2025/dec/12/oregon-pyschedelic-mushrooms.

et al., 2026) and positive psychology (Baranov et al., 2020a). We show that a single ceremony with ayahuasca, relative to placebo, improves well-being for at least two years. The meta-analysis of Lund et al. (2024) shows that mental health treatment improves an index of work outcomes, driven mainly by fewer days unable to work, and has no effects on income. These effects are larger in studies with bigger mental health gains and are no longer detectable after the first year. We instead show that two years after treatment, ayahuasca has no effect on distress, but increases hours worked and income. Moreover, because we do not screen participants on baseline distress, unlike many existing studies, we can show that these economic effects are similar for participants who were and were not distressed at baseline. These patterns suggest that psychedelics affect economic outcomes through a channel other than reduced distress.

Third, we build on a nascent literature on the societal role of rituals (reviewed by Xygalatas (2022)). Ghosh et al. (2025) find that adding collective rituals, like singing and dancing in unison, to Hindu-Muslim youth camps leads to mental health benefits for Hindus. Butinda et al. (2023) show that traditional African ritual spells change the perceived risk of theft of entrepreneurs, increasing profits. In contrast, we study a profoundly mind-altering ritual, with potential implications for a broader set of religious and spiritual practices (Clingingsmith et al. 2009; Campante and Yanagizawa-Drott 2015), and for the myriad cultures that have used mind-altering substances as part of group rituals throughout history (Lissarrague 2014; Labate and Cavnar 2014; Ferrara 2016). Related, by spotlighting the deep meaning attributed to psychedelic trips, we complement a small economics literature that considers the effort-motivating effects of meaning at work (Ariely et al. 2008; Cassar and Meier 2018; Khan 2025; Ashraf et al. 2025).

2 Background and experiment design

2.1 Psychedelic experiments

Trials with more than 75 participants. We begin with an overview of the randomized studies on psychedelics with 75 participants or more, regardless of their outcomes or whether they include a placebo arm.[3] Appendix Table A2 summarizes the design and findings of the thirteen published trials that meet this criterion. Most of these trials include patients with a pre-existing condition such as depression or anxiety, and combine the drug with therapy or individual guid-

[3]We focus on larger studies given statistical power concerns with small-N trials. We exclude within-subject designs and microdosing trials. Thomson and Thomacos (2025) provide a comprehensive review of 1,612 studies of psychedelics in healthy subjects, and identify only four that are randomized and placebo-controlled; only one of these has 75 or more participants (Griffiths et al. 2018).

ance, and we highlight below the trials that deviate from this pattern. Starting with studies that have depression as an outcome, a single dose of psilocybin ("magic mushrooms") reduces symptoms at three weeks ($N = 233$; Goodwin et al. 2022) and at six weeks ($N = 104$; Raison et al. 2023), though Mertens et al. (2026) find no significant effect at six weeks ($N = 144$). Two recent trials administer the drug under medical supervision but without therapy, and also find positive effects: a single dose of high-dose LSD reduces anxiety at four and twelve weeks ($N = 198$; Robison et al. 2025), and inhaled 5-MeO-DMT reduces depression at one week ($N = 81$; Cubała et al. 2026). Four trials study addiction. Two early trials of a single dose of LSD for alcoholism find mixed results, with less drinking at six months in one ($N = 135$; Pahnke et al. 1970) and no effect over twelve months, the longest follow-up of any of these trials, in the other ($N = 176$; Ludwig et al. 1969). More recently, Bogenschutz et al. (2022) shows that psilocybin reduces heavy drinking among people with alcohol dependence over eight months ($N = 95$), and raises six-month smoking abstinence from 10% with a nicotine patch to 41% in an open-label trial ($N = 82$; Johnson et al. 2026). Only two trials enroll healthy volunteers, and both take place in the laboratory. Griffiths et al. (2018) find that two high doses of psilocybin combined with a program of meditation produce large gains at six months in gratitude, forgiveness, and closeness to others, but no change in life satisfaction or personality ($N = 75$), and Rucker et al. (2022) find that a single dose has no effect on cognition or emotional processing over twelve weeks ($N = 89$).

A number of trials are ongoing or recently completed. Appendix Table A3 provides a summary of these trials with 75 or more participants. All of them enroll patients with a diagnosed disorder at clinical sites in the United States or Europe, and the longest follow-up lasts 26 weeks. COMPASS Pathways' second phase 3 trial of psilocybin for treatment-resistant depression, which enrolls 581 patients, is the largest to date. They find a 3.8 point reduction in depression scores relative to a 1 mg control dose at six weeks, although results are yet to be published.

Trials with ayahuasca. Turning to studies using ayahuasca, we are aware of four randomized studies, all with 30 or fewer participants. Palhano-Fontes et al. (2019) randomize 29 patients with depression to ayahuasca or placebo in a Brazilian hospital, and find a large reduction in depression scores one week later (64% versus 27% responding). dos Santos et al. (2021) randomize 17 patients with social anxiety disorder and find that ayahuasca improves how participants rate their own performance in a public-speaking task, but not their anxiety, over three weeks. Mendes Rocha et al. (2021) run two trials with 15 healthy volunteers each and find inconclusive effects on personality. Closest to our setting, Uthaug et al. (2021) randomize 30 participants

in ayahuasca retreats in the Netherlands to ayahuasca or placebo during a ceremony. The day after, both groups report similar reductions in anxiety, depression, and stress, which the authors attribute to the ceremony rather than to the drug.

Discussion. Our study differs from existing trials in several ways. First, and most importantly, we measure outcomes beyond mental health, including economic behaviors and decision-making. Second, we follow participants for two years, longer than any trial discussed above. Third, participants take ayahuasca in a naturalistic ceremonial setting without one-to-one psychotherapy, which allows us to study the effects of the drug and ritual in the absence of costly psychological support. Fourth, the center's open admission criteria allow us to estimate effects for participants who are not distressed at baseline, and to compare them with effects for participants who more closely resemble typical clinical subjects.

2.2 Background

Ayahuasca. Ayahuasca is a traditional Amazonian tea that contains the hallucinogen DMT. Like other psychedelics, individuals that take ayahuasca experience an hours-long "trip," typically experiencing altered visual perception, synesthesia (e.g., seeing colors when hearing sounds), oneness with others and the world, strong emotions (both positive and negative), profound meaning, and insights into the self (Nichols 2016). Ingestion has some immediate ill-effects, most commonly nausea and vomiting (Dos Santos et al. 2016). However, ayahuasca is considered relatively safe in healthy individuals (Guimarães dos Santos 2013; Netzband et al. 2020), with extremely low incidence of serious mental health consequences (Dos Santos et al. 2017).[4] The use of ayahuasca for religious and ritualistic purposes is legal in Brazil, following a set of rules established in 2010 (Labate and Feeney 2012). Our partner center has the necessary legal authorization that allows them to administer ayahuasca.

Placebo. Following the suggestion of our partner center, the center administered jurema (*Mimosa tenuiflora*) as the placebo condition. The key advantages of jurema as a placebo are that (i) like ayahuasca, jurema is served as a tea, and is similar in color, (ii) like ayahuasca, jurema contains DMT, and (iii) unlike ayahuasca, the DMT does not cause psychoactive effects (i.e.,

[4] Animal studies indicate that the median lethal dose of DMT in humans would amount to 20 times more than that used in ceremonial ayahuasca practice (Gable 2007), and neither acute ayahuasca administration nor long-term consumption seems to be toxic to humans (Guimarães dos Santos 2013). Use of the brew in religious ceremonies has a safety margin comparable to codeine, mescaline, or methadone (Gable 2007), with minimal risk of sustained psychological disturbance. Cardiovascular risk has been found to be low (Riba et al. 2003), as has the addiction potential of the brew (Fábregas et al. 2010).

trips) when ingested, because the DMT is broken down by monoamine oxidase A (MAO-A) in the gut and liver, a process that ayahuasca inhibits through its MAO-A inhibitors (Ruffell et al. 2020). In principle, features (i) and (ii) should help preserve blinding by making it harder for participants to tell which treatment they received. In practice, and as in most psychedelic experiments,[5] we see evidence of functional unblinding: the intense psychoactive effects only present with ayahuasca make it easy for most participants to guess their treatment assignment. The practical role of the placebo is then the same as in most experiments in economics: to hold constant certain aspects of the treatment (in this case, the ritual of undergoing the ceremony and drinking the tea), but not to hold constant perceived treatment status. For further details on jurema, see Appendix C.1.

Partner center and ceremony. Our partner center is in a large Brazilian city, and hosts roughly 1,400 ayahuasca participants per year. Unlike most ayahuasca centers in Brazil, the center holds universalist ceremonies, with no affiliation with the religions most associated with the use of ayahuasca as a sacrament (e.g., Santo Daime, União do Vegetal). The center is not a retreat oriented to foreigners (Londoño 2024), and reflecting this, all of our participants are adults living in Brazil.

Each experimental session is attended by the two center owners and two center employees, and follows the same structure as the center's regular sessions. The experimental session sizes range from 32 to 60 people. Despite the group setting, the treatment entails little actual social interaction with other participants – in fact, the center instructs participants not to talk to or touch other participants during the ceremony (see Appendix C.2 for the full set of instructions). The center owners begin by giving a brief explanation of the effects of ayahuasca to expect, followed by a short lecture on general life lessons (see lecture text in Appendix C.3), without accompanying psychotherapy. Participants are given one serving of tea (ayahuasca or jurema; blinded to the participant but not the center), and advised to be silent and to close their eyes throughout the ceremony, in which music is played. Each participant is later offered a second, optional, serving of the same substance.[6] Unlike clinical settings, there is no "integration" – in which guides help participants make sense of their experiences – at the end of the ceremony. The full ceremony takes roughly four hours.

[5] Exceptions include microdosing experiments, in which the dose is sufficiently small as to not have perceptible effects (Szigeti et al. 2021), and experiments in which psychedelics are administered under anesthesia (Lii et al. 2023).

[6] Eighty percent of the participants that received ayahuasca opted for the second serving, as did 86% of those that received the placebo.

2.3 Experiment design details

Recruitment, screening, and ethics. The center recruited participants following its status quo protocols that include social media, walk-in registrations, and other forms of outreach. Those who had not taken ayahuasca before were given the option of participating in an experimental session, in which they would be randomly assigned to receive either ayahuasca or the placebo.

The center follows its status quo screening protocols: it reduces dosing for individuals taking the antidepressant fluoxetine,[7] and they fully exclude participants that self-declare having a history of schizophrenia. In addition, the center sends a set of instructions to sign-ups prior to the ceremony – telling them to check in with their doctor if they take certain medications, along with some guidance on what to bring and what to expect (see Appendix C.2). These inclusion criteria are less stringent than typical inclusion criteria in clinical trials. But since these criteria are applied in the status quo (i.e., in the absence of our experiment), we keep them intact for the experiment.

Our study received ethics approval from UBC (certificate numbers H21-00789 and H24-01148). On the point of risk to participants, our study differs from typical clinical trials in that our setting is one in which psychedelics are legally available, and our experimental participants are those that already planned to take ayahuasca at our partner's center. As a result, our experiment randomizes the participants "down" to the placebo, or to the status quo; clinical trials typically expose participants to psychedelics that they would not have been able to obtain legally otherwise.

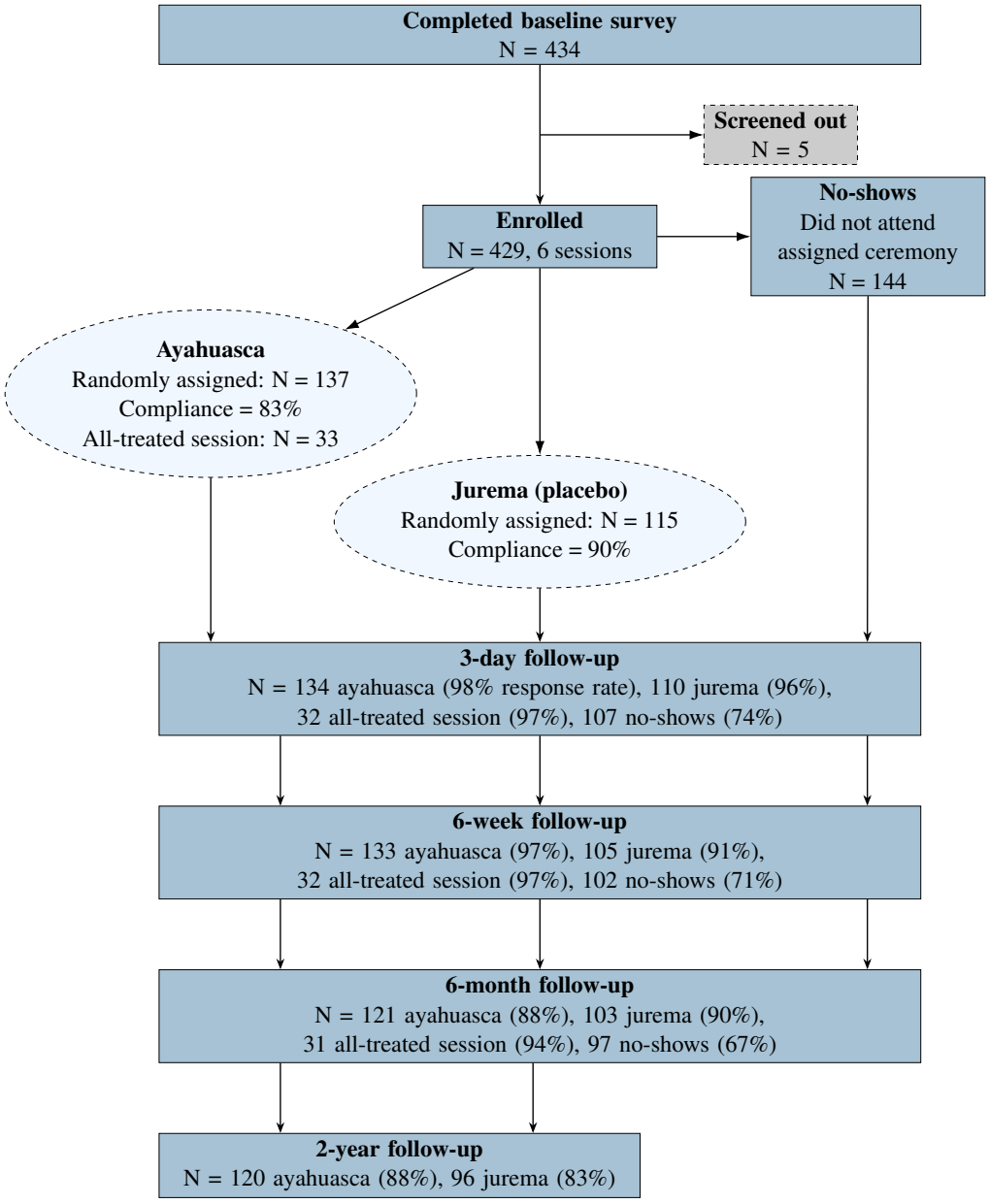
Experiment design. Our experiment design is summarized in Figure 1. The center recruited 434 participants to complete the baseline survey for the experimental sessions and screened out five. The remaining 429 participants were assigned to the next available session date, with six experimental sessions in 2023 and 2024. The center used a random number generator to randomize the 429 participants 50:50 to ayahuasca or placebo, stratifying on session-by-gender. Since the study is single-blind, participants were not informed of their actual treatment status until the end of the 6-week follow-up survey.[8]

Participants in the experimental sessions had their session cost waived, and received 70

[7] According to the center owners, they are concerned with a scientific literature providing evidence of an ayahuasca interaction with fluoxetine. The center cannot suspend the use of this medication, as it is prescribed by a doctor. The center's approach is then to allow such participants to go to the ceremony, but with them given a lower dose of ayahuasca.

[8] Twelve participants entered the study twice. We keep only one set of surveys for each participant (see details in Appendix C.4). Our results are nearly identical if we instead include the full set of survey responses, with standard errors clustered at the participant-level.

Figure 1: Enrollment, randomization, and follow-up details



Note: The center screened out five participants with higher risks of psychosis identified through their personal and family medical history reported in the baseline survey. The center performed the randomization into ayahuasca or jurema before each session. *Compliance* refers to the percentage of participants who were actually given their randomly assigned treatment. In the last of the six sessions (all-treated session), by mistake, all 33 participants were given ayahuasca. Response rates for the first three follow-up surveys are reported separately for four groups: those randomly assigned ayahuasca or jurema for the first five sessions, those in the all-treated session, and participants that did not attend their assigned session. The Ns reflect those that responded to at least one well-being question in the corresponding follow-up. We did not send the 2-year follow-up survey to participants that did not attend their session or those that attended the all-treated session.

BRL (14 USD) for completing each of the first two follow-up surveys, 100 BRL (20 USD) for completing the third follow-up survey, and 170 BRL (34 USD) for completing the fourth.[9] Of the 429 participants, 144 did not attend their assigned ceremony. We still sent follow-up surveys to these "no-shows," and we use their data for a difference-in-differences analysis of the effects of attending the ceremony. Thirty-three participants attended the sixth experimental session, but all were given ayahuasca due to error. We exclude these participants from our analysis of the effects of ayahuasca relative to the placebo, but use their data for other analyses.

Two hundred and fifty-two participants attended one of the first five sessions – 137 participants that were randomly assigned to ayahuasca, and 115 to the placebo. These numbers depart somewhat from 50:50 due to ayahuasca-assigned participants having a higher attendance rate than placebo-assigned participants. This difference in attendance is due to chance, given that participants did not know their treatment status in advance. Supporting this, baseline characteristics of the two groups of attenders are similar, and consistent with randomization, as we show in Section 2.6. Compliance with assigned treatment was imperfect, with 83% of the ayahuasca-assigned given ayahuasca and 90% of the placebo-assigned given the placebo. Given this, we estimate intent-to-treat (ITT) effects, and IV effects, with assigned treatment as an instrument for actual treatment status. Follow-up response rates are high for those that attended their assigned ceremony, ranging from 83% to 98%, but lower for the no-shows, ranging from 67% to 74% (Figure 1).

Since ayahuasca is legally available in Brazil, one concern was that participants assigned to the placebo would nevertheless take ayahuasca elsewhere in subsequent weeks, making it impossible to characterize the long-term effects of ayahuasca. To mitigate this concern, at baseline we asked participants to pledge not to take ayahuasca after the ceremony date until they had completed the 6-week follow-up. We then asked participants detailed questions about ayahuasca and other psychedelic usage in the 6-week, 6-month, and 2-year follow-ups, telling participants that they should feel free to be honest (i.e., we won't mind if they broke their pledge). In practice, we show in Section 3.2 that relatively few participants took ayahuasca after their assigned ceremony dates, and we do not see a difference between those assigned ayahuasca and those assigned the placebo.

Pre-registration. We pre-registered our experiment in the AEA RCT Registry (#10400). We report all pre-registered outcomes in this paper. We summarize these outcomes, whether they were pre-registered as primary or secondary, and the exhibits in which they are reported in

[9] We increased the incentive for the later follow-up surveys as we anticipated higher attrition over time otherwise.

Appendix Table B1. We note that we initially pre-registered and ran experimental sessions with a low-dose ayahuasca group rather than a jurema placebo group. These sessions had a first stage problem, in that low-dose ayahuasca takers still frequently experienced trips, often reporting that these were among their most meaningful experiences ever. We pivoted to the jurema-placebo design as a result and updated the pre-registration at that point. We only report results from the jurema design in this paper. We detail additional minor deviations from the pre-registration in Appendix C.6.

2.4 Survey questions

We give an overview of our core survey outcomes in this subsection. The outcomes we describe were pre-registered as primary outcomes unless stated otherwise. For the full set of outcomes along with complete question wording, see Appendix B.2.

Baseline. In the baseline survey, we measure basic background and demographic information (including race, gender, education, income, employment, religiosity, and drug use), and psychological well-being (described in detail below). We ask participants why they wanted to try ayahuasca, with one example answer category being "I was looking for healing," how much they expected their experience with ayahuasca to improve their well-being (from 1 to 10), and what their most meaningful experience in life has been so far (open-text). Given our reliance on self-reported measures of well-being, we also ask participants a subset of the Marlowe-Crowne social desirability scale (Crowne and Marlowe 1960; Dhar et al. 2022). In Section 3.3, we show that our positive treatment effects are not driven by participants that give more socially desirable answers to the Marlowe-Crowne questions.

Trip reports. We elicit measures of the ceremony experience in the 3-day follow-up. Following Griffiths et al. (2006) and others, we ask how meaningful participants found the experience, with answers on an eight-point scale ranging from 0 = "No more than routine," to 6 = "Among the five most meaningful experiences of my life" and 7 = "The single most meaningful experience of my life" (we also re-ask this meaningfulness question at each subsequent follow-up). We measure specific aspects of the trip experience by administering seven items from the *Mystical experience questionnaire* (Pahnke 1963), covering a participant's feelings of loss of usual sense of time, sacredness, ineffability, and feelings of universal or infinite love. Each dimension is scored from 0 = None to 5 = Extreme, yielding a summed mystical experience score ranging from 0 to 35. We measure reduced identification with ego through five items from the *Ego dissolution* questionnaire (Nour et al. 2016), with participants rating, for example, how much

they experienced a dissolution of self, union with others, and how much they felt more special or important than others (reverse-coded). Each dimension is scored from 0 = No more than usually to 100 = Entirely or completely, yielding a summed ego dissolution score ranging from 0 to 500.

We ask participants to describe their experience in their own words, and to report what domains their trip covered, with 12 "select-many" categories, including family members, revived old memories, had visions, love or peace, sadness or pain, and insights about bad habits. To capture immediate adverse effects, we also ask participants to select which of the following happened to them: vomit, diarrhea, dizziness, bad trip, challenging trip, hypersalivation, or other. To characterize the success of the blinding, we ask participants to guess their treatment status.

Psychological well-being. No biomarker exists for psychological well-being, and as a result, we rely on self-report scales, as in related work by economists (Baranov et al. 2020b; Bhat et al. 2022), and as used widely by practitioners for screening.[10] We pre-registered three primary well-being outcomes, and measured these at baseline, as well as in all four follow-up surveys. We measure psychological distress using the Kessler-10 scale (Kessler et al. 2003; Barker et al. 2022), a measure extensively validated against independent clinical assessments, which asks participants how much they have felt ten symptoms over a recent time period, which varies depending on the exact survey (i.e., only three days for the 3-day follow-up, but two weeks for the 6-week follow-up, etc.). The ten symptoms include feeling tired out for no good reason, depressed, worthless, nervous, so restless you could not sit still, and that everything was an effort. These symptoms capture aspects of both depression and anxiety, and are very similar to items used in the PHQ-9 and GAD-7 scales commonly used to screen for these conditions.[11] Participants answer 0 = Never to 4 = All the time for each symptom, yielding a summed Kessler-10 score that ranges from 0 to 40.

We measure happiness with the question "In general, how happy would you say you are these days?" with answers from 0 = Not very happy to 6 = Very happy. We also ask a retrospective version of this question at baseline ("In the past month, how happy have you felt?") as well as a prospective question in the 3-day follow-up (pre-specified as secondary, "Please guess

[10] Clinician assessments can improve on self-reports. For example, clinicians can ask follow-up questions to patients to determine whether recent weight loss is a feature of depressive under-eating versus the effects of Ozempic. Clinician assessments were not possible in our outside-of-the-clinic setting, although encouragingly, meta-analytic evidence finds that effects of psychotherapy on self-reports tend to be smaller than those on clinician assessments (Miguel et al. 2025).

[11] For example, the PHQ-9 asks "Over the last two weeks, how often have you been bothered by any of the following?" with categories including feeling down, depressed, or hopeless, and feeling tired or having little energy. The GAD-7 asks "Over the last two weeks, how often have you been bothered by the following problems?" with categories including feeling nervous, anxious or on edge, and being so restless that it is hard to sit still.

how happy you will be in six weeks").

Our third primary well-being outcome is the *Flourishing Scale* (Diener et al. 2010), which aims to capture the more positive dimensions of psychological health. Participants are asked whether they disagree or agree (0 = Strongly disagree to 4 = Strongly agree) with each of eight statements, including "I lead a purposeful and meaningful life," "People respect me," and "I actively contribute to the happiness and well-being of others." We sum the answers to give a score ranging from 0 to 32.

To address multiple hypothesis testing concerns, we also construct a well-being index as the simple mean of the standardized versions of the distress (reverse-coded), happiness, and flourishing scores, following Kling et al. (2007).

Labor market outcomes. Participants report their employment status (at the 6-week, 6-month, and 2-year points), hours worked the week before (6w, 6m, 2y), occupation (6m, 2y), and gross monthly income (6m, 2y). We use the logarithm of gross monthly income in our main specifications to reduce the influence of outliers. To again address multiple hypothesis testing concerns, we create an economic index outcome as the simple mean of the standardized versions of a binary variable for whether the participant is employed, hours worked the week before, and log gross monthly income. To explore mechanisms for labor market impacts, participants report the likelihood of changing career path along with whether the ceremony experience made them reconsider their career choices (3d), intentions to find a new job (3d, 6w), job transitions (6w, 6m, 2y), and work satisfaction (all follow-ups).

Major life decisions. Following Levitt (2021), we ask participants at baseline to list which of ten major life decisions they were considering (e.g., whether to move, open a business, go back to school, divorce their spouse, etc.), along with an "other" option. In the 6-week and 6-month follow-up surveys, we ask participants about each pending decision they listed at baseline, recording whether they decided to carry out the decision (moving away from the status quo), not to do it, or whether they remain undecided. For participants that answered the 6-week follow-up, in the 6-month follow-up we only ask about the decisions that remained pending given their 6-week follow-up answers. The outcomes we consider are the fraction of decisions of each type by the 6-month point: decided to do, not to do, or undecided; and we control for the number of pending decisions the participant reported at baseline.

Savings behavior *(secondary outcomes)*. Participants answer a battery of savings and credit-related questions in the 6-month follow-up survey, reporting (i) the types of credit the participant

had applied for in the past six months (we use the number selected, reverse-coded), (ii) the types of investments they had made in the past six months (we use the number selected), (iii) how their savings had changed over the past six months, from decreased considerably (0) to increased considerably (4), (iv) their total savings and total debt at the point of the follow-up, in BRL (we use the two answers to calculate net savings, and winsorize the resultant number at the 5th and 95th percentiles), and (v) the percentage of last month's income saved (missing for participants that report earning zero income last month). We collapse these five proxies for saving into an index by taking the mean of the standardized components. In the shorter 2-year follow-up survey, we only ask participants to report the percentage of last month's income saved.

Other outcomes. We also measure (i) social preferences, social image concerns, and social media (Instagram) usage, (ii) values and how choices align with happiness (following Benjamin et al. (2012)), (iii) relationship improvements, and (iv) self-knowledge. Finally, other secondary outcomes include (i) health symptoms and overall health self-evaluations, (ii) ayahuasca and other drug use, (iii) reports of behavioral change, (iv) willingness to share one's trip experience details, (v) various traits including competitiveness, self-awareness, Big Five personality, and spirituality, (vi) actual and perceived creativity, (vii) dream recall and characteristics, and (viii) beliefs about the effects of ayahuasca on depression. We provide further details on these outcomes when discussed in the main text, in the notes to exhibits, and in Appendix B.2, where we include the complete question wording.

2.5 Summary statistics

Sixty-two percent of participants are female, 45% are non-white, and 45% practice a religion (Table A4), making this sample much less religious than the average Brazilian (91% of Brazilians practiced a religion in 2022, Instituto Brasileiro de Geografia e Estatística 2025). Participants display the full range of psychological well-being at baseline, with 58% being classified as distressed. The median participant falls in an income bracket of BRL 2,001 to 3,000 (363 to 544 USD) per month, where BRL 3,000 is roughly the average monthly earnings in the country in 2023 (Instituto Brasileiro de Geografia e Estatística, 2023). At the point of the third and fourth follow-up surveys, roughly half of the experimental sample are employed in the formal sector, while roughly 30% are self-employed and 10% are unemployed (Appendix Figure A1A); participants are most often in managerial and professional occupations, with common examples including personal service workers, sales workers, and teachers (Appendix Figures A1B and A2).

The most common reasons given for wanting to try ayahuasca are that participants want to improve their spirituality (82% of participants, Figure A3), understand why patterns are repeating in their lives (67%), or understand why they are the way they are (64%). Sixty-two percent say that they were looking for healing, while only 11% say that they were taking ayahuasca out of curiosity.

2.6 Econometric specification and balance

Our main specification estimates ITT effects, by comparing ceremony participants assigned ayahuasca with those assigned to the placebo. The sample includes the participants that attended the five experimental sessions in which there was variation in actual treatment (i.e., we drop the sixth, in which due to an error all attendees were given ayahuasca). We estimate the following cross-section regression, separately for each time point $t \in \{\text{3-day, 6-week, 6-month, 2-year}\}$:

$$y_{it} = \gamma_s + \beta_{0t} y_{i0} + \beta_{1t} \text{Assigned Ayahuasca}_i + \varepsilon_{it} \tag{1}$$

where y_{it} is the well-being outcome for participant i at survey time point t, y_{i0} is the outcome measured at baseline, where available, and γ_s are randomization strata (gender-by-session) fixed effects. With two genders and five sessions, there are ten dummy variables. The key regressor is Assigned Ayahuasca$_i$, which is equal to one if the participant was randomly assigned to receive ayahuasca, and equal to zero if the participant was randomly assigned to receive the placebo. It follows that $\hat{\beta}_{1t}$ is our ITT estimate of the effects of ayahuasca relative to placebo by time t. We estimate robust standard errors.

Balance. Baseline characteristics are largely balanced between ceremony participants randomly assigned ayahuasca versus those assigned to the placebo, including when restricting only to the respondents to each follow-up (columns 1 to 4, Tables A5 to A9, with joint test p-values ranging from 0.21 to 0.47). The one important exception is that baseline happiness is lower among those assigned ayahuasca ($p = 0.03$). This imbalance would bias us against finding positive effects of ayahuasca on well-being, though we anyway control for the baseline measure of the well-being outcome in our regressions.

Observables are only marginally more imbalanced when comparing groups based on *actual* assignment, rather than intended assignment (columns 5 to 8, Tables A5 to A9, with joint test p-values ranging from 0.07 to 0.52). The center's deviations from randomization appear to be mostly arbitrary, which fits with our anecdotal understanding that errors were driven by logistical difficulties (e.g., a participant arriving late) rather than the desire to ensure that certain

participants receive ayahuasca. Given this, we show below that the effects of ayahuasca on well-being are similar, but more precise, when comparing groups based on actual assignment.

As might be expected, the no-shows are selected, being less educated, less likely to be employed, less happy, and more distressed than those that attended and took the placebo (column 9, Table A5, joint $p < 0.01$).

3 Trip experiences and well-being effects

3.1 Trip experiences

Participants that take ayahuasca report remarkable experiences in the first follow-up survey three days later: 36% report that the experience was the single most meaningful experience they have ever had, while a further 40% report it to be among their top five most meaningful experiences. These large numbers do not reflect a fleeting warm-glow effect: answers to the same question are similar in the three subsequent follow-up surveys (Appendix Figure A4), and highly correlated with the 3-day responses ($\hat{\beta} = 0.78$ for the 6-week answer, $p < 0.0001$). These rates are higher than those reported in seminal clinical trials of psilocybin (Griffiths et al. 2006, 2016), which may be due to the ritualized ceremony setting here as compared with the clinical setting.

To contextualize these reports of meaningful experiences, we can look at how the same set of participants answered our baseline question "What was the most meaningful experience of your life so far?" The modal response is the experience of parenthood – mentioned in 32% of responses (nearly three-quarters of those that actually have children), while 13% describe a romantic relationship (including break-ups), 10% describe a spiritual or religious experience, and 8% describe a professional experience (e.g., becoming a lawyer). The only other categories with at least 5% of respondents are schooling, travel, and bereavement-related experiences. Even participants that reported parenthood as their most meaningful experience found taking ayahuasca to be deeply meaningful: at the 3-day point, 42% reported their ayahuasca experience to be their (new) single most meaningful life experience.

Reports of meaningful experiences are also reflected in the rich descriptions participants give in response to our open-text question on the ceremony experience. For example, one participant wrote that "With the force of the Ayahuasca, I was able to face my traumas, fears, and anxiety. Not only did I face them, but I was able to understand all of it – that I can avoid being affected. Ayahuasca embraced me, and I felt like I was in the lap of God." For further examples, see Appendix C.5.

First stage effects. Using treatment assignment as an IV for actually receiving ayahuasca, we find that ayahuasca increases reports of meaningfulness, mystical experiences, and ego dissolution by roughly one standard deviation relative to the placebo condition (Table 1).[12] For meaningfulness, the average placebo group participant reports that the experience was similar to meaningful experiences that occur once every few years (i.e., still quite meaningful). Ayahuasca causes participants to score 2.4 points higher on the meaningfulness scale – roughly to the point of reporting the experience as in their top five ever.[13] Ayahuasca also causes participants to have trips that touch on more areas of life, to have more visions, and to write 59% more in the open-text question asking them to describe their experience (columns 4 to 6, Table 1).

On the negative side, ayahuasca causes more vomiting (5% vs. 67%, using IV estimates, Table 2), diarrhea (4% vs. 15%), and dizziness (9% vs. 36%). These are well-known immediate side effects of ayahuasca, and often considered a positive and necessary element of an ayahuasca ceremony, given a perception of purging as cleansing (Bouso et al. 2022; Lustig Vijay et al. 2024). Ayahuasca also increases self-reports of "bad" (3% vs. 13%) and "challenging" trips (5% vs. 24%). We show below that bad and challenging trips are not followed by deteriorations in well-being.

3.2 Effects on well-being

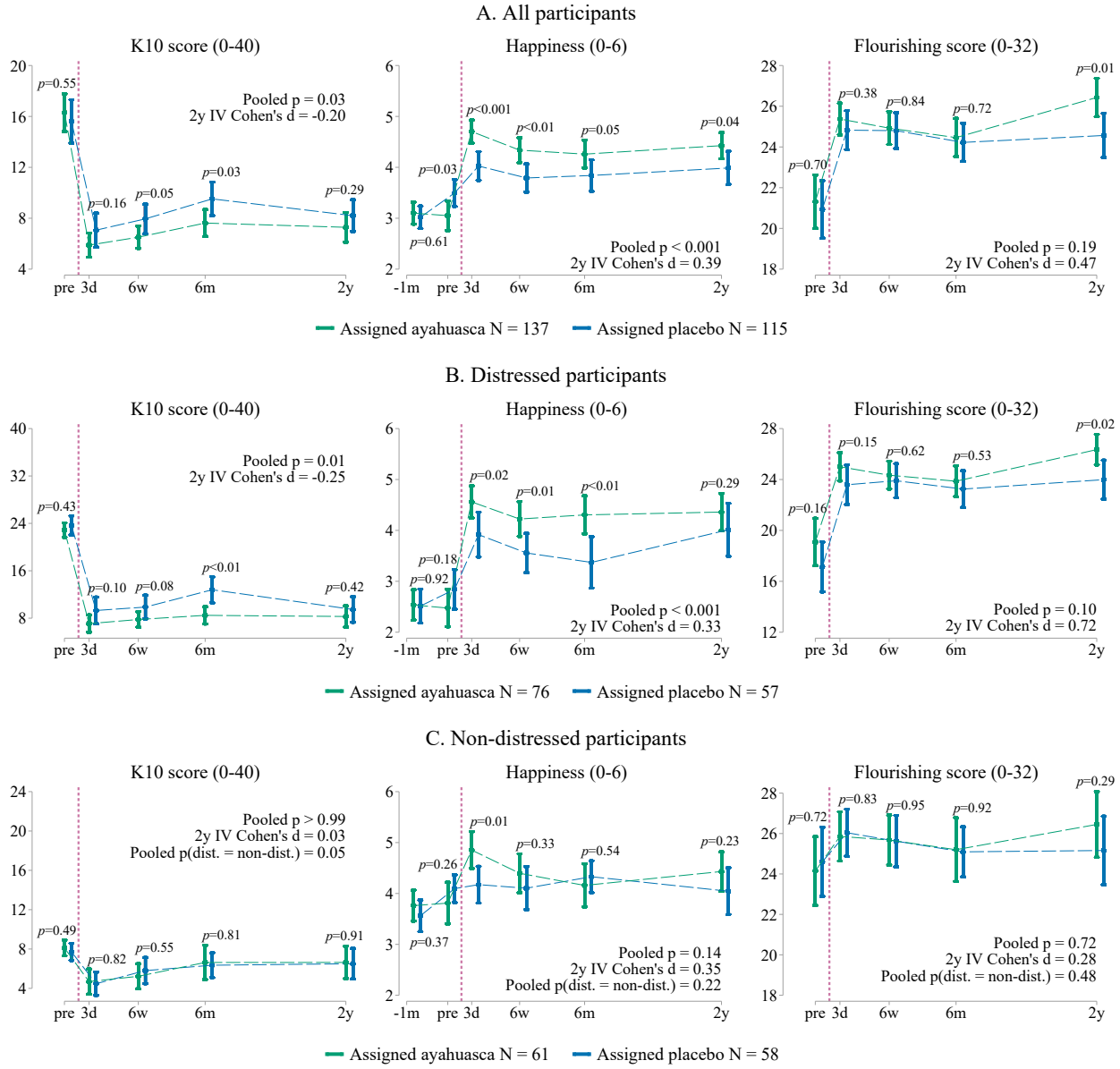
Recipients randomly assigned to ayahuasca experience durable improvements in subjective well-being relative to placebo (Figure 2A). The most robust effect is on happiness. Participants assigned to ayahuasca report higher happiness at every follow-up survey.[14] Pooling across follow-up surveys, the treatment effect on happiness is strongly statistically significant ($p < 0.001$), and the two-year IV effect remains economically meaningful, with a Cohen's d of 0.39.

[12] The mystical experience scores for placebo-takers are low and have a mass at zero (Figure A5), consistent with participants not experiencing psychedelic trips through taking jurema. For example, the average score of 12/35 on the seven-item Mystical Experience Questionnaire is consistent with participants answering "So slight I cannot decide" or "Slight" to questions like "Please rate the degree to which you experienced... Feelings of universal or infinite love." In contrast, the average score of 24/35 (69%) for participants who took ayahuasca is comparable to the 64% average, though on the 30-item Mystical Experience Questionnaire, for high psilocybin dose participants in a seminal clinical trial for patients with life-threatening cancer (Griffiths et al. 2016).

[13] The first stage on perceived meaningfulness of the ceremony experience persists to the 2-year follow-up, though the placebo group's meaningfulness reports increase over time (Appendix Figure A4). It seems that the meaningfulness of psychedelic trips is apparent immediately, while the meaningfulness of the non-drug-assisted ceremony takes longer to be recognized.

[14] Ayahuasca also increased optimism about future happiness, reported three days after the ceremony (Appendix Figure A6).

Figure 2: Ayahuasca durably improves well-being relative to placebo



Note: Figure shows intent to treat effects. Baseline measures are denoted by pre; -1m denotes a retrospective measure for the past month. K10 score refers to the score on the Kessler-10 Psychological Distress Scale. Happiness is the answer to *In general, how happy would you say you are these days?* on a scale from *Not very happy (0)* to *Very happy (6)*. Flourishing is the score from 0 to 32 from summing answers to eight statements like *I lead a purposeful and meaningful life (0 = Strongly disagree to 4 = Strongly agree)*. 95% confidence intervals are shown. *p*-values are from a regression that controls for the outcome at baseline (except for the baseline and retrospective comparisons) and session-by-gender fixed effects, with robust standard errors. The pooled *p*-value is obtained from a regression pooling data from the four follow-up surveys. 2y IV Cohen's *d* is the standardized effect of ayahuasca at two years, when using treatment assigned as an instrumental variable for treatment received. (**A**) presents results for the full sample of participants who attended one of the first five sessions (i.e., excluding those that attended the all-treated session), (**B**) restricts to distressed participants at baseline (i.e., participants that scored 15 or above on the Kessler-10 Psychological Distress Scale), while (**C**) restricts to non-distressed participants.

Table 1: Ayahuasca causes more meaningful experiences than the placebo

	Meaningful score (1)	Mystical experience (2)	Ego dissolution (3)	Word count (4)	N trip domains (5)	Had visions (6)
Received ayahuasca	2.36***	11.81***	51.37***	37.50**	3.14***	0.53***
	(0.36)	(1.58)	(10.85)	(14.94)	(0.46)	(0.07)
Placebo group outcome mean	3.4	12.0	245.4	63.6	3.5	0.1
Placebo group outcome SD	2.5	9.8	58.0	66.8	2.4	0.3
Observations	241	240	240	240	241	241
Session-by-gender fixed effects	Yes	Yes	Yes	Yes	Yes	Yes

Notes: Table shows regression results from an IV specification, where treatment assigned serves as an instrument for actual treatment received. Sample includes participants that attended their assigned session, but excludes the session in which all participants were erroneously given ayahuasca. Placebo group refers to the participants that received the placebo. All outcomes are measured in the three-day follow-up survey. Meaningful score corresponds to the question *How personally meaningful was the experience?* on a scale from 0 to 7. Mystical experience corresponds to the 0-35 score on the mystical experience questionnaire, where participants rate seven items on a scale from 0 to 5 according to the degree to which they experience phenomena like *Sense of awe or awesomeness*. Ego dissolution corresponds to the 0-500 score after summing responses on a scale from 0 to 100 to five statements such as *I felt a sense of union with others*. Word count is the total number of words in the participant's open response to the question *Describe in detail your experience with the Ayahuasca in the box below. Please be specific about what you saw, heard, and felt.* N Trip Domains is the total number of domains, such as *Revived old memories* and *Love or Peace*, that the participant "tripped on". Had visions indicates whether the participant reported having visions during the ceremony. For further detail on outcome variable definitions, see Appendix B.2. The first stage coefficient is 0.73 (i.e. being randomly assigned ayahuasca increases the probability of actually receiving ayahuasca by 73 percentage points). *** p<0.01, ** p<0.05, * p<0.1.

Table 2: Ayahuasca causes more immediate adverse experiences than the placebo

	Vomit (1)	Diarrhea (2)	Dizziness (3)	Bad (4)	Challenging (5)	Hyper-salivation (6)	Other (7)	N neg effects (8)
Received ayahuasca	0.62***	0.11**	0.27***	0.10**	0.19***	0.04	0.02	1.35***
	(0.06)	(0.05)	(0.07)	(0.05)	(0.06)	(0.04)	(0.07)	(0.18)
Placebo group outcome mean	0.05	0.04	0.09	0.03	0.05	0.05	0.21	0.52
Placebo group outcome SD	0.22	0.20	0.29	0.16	0.22	0.22	0.41	0.77
Observations	240	240	240	240	240	240	240	240
Session-by-gender fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Notes: Table shows regression results from an IV specification, where treatment assigned serves as an instrument for actual treatment received. Sample includes participants that attended their assigned session, but excludes the session in which all participants were erroneously given ayahuasca. Placebo group refers to the participants that received the placebo. All outcomes are measured in the three-day follow-up survey. Outcomes in columns (1)-(7) correspond to checkboxes selected for the question *We know that some people can have negative effects during an ayahuasca session. Did any of the following happen during your trip? Please select all that apply.* N neg effects is the sum of negative effects selected, from 0 to 7. For further detail on outcome variable definitions, see Appendix B.2. The first stage coefficient is 0.73 (i.e. being randomly assigned ayahuasca increases the probability of actually receiving ayahuasca by 73 percentage points). *** p<0.01, ** p<0.05, * p<0.1.

The reductions in psychological distress are less enduring. Assignment to ayahuasca reduces the Kessler-10 distress score by roughly two points in the short- to medium-run, with p-values of 0.16, 0.05, and 0.03 at the 3-day, 6-week, and 6-month time points. By the 2-year

follow-up, however, the impact on distress has attenuated and is no longer statistically significant ($p = 0.29$). This is largely attributable to a decline in distress among the placebo group between the 6-month and 2-year surveys, with the treatment group remaining similar across these waves. Despite the attenuation, the pooled post-period effect remains statistically significant ($p = 0.03$).

Flourishing follows a distinct time profile. Through six months, we estimate null effects. By two years, however, participants assigned to ayahuasca report substantially higher flourishing scores than those assigned to placebo ($p = 0.01$, IV Cohen's $d = 0.47$). Four of the eight flourishing components are positively affected and statistically significant at the 5% level: "My social relationships are supportive and rewarding," "I am a good person and live a good life," "I am optimistic about my future," and "People respect me" (Appendix Figure A7). The delayed emergence of these effects suggests that some psychological consequences of psychedelics may take time to materialize. Rather than only shifting immediate affective states, ayahuasca may initiate slower changes in life organization, work, relationships, and self-conception that become measurable only over longer horizons – horizons that are currently missed in typical psychedelic trials (recall Appendix Tables A2 and A3).

The positive effects of ayahuasca on well-being are robust to several alternative analyses. First, effects on distress are similar, if not stronger, when considering alternative versions of the dependent variable: a dummy variable for scoring 15 or above (an existing cutoff used to indicate moderate or severe psychological distress, Yiengprugsawan et al. (2022)) and the six-item Kessler distress score (Appendix Figure A8). Second, to avoid multiple hypothesis testing concerns, we standardize and collapse the well-being measures across time points, yielding an individual-level well-being index. We estimate an ITT effect on the combined index of 0.32σ ($p < 0.01$, column 1, Table 3). It follows that the takeaway of positive well-being effects is not a consequence of cherry-picking outcomes or time points. Third, the well-being effects of ayahuasca relative to placebo are similar, though more precise, if we instead compare groups based on *actual* treatment – for which we still mostly see balance on observables – as opposed to assigned treatment (Appendix Figure A9). Fourth, we do not see evidence for non-well-being dimensions of health deteriorating as a result of treatment – if anything, effects on a general evaluation of health are positive (Appendix Figure A6).

For all three well-being outcomes, there is also a large pre-post improvement for the participants randomly assigned to the placebo. This improvement reflects three forces: (i) some participants in this group actually received ayahuasca due to imperfect compliance, leading to well-being benefits, (ii) mean reversion given low well-being at baseline, which is also a common feature of clinical trials that select participants based on poor baseline mental health, and

Table 3: Ayahuasca improves well-being more among initially distressed and older participants

	Well-being Index (3d to 2y)			
	(1)	(2)	(3)	(4)
Assigned ayahuasca	0.32***	0.10	0.07	-0.14
	(0.12)	(0.17)	(0.19)	(0.24)
Assigned ayahuasca × Distressed at baseline		0.47*		0.51**
		(0.24)		(0.24)
Distressed at baseline		-0.66***		-0.65***
		(0.18)		(0.18)
Assigned ayahuasca × Above-median age			0.49*	0.42*
			(0.25)	(0.25)
Above-median age			-0.24	-0.20
			(0.20)	(0.20)
Observations	249	249	248	248
Session-by-gender fixed effects	Yes	Yes	Yes	Yes

Notes: Sample is participants who attended one of the five jurema sessions and excludes the all-treated session. The outcome is an individual-level well-being index that combines all three well-being measures and all four follow-up surveys. At each follow-up, K10 (reversed, so that a positive value indicates less distress), happiness, and flourishing are standardized using the mean and standard deviation of the assigned placebo group at baseline, and well-being is the mean of the standardized scores available at that follow-up. The individual index is the mean of those follow-up values over the follow-ups with a non-missing value, re-standardized so that this average has mean 0 and standard deviation 1 in the assigned placebo group. Column (1) is the intent-to-treat effect of assignment to ayahuasca. Column (2) adds an indicator for being distressed at baseline (K10 of 15 or above at baseline) and the interaction of assignment with that baseline distress indicator. Column (3) adds an indicator for age above the sample median (i.e. age above 32 years old) and the interaction of assignment with that age indicator. Column (4) includes both indicators and both interactions. Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

(iii) well-being effects of the ceremony and ritual, absent the ayahuasca. We expand on forces (ii) and (iii) in Section 5.

Heterogeneity by baseline mental health. Clinical trials of psychedelics restrict to participants that suffer from mental or physical ill-health. A feature of our setting is that we can also estimate effects for healthier participants – relevant for policy-makers considering legalization of psychedelics beyond strictly medical use (Smith and Appelbaum 2021). We split the sample and estimate effects separately for those distressed at baseline (Kessler-10 score ≥ 15, 53% of the participants that attended the ceremonies with variation in treatment) and those not. As this heterogeneity analysis was not pre-registered, we interpret these findings as exploratory and suggestive rather than confirmatory evidence.

The positive effects of ayahuasca on well-being are larger for distressed participants (Figures 2B and 2C). Of the 12 treatment effects (three outcomes $\times$ four time points), six are statistically significant and positive at the 10% level for distressed participants, while only one is for the non-distressed – a fleeting 3-day improvement in happiness. Using the pooled well-being index that combines all follow-ups and well-being outcomes, we estimate that the ITT effects of ayahuasca are 0.47σ larger for the distressed ($p = 0.052$, column 2, Table 3), and effectively null for the non-distressed (0.10σ, $p = 0.58$).

This pattern is consistent with the theorized REBUS ("relaxed beliefs under psychedelics") model from neuroscience (Carhart-Harris and Friston 2019), whose basic premise is that the brain relies on strong priors to interpret the world, that these priors can become maladaptive when they are too rigid, and that psychedelics relax these priors, allowing maladaptive beliefs to update. The REBUS theory arguably predicts larger effects among participants with worse baseline well-being (or maladaptive beliefs), consistent with our findings.

The positive effects for distressed participants – including an IV Cohen's d of 0.94 on a dummy for distressed at the 6-month point – are comparable to the effects of single-dose psilocybin relative to placebo in clinical trials with depressed participants (Goodwin et al. 2022; Raison et al. 2023; von Rotz et al. 2023). These clinical trials typically combine psychotherapy or psychological support with psychedelics; our experiment shows that large effects on subjective well-being can be achieved in the absence of costly therapy. A Cohen's d of 0.9 is also comparable to the effects of cognitive behavioral therapy (Cuijpers et al. 2016), though we do not know whether the effects of ayahuasca are as enduring – Baranov et al. (2020b) find the mental health effects of psychotherapy in Pakistan to persist seven years later, while Bhat et al. (2022) find five-year persistence of one of two psychotherapy interventions in India.

The effects among distressed participants parallel the evidence on pharmacological interventions such as antidepressants, which shows that improvements over placebo are substantial for severe depression (Fournier et al. 2010). Psychological interventions, by contrast, show little or no differential effects by baseline depression. In a meta-analysis of low-intensity interventions, patients with more severe depression at baseline benefit only marginally more than those with milder symptoms (Bower et al. 2013). In developing countries, cognitive behavioral therapy improves mental health equally among those with different levels of baseline distress (Barker et al., 2022), and brief psychotherapy has no effect regardless of baseline distress (Haushofer et al., 2020).

Adverse effects. The clinical consensus is that psychedelics are non-addictive and generally safe (Nichols 2016), though there are concerns of rare adverse events, including hallucinogen

persisting perception disorder and psychosis (Barber et al. 2022), particularly for those with a family history of mental health issues (Schlag et al. 2022). In exploring adverse effects in our setting, we note two points. First, the center uses much less conservative screening criteria than modern clinical trials, and abuse potential is higher in Brazil given that ayahuasca is legally available for people to continue to access. Our setting then permits us to explore adverse effects in a less-regulated environment than that of typical clinical trials. Second, an important caveat is that our relatively small samples give us limited statistical power to detect rare negative effects.

Ninety-six percent of participants assigned to take ayahuasca report being willing to take ayahuasca again (Appendix Figure A10), suggesting that few experiences are adverse enough to deter future intended use. Nevertheless, post-treatment use of ayahuasca is relatively uncommon, and not differential by treatment, consistent with the clinical consensus that psychedelics are non-addictive (Appendix Figure A11). Two years after the ceremony, fewer than 40% of participants have taken ayahuasca again.[15] There is suggestive evidence of increased use of marijuana and other psychedelics by the 6-month follow-up, but these become null effects by the 2-year point. We therefore do not find strong evidence that ayahuasca operates as a gateway drug.

While we showed large positive effects on average well-being in Figure 2, one concern is that psychedelics may cause negative tail events, obscured by our focus on means. To explore this, we plot the full distributions of pre-post changes in distress and happiness, separately for those that actually took ayahuasca and those that took the placebo (Appendix Figure A12). This figure replicates our core well-being effects, with the mean improvement in distress and happiness being statistically significantly larger for the ayahuasca group at all follow-up time points. More importantly, we see little evidence of more negative tail events (i.e., large pre-post increases in distress or decreases in happiness) in the ayahuasca group.[16] An alternative hypothesis is that negative well-being effects are caused by so-called "bad trips." Against this, we find that bad trips and the placebo are followed by similar mean changes in well-being (Appendix Figure A13), while participants that report having had challenging ayahuasca trips

[15]The rarity of repeat use prompts two questions. First, if the well-being effects of ayahuasca are large, why don't more treated participants keep taking it? Second, once placebo-takers learn that they received the placebo, why don't more of them return to take the real thing? The first point likely reflects the fact that, while ayahuasca experiences are meaningful, they are intense and effortful, taking up a long evening, and often with challenging elements. A participant may then reasonably delay a repeat experience until they reach a point where they again feel like they need healing. We suspect a similar motivation explains the low revisit rate of the placebo group. This group also experiences large pre-post improvements in well-being, reducing the need to return to take ayahuasca.

[16]The one exception is a treated participant that experienced an increase of 18 points on the Kessler-10 scale between baseline and the 3-day follow-up – a larger increase than any other participant. Encouragingly, this was a transitory increase: this participant's Kessler-10 score fell by nine points by the 6-week follow-up, and fully returned to the baseline score by the 6-month follow-up.

go on to experience greater improvements in well-being on average than placebo participants (Appendix Figure A14). In addition, we do not see a greater prevalence of negative tail events following bad or challenging trips relative to the placebo.

We estimate null effects on the total number of negative health symptoms reported six months and two years after the ceremony (column 12, Appendix Table A10). However, four effects on individual symptoms are statistically significant at the 10% level: a fall in the likelihood of increased blood pressure at the 6-month point (column 1), a fall in mood disturbances at the 2-year point (column 10), along with increases in chest pain and confusion at the 2-year point (columns 3 and 6). Taken together, there is little evidence of long-term negative side effects from taking ayahuasca.

3.3 Well-being mechanisms

We use heterogeneity analyses to explore three leading theories for the mechanisms behind the well-being effects of psychedelics. We caveat that our pre-registration did not cover analysis of treatment effect heterogeneity.

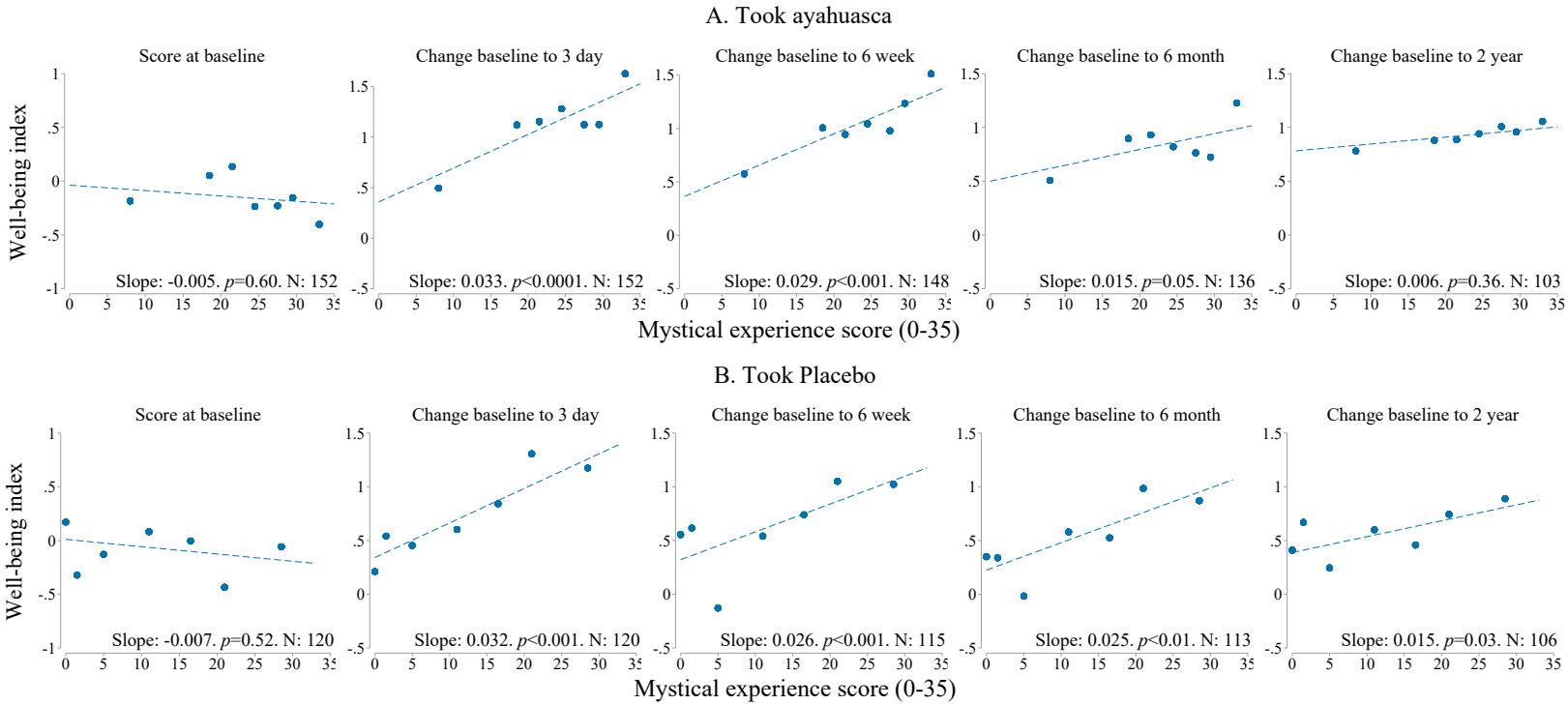
Subjective experience. Many scholars argue that the subjective experience of the psychedelic trip explains the therapeutic benefits of psychedelics, while others question this view (Yaden and Griffiths 2020; Olson 2020; Yaden et al. 2024). We explore this question by correlating participants' reports of mystical experiences with well-being changes from baseline to follow-up, building on Griffiths et al. (2016) and Ross et al. (2016). We use the mystical experience score (0 to 35) reported in the 3-day follow-up survey, which reflects a participant's experience of loss of sense of time, ineffability, gain of insightful knowledge, etc. While the mystical character of the experiences was not randomly assigned, mystical experience scores are uncorrelated with the well-being index at baseline ($p = 0.60$). Nevertheless, when correlating the mystical experience score with well-being changes, we control for the baseline measure of the well-being outcome. Keeping only the participants that actually received ayahuasca, including those in the all-treated session, we estimate:

$$\Delta y_{it} = \psi_s + \phi_0 y_{i0} + \phi_1 \text{ Mystical Experience Score}_i + u_{it} \tag{2}$$

where Δy_{it} is the change in the well-being measure from baseline to follow-up survey t, ψ_s are session-by-gender fixed effects, and y_{i0} is the well-being measure at baseline.[17] We estimate

[17] Note that this approach follows the logic of a difference-in-differences design – in that we test for whether the change in well-being from baseline to follow-up is larger for those with higher versus lower mystical experience scores, though while also controlling for baseline well-being. The effects can then be interpreted as causal given

Figure 3: More mystical experiences predict greater well-being improvements for both ayahuasca- and placebo-takers



Note: Each panel shows a binscatter of the mystical experience score, measured at the 3-day follow-up, against the well-being index. (**A**) includes the participants who took ayahuasca. (**B**) includes the participants who took the placebo. The first column uses the well-being index at baseline. The other columns use the change in the index from baseline to each follow-up. At each wave, the Kessler-10, happiness, and flourishing scores are standardized using the mean and standard deviation of participants assigned to the placebo at baseline. The Kessler-10 z-score is reversed so that higher values indicate better well-being, and the index is the average of the three z-scores. The baseline column re-standardizes this average to mean 0 and standard deviation 1 in the assigned placebo group. Each follow-up column subtracts the baseline average from the follow-up average and divides that change by its standard deviation in the assigned placebo group. This ensures that the fitted line's intercept can be read as the predicted well-being change for participants reporting a mystical experience score of zero. (**A**) includes the all-treated session, for which the 2-year follow-up is not available. Each panel controls for session-by-gender fixed effects and, with the exception of the first column, the baseline index. *p*-values are based on robust standard errors.

robust standard errors.

Among ayahuasca-takers, participants who report more mystical experiences experience larger improvements in the well-being index in the short run, with the effect attenuating over time and becoming insignificant at two years (Figure 3A).[18] This pattern suggests that the subjective experience of a psychedelic trip is a stronger mediator of short-run well-being gains than long-run gains.

Some placebo-takers also report mystical experiences, perhaps through meditation and introspection during the ceremony (Appendix Figure A5),[19] and these reports are again orthogonal to baseline well-being ($p = 0.52$). The slopes of well-being changes on mystical experience scores for placebo-takers closely resemble those among ayahuasca-takers in the short run and are somewhat more persistent in the longer run (Figure 3B).[20] This pattern fits the "quantum change" view, going back to William James' *Varieties of Religious Experience*, that mystical experiences can transform people regardless of their source (James 1902; Miller 2004). Under this view, the power of psychedelics is that they reliably create mystical experiences; but such experiences need not be psychedelic to improve well-being.

Re-opening of critical periods. An emergent hypothesis from neuroscience holds that psychedelics re-open "critical periods," windows in which the brain becomes more open to learning and which outlast the trip itself (Lepow et al. 2021; Nardou et al. 2023; Nuwer 2023; Dölen and Wilkinson 2026). This theory suggests an interesting prediction concerning heterogeneity by age. Although younger individuals are generally more malleable, the incremental effects of restoring plasticity may be greater among older individuals, for whom relevant critical periods are more likely to have closed. Consistent with this possibility, a recent meta-analysis of randomized psilocybin trials finds larger improvements in depression in studies enrolling older participants (Metaxa and Clarke 2024).

Motivated by this literature, we explore whether treatment effects in our experiment vary with age. This prediction runs against the common view in the social sciences that the young are the most malleable (Krosnick and Alwin 1989; Malmendier 2021). We explore this idea by splitting our sample at the median age of 32, and we interpret the results with caution given the smaller subsamples, and that the population we study is likely to be quite homogeneous on neuroplasticity since it excludes the very young and has relatively few geriatric participants.

the usual parallel trends assumption.

[18] We see a similar pattern for each of the three underlying well-being measures (Appendix Figure A15), and when we use alternative measures of the intensity of the subjective experience (Appendix Table A11).

[19] Consistent with this, placebo-takers that reported at baseline that they practice meditation report 0.38σ higher mystical experience scores than those that did not ($p = 0.08$).

[20] The findings are again similar if we look at each well-being measure separately (Appendix Figure A16).

We also note that this heterogeneity analysis was not preregistered and should therefore be interpreted as exploratory rather than as a confirmatory test of the critical-period hypothesis.

Over the first six months, the effects of ayahuasca on distress, happiness, and flourishing are more beneficial for older participants, and typically null for younger participants (Appendix Figure A17). Two years after the ceremony, effects are as positive or more positive for younger participants. As with mystical experiences, age is a clearer moderator of effects in the short run than in the long run.

Pooling all follow-ups, we can reject equal effects across the two age groups for distress ($p = 0.03$) and flourishing ($p = 0.04$), but not for happiness ($p = 0.17$). Using the individual-level well-being index that pools the three well-being measures across all follow-up surveys, we estimate the well-being effects to be 0.49σ larger for above-median age participants ($p = 0.056$, column 3, Table 3). The age heterogeneity is not just picking up the already-discussed heterogeneity by baseline distress – old and young participants have similar baseline well-being, and accordingly, the age interaction effect remains similar after adding an interaction between treatment and baseline distress (column 4, Table 3).[21]

The earlier response of older participants differs from the pattern for psychotherapy, whose effects decline with age (Cuijpers et al. 2020), and is consistent with, though far from proof of, a role for renewed plasticity. More broadly, our results leave open the possibility that acute mystical experiences drive the short-run improvements, while other channels sustain them over the longer run.

Experimenter demand and placebo effects. Several patterns speak against demand concerns. Baseline expectations about whether ayahuasca will improve well-being do not predict treatment effects (Appendix Table A12), and treatment effects are no larger for participants who give more socially desirable answers at baseline (Appendix Table A13). In addition, we ran all surveys remotely using Qualtrics links sent on WhatsApp, limiting forces that might distort reporting, like in-person surveyor pressure (Bursztyn et al., forthcoming).

A separate concern is functional unblinding, which occurs when participants infer their treatment assignment from the noticeable effects of the drug. Functional unblinding raises the possibility of a placebo-effect mechanism for the effects of psychedelics, in which effects depend positively on a participant's belief that they received the drug (Malani 2006). Our trial shows clear signs of functional unblinding, similar to other psychedelic trials (Muthukumaraswamy et al., 2021; Bogenschutz et al., 2022; Mitchell et al., 2023). At the 3-day follow-

[21] The age heterogeneity is also not picking up the heterogeneity by mystical experience scores discussed above, as the two age groups have similar mystical experience scores ($p = 0.96$ for the difference, using the specification with strata fixed effects).

up, 75% of ayahuasca-takers guessed that they had received the regular dose, compared with 9% of placebo-takers.[22] We find suggestive evidence of placebo effects playing a role. Using a difference-in-differences design, participants that learn in the 6-week follow-up (where we reveal treatment status) that they had received ayahuasca report being happier and less distressed (Appendix Table A14), and our core treatment effects attenuate after controlling for participants' perceived treatment status (Appendix Figure A18). Having said that, the correlation of mystical experience scores with well-being improvements is similar after adding the same control (Appendix Figure A19).

4 Effects on economic behaviors, decision-making, and other outcomes

A central question for economists is whether improvements in subjective well-being translate into changes in economic behaviors, labor market engagement, and material circumstances. In this section we show that, after some delay, ayahuasca affects economic behaviors.

4.1 Economic outcomes and decision-making

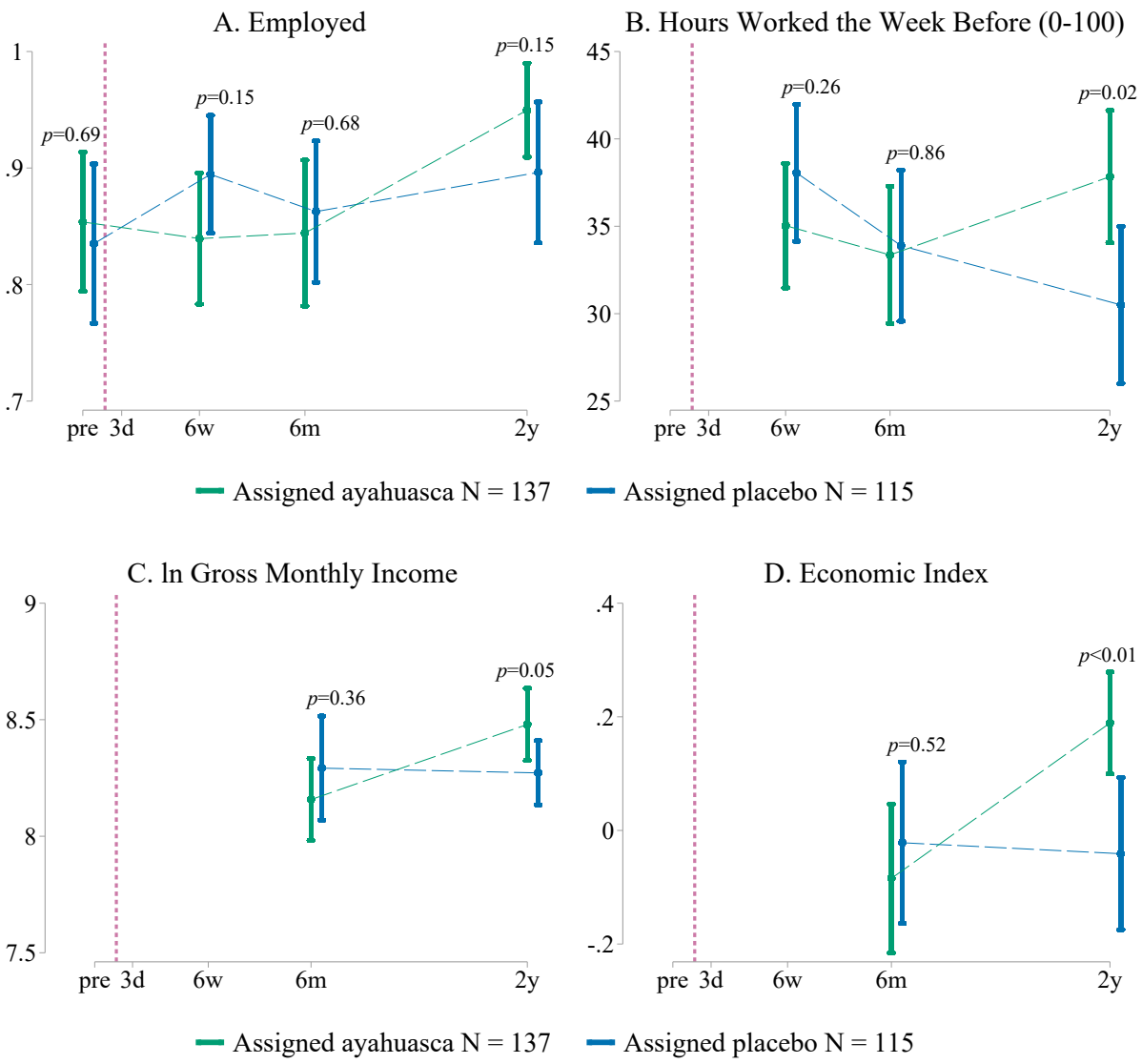
Labor market outcomes. Despite the immediate positive impacts of ayahuasca on well-being, ayahuasca does not significantly affect employment, hours, or income in the first six months after the ceremony (Figure 4). Accordingly, we estimate a null effect on an index outcome combining the three margins at the 6-month time point ($p = 0.52$). If anything, ayahuasca has negative effects on employment and hours ($p = 0.15$ and $p = 0.26$) at the 6-week point, with the former driven by a (non-significant) shift from self-employment to being unemployed (Appendix Table A15).

Labor market effects of ayahuasca emerge two years after the ceremony, with participants assigned ayahuasca reporting higher employment (though not significant, $p = 0.15$), longer work hours ($p = 0.02$), and greater log monthly income ($p = 0.05$),[23] yielding an effect on the combined index outcome of 0.23σ ($p < 0.01$, Figure 4). The delayed timing of these labor market impacts speaks against experimenter demand and social desirability channels – both of

[22] Due to an unintentional miswording, we asked participants to guess whether they had received a regular ayahuasca dose or a less concentrated ayahuasca dose. See Appendix B.2 for our exact question wording.

[23] While our log-transformation of gross monthly income drops participants that report zero income, we note that less than 5% of participants report zero income, and we estimate null effects of ayahuasca on a dummy for reporting positive income (Appendix Figure A20). In addition, effects on raw income are similar, though less precise (columns 3 and 4, Appendix Table A17).

Figure 4: Ayahuasca increases work hours and income after two years



Note: Figure shows intent to treat effects. Employed is an indicator for being employed in the formal or informal sector, or being self-employed. Hours worked the week before is the answer to *How many hours did you work for income last week?* ln Gross Monthly Income is the log of the answer to *What was your gross income last month, in reais? If you are not sure, try to guess a rough amount.* The Economic Index is created by taking the unweighted mean of standardized measures of employment (dummy), ln gross monthly income, and hours worked (if a component is missing it averages the remaining two components). Each variable is standardized using its mean and standard deviation at the 6-month follow-up for those assigned placebo. *p*-values are from a regression that controls for a baseline dependent variable where available – (**A**) controls for the outcome at baseline and (**C**) includes dummies for income brackets at baseline – and session-by-gender fixed effects, with robust standard errors. 95% confidence intervals are shown.

which would plausibly be as or more operative when closer in time to the ceremony.

The binary employment outcome is equal to one for the categories of formally employed, informally employed, and self-employed; and equal to zero for the categories of unemployed, student, or retired. The positive, but insignificant, effect on employment after two years can be decomposed into a fall in unemployment and self-employment, and an increase in student status and formal employment (Appendix Table A15, Appendix Figure A20), though only the reduction in unemployment is statistically significant ($p = 0.07$).

The increase of 7.3 hours worked in the previous week is enough to account for the 23% (0.21 log points) increase in gross monthly income – we estimate null effects on the implied hourly earnings (Appendix Table A16). One possible interpretation is then that ayahuasca increases engagement with work without improving productivity. Though we caveat that our measurement limits this interpretation: we do not have a direct measure of participants' work productivity, nor do we know which participants are paid per hour worked (and thus for which participants an increase in weekly hours would directly map to an increase in monthly income).

While we see evidence of economic effects at the two-year point, we note that our estimates are fairly imprecise. For example, the 95% confidence interval for the effect on log income roughly spans 0 to 0.4 log points (column 4, Appendix Table A17). A more conservative takeaway is then that our estimates fairly confidently rule out a particular version of psychedelics' "turn on, tune in, drop out" reputation, in that we see no signs of negative effects on engagement with paid work.

Labor market mechanisms. In principle, psychedelic trips could provide participants with insights into their career ambitions, leading to job transitions that eventually lead to higher incomes. We do not see evidence for this mechanism. While participants assigned to ayahuasca are more likely to report three days later that their experience made them reconsider their career choices,[24] they are similarly likely to report intentions to find a new job or to change their career path (panels A, B, and C, Appendix Figure A21). Consistent with this, while job transitions in the two years following the ceremony are common, they are similarly common in treatment as in control (panel D). Nevertheless, over time, treatment has positive effects on work satisfaction (panel E, $p = 0.18$ after six months, $p = 0.03$ after two years). Collectively, these results are consistent with a story in which ayahuasca leads participants to find more satisfaction in their existing work, leading to greater engagement, and ultimately higher income.

[24] We note that this question was only asked to those that reported that it was likely that they would change career path within the next year (38% of those assigned to the placebo and 39% of those assigned to ayahuasca). Among those who agreed or strongly agreed that their ayahuasca experience made them reconsider their career choices we also asked in what ways. Treatment and control participants answer similarly (Appendix Figure A22).

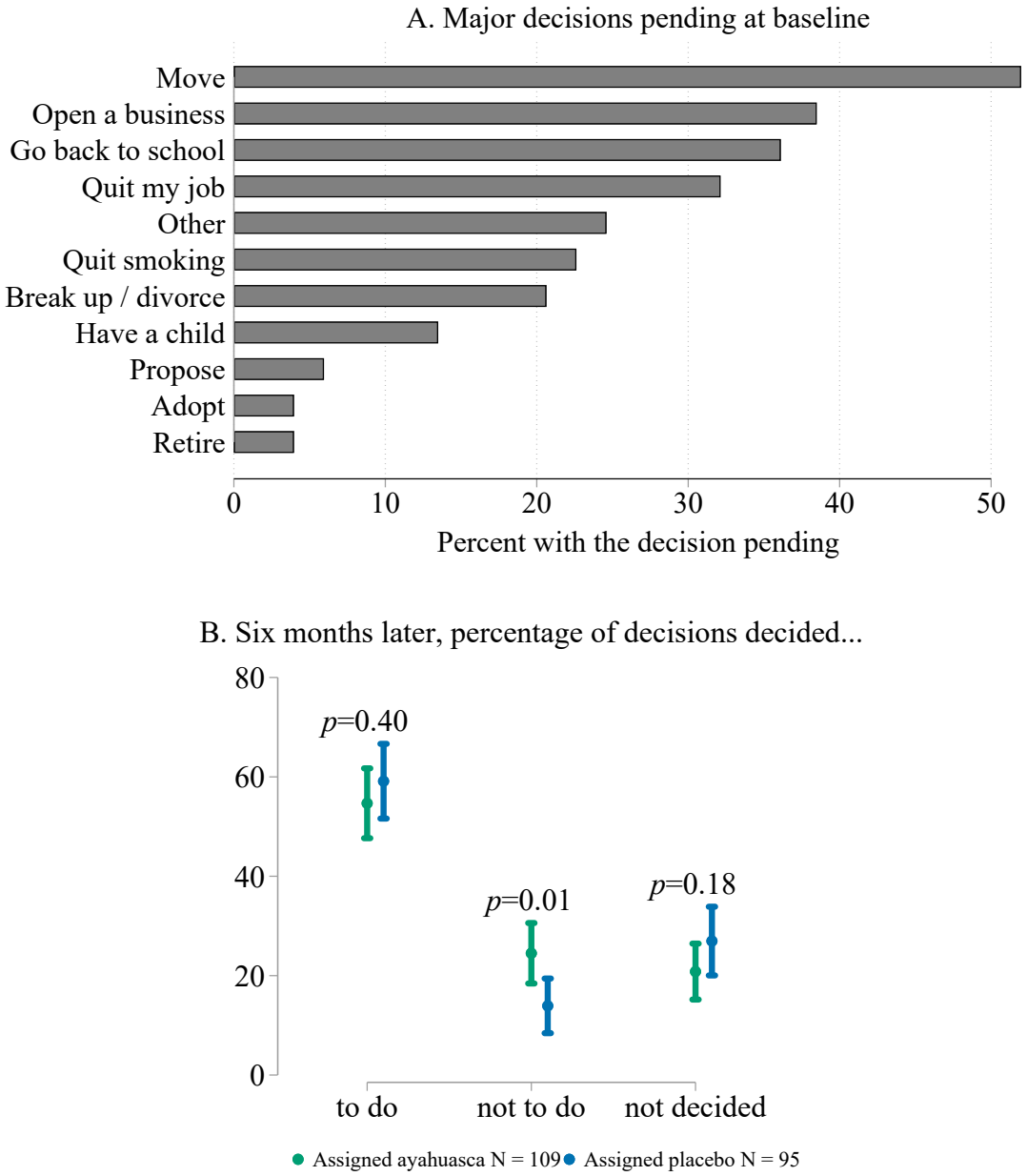
Decision-making. We find a related pattern of effects when considering our measures of major life decision-making. At baseline, 94% of participants reported that they were considering at least one major life decision, with the most common being whether to move, whether to open a business, whether to go back to school, and whether to quit one's job (Figure 5A). Levitt (2021) finds positive well-being effects from an exogenous nudge to decide away from the status quo – i.e., moving, opening a business, going back to school, and quitting increases happiness for those at the margin. Such a mechanism could be at the heart of the well-being effects of psychedelics – trips may give participants the confidence to make major life changes that may yield enduring welfare gains. We in fact find the opposite. Six months after the ceremony, treated participants are more likely to have decided *not* to carry out their major decisions ($p = 0.01$) with this shift coming roughly equally from the two remaining categories: decided to do, and undecided (Figure 5B). Taken together with the labor market effects, ayahuasca seemingly helps individuals find satisfaction and happiness in what they already have, rather than prompting major life changes.

Savings. A range of clinical evidence suggests that psychedelics may be effective treatments for addictive behaviors, including alcohol and tobacco use (for an example, see Johnson et al. 2026). If psychedelics reshape self-control problems more generally, we might expect impacts on time preferences and saving behaviors. While we did not measure time preferences, we measured savings six months and two years after the ceremony. We note that we pre-registered the measures of savings as secondary outcomes, unlike the labor market and decision-making outcomes discussed above.

Ayahuasca has positive effects on each of our five measures of savings at the 6-month point (columns 1 to 5, Table 4), although with statistical significance only for the percentage of last month's income saved ($p = 0.02$, column 5). Combining the five components into a savings index, we estimate a positive effect of ayahuasca on savings of 0.23σ ($p = 0.02$). Given our null effects on income at the 6-month point, this savings increase is not merely an income effect in a context of stable preferences (Dynan et al. 2004). It is instead more consistent with a change in consumption or time preferences. Two years after the ceremony, we again estimate a positive effect on the percentage of income saved (the only saving measure in our two-year follow-up) – a seven percentage point increase ($p = 0.001$).

Discussion of economic effects. Our results run against a common view of psychedelics as antithetical to conventional economic activity. The familiar counterculture image of psychedelic use is associated with withdrawal from work and mainstream productivity. For example, psychedelic

Figure 5: Ayahuasca shifts major life decisions toward the status quo



Note: Sample includes participants that attended their assigned session, except the all-treated session. (**A**) shows the share reporting each decision as one they had been considering at baseline (participants could select from a list of ten major decisions plus "other"); 6.0% selected none. (**B**) shows ITT effects on percentages of baseline decisions falling in three categories. The percentages are over the major decisions selected at baseline and are cumulative across the 6-week and 6-month batteries (the 6-month battery re-asks only decisions unresolved at the 6-week battery). This construction requires answering the 6-month battery, unless all decisions were resolved in the 6-week one. *p*-values are from a regression that controls for the number of decisions the participant wanted to make at baseline and session-by-gender fixed effects, with robust standard errors. 95% confidence intervals are shown.

Table 4: Ayahuasca increases saving behaviors

	After 6 months						After 2 years
	Num. Credit (rev)	Num. Investments	Savings Increase	Savings Minus Debt	Saving Percent	Index	Saving Percent
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Assigned ayahuasca	0.07	0.14	0.19	23414.80	5.80**	0.23**	7.26***
	(0.11)	(0.10)	(0.16)	(23266.44)	(2.46)	(0.10)	(2.21)
Placebo group outcome mean	-0.63	0.43	1.81	-46780.62	8.43	0.02	8.45
Observations	221	221	221	221	213	224	209
Session-by-gender fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Notes: Table shows intent-to-treat effects from a regression of each variable on an indicator equal to one for participants assigned ayahuasca, and zero for those assigned the placebo (jurema). Column (1) is minus the number of credit types the participant selected at the 6-month follow-up (so larger values mean fewer types of credit applied for). The question is *In the last 6 months, did you apply for any new credit, including increase in credit card limit or any loans?*; those who answered No are coded 0. Those who answered Yes could select any of: new credit cards; increase of credit card limits; mortgage or home loans; auto loans; increase in the limits of an existing loan; mortgage refinances; student loans; and Other. Selecting Other counts as one type. Column (2) is the number of investment types selected. The question is *In the last 6 months, did you invest any money in financial services (e.g., pension, stock market, saving account)?*; those who answered No are coded 0. Those who answered Yes could select any of: private pension; public fixed income; private fixed income; investment funds; stock market; saving account; crypto; and Other. Selecting Other counts as one type. Column (3) is the answer to *In the last 6 months, would you say your savings:* on a scale from *Decreased considerably* (0) to *Increased considerably* (4). Column (4) is current savings minus current debt at 6 months, winsorized at the 5th and 95th percentiles in this sample. Savings is *How much money do you currently have saved? (Including cash, money across all your bank accounts, and the value of any financial assets, like stocks. Select "0 reais" if you currently have no savings.) If you are not sure, try to guess a rough amount.* Debt is *Please give an estimate of the total BRL value of financial and non-financial debt that you currently owe (e.g. loans, borrowed credit. Select "0 reais" if you do not have any debt). If you are not sure, try to guess a rough amount.* Column (5) is the percentage of last month's income saved at 6 months, from *You said your income last month was [Income]. Out of this, what percentage did you save last month, if anything?*; it is missing when income is not reported. Column (6) is the unweighted mean of columns (1)–(5) after each is standardized using the mean and standard deviation among participants assigned placebo; the mean is taken over whichever of the five standardized components are non-missing. Column (7) is the same percentage-of-income-saved question as column (5), measured at the 2-year follow-up. Sample includes participants that came to their session and excludes the all-treated session. Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

advocate and former Harvard Professor Timothy Leary encouraged Americans to "Quit school. Quit your job. Don't vote. . . . To postpone the drop-out is to cop-out" (Leary, 1990, p. 226). In our data, the opposite pattern appears by two years: ayahuasca recipients are more satisfied with work, work more hours, and report higher income. They also show more future orientation, as reflected in their saving behavior.

We conjecture that our causal evidence may differ from stereotypes related to psychedelic use because of the strong selection into taking psychedelics, given an era in which psychedelic consumption remains stigmatized. In particular, it may well be that the types of people that take psychedelics are exactly the types of people that are already planning to disengage from conventional economic activity, and those already planning to make major life changes. If this conjecture is true, we might expect the mainstreaming of psychedelics to change the correlates of psychedelic consumption – just as health recommendations endogenously change the correlation between health behaviors and health outcomes (Oster, 2020).

Clinical trials have already established evidence of psychedelics improving well-being. A central finding of our experiment is that positive impacts on well-being are accompanied by

longer-term changes in meaningful economic behaviors. This prompts a question: are the mechanisms behind impacts on well-being the same as those behind impacts on economic behaviors? Or related, are the economic gains a direct consequence of the well-being gains, as argued in recent work by development economists (Baranov et al. 2020a; Lund et al. 2024)? We do not see strong evidence for this claim. In particular, the subgroups with larger well-being gains – older participants and those distressed at baseline – do not tend to experience larger economic effects (Appendix Table A17). In fact, the income effects are completely driven by the young (columns 3 and 4). Similarly, economic effects are no larger for those that report higher mystical experience scores, with the exception of the savings index (Appendix Figures A23 and A24).

4.2 Other pre-registered outcomes

Given diffuse priors around the possible effects of psychedelics, we measured a number of additional outcomes. In the interests of space, we review the effects on these additional outcomes briefly, and refer the reader to the Appendix exhibits for additional details. We also caveat that some of the significant findings discussed here should be considered exploratory, given multiple hypothesis testing concerns.

Behavior change and relationships. Ayahuasca increases participants' short-term reports of noticing behavior change, with these effects attenuating by the 2-year point, likely due to ceiling effects, as nearly all participants report noticing some behavior change since the ceremony at that point (Appendix Figure A25). Among the categories of behavior change observed, we note three findings: (i) ayahuasca increases reports of improved relationships with other people due to better communication at the 6-month point ($p < 0.01$), (ii) we see suggestive evidence of ayahuasca reducing the use of therapy at the 2-year point ($p = 0.13$), hinting that psychedelics may be more of a substitute than a complement to conventional therapy, and (iii) reports on an improved relationship with work are directionally consistent with our earlier work-related findings, though insignificant ($p = 0.37$ at the 6-month point, $p = 0.16$ at the 2-year point). Despite positive effects on relationships more broadly, we find no significant improvement in participants' relationships with the specific individuals they identified at baseline as people with whom they hoped to improve their relationships (far-right panel, Appendix Figure A25).

Social preferences, social image, and social media. While small-sample psychedelic trials have found positive effects on prosocial attitudes (e.g., Griffiths et al. 2018), we estimate null effects on measures of prosocial behavior (both incentivized and self-reported), moral universalism, and altruistic punishment (Appendix Figure A26). In that same figure, we find mixed

evidence of effects on social image concerns – estimating opposite effects on self-reported and incentivized social image concerns, albeit both insignificant. Treated participants are less willing to have their self-reported trip experience shared with their full name on the center's social media account than control participants ($p = 0.08$), but similarly likely in the case of anonymity. Finally, while point estimates for observed Instagram usage are negative and marginally significant in one case, a causal interpretation is limited given differential willingness to share one's Instagram handle across treatment groups (Appendix Table A18).

Values, preferences, and traits. Ayahuasca does not systematically affect the importance participants attribute to different domains (e.g., family, friends, work) three days after the ceremony, nor does ayahuasca influence participants' 6-week answers to which option in each of four vignettes would make them the most happy (Appendix Figure A27). We see some evidence of differences in intended choices: assignment to ayahuasca increases participants' reports that they would choose a job with more time for sleep over a job with higher pay ($p = 0.11$), and a job that pays more in absolute terms but less than colleagues over a job that pays less in absolute terms but more than colleagues ($p = 0.01$), suggesting that ayahuasca reduces the tendency toward social comparison. We do not detect effects of ayahuasca on individual traits and characteristics, including spirituality and the Big Five personality traits (Appendix Figure A28).

Creativity, dreams, and perceived efficacy. Ayahuasca has no impact on creativity, as proxied by the number of unusual uses for a tin can listed by participants; however, we find suggestive evidence that ayahuasca makes self-beliefs about creativity more overconfident ($p = 0.10$, Appendix Figure A29). This finding contrasts with that of Bhat et al. (2022) in which psychotherapy reduces overconfidence five years later.

To explore whether the altered states of consciousness induced by psychedelics spill over into other altered states, we asked participants about their dreams at the 3-day and 6-week points. Treated participants dream more in the three days following the ceremony (though not significant, $p = 0.16$), but the dreams do not differ in tone (Appendix Figure A30). Finally, participants' incentivized guesses of the effects of ayahuasca on depression underestimate impacts on average,[25] and do not differ significantly by treatment (Appendix Figure A31).

[25]The underestimation may be due to an error in the survey wording—we asked participants to predict effects of a regular versus low dose of ayahuasca, rather than a regular dose of ayahuasca versus jurema.

5 Ceremony effects and cost-benefit analysis

Having explored the effects of ayahuasca relative to the placebo, we use the final section of the paper to explore the effects of the ritualized ceremony, and report cost-benefit analyses.

5.1 Ceremony effects

We now make use of the follow-up data for the participants that did not attend their assigned ceremony – the no-shows – and use a difference-in-differences approach. We test for whether the improvement in well-being from baseline to each follow-up is larger for those that attended the ceremony than for those that did not attend. Our core difference-in-differences specification is:

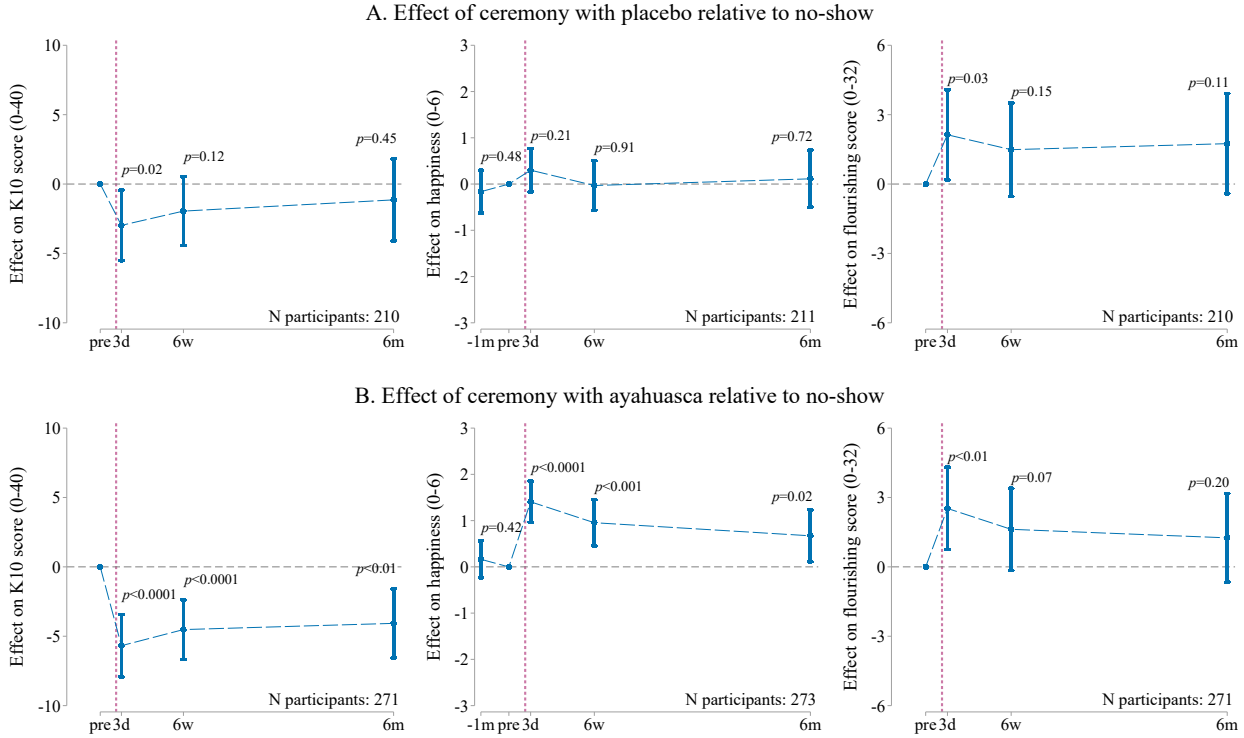
$$y_{it} = \alpha_i + \alpha_{st} + \theta_1(\text{Attended}_i \times \text{3-day Follow-up}_t) + \theta_2(\text{Attended}_i \times \text{6-week Follow-up}_t) + \theta_3(\text{Attended}_i \times \text{6-month Follow-up}_t) + e_{it}, \quad (3)$$

where there are now up to four observations per participant (for t = baseline, 3-day, 6-week, and 6-month; we did not send the 2-year follow-up to the no-shows). α_i are participant fixed effects, while α_{st} are randomization strata fully interacted with follow-up survey fixed effects. Attended_i is equal to one if participant i attended their assigned ceremony, and equal to zero for no-shows. 3-day Follow-up_t is equal to one if $t = 3$ days, and similarly for 6-week and 6-month. For the happiness outcome, we run a specification that also includes an interaction between Attended_i and $\text{Retrospective Report at Baseline}_t$, where the latter is a dummy variable equal to one for a participant's retrospective report of happiness over the past month, answered in the baseline survey. This is what permits a suggestive test of parallel pre-trends. We keep only the participants that completed the baseline and answered at least one follow-up survey, and we cluster standard errors at the participant-level.

θ_1, θ_2, and θ_3 are our difference-in-differences-estimated effects of attending the ceremony on well-being at each time point. To get at the effects of attending and taking the placebo, we run the regression keeping only those that didn't attend or attended and took the placebo. To get at the full effects of attending the ceremony and taking ayahuasca, we keep only those that didn't attend or attended and took ayahuasca.

Encouragingly, we do not find evidence for differential pre-trends using the retrospective happiness question (central column, Figure 6). We find suggestive evidence of positive well-being effects of attending the ceremony and taking the placebo (Figure 6A). This finding reduces

Figure 6: Ceremonies durably improve well-being when combined with ayahuasca



Note: Figure shows difference-in-differences effects of (**A**) attending the ceremony and taking the placebo relative to no-shows, and (**B**) attending the ceremony and taking ayahuasca relative to no-shows. As an example, the first coefficient in the top-left panel shows that the fall in K10 score from baseline to the 3-day follow-up was almost 3 points larger among those that attended and took the placebo than among those that did not attend the ceremony. 95% confidence intervals are shown, with standard errors clustered at the participant level. The effects are shown up to the 6-month follow-up, as no-shows were not sent the 2-year follow-up survey.

the likelihood that our positive ITT effects of ayahuasca are due to disappointment lowering well-being in the placebo group. It also suggests that the ceremony bundle itself – including a social gathering, a self-improvement lecture, the ingestion of jurema, and several hours of meditation and introspection – might deliver improvements in well-being. Notably, the ceremony bundle improves flourishing more than the psychedelic in the short run, suggesting complementary mechanisms of action of the ritual and the drug. As for the overall effect of the ceremony, including taking the psychedelic, we find large positive and enduring effects on all three measures of well-being, though the effect on flourishing is statistically insignificant at the 6-month point (Figure 6B). Taking the area between the blue dashed line and the grey dashed line at zero as the effect, the ceremony with placebo accounts for 39% of the distress-reduction impact of the ceremony with ayahuasca, 7% of the increase in happiness, and 105% of the increase in

flourishing.

We have shown that no-shows differ from placebo-takers in levels at baseline – they are less educated, less likely to be employed, less happy, and more distressed (column 9, Table A5). But given mean reversion, their lower well-being at baseline actually biases us away from finding positive effects of the ceremony. Reflecting this, our results strengthen after allowing for flexible time trends by baseline well-being (Appendix Figure A32).[26] This all said, participants that decide to go to an ayahuasca ceremony may be those that would attempt to improve their mental health even in the absence of the ceremony, causing the parallel trends assumption to fail. The difference-in-differences results come with this caveat.[27] An additional caveat is that attrition is roughly 20 percentage points higher among no-shows than among ceremony attendees. When we trim the treatment group to yield a conservative lower bound (following Lee (2009)), the only estimate that remains well-being-improving and statistically significant is the 3-day effect of the ceremony with ayahuasca on happiness (Appendix Figure A33).

5.2 Cost-benefit analysis

We carry out two cost-benefit analyses: the first comparing the distress-reduction benefits of attending a ceremony and taking ayahuasca (relative to not attending) with the per-person price of the ceremony set by the center (24 USD). The second compares the distress-reduction benefits of receiving ayahuasca (relative to the placebo) with the per-person procurement cost of the ayahuasca itself. Both analyses are conservative in that we ignore benefits other than reductions in distress (e.g., income effects) and we assume zero benefits after six months have passed since the ceremony.

Ceremony versus no-show. To estimate the benefits, we use the three difference-in-differences coefficients for the effects on the distressed dummy (panel B, Appendix Figure A36), and calculate the area between the grey dashed line at zero and the blue dashed line, which is 0.12. This area gives the number of distressed years averted due to the ceremony under the assumptions that (i) the difference-in-differences estimates are unbiased estimates of causal effects, (ii) after six months there is no treatment effect of the ceremony, and (iii) treatment effects grow or fall linearly in between each of the four time points.

[26] The mean reversion can be seen directly in Figure A34, where we plot the well-being levels for both the placebo-takers and the no-shows – all three well-being outcomes improve from baseline to follow-up even for the no-shows.

[27] Given a lack of baseline data, we can only estimate economic effects of the ceremony for employment and work satisfaction. The ceremony with placebo has little effect on either, while the ceremony with ayahuasca increases work satisfaction after six months (Appendix Figure A35).

In the next step, we value the number of distressed years averted in dollars. We first convert a single distressed year averted to its disability-adjusted life year (DALY) equivalent, by applying the disability weight of 0.396 used by the Global Burden of Disease 2021 for moderate major depressive disorder.[28] Finally, we value a DALY at 100,000 USD, following Coefficient Giving.[29] The benefits then amount to $0.396 \times 100,000 \times 0.12 = 4,752$ USD, or 198 times the 24 USD price of a ceremony.[30]

Ayahuasca versus placebo. Our approach to valuing the distress-reduction benefits of ayahuasca relative to placebo follows similar steps. The key difference is that we use IV estimates of the causal effects of ayahuasca to estimate the number of years of distress averted, as opposed to difference-in-differences estimates. These estimates of the benefits are more credible, given that they do not rely on a parallel trends assumption.

To calculate the cost of the average participant's ayahuasca, we use the fact that the ayahuasca costs the center 400 BRL/liter, and the average dose in our experimental sample is 78.2 ml. The cost per person is then 31.3 BRL, or 5.59 USD. If we apply the same logic for the effects of ayahuasca relative to placebo (Figure 2), we estimate the benefits of ayahuasca to be 2,703 USD, or 484 times the 5.59 USD cost of the average ayahuasca dose.

Discussion. In comparison to existing clinical psychedelic protocols, the dramatic difference in our setting is the cost: the price of participating in an ayahuasca ceremony is 24 USD, while economic evaluations of clinical psychedelic treatments assume costs of roughly 4,000–17,000 USD per patient (Marseille et al. 2020, 2022a,b; McCrone et al. 2023; Marseille et al. 2023; Avanceña et al. 2025). To take one example, McCrone et al. (2023) estimate that a course of psilocybin-assisted psychotherapy for severe depression costs approximately 4,600–6,600 USD per patient, comprising 4,100 USD for therapist support and 500–2,500 USD for psilocybin. Our partner center delivers a form of psychedelic treatment that achieves enduring well-being gains at a fraction of the cost. This low-cost form of psychedelic treatment has the potential to broaden access far beyond the well-resourced healthcare systems and citizens of rich countries. However, we note that many issues regarding real-world scalability and feasibility are beyond

[28] See https://ghdx.healthdata.org/record/ihme-data/gbd-2021-disability-weights. Here we are taking moderate or severe distress according to the Kessler-10 scale (a score of 15 or above) to be approximately equivalent to a moderate major depressive disorder (the Global Burden of Disease does not have a disability weight for psychological distress itself).

[29] See https://www.openphilanthropy.org/research/technical-updates-to-our-global-health-and-wellbeing

[30] We verified that our approach to valuation closely follows that of Coefficient Giving through personal correspondence with a Coefficient Giving (then named Open Philanthropy) research fellow on the Global Health and Well-Being cause prioritization team.

the scope of our experiment, including the cost of expanding treatment centers while preserving quality and preventing the abuses recently documented in some tourist-oriented settings (Londoño 2024).

6 Conclusion

Tens, and perhaps hundreds, of millions of people have ingested psychedelic substances and experienced their hallucinogenic effects (Krebs and Johansen 2013). Psychedelics are available legally in the Bahamas, Bolivia, Brazil, Jamaica, the Netherlands, Peru, and Uruguay, which together are home to only a small share of the world's population and of the mentally distressed. There is also a move toward deregulation in many other polities (Psychedelic Alpha 2024), which raises the value of evidence on whether psychedelics can be administered safely outside clinical settings. Our experiment gives initial evidence that the positive findings of tightly controlled clinical trials generalize to a more naturalistic form of psychedelic use in a group setting, and that expanding access could be cheap.

Our findings suggest that psychedelic experiences are not only potential mental health treatments, but can also affect economic outcomes over long horizons. Two years after a single ceremony, participants assigned to ayahuasca are happier, more likely to report being a good person and living a good life, work more hours, and earn higher incomes, contrary to the view of psychedelics as antithetical to productivity. The labor market effects emerge only after the reduction in distress has faded, and they differ from the well-being effects in who benefits. The well-being gains, particularly in the first six months, concentrate among participants who are older, initially distressed, or report more mystical trips. The economic effects, in contrast, are similar across levels of baseline distress and trip intensity, and the income gains concentrate among the young.

Several caveats apply. Our participants chose to take ayahuasca, a choice that only 0.4% of Brazilians have made, despite its legality (ICEERS 2023). As psychedelics become more mainstream, the composition of users, and hence the effects, may change – particularly if effects are partially driven by expectation and placebo-related channels. In addition, our sample is too small to detect rare adverse events. Expanding access safely would therefore require investment in screening, a standardized brew, trained facilitators, and an adequate facilitator-to-participant ratio. Whether governments, NGOs, or health insurers would fund such treatment is an open question, but low costs and large estimated mental health benefits make a strong case for public or philanthropic support.

Several questions remain for future research. First, our design does not allow us to pin down

the mechanisms behind the well-being and economic effects, or why the two differ. The REBUS and critical-period hypotheses are consistent with the heterogeneity of the well-being effects, but neither obviously explains the economic effects. Studies designed to test these hypotheses directly could help. Second, do these effects extend to other psychedelics, other countries, or users who do not seek out a ceremony? Third, what are the demand-side barriers to psychedelic use? Understanding whether information, cost, stigma, or perceived risk deters adoption, and what the effects are for those who would adopt if these barriers were lowered, is an important policy question. Finally, do the economic effects persist beyond two years, and do they reflect changes in productivity as well as in hours worked?

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Online Appendix

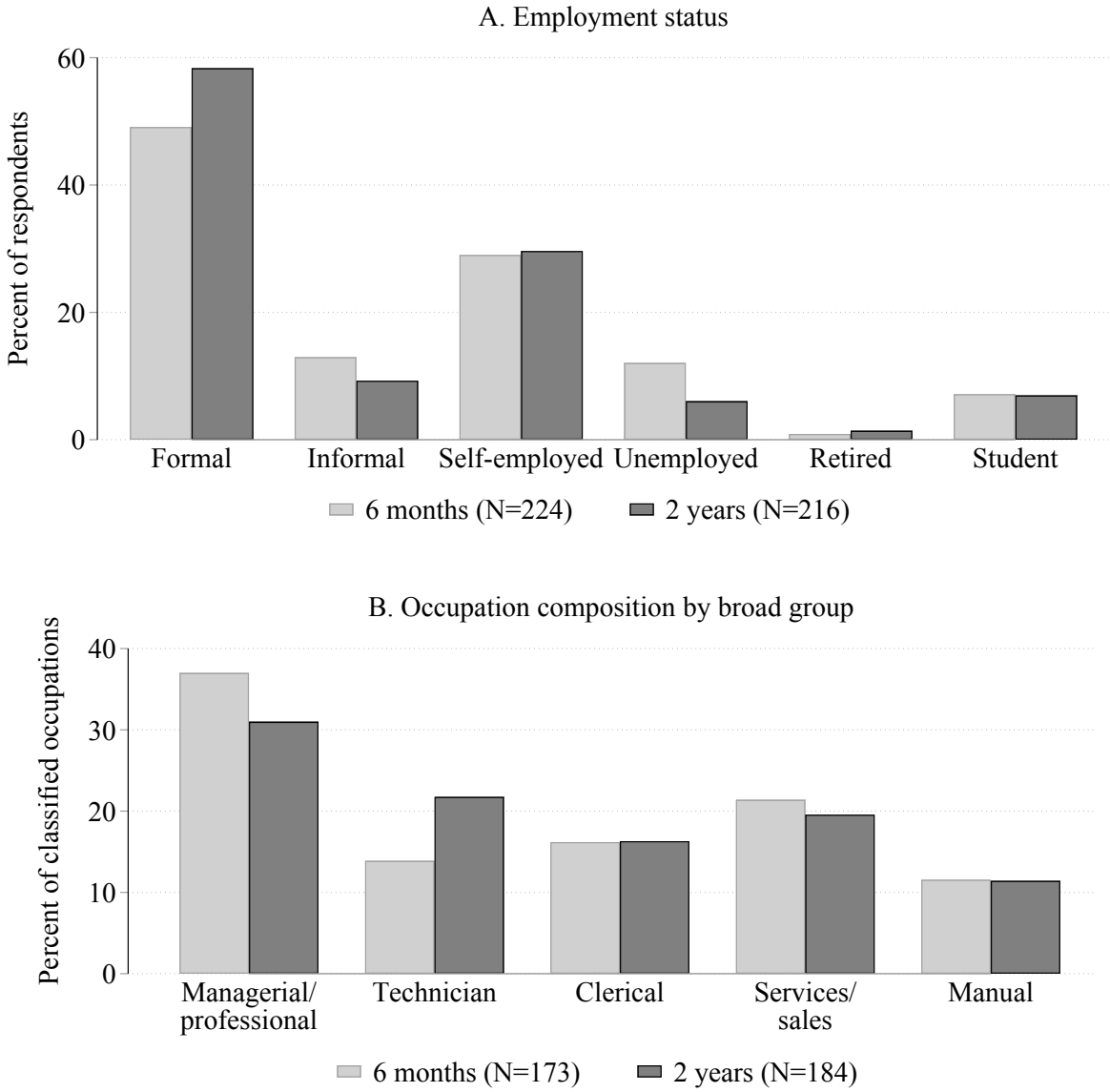
"Psychedelics, Well-Being, and Work"

Patrick Francois*
Matt Lowe*
Ieda Matavelli+

**University of British Columbia*
+*Monash University*

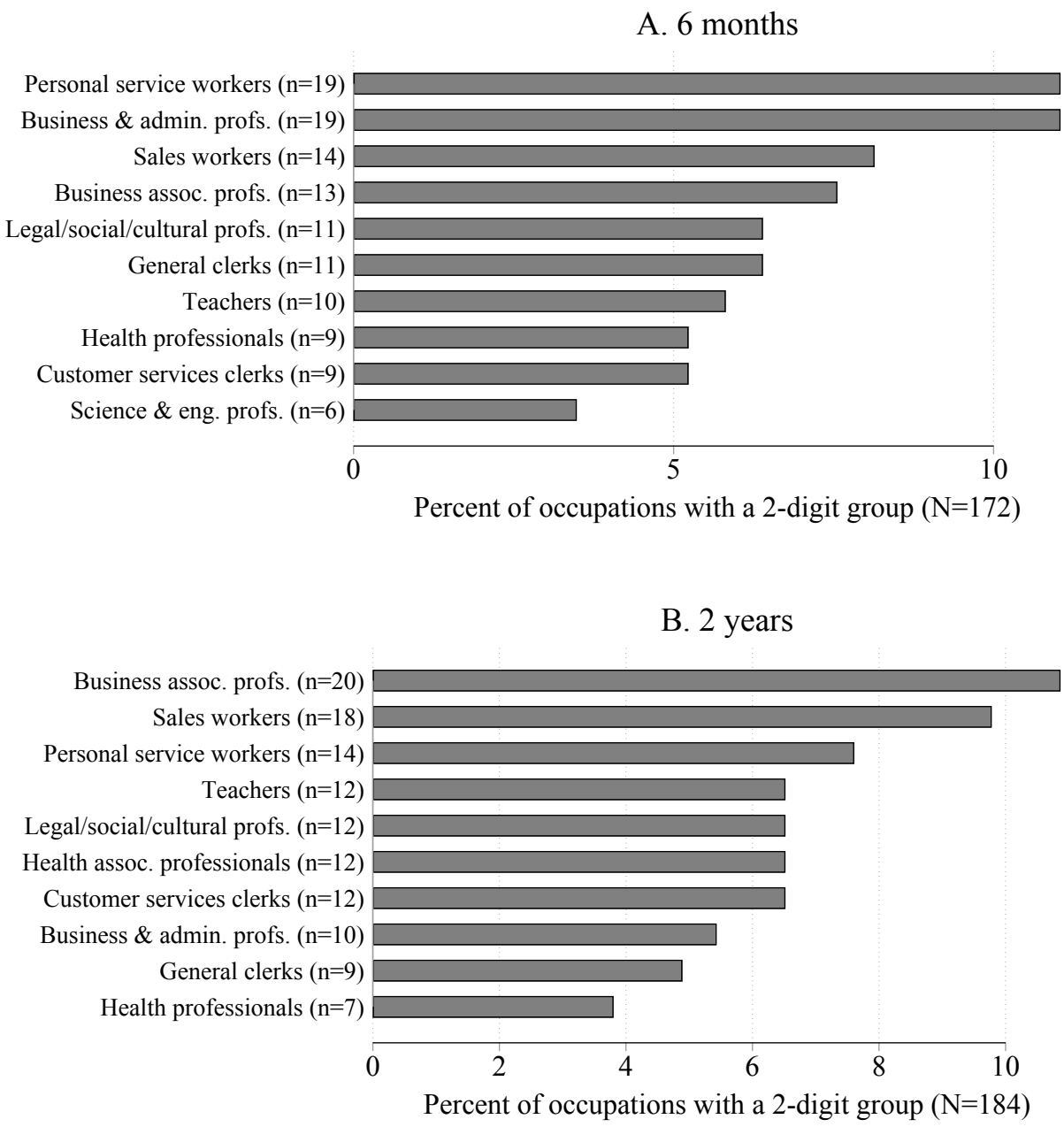
A Appendix figures and tables

Figure A1: Employment status and occupation composition at six months and two years



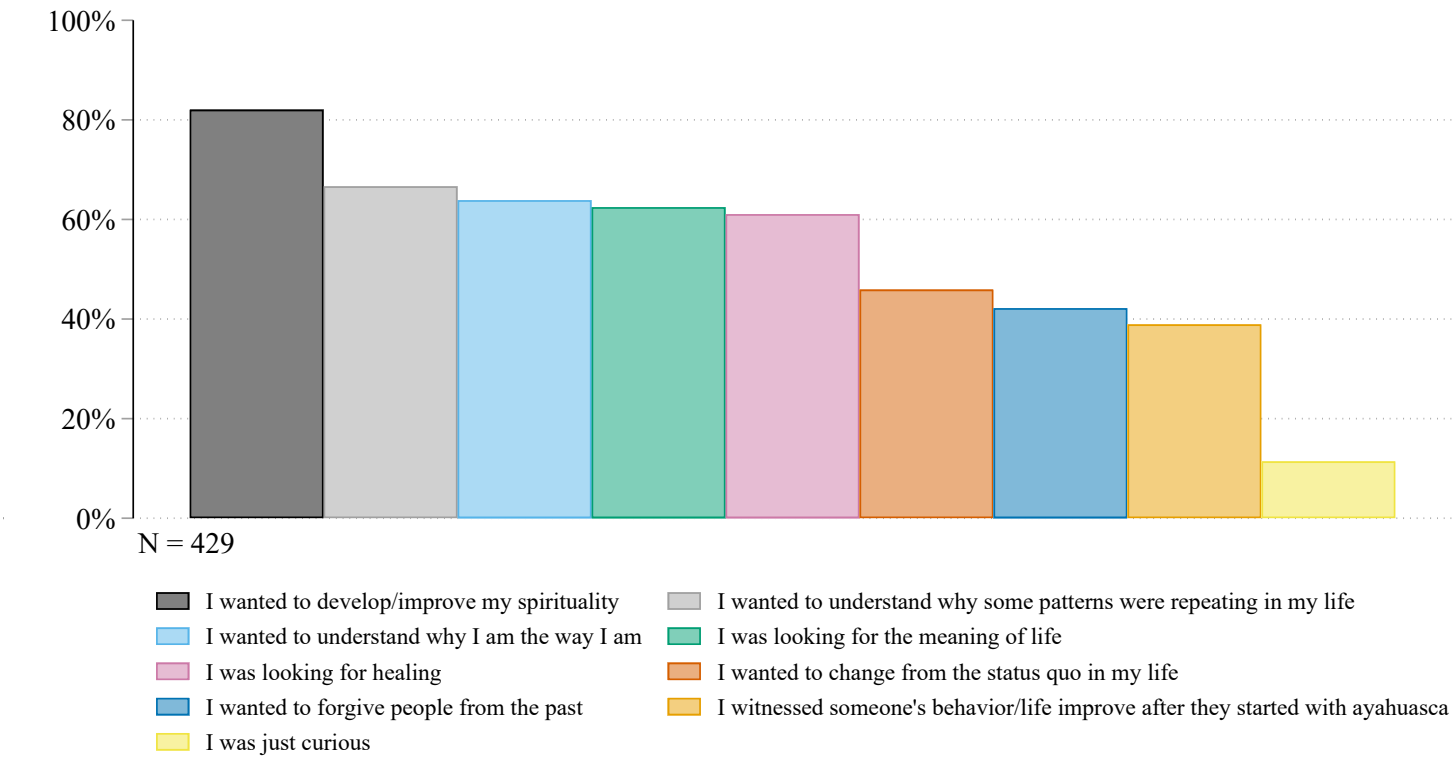
Note: (**A**) Sample includes participants that attended their assigned session, except the all-treated session. Each column describes the share of participants selecting each option of *What is your employment status? Select all that apply — formal sector*, *informal sector*, *self-employed*, *unemployed*, *retired*, and *student*. The question is multi-select, so shares sum to more than 100%. (**B**) The sample includes all respondents, except the all-treated session, whose occupation could be classified. Each column shows the share of classified occupations in one of five broad groups built from the ten ISCO-08 major groups (numbered 0-9), where ISCO-08 is the 2008 International Standard Classification of Occupations: managerial/professional (ISCO-08 major groups 1 and 2); technician (major group 3); clerical (major group 4); services/sales (major group 5); manual (major groups 0 and 6–9). Participants reported their occupation as free text. The survey's autocomplete offered the 434 titles in Brazil's Classificação de Ocupações para Pesquisas Domiciliares (COD; Classification of Occupations for Household Surveys). After the text is normalized, an answer that exactly matches a COD title keeps that title's corresponding ISCO-08 major group (about 38–39% of answers). Keyword rules assign a major group to the remaining free text. Of reported occupations, 97.2% at 6 months and 97.5% at 2 years are classified.

Figure A2: Ten most common 2-digit occupation groups



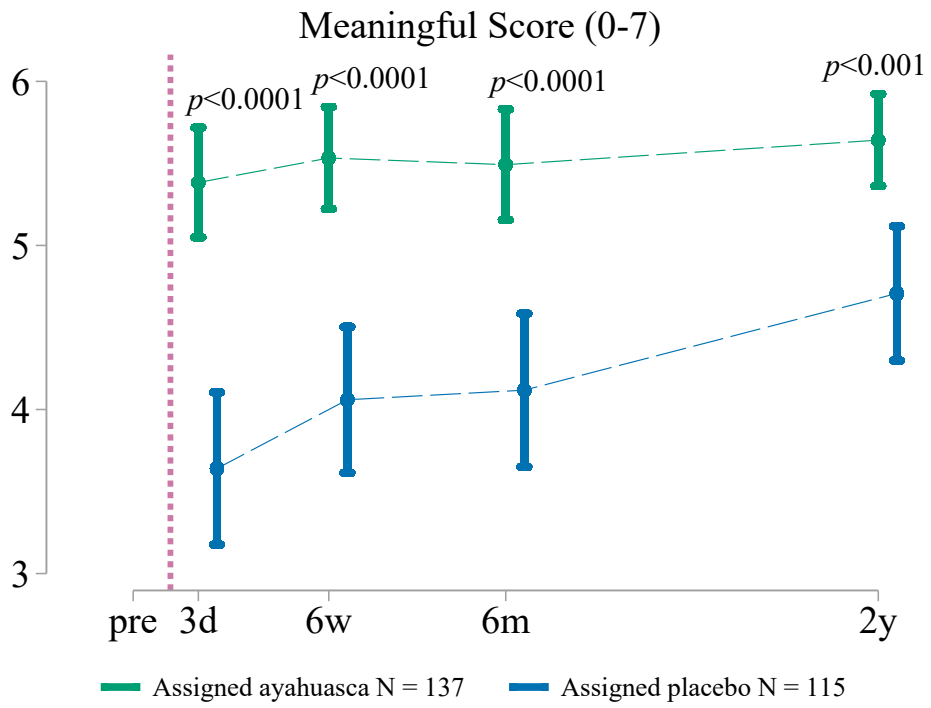
Note: The sample in (**A**) and (**B**) includes all respondents, except for those in the all-treated session, whose occupation could be classified in an ISCO-08 sub-major group at 6 months and 2 years, respectively, where ISCO-08 is the 2008 International Standard Classification of Occupations. Each horizontal bar shows the share of classified occupations in one of the ten largest ISCO-08 sub-major groups in this sample — a middle level between raw titles and the five broad groups in Appendix Figure A1B. The N for each sub-major group is shown on the y-axis. Participants reported their occupation as free text. The survey's autocomplete offered the 434 titles in Brazil's Classificação de Ocupações para Pesquisas Domiciliares (COD; Classification of Occupations for Household Surveys). Each COD title is associated with an ISCO-08 sub-major group (there are 43 such groups). After the text is normalized, an answer that exactly matches a COD title keeps that title's sub-major group (about 38–39% of answers). Keyword rules classify the remaining free text, assigning a sub-major group when the wording is specific enough (generic answers like "gerente" or "técnico" get only a major group and are excluded here). Of reported occupations, 89.8% at 6 months and 89.0% at 2 years are classified.

Figure A3: Reasons for trying ayahuasca



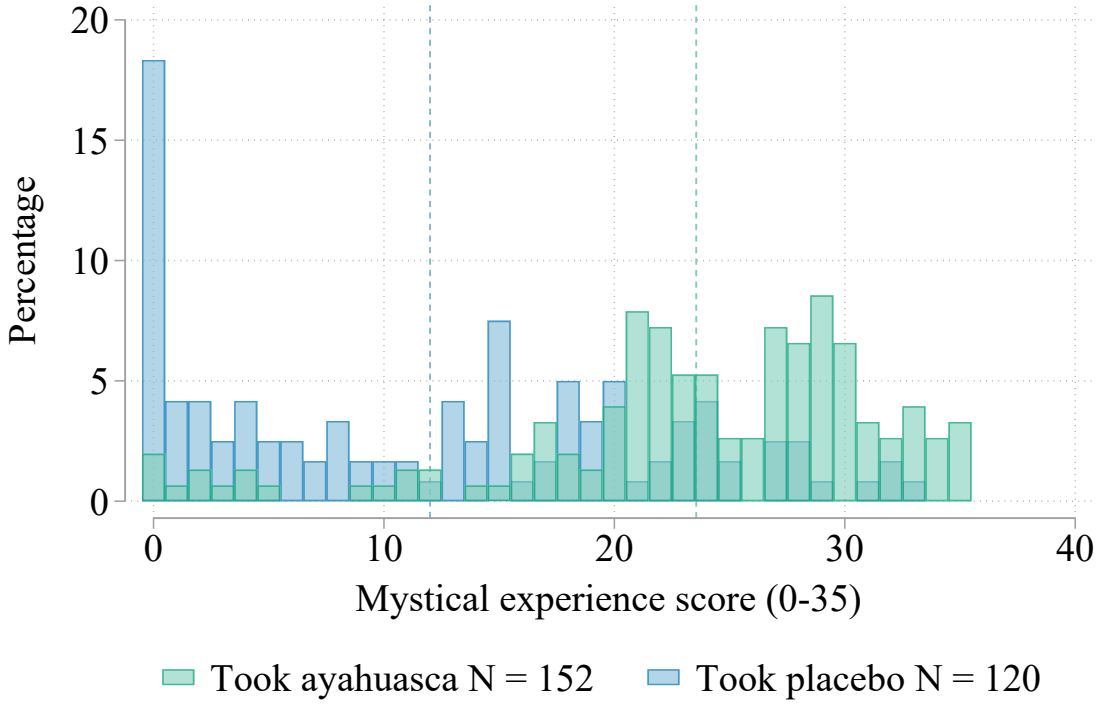
Note: The figure plots the percentage of participants that selected each reason in response to the baseline question: *What reason(s) best describes why you want or wanted to try ayahuasca in the first place? Select all options that apply.* The option to select *Other* was also available. Participants could select more than one reason.

Figure A4: Effects of ayahuasca on meaningfulness of the experience



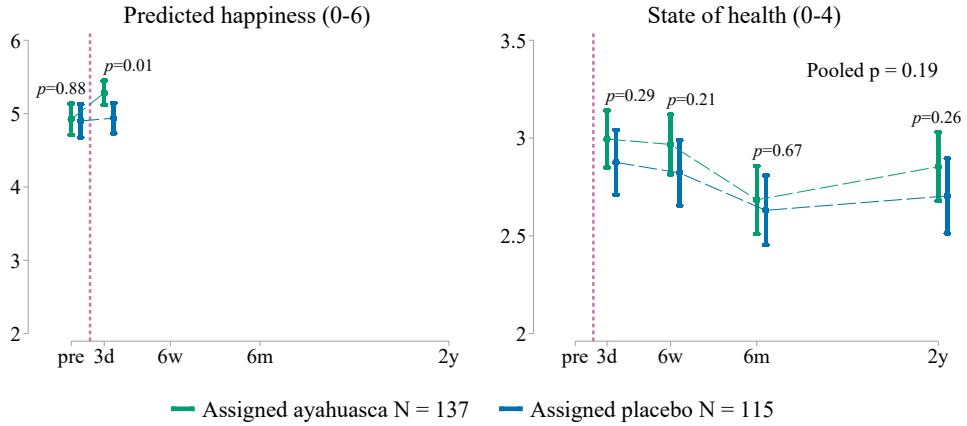
Note: Figure shows intent to treat effects. The outcome is the answer to *How personally meaningful was your Ayahuasca experience at [center name redacted]?* on a scale from 0 to 7. *p*-values are from a regression that controls for session-by-gender fixed effects, with robust standard errors. 95% confidence intervals are shown.

Figure A5: Mystical experience scores by treatment group



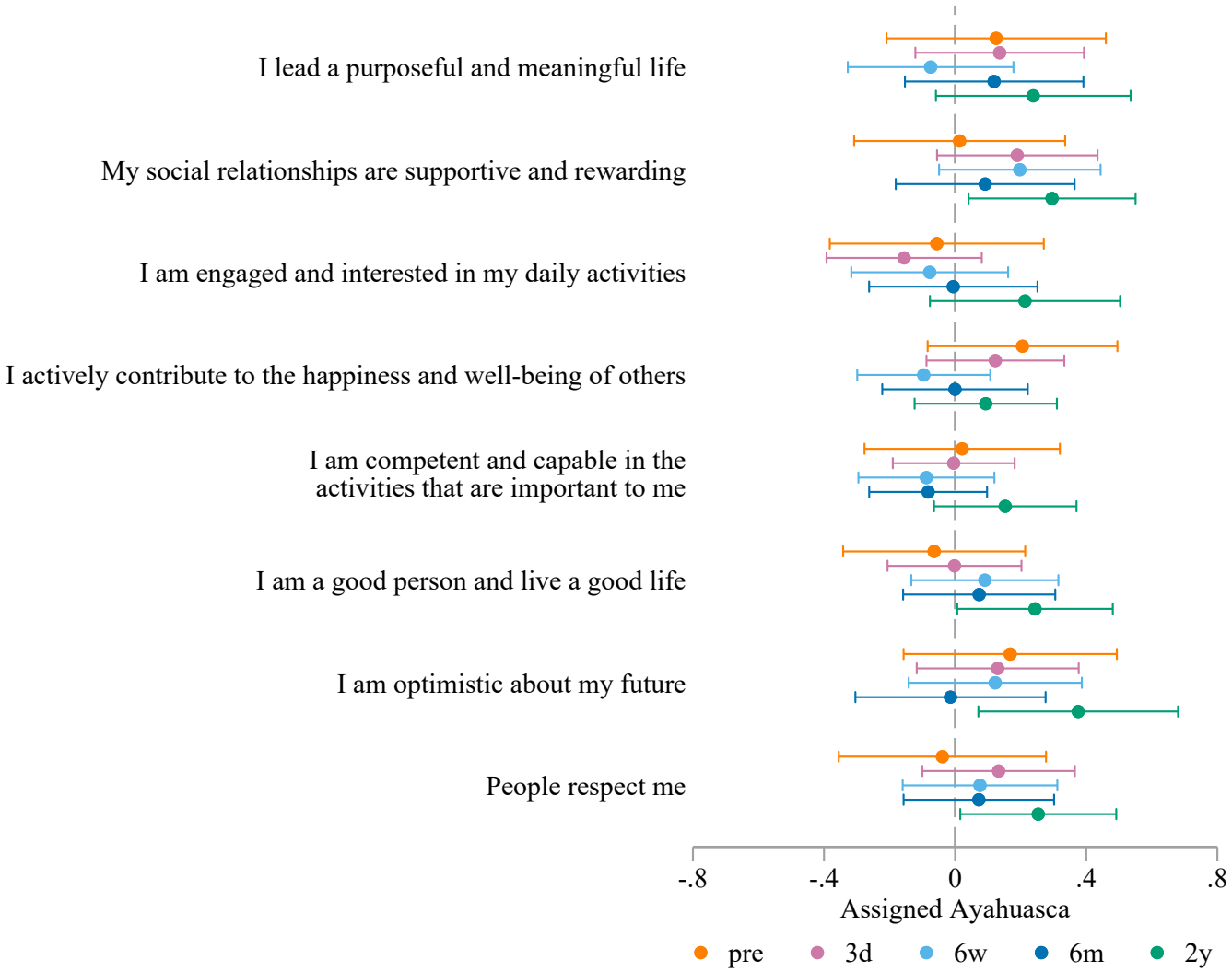
Note: Figure shows the histogram of mystical experience scores separately for those that took ayahuasca and those that took the placebo during the six experimental sessions.

Figure A6: Effects of ayahuasca on predicted happiness and general health



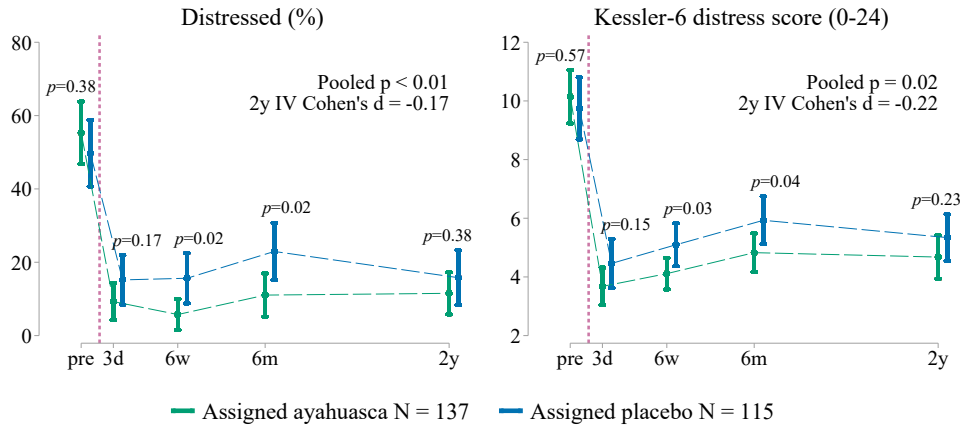
Note: Figure shows intent to treat effects. Baseline measures are denoted by pre; d/w/m/y denote days/weeks/months/years. The outcome in the first panel is the answer to *Now please predict how happy you will be in six weeks* on a scale from *Not very happy (0)* to *Very happy (6)*. The outcome in the second panel is the answer to *All in all, how would you describe your state of health these days?* and choices go from *Very Poor (0)* to *Very Good (4)*. 95% confidence intervals are shown. *p*-values are from a regression that controls for the outcome at baseline where available (except for the baseline comparison) and session-by-gender fixed effects, with robust standard errors.

Figure A7: Effects of ayahuasca on each item of the Flourishing Scale



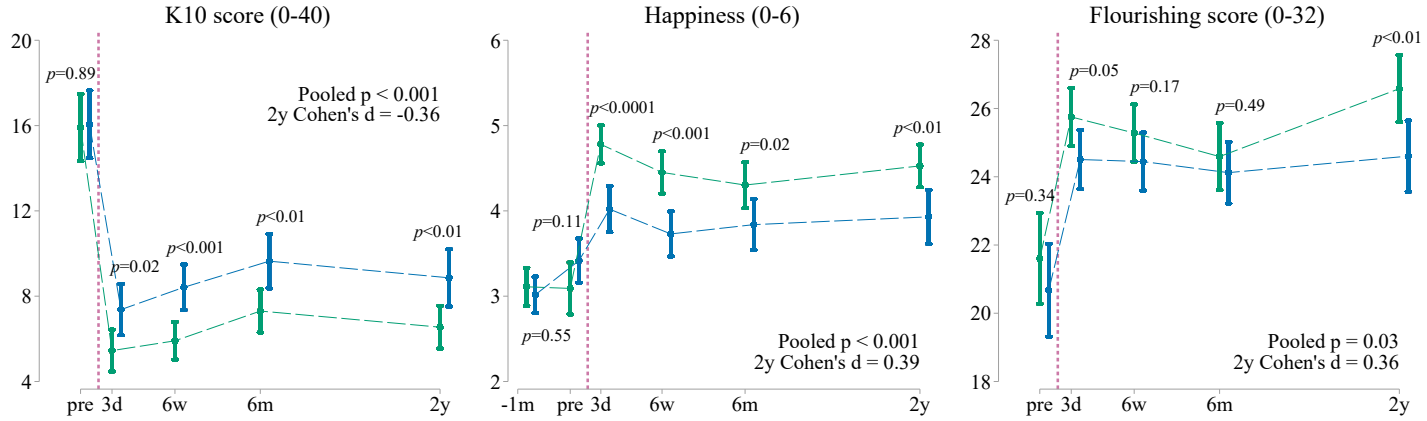
Note: Figure shows the effects of being assigned ayahuasca on each of the items of the Flourishing Scale. Participants are told "Below are eight statements with which you may agree or disagree. Please indicate your agreement with each item." For each item, participants respond 0 = Strongly disagree, 1 = Disagree a little, 2 = Neither agree nor disagree, 3 = Agree a little, or 4 = Strongly agree. 95% confidence intervals are shown. *p*-values are from a regression that controls for the outcome at baseline (except for the baseline specification) and session-by-gender fixed effects, with robust standard errors.

Figure A8: Effects on alternative measures of psychological distress



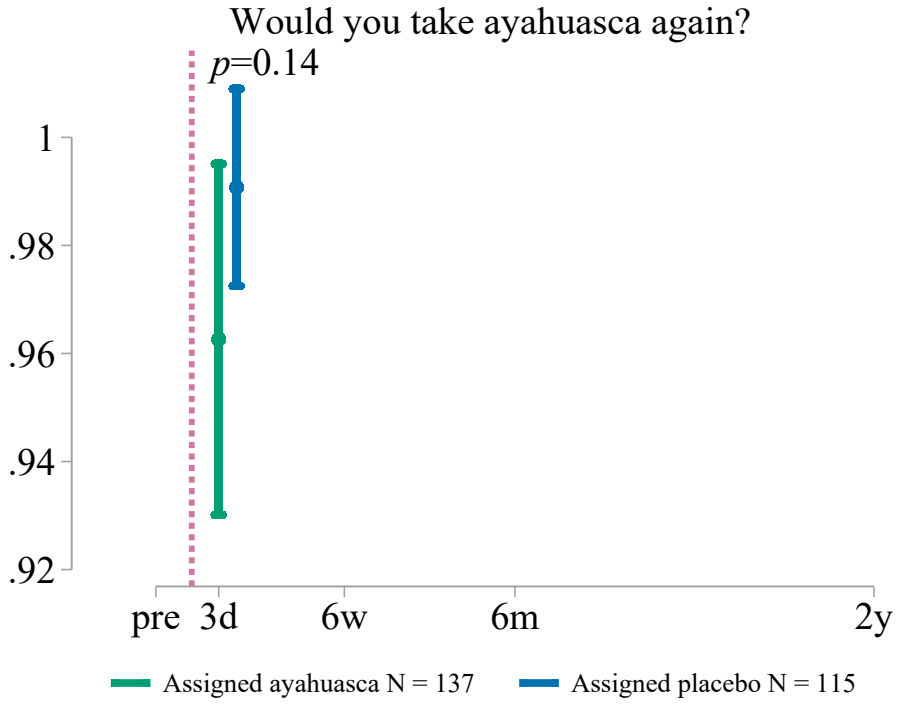
Note: Figure shows intent to treat effects. Baseline measures are denoted by pre; d/w/m/y denote days/weeks/months/years. Distressed (%) is the percentage of participants that score 15 or above on the Kessler-10 Psychological Distress Scale, while the Kessler-6 score is the score from the six-item version. 95% confidence intervals are shown. *p*-values are from a regression that controls for the outcome at baseline (except for the baseline comparisons) and session-by-gender fixed effects, with robust standard errors. The pooled *p*-value is obtained from a regression pooling data from the four follow-up surveys. 2y IV Cohen's *d* is the standardized effect of ayahuasca at two years, when using treatment assigned as an instrumental variable for treatment received.

Figure A9: Well-being effects using treatment actually received



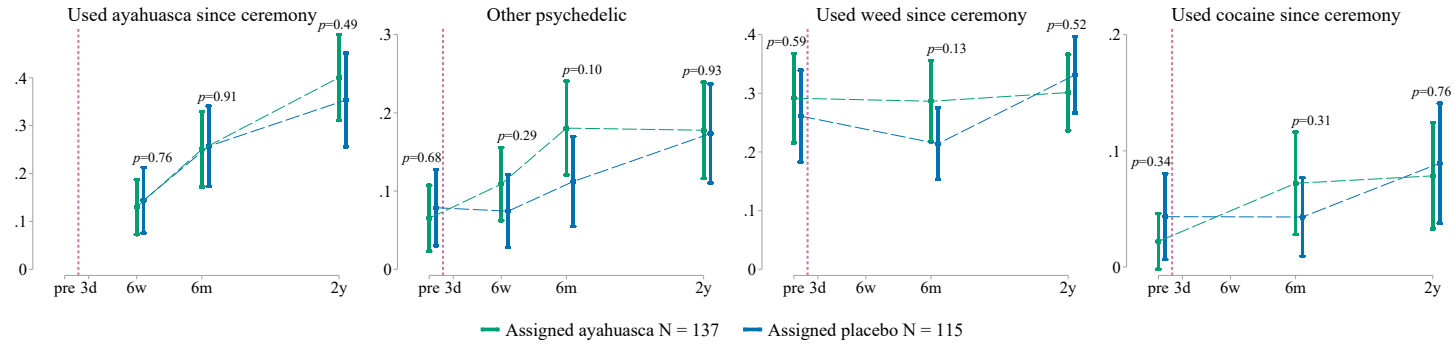
Note: Figure shows means by treatment actually received (as opposed to intent to treat estimates based on treatment assigned). Baseline measures are denoted by pre; -1m denotes a retrospective measure for the past month; d/w/m/y denote days/weeks/months/years. K10 score refers to the score on the Kessler-10 Psychological Distress Scale. Happiness is the answer to *In general, how happy would you say you are these days?* on a scale from *Not very happy (0)* to *Very happy (6)*. Flourishing is the score from 0 to 32 from summing answers to eight statements like *I lead a purposeful and meaningful life (0 = Strongly disagree to 4 = Strongly agree)*. Distressed (%) is the percentage of participants that score 15 or above on the Kessler-10 Psychological Distress Scale. 95% confidence intervals are shown. *p*-values are from a regression that controls for the outcome at baseline (except for the baseline and retrospective comparisons) and session-by-gender fixed effects, with robust standard errors. The pooled *p*-value is obtained from a regression pooling data from the four follow-up surveys. 2y Cohen's *d* is the standardized effect of ayahuasca at two years.

Figure A10: Almost all participants assigned to ayahuasca report that they would take ayahuasca again



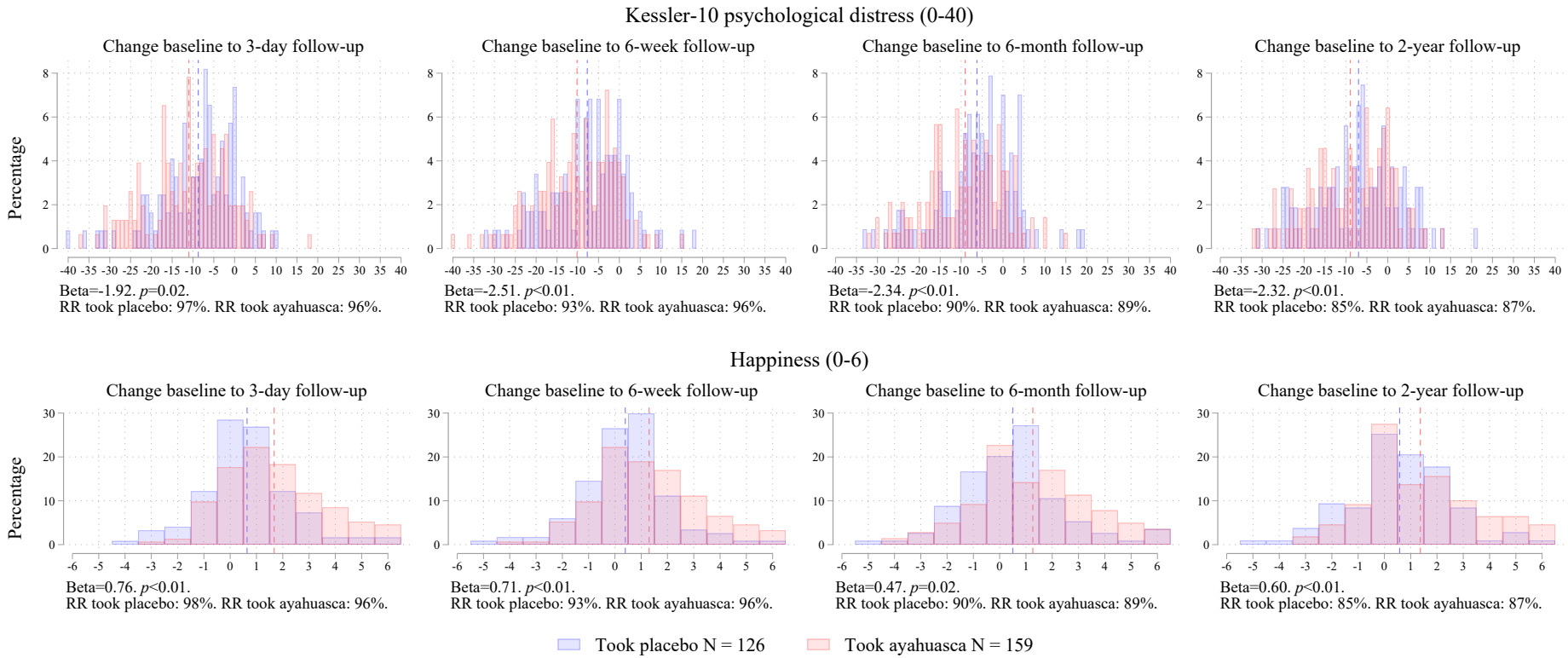
Note: Figure shows intent to treat effects. The outcome is the answer to *Would you take the Ayahuasca again?* p-values are from a regression that controls for session-by-gender fixed effects, with robust standard errors. 95% confidence intervals are shown.

Figure A11: Little evidence of ayahuasca being addictive or a gateway drug



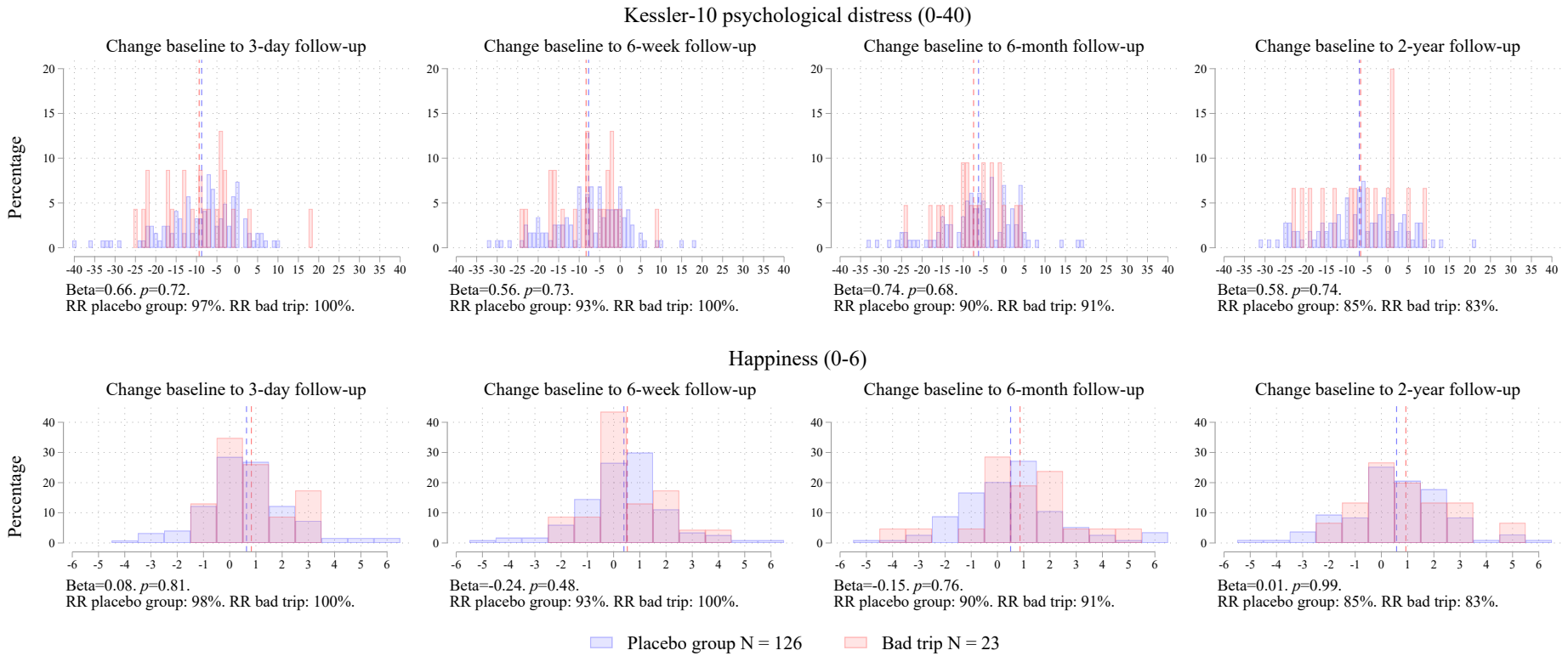
Note: Figure shows intent to treat effects. Baseline measures are denoted by pre; d/w/m/y denote days/weeks/months/years. Each panel shows effects of ayahuasca on binary outcomes, as described next. (i) Whether the participant reports having taken ayahuasca since the ceremony. At 6 weeks this is whether the answer to *How many times did you take ayahuasca again after the experiment session?* is at least once. At 6 months/2 years the question is *Have you taken Ayahuasca since [ceremony date]/[6-month follow-up date]?* (ii) Whether the participant reports taking psilocybin, LSD, or MDMA, (iii) whether the participant reports taking marijuana, and (iv) whether the participant reports taking cocaine. At 6 weeks and 6 months the corresponding question for these outcomes is *Which psychedelic/illicit drug(s) have you used since [ceremony date]?*, while at 2 months it asks since [6-month follow-up date]. 95% confidence intervals are shown. *p*-values are from a regression that controls for the outcome at baseline where available and session-by-gender fixed effects, with robust standard errors.

Figure A12: No evidence of negative tail events due to ayahuasca



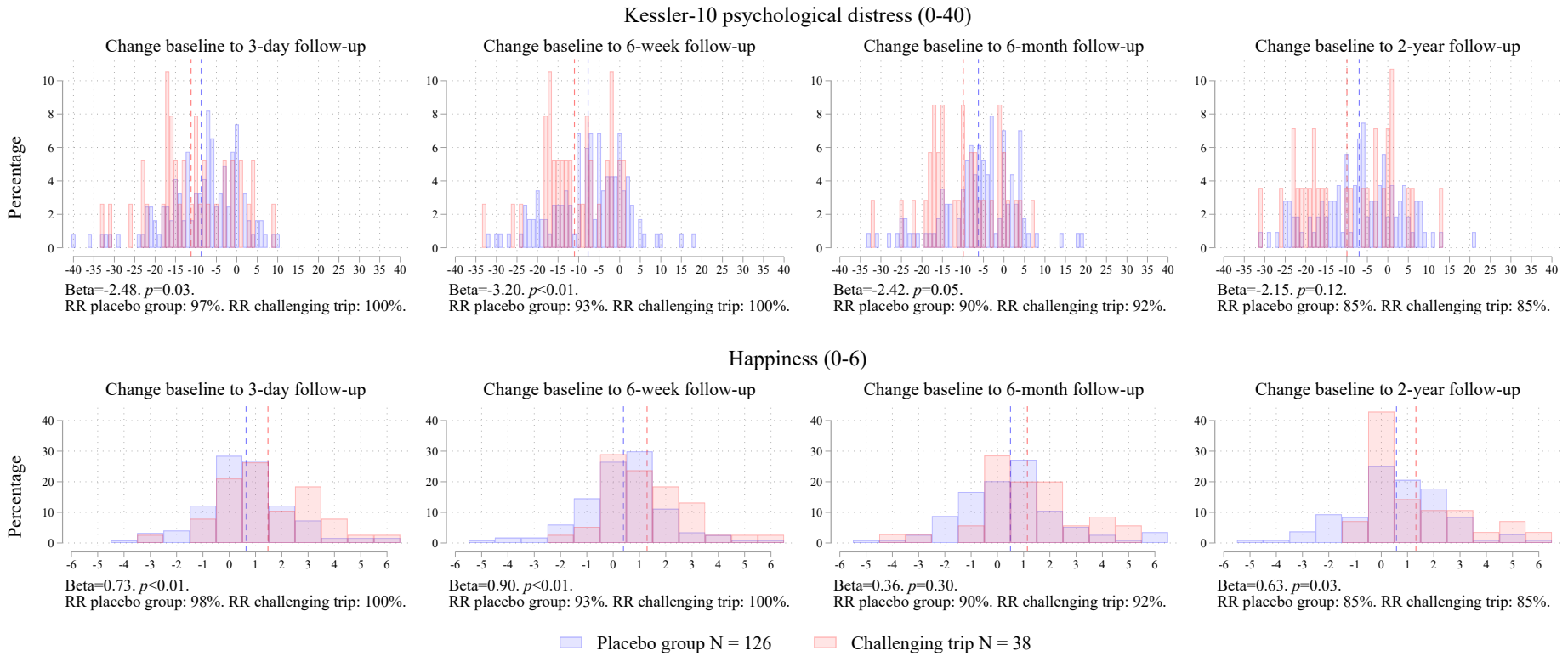
Note: The figure plots histograms of well-being changes for (i) participants that actually received ayahuasca, including in the all-treated session (for columns 1-3 only; participants in the all-treated session did not receive 2-year follow-up), and (ii) participants that received the placebo. RR refers to response rate (in terms of response to the respective outcome). The high response rates in the ayahuasca group limit the possibility of negative effects obscured by non-response. Vertical dashed lines denote the mean well-being change for each group. The betas and *p*-values are from a regression of the outcome on an indicator for taking ayahuasca (the omitted group comprises participants that received the placebo) that controls for the outcome at baseline, and session-by-gender fixed effects, with robust standard errors.

Figure A13: Bad trips and placebo deliver similar changes in well-being



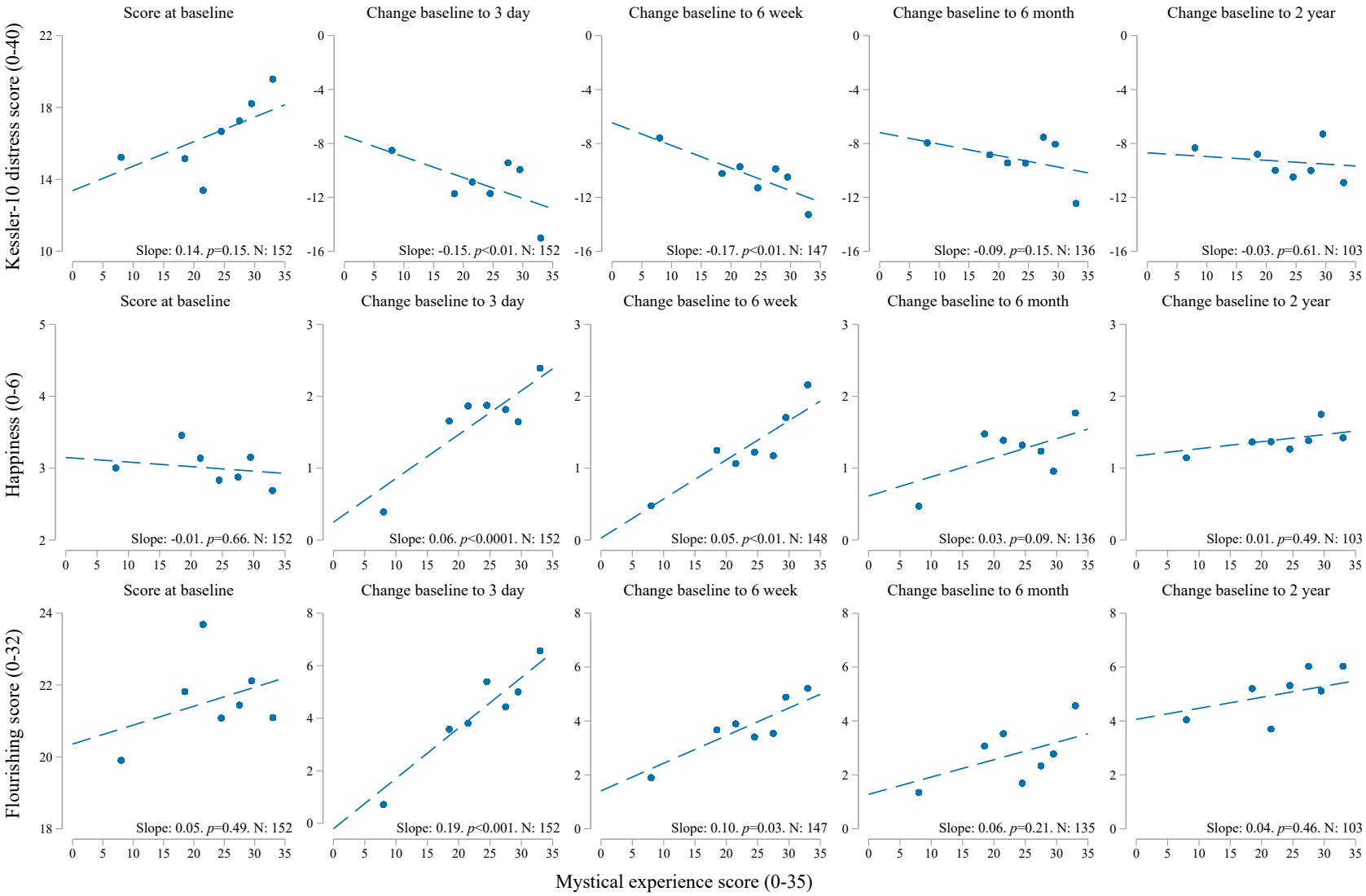
Note: The figure plots histograms of well-being changes for (i) participants that received ayahuasca and reported having a bad trip (at the 3-day follow-up; includes participants in the all-treated session in columns 1-3, but these participants did not receive the two-year follow-up), and (ii) participants that received the placebo. RR refers to response rate. Bad trip participants have high response rates, limiting the possibility of negative effects obscured by non-response. Vertical dashed lines denote the mean well-being change for each group. The betas and *p*-values are from a regression of the outcome on an indicator for having had a bad ayahuasca trip (the omitted group comprises participants that received the placebo) that controls for the outcome at baseline and session-by-gender fixed effects, with robust standard errors.

Figure A14: Challenging trips improve well-being more than placebo



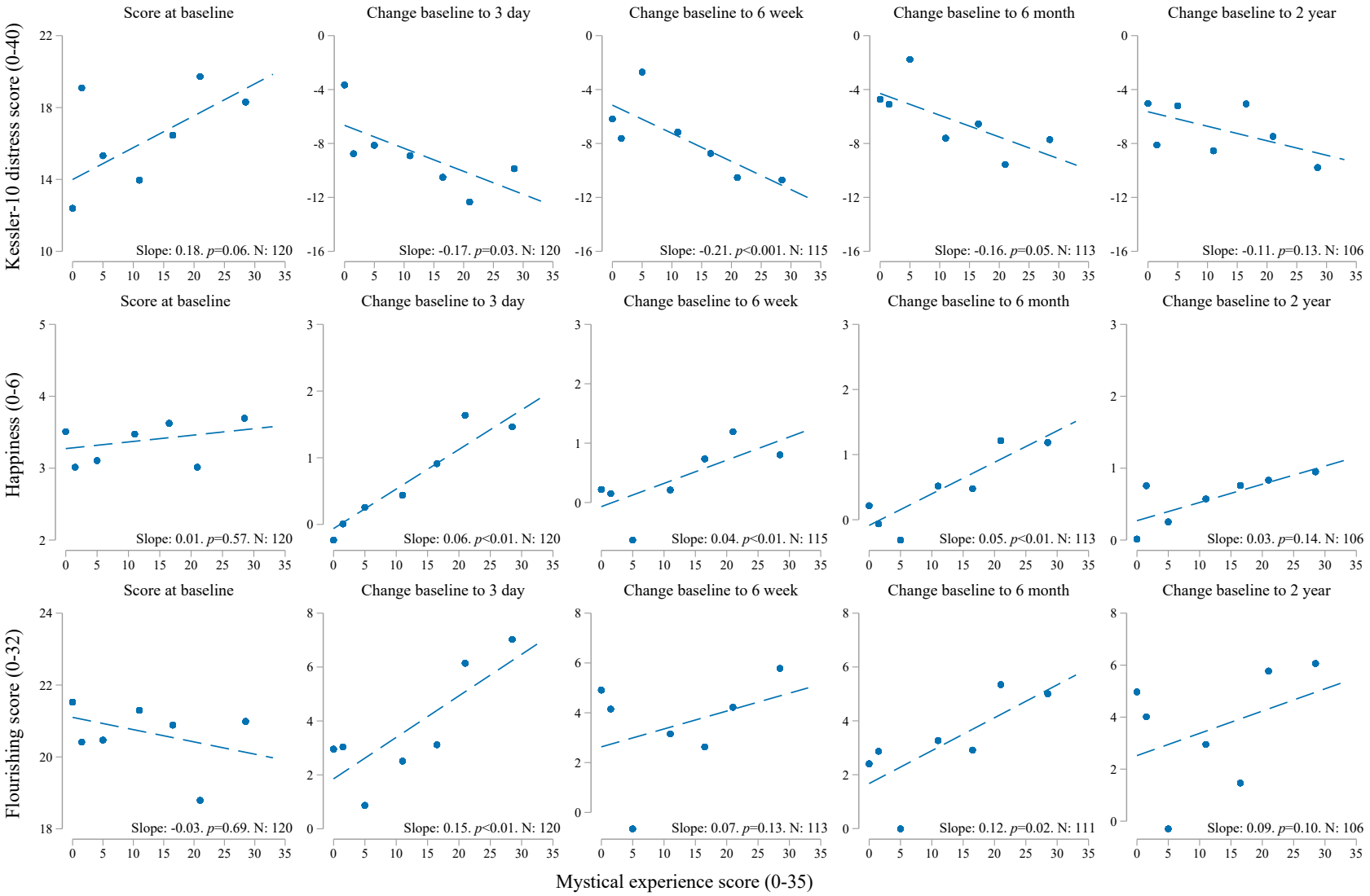
Note: The figure plots histograms of well-being changes for (i) participants that received ayahuasca and reported having a challenging trip (at the 3-day follow-up; includes participants in the all-treated session in columns 1-3, but these participants did not receive the two-year follow-up), and (ii) participants that received the placebo. RR refers to response rate (in terms of response to the respective outcome). Challenging trip participants have high response rates, limiting the possibility of negative effects obscured by non-response. Vertical dashed lines denote the mean well-being change for each group. The betas and *p*-values are from a regression of the outcome on an indicator for having had a challenging ayahuasca trip (the omitted group comprises participants that received the placebo) that controls for the outcome at baseline and session-by-gender fixed effects, with robust standard errors.

Figure A15: More mystical trips predict greater improvements in well-being



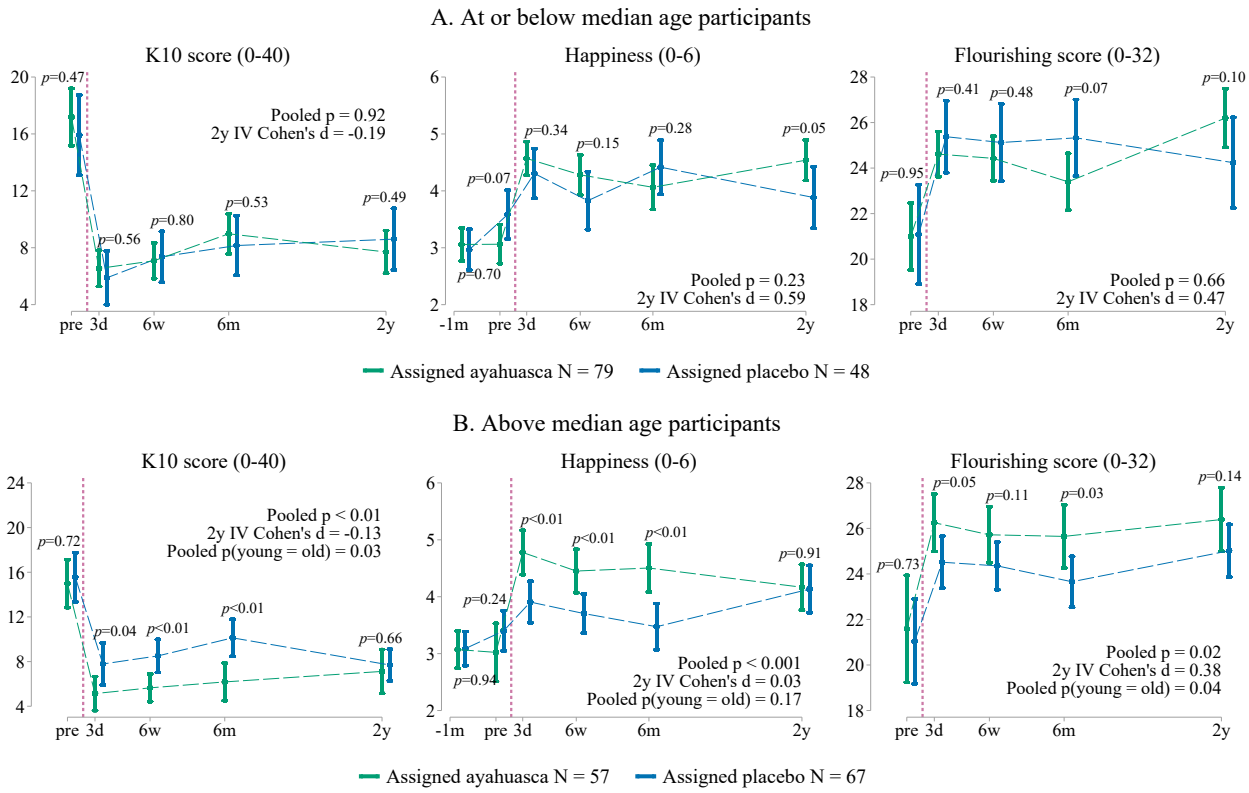
Note: Each panel shows a binscatter plot correlating the mystical experience score (measured at the 3-day follow-up) of participants who took ayahuasca with baseline measures of well-being (first column), and changes in well-being from baseline to each of the follow-up surveys (second to fifth columns). The sample includes the last session where everyone was treated, and for which 2-year follow-up (column 5) is not available. Each panel controls for session-by-gender fixed effects and, with the exception of the first column, the well-being outcome measured at baseline. Standard errors are robust.

Figure A16: More mystical experiences in the placebo group also predict greater improvements in well-being



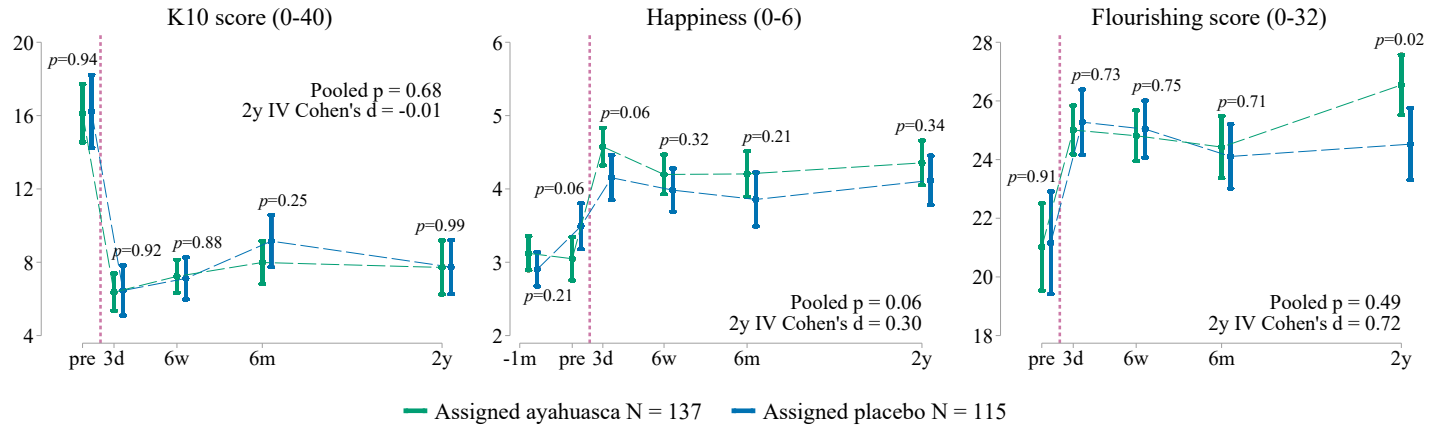
Note: This figure parallels Figure A15, but includes only the participants that attended the ceremony and took the placebo, jurema.

Figure A17: Well-being effects are larger for older participants



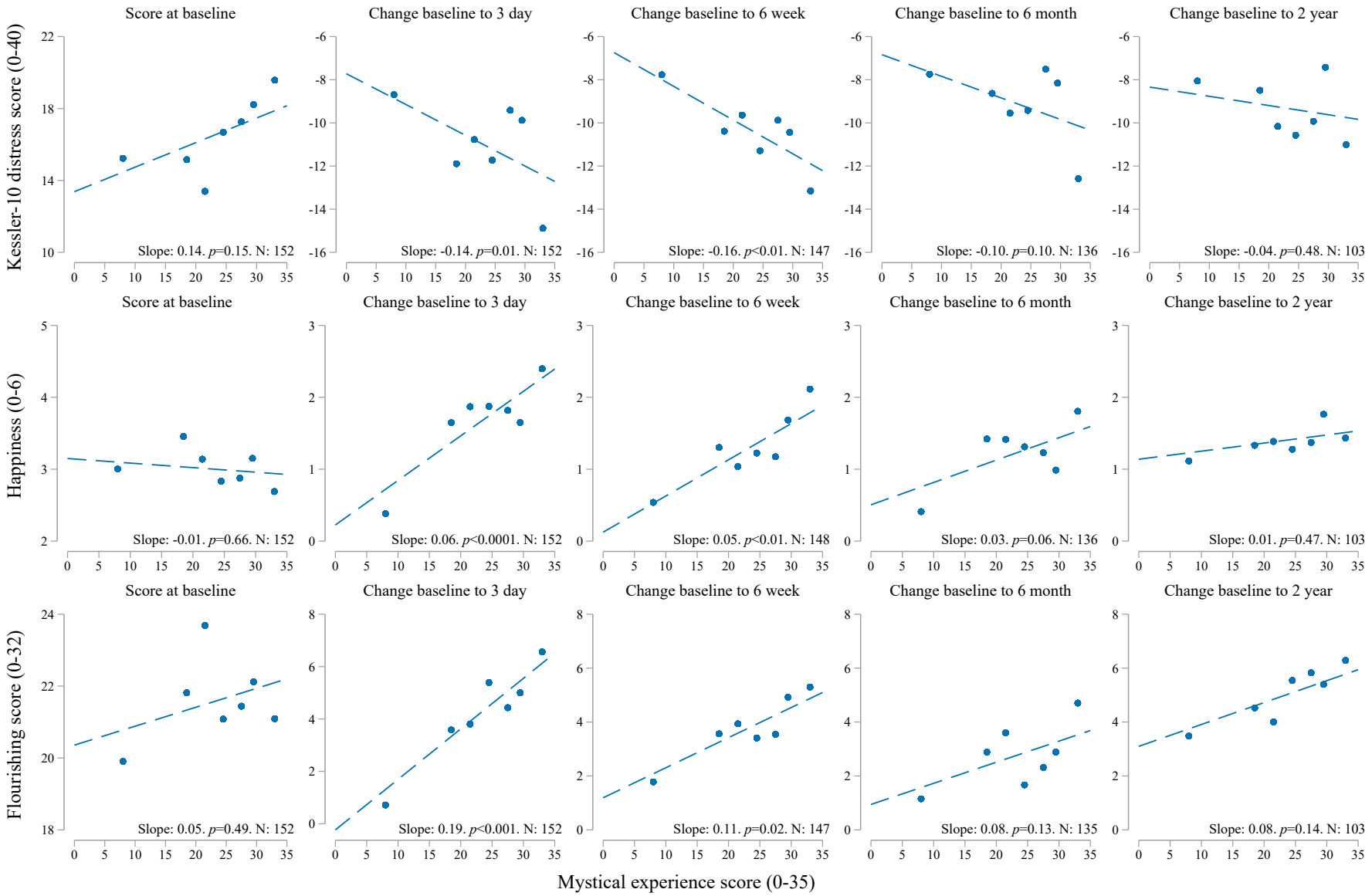
Note: This figure parallels Figure 2, but shows effects separately for at-or-below-median age ($N = 127$; between 18 and 32 years old) versus above-median ($N = 124$; between 33 and 66 years old) participants. One participant is excluded due to having missing age data at baseline.

Figure A18: Well-being effects attenuate after controlling for perceived treatment status



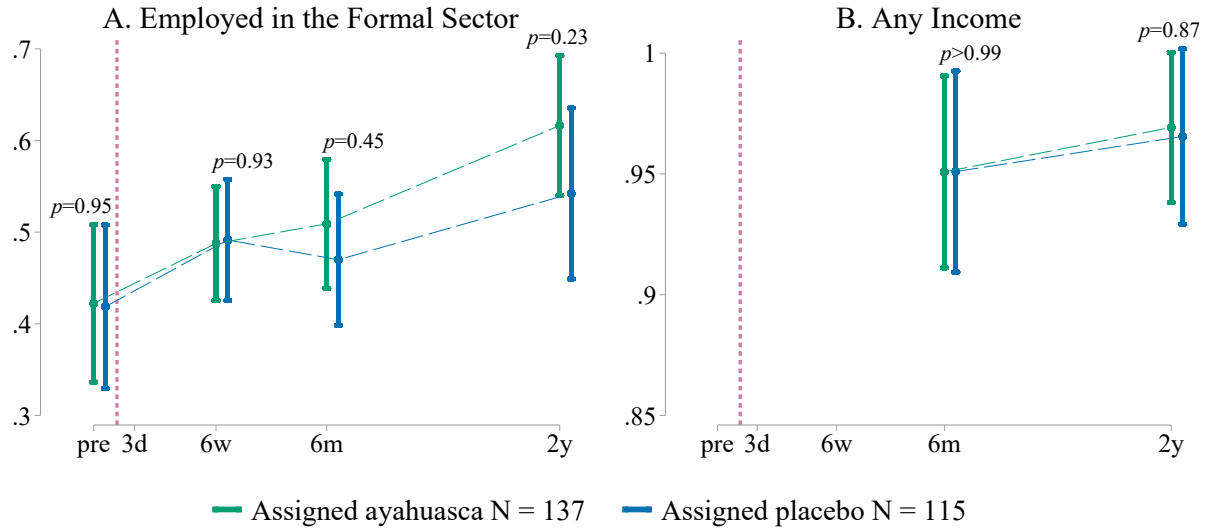
Note: Figure shows intent to treat effects. Baseline measures are denoted by pre; -1m denotes a retrospective measure for the past month; d/w/m/y denote days/weeks/months/years. K10 score refers to the score on the Kessler-10 Psychological Distress Scale. Happiness is the answer to *In general, how happy would you say you are these days?* on a scale from *Not very happy (0)* to *Very happy (6)*. Flourishing is the score from 0 to 32 from summing answers to eight statements like *I lead a purposeful and meaningful life (0 = Strongly disagree to 4 = Strongly agree)*. 95% confidence intervals are shown. *p*-values are from a regression that controls for the outcome at baseline (except for the baseline and retrospective comparisons), a dummy variable equal to one if the participant guessed that they received regular-concentration ayahuasca, and session-by-gender fixed effects, with robust standard errors. The pooled *p*-value is obtained from a regression pooling data from the four follow-up surveys. 2y IV Cohen's *d* is the standardized effect of ayahuasca at 2 years, when using treatment assigned as an instrumental variable for treatment received.

Figure A19: More mystical trips predict greater improvements in well-being with guess control



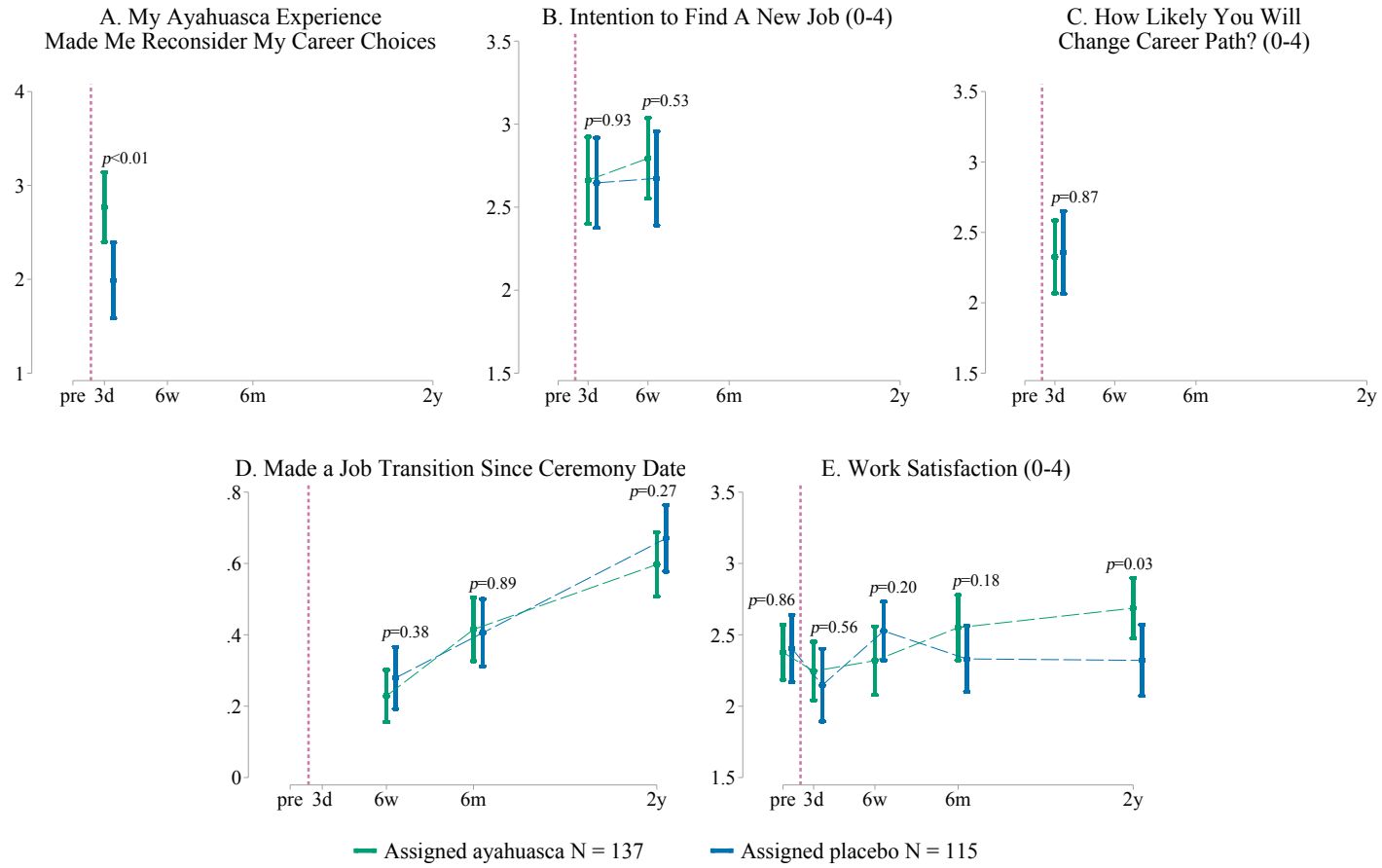
Note: Each panel shows a binscatter plot correlating the mystical experience score (measured at the 3-day follow-up) with baseline measures of well-being (first column), and changes in well-being from baseline to each of the follow-up surveys (second to fifth columns). Each panel controls for session-by-gender fixed effects, a dummy variable equal to one if the participant guessed that they received regular-concentration ayahuasca, and, with the exception of the first column, the well-being outcome measured at baseline. Standard errors are robust.

Figure A20: Effects of ayahuasca on formal employment and whether participants earn any income



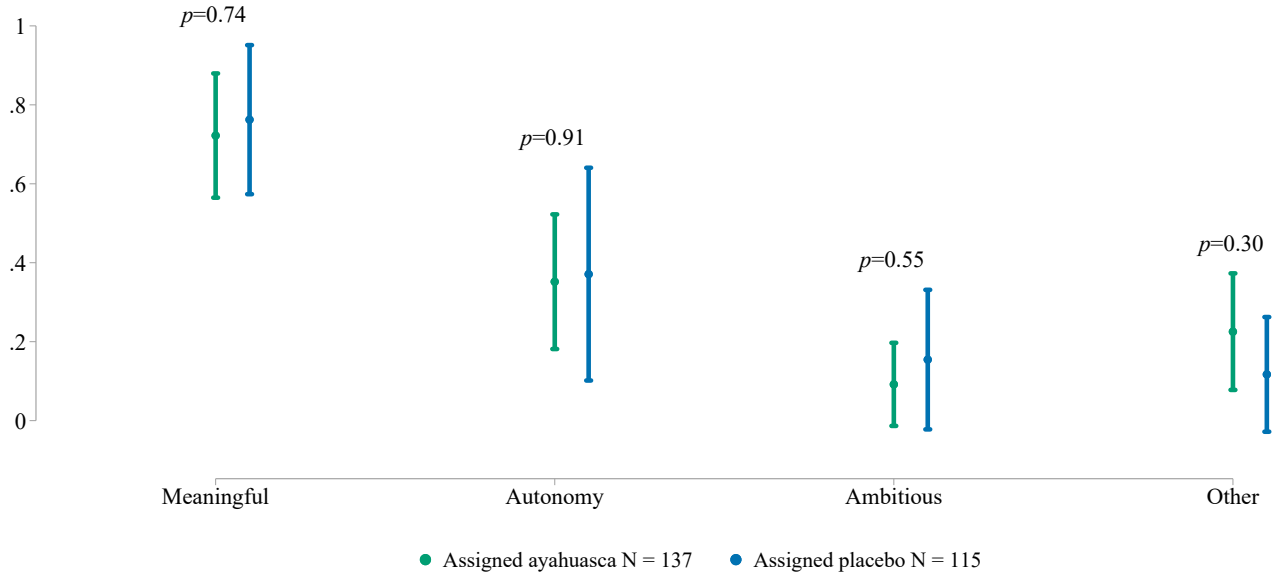
Note: Figure shows intent to treat effects. The outcome in the first panel is an indicator for being employed in the formal sector. The outcome in the second panel is an indicator for positive reported gross monthly income. *p*-values are from a regression that controls for a baseline dependent variable – (**A**) controls for the outcome at baseline, and (**B**) includes dummies for income bracket at baseline – and session-by-gender fixed effects, with robust standard errors. 95% confidence intervals are shown.

Figure A21: Mechanisms for effects of ayahuasca on labor market outcomes



Note: Figure shows intent to treat effects. The outcome in (**A**) is the answer to *Please rate to which extent you agree with the following statement: My Ayahuasca experience has made me reconsider my career choices.* This question is only asked of those that report that it is likely that they will change career path within the next year (38%/39% of the assigned placebo/ayahuasca group reported this). The outcome in (**B**) is the answer to *Taking everything into consideration, how likely is it you will make a genuine effort to find a new job within the next year?* The outcome in (**C**) is the answer to *Taking everything into consideration, how likely is it you will change your career path within the next year?* The outcome in (**D**) is the answer to *Have you made a job transition (that is, leaving a job or starting a new job) since [ceremony date]?* In the 6-week follow-up, question choices are Yes/No. In the 6-month follow-up, question specifies which transition was made (e.g., from unemployed to employed), if any. The 6-month follow-up is recoded to match the Yes/No format. The outcome in (**E**) is the answer to *How satisfied do you feel right now about your current job?* The regression for this panel also controls for the outcome at baseline. *p*-values are from a regression that controls for a baseline dependent variable where available – the middle figure in the top row controls for the outcome at baseline – and session-by-gender fixed effects, with robust standard errors. 95% confidence intervals are shown.

Figure A22: How ayahuasca made participants reconsider their career choices



Note: The question is *In what ways do you think your Ayahuasca experience has made you reconsider your career choices? Select all that apply.* It is asked only of participants who said it was likely they would change career path within the next year and who agreed (*agree a little* or *strongly agree*) that their Ayahuasca experience made them reconsider their career choices. Options, from left to right: (1) *I want to move to a job that is more meaningful*, (2) *I want to move to a job where I have more autonomy*, (3) *I want to stay in the same job, but I want to be more ambitious*, and (4) *Other.* Participants could select more than one reason.

Figure A23: Mystical experience scores correlated with changes in economic behaviors - Part I

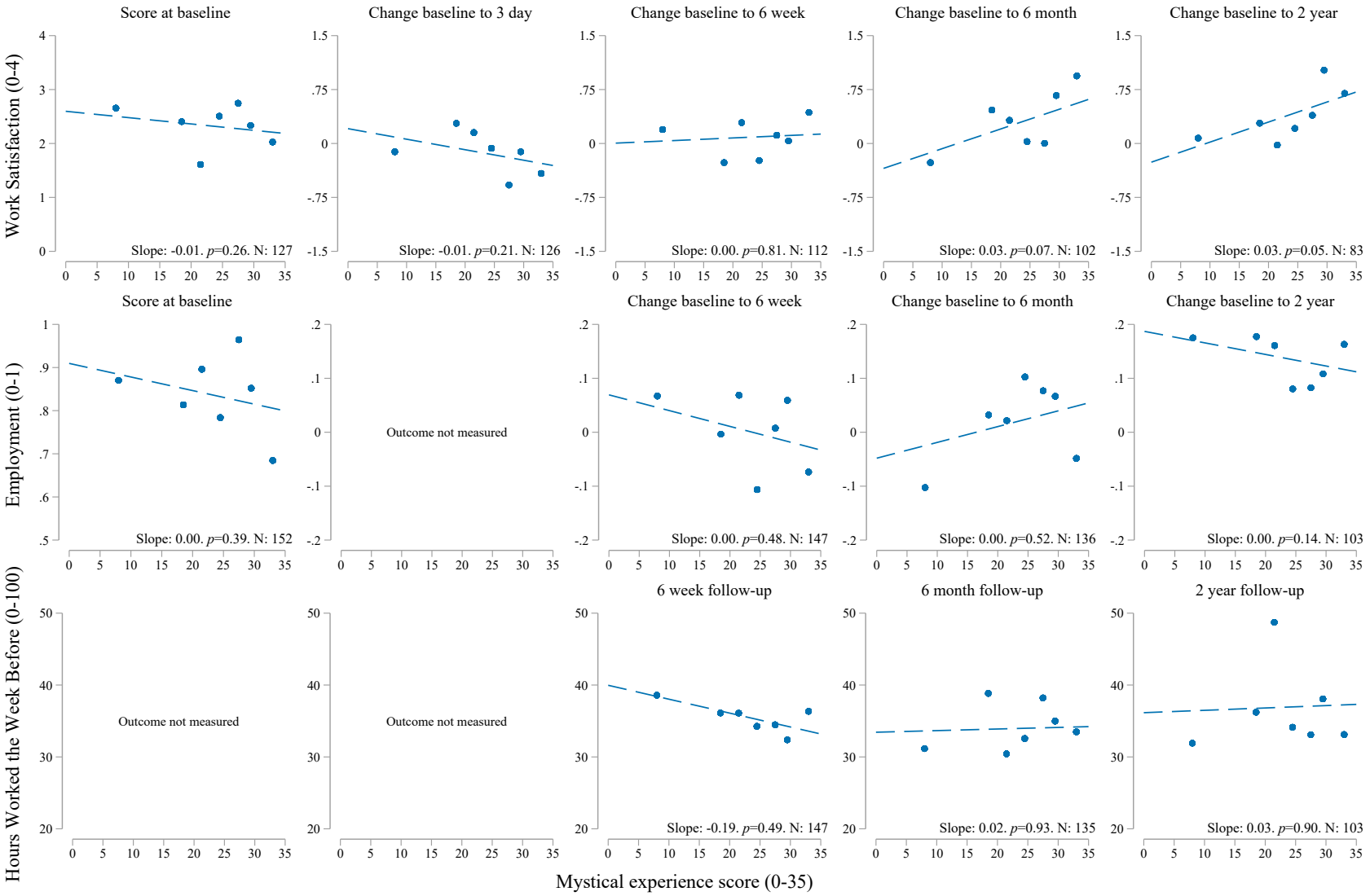
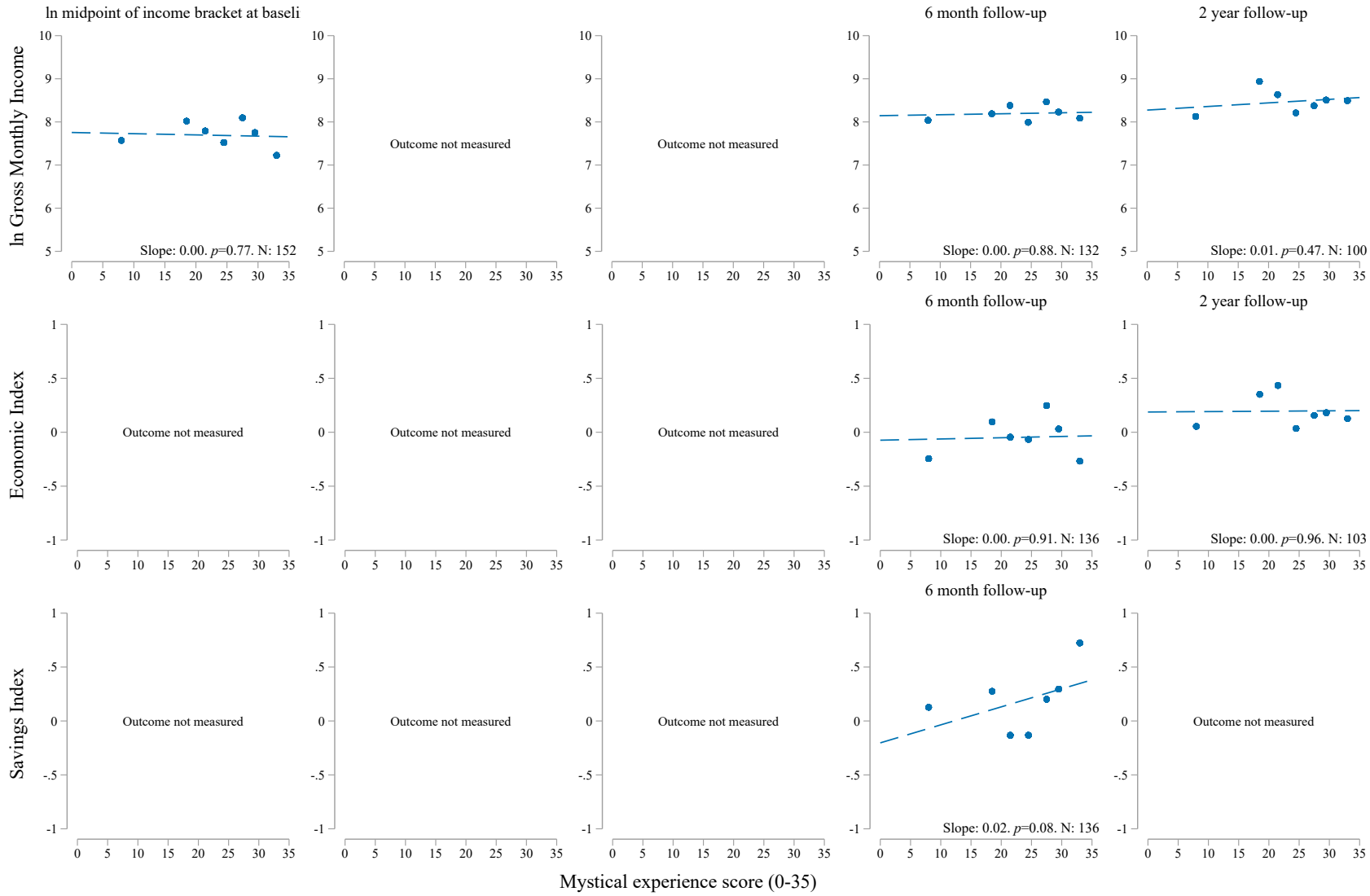
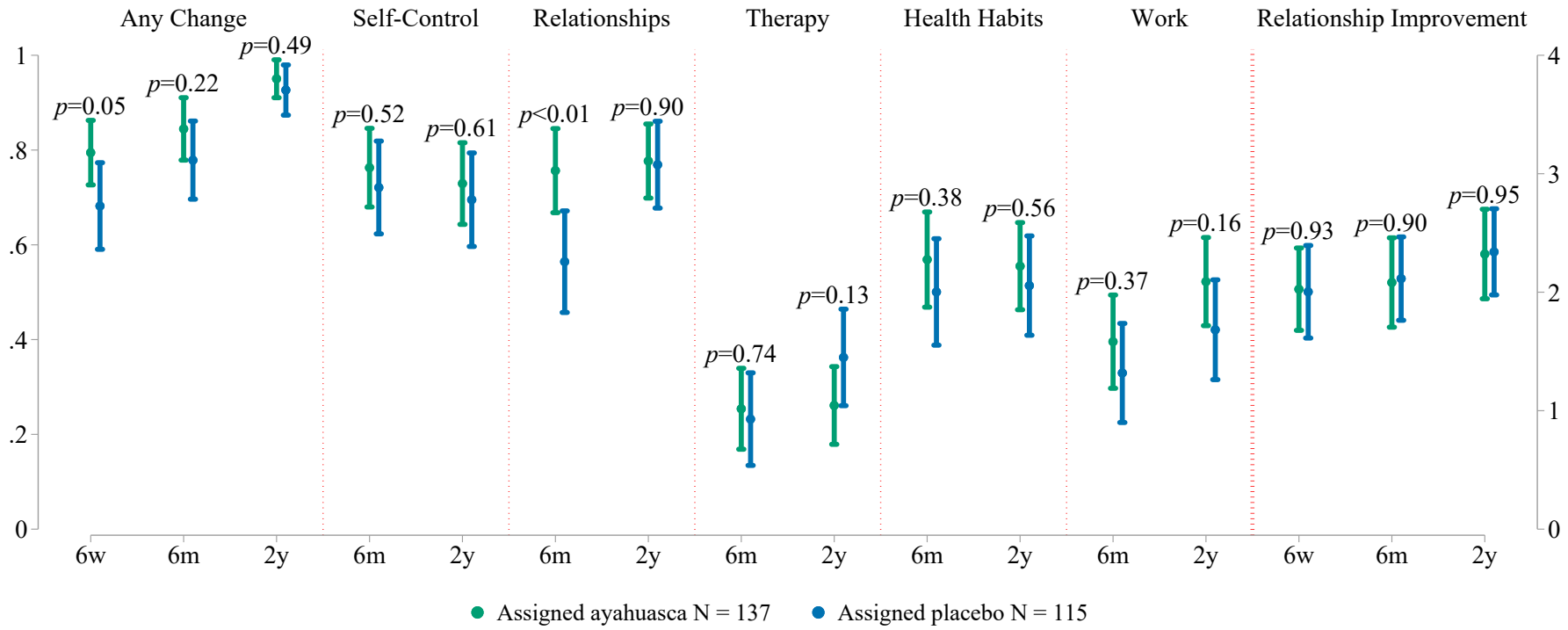


Figure A24: Mystical experience scores correlated with changes in economic behaviors - Part II



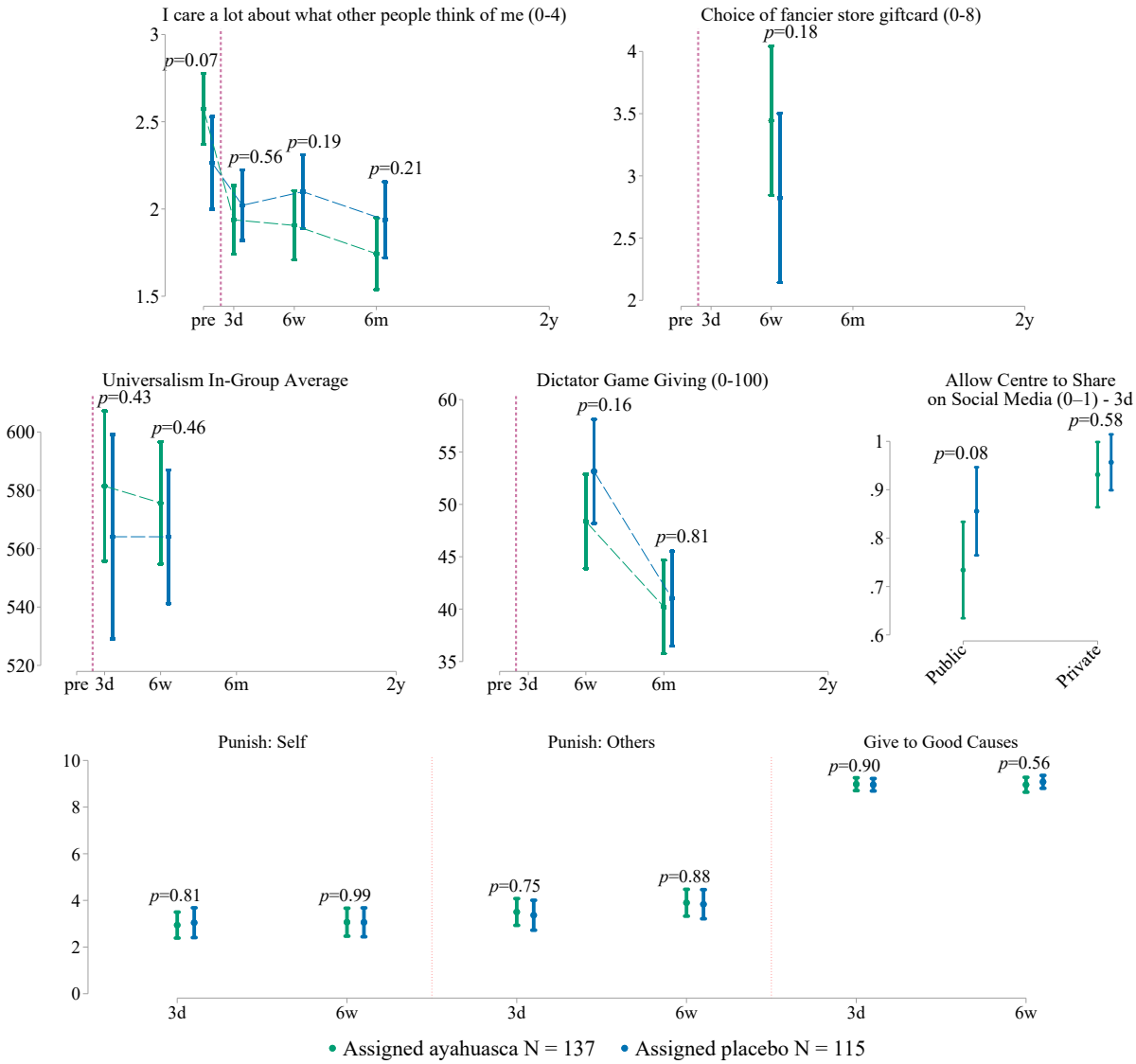
Note: Analog of Figure A15 for economic outcomes. Work satisfaction and employment show the baseline level and the change from baseline to each follow-up (3-day, 6-week, 6-month, and 2-year, where measured); those change panels also control for the outcome at baseline. Employment was not asked at 3 days. Hours worked and percent of income saved are levels at each available follow-up (hours: 6-week, 6-month, and 2-year; savings: 6-month and 2-year). For ln gross monthly income, the first panel is the log of the midpoint of the baseline income bracket; later panels are log of reported income at 6 months and 2 years and include baseline income-bracket dummies. Economic index is the unweighted mean of employment, ln gross monthly income, and hours worked, each standardized using the mean and standard deviation among participants assigned placebo at the 6-month follow-up; the mean is taken over whichever components are non-missing. Savings index is the unweighted mean of number of credit types (reverse-coded), number of investment types, savings increase, winsorized savings minus debt, and percent of income saved, each standardized using the mean and standard deviation among participants assigned placebo; the mean is taken over whichever components are non-missing.

Figure A25: Effects of ayahuasca on behavior change



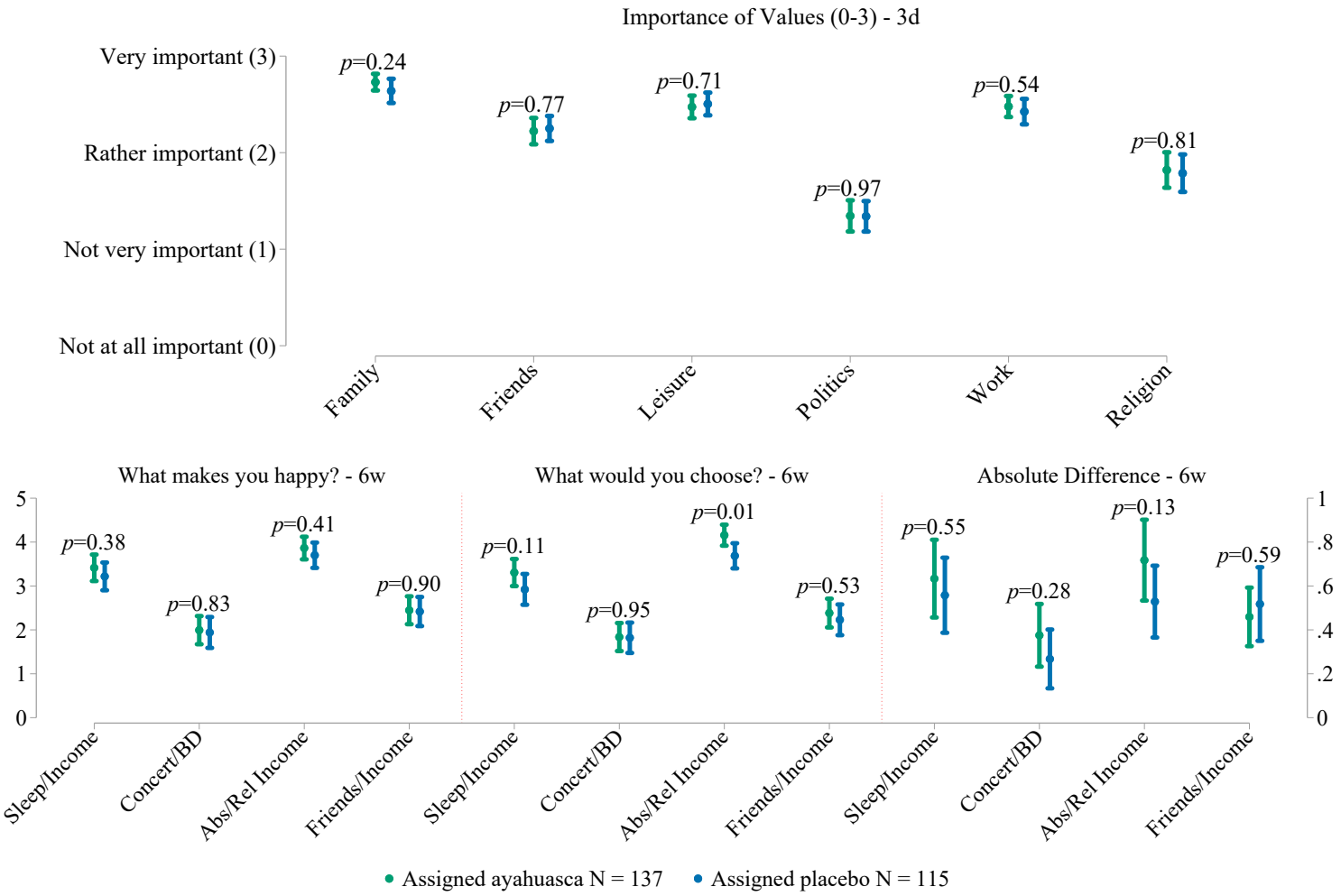
Note: Figure shows intent to treat effects. The outcome in the first panel is whether the participant noticed any behavior change. The outcomes in the following five pairs are the answers to *Which behaviors below do you believe have changed the most since [ceremony date]? Select all options that apply.* Each is 0 for participants who reported no behavior change (and were therefore not asked this question). Options are from left to right: (1) *Self control. I became a person who thinks more before making decisions or saying something.* (2) *My relationships with other people, in general. I learned to listen and communicate better.* (3) *I started going to therapy or opening up more in therapy.* (4) *I improved some health habits, like exercising and eating better.* (5) *I improved my relationship with work.* The outcome in the last column is the answer to *In your first survey, you mentioned that you would like your relationship to improve with [someone]. How much has your relationship improved with [someone] since [ceremony date]?* and is measured on a scale from *Not at all* (0) to *A great deal* (4). This question was only asked of participants that reported wanting to improve a relationship at baseline (138 ceremony attendees); 129 ceremony attendees received this question at the 6-week follow-up, 123 at the 6-month follow-up, and 119 at the 2-year follow-up. *p*-values are from a regression that controls for session-by-gender fixed effects, with robust standard errors. 95% confidence intervals are shown.

Figure A26: Effects of ayahuasca on social preferences and social image



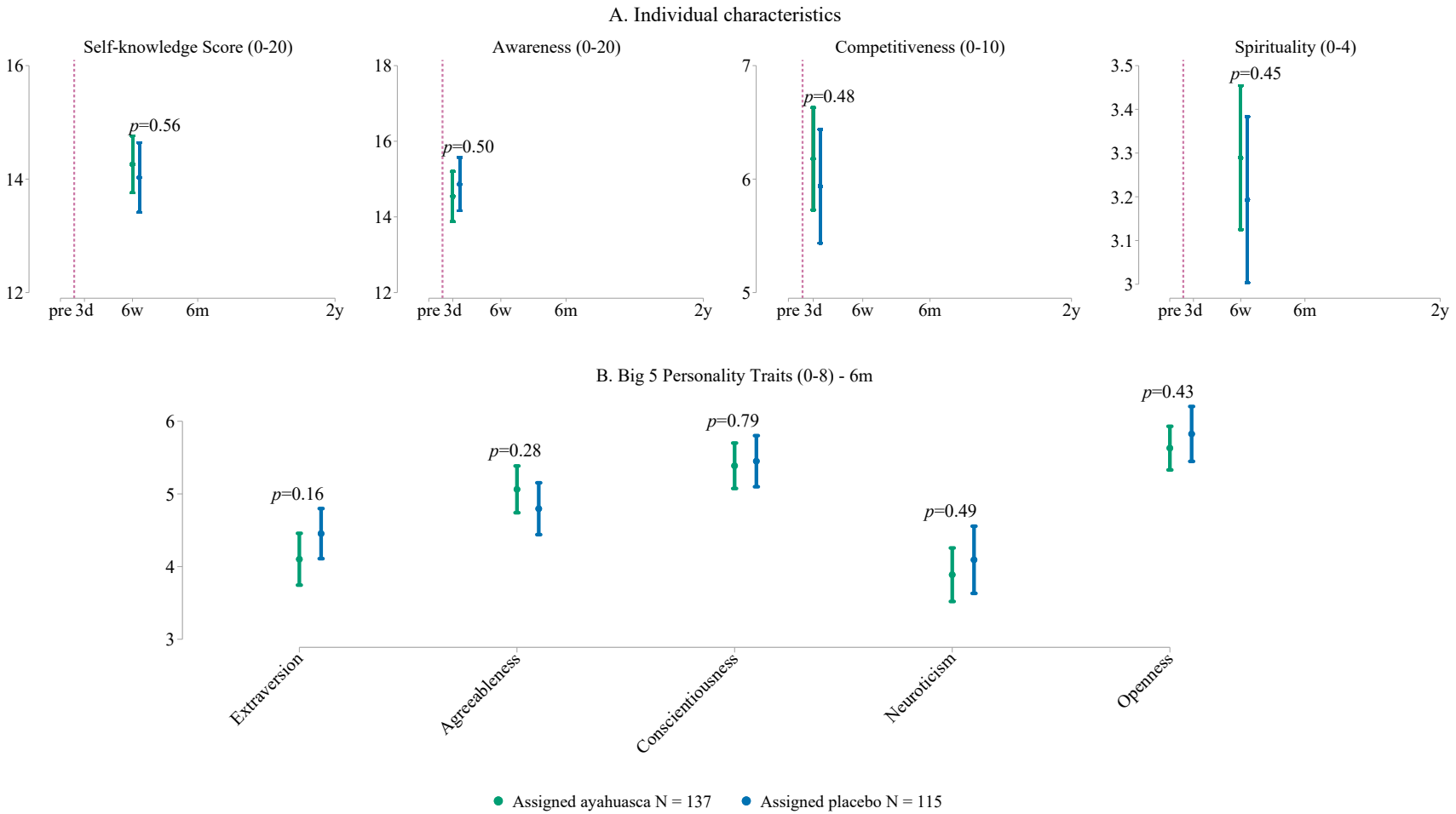
Note: Figure shows intent to treat effects. For Choice of fancier store giftcard, participants were incentivized to choose between a Hering giftcard with a fixed value and an Osklen giftcard (i.e., fancier store) that increases in value. A higher value means the person preferred the fancier store, even at a lower giftcard value. We exclude people that switch away from the fancier store giftcard when it increases in value. Universalism In-Group Average is the average of the self-reported amounts given (out of 1000 reais) to a family member, a friend, and a random stranger from Brazil (as opposed to a random stranger anywhere in the world). Dictator Game Giving is the amount, out of 100 reais, the respondent chooses to transfer to a randomly matched anonymous recipient who is also a resident of [city name redacted]. One participant from each ayahuasca session is randomly drawn to win 100 reais, and the money is split according to their answer. For Allow Centre to Share on Social Media, participants were randomized into seeing the public or private version of the following incentivized question. Public: *Would you allow [center name redacted] to disclose what you just described about your Ayahuasca experience on their Instagram, in which they have over [number redacted] followers? This information would be shared along WITH your full name.* Private: Same but *WITHOUT your full name*. The outcomes in the bottom row are the self-reported willingness to punish someone who treats the participant unfairly (even if there may be costs for them), willingness to punish someone who treats others unfairly (even if there may be costs for them), and willingness to give to good causes without expecting anything in return; all measured on a scale from 0 to 10. *p*-values are from a regression that controls for session-by-gender fixed effects, with robust standard errors. The regression for the top-left panel also controls for the outcome at baseline. 95% confidence intervals are shown.

Figure A27: Effects of ayahuasca on values and preferences



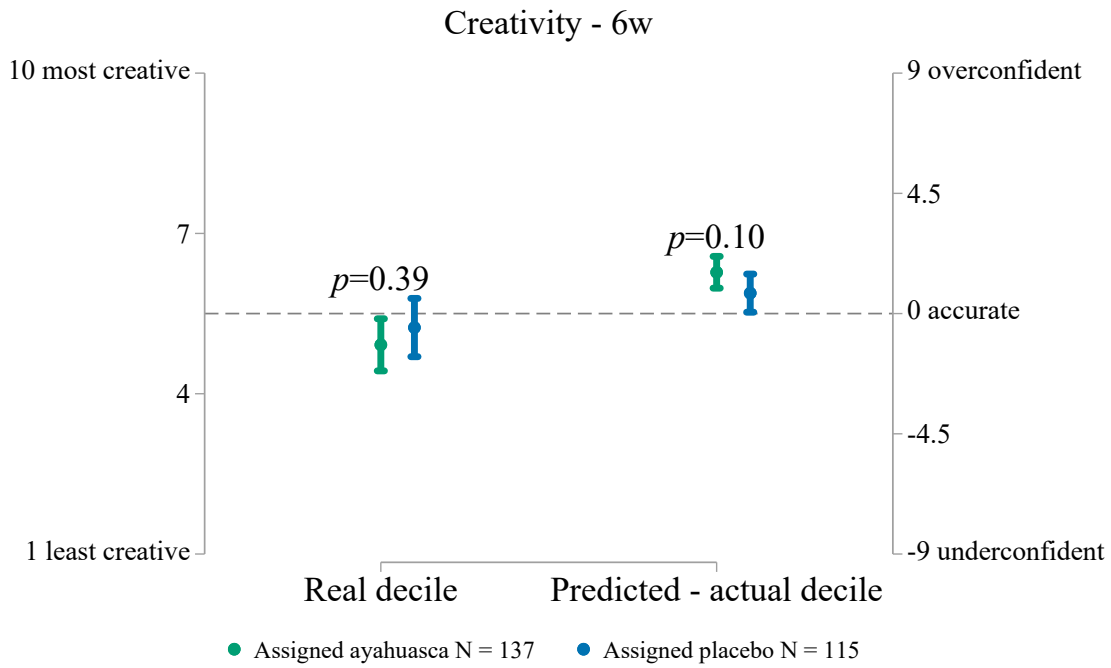
Note: Figure shows intent to treat effects. The question in the top figure is *For each of the following, indicate how important it is in your life* with choices from *Not at all important (0)* to *Very important (3)*; this outcome was measured at the 3-day follow-up. In the bottom figure, for happiness, the question is *Between these two options, taking all things together, which do you think would give you a happier life as a whole?* For choice, the question is *If you were limited to these two options, which do you think you would choose?* Both questions were measured on the 6-week follow-up on a scale from 0 to 5, with 0 being choosing the second option and 5 being choosing the first option. For absolute difference, the outcome measures the difference between the happiness and choice responses. For Sleep/Income, the choice is between a job that allows the person to get more hours of sleep on the average work night and one with fewer hours of sleep but higher pay. For Concert/BD, the choice is between attending a close friend's birthday dinner and using a last-minute VIP ticket to a concert. For Absolute/Relative income, the choice is between a job that pays more in absolute terms but where you are paid less than your colleagues, and a job that pays less in absolute terms but where you are paid more than your colleagues. For Friends/Income, the choice is between a job in a city where you have friends but are paid less, and a job in a city where you don't know anyone but are paid more. Two participants that answered the happiness question only were excluded. p-values are from a regression that controls for session-by-gender fixed effects, with robust standard errors. 95% confidence intervals are shown.

Figure A28: Effects of ayahuasca on individual characteristics and personality



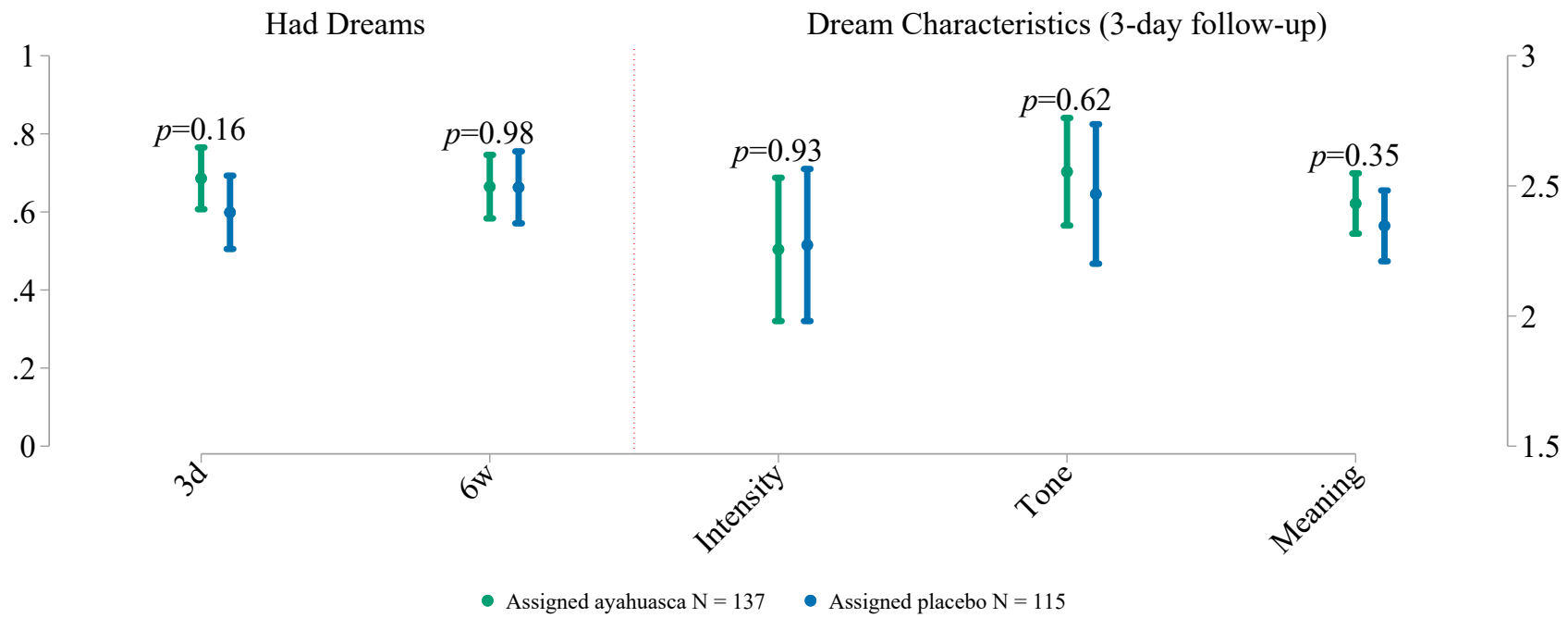
Note: Figure shows intent to treat effects. (**A**) corresponds to individual characteristics, measured separately at the 3-day or 6-week follow-up. The self-knowledge scale asks respondents how frequently they have each of 5 experiences. Each item is rated from *Never* (0) to *Almost Always* (4), and all 5 items are added up to create the final score (0–20). A higher score means these experiences are reported more often. Items include *I'm aware of my abilities and limitations* and *I understand my emotions*. The awareness scale asks respondents to indicate how often they have had each of 5 experiences over the last 3 days after their Ayahuasca session. Each of the items is rated on a scale from *Never* (4) to *Very often* (0), and all 5 items are added up to create the final score. Items include *I could be experiencing some emotion and not be conscious of it until some time later* and *I found myself listening to someone with one ear, doing something else at the same time*. Competitiveness is the answer to *How competitive do you consider yourself to be?* and is measured on a scale from 0 to 10. Spirituality is how much the participant agrees with the sentence *I am a spiritual person* on a scale from 0 to 4. Each outcome in (**B**) is a Big 5 personality trait score (0-8); each trait score is obtained from adding its corresponding two items from the Big Five Inventory, one positively keyed and one reverse coded, with choices from *Strongly disagree* (0/4) to *Strongly agree* (4/0). *p*-values are from a regression that controls for session-by-gender fixed effects, with robust standard errors. 95% confidence intervals are shown.

Figure A29: Effects of ayahuasca on actual and perceived creativity



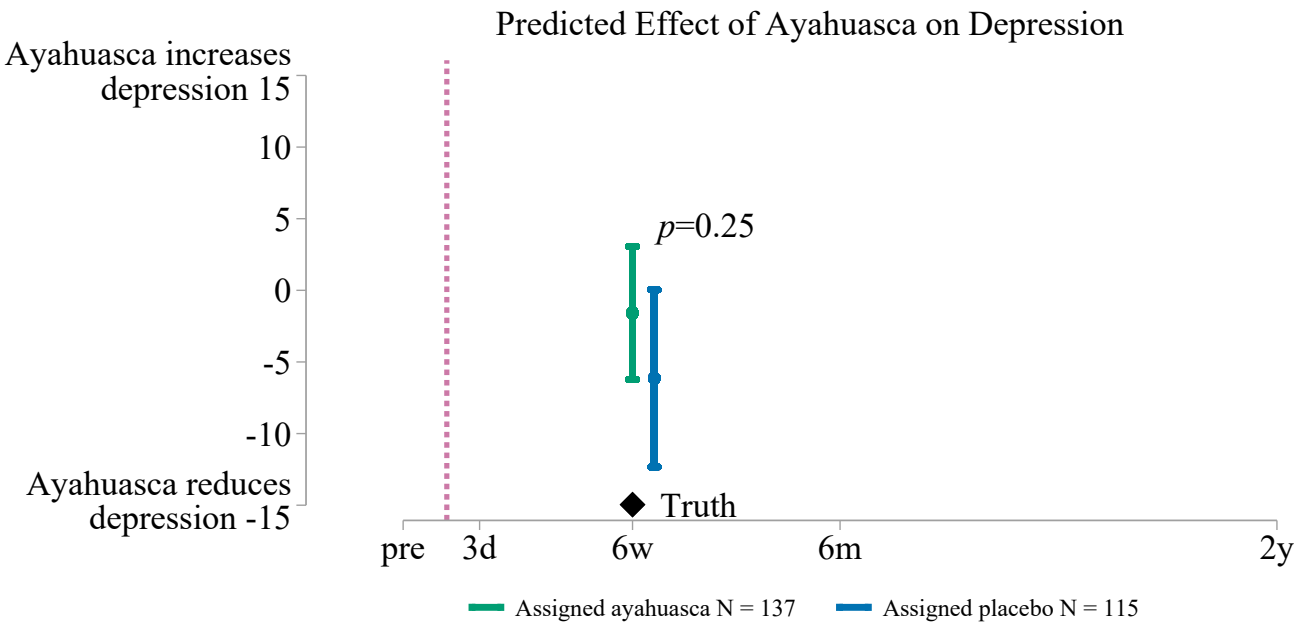
Note: Figure shows intent to treat effects. At the 6-week follow-up, participants were asked to list unusual uses for a tin can. The real decile, on the left axis, groups participants by how many uses they listed, from 1 to 10. A score of 10 is the most uses and 1 is the fewest, so a higher rank is more creative. Participants then guessed where that count placed them relative to the other respondents, from the top 10% to the bottom 10%. A correct guess was incentivized with 30 reais. Those guesses are coded on the same 1–10 scale, with the top 10% coded as 10 and the bottom 10% as 1. The right axis is the predicted decile minus the real decile. A negative number means the participant ranked themselves as less creative than they were, so they were underconfident, and a positive number means they ranked themselves as more creative than they were, so they were overconfident. *p*-values are from a regression that controls for session-by-gender fixed effects, with robust standard errors. 95% confidence intervals are shown.

Figure A30: Effects of ayahuasca on dreams



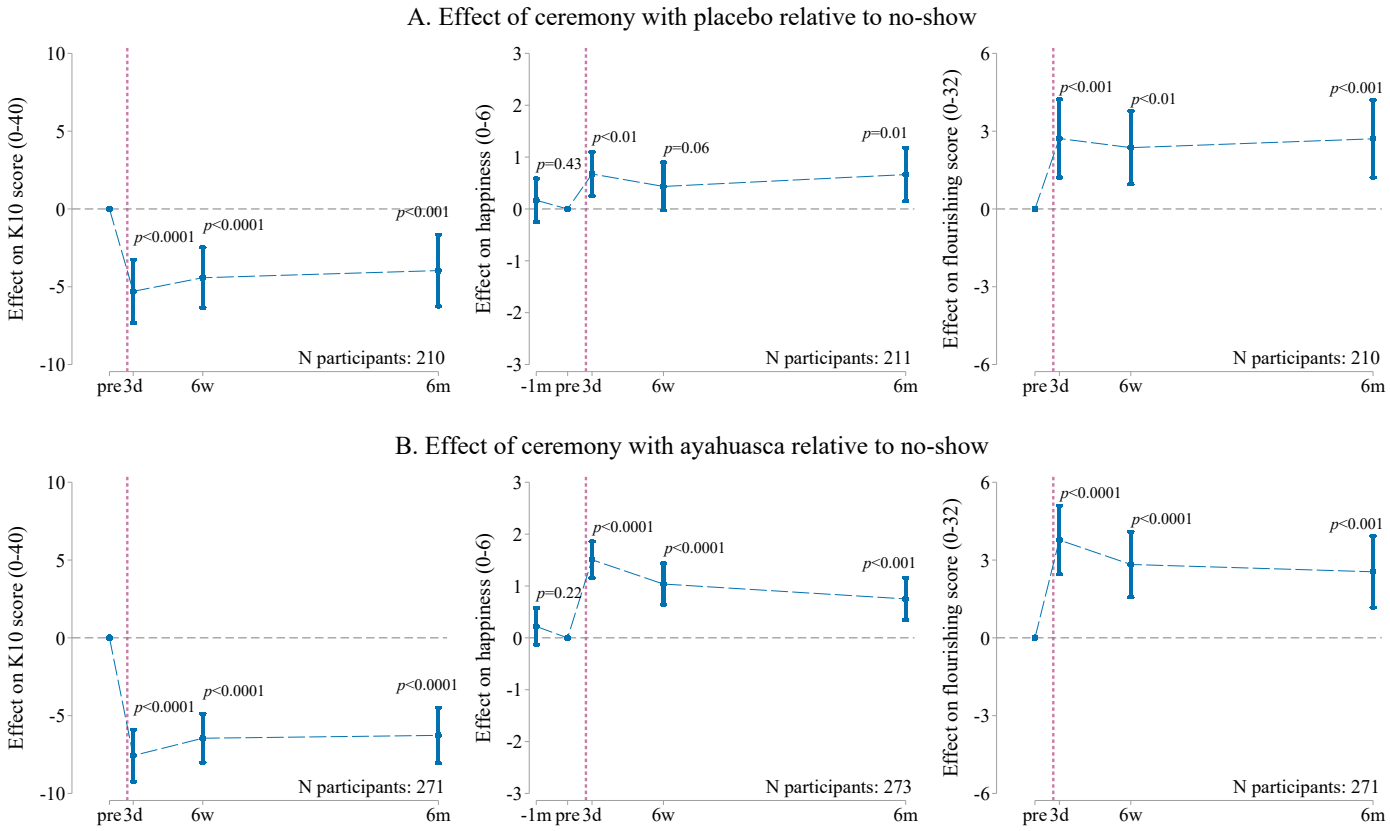
Note: Figure shows intent to treat effects. Had Dreams is the answer to *In the past 3 nights, do you recall having any dreams?* For intensity, the question is *How emotionally intense were your dreams in the past 3 nights?*, with answers from *Not at all intense* (0) to *Very intense* (4). For tone, the question is *How would you classify your dreams in the past 3 nights?*, with answers from *Very negative* (0) to *Very positive* (4). For meaning, the question is *How much importance do you attribute to your dreams?*, with answers from *None at all* (0) to *A lot* (3). Intensity, tone, and meaning are measured at the 3-day follow-up; intensity and tone are measured conditional on having dreams. *p*-values are from a regression that controls for session-by-gender fixed effects, with robust standard errors. 95% confidence intervals are shown.

Figure A31: Effects of ayahuasca on beliefs about therapeutic effects



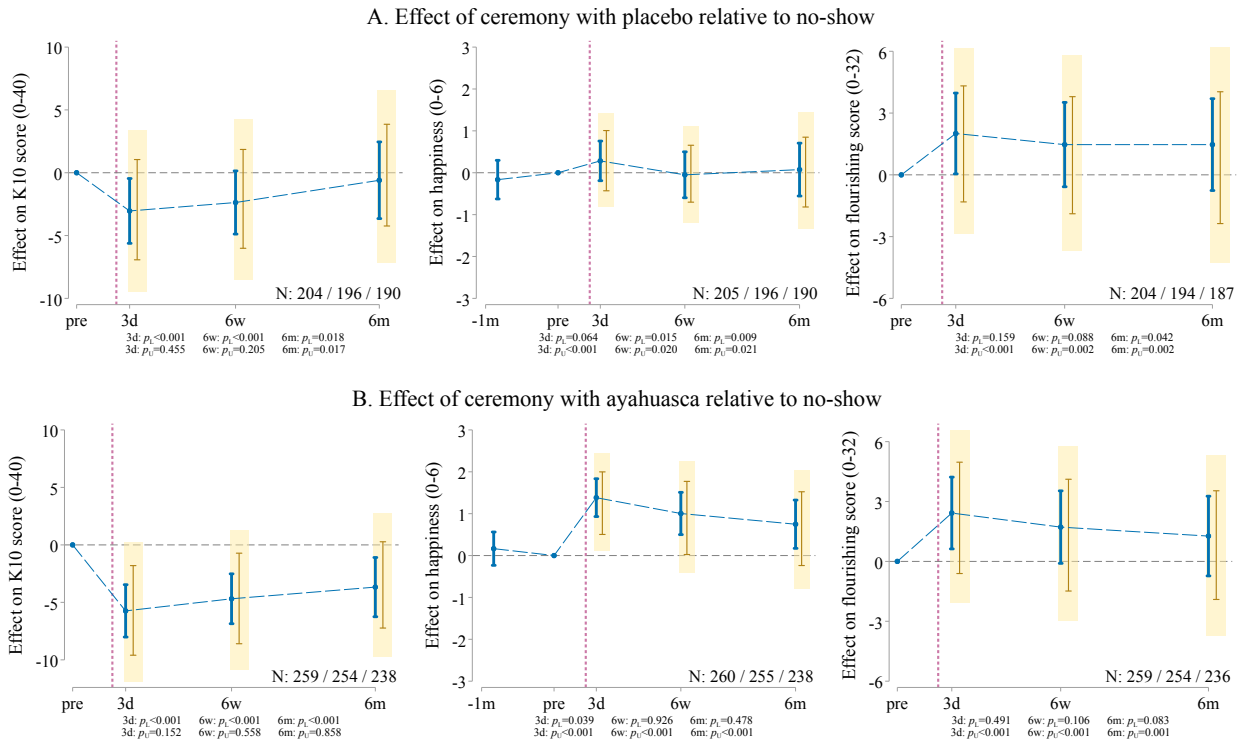
Note: Figure shows intent to treat effects. Participants were told what percentage of the other people in their session had at least mild depression symptoms before the ceremony, meaning that, on average, they chose at least "A little of the time" on the symptom items (i.e., K10 $\geq$ 10). Participants were then asked to guess that percentage now, separately for participants who took a regular dose of ayahuasca and for the placebo group. Each guess is on a scale from 0 to 100, and the closest guess was incentivized with 30 reais. The outcome is the regular-dose guess minus the placebo-group guess. A negative number means the participant predicts a lower share with at least mild depression under the regular dose than under the placebo condition. Because both guesses are compared with the same baseline, this difference is also the difference between the two predicted changes. The placebo group was unintentionally described as having taken a "less concentrated (i.e., weaker) dose", rather than jurema. The diamond labeled Truth is the average, across respondents, of the actual session difference in the 6-week share with K10 $\geq$ 10 (ayahuasca-takers minus placebo-takers). *p*-values are from a regression that controls for session-by-gender fixed effects, with robust standard errors. 95% confidence intervals are shown.

Figure A32: Effects of ceremony controlling for baseline well-being-specific time trends



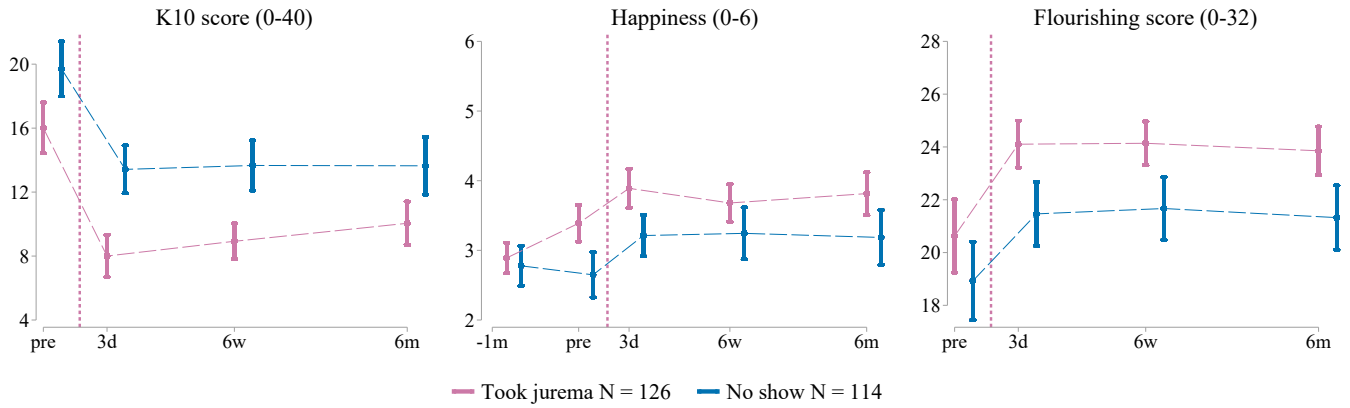
Note: Figure shows difference-in-differences effects of (**A**) attending the ceremony and taking the placebo relative to no-shows, and (**B**) attending the ceremony and taking ayahuasca relative to no-shows. The one difference from Figure 6 is that each regression includes the baseline well-being measure interacted with dummy variables for each follow-up survey. 95% confidence intervals are shown, with standard errors clustered at participant-level. The effects are shown up to the 6-month follow-up, as no-shows were not sent the 2-year follow-up survey.

Figure A33: Lee bounds for the effects of the ceremony on well-being



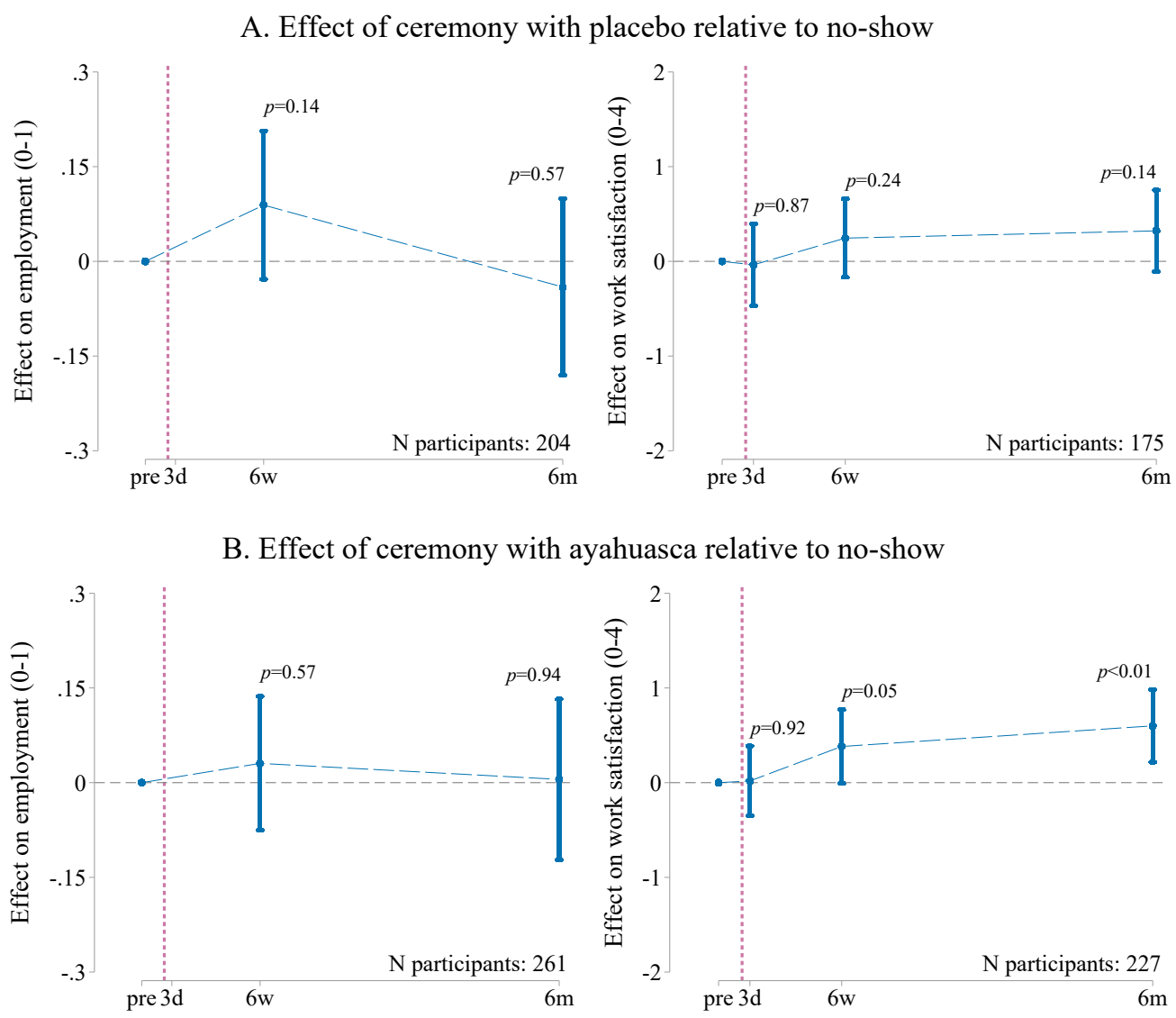
Note: Figure shows the effects of (**A**) attending the ceremony and taking the placebo relative to no-shows, and (**B**) attending the ceremony and taking ayahuasca relative to no-shows using a difference-in-differences approach along with Lee bounds (Lee, 2009). To operationalize the bounds, the specification departs slightly from the event study specification in equation 3. Here, each coefficient comes from a regression of the first-difference (baseline to follow-up well-being change) on the treatment dummy and strata (session-by-gender) fixed effects. As a result, the coefficients differ very slightly from those in Figure 6. 95% confidence intervals for the point estimates are shown in blue, whereas the golden lines indicate Lee bounds. The yellow bars provide the 95% confidence interval range for the bounds themselves. p_L denote p-values for the lower bound of the effect while p_U denote p-values for the upper bound of the effect (note that some effects are statistically significant but have the "wrong" sign). Standard errors are robust. The effects are shown up to the 6-month follow-up, as no-shows were not sent the 2-year follow-up survey.

Figure A34: Well-being levels for placebo-takers and no-shows



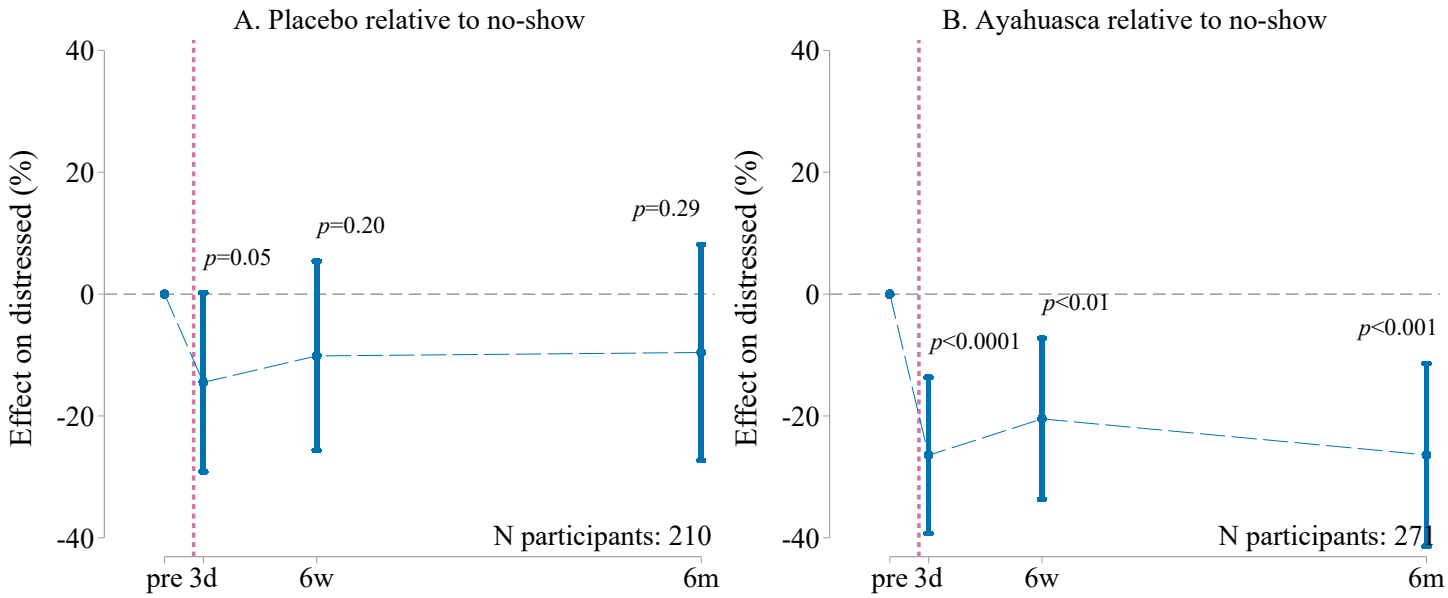
Note: Comparison of those that took the placebo and those that didn't show up for their session (includes the 5 experimental sessions with variation in treatment). Results are shown up to the 6-month follow-up, as no-shows were not sent the 2-year follow-up survey.

Figure A35: Effects of ceremony on economic outcomes



Note: Figure shows difference-in-differences effects of (**A**) attending the ceremony and taking the placebo relative to no-shows, and (**B**) attending the ceremony and taking ayahuasca relative to no-shows. Employment was not measured at the 3-day follow-up. The work satisfaction question is only asked of participants who are employed. 33 participants are excluded from these figures as they did not answer any of the follow-up surveys. 95% confidence intervals are shown, with standard errors clustered at the participant level. The effects are shown up to the 6-month follow-up, as no-shows were not sent the 2-year follow-up survey.

Figure A36: Effect of ceremony on whether distressed



Note: The one difference from Figure 6 is the outcome. Distressed (%) is the percentage of participants that score 15 or above on the Kessler-10 Psychological Distress Scale.

Table A1: Low-cost mental health interventions in developing countries

Paper	Country	Intervention (delivery)	Population	Sample & design	Follow-up	MH outcome	Effect	Cost/person	Cost/SD	Cost–benefit result
Baranov, Bhalotra, Biroli & Maselko (2020, *AER*)	Pakistan (rural Punjab)	Thinking Healthy Programme: 16 CBT-based home visits by government Lady Health Workers	Prenatally depressed women (DSM-IV MDE), N=903	Cluster RCT, 40 union councils; 585 re-surveyed at 7 yrs	1 yr; 7 yrs	SCID clinical depression; MH index	1 yr: −33 pp depression, +0.7 SD index; 7 yrs: −17% depression rate, ≈0.2 SD. Screened sample: heterogeneity by baseline severity not reported	USD 10	1 yr: 14; 7 yrs: ≈50	No formal CBA; effects on financial empowerment (0.29 SD) and parental investment (0.2–0.3 SD); no labour-supply effect
Bhat, de Quidt, Haushofer, Patel, Rao, Schilbach & Vautrey (2022, NBER WP 30011)	India (Goa)	(i) HAP: 6–8 behavioural-activation sessions by lay counsellors; (ii) THPP: 6–14 peer-delivered sessions	(i) Primary-care adults, PHQ-9≥15, N=495; (ii) pregnant women, PHQ-9≥10, N=280	Individual RCTs; 589/775 (76%) re-surveyed	3 m; 12 m; 4–5 yrs	PHQ-9 score and remission	HAP: +25 pp remission at 3 m, +16 pp at 12 m, −0.23 SD at 5 yrs; THPP: null. Screened sample: no heterogeneity by baseline severity reported	HAP 66; THPP 72	HAP (5 yr): 287	HAP averts 9 months of depression over 5 yrs, USD 7.33 per depression-month averted; no effect on employment or consumption
Angelucci & Bennett (2024, *AER*)	India (Karnataka)	8 months of SSRI pharmacotherapy with psychiatrist oversight (PC), alone or with livelihoods assistance (LA)	Community-screened adults, PHQ-9 9–20, 86% female, N=1,000	Cluster RCT, 506 localities, 2×2 design	0–8 m (during); 16–26 m (after)	PHQ-9 (SD)	PC: −0.14 SD during ($p<0.10$), −0.04 after; PC/LA: −0.26 during, −0.24 after. Heterogeneity by baseline MH index tested: no significant gradient	PC 221; PC/LA 232	PC: ≈1,580 (during); PC/LA: ≈890–970	Cost-effectiveness argued for bundling; no effect on earnings or consumption
Barker, Bryan, Karlan, Ofori-Atta & Udry (2022, *AER: Insights*)	Ghana (rural, 5 regions)	Group CBT, 12 weekly sessions in groups of 10, by recent graduates	General population of poor households (unscreened), N=7,227	Cluster/ individual RCT, 258 communities	1–3 months	K10 distress; MH index	+0.15 SD MH index; −1.36 K10 points; −6 pp any distress; effects similar for distressed and non-distressed at baseline (explicitly tested); also benefits those predicted to become distressed	Not reported	n/a	No CBA; effects on socio-emotional skills (0.27 SD) and self-assessed economic status (0.19 SD)
Haushofer, Mudida & Shapiro (2020, NBER WP 28106)	Kenya (Nakuru)	WHO Problem Management Plus: 5 weekly 90-min sessions by volunteer CHWs; alone or with USD 485 cash	General population of poor households (unscreened), N=5,756	Cluster RCT, 233 villages, 2×2 design	≈13 months	Psychological well-being index (GHQ-12, PSS, happiness, life satisfaction)	PM+: −0.01 SD (null; rules out >0.11 SD); cash: +0.24 SD; both: +0.28 SD. Split by baseline well-being: PM+ null in both groups, no gradient	PM+ 1,189 (marginal 37); cash 534	PM+: n/a; cash: ≈2,200	PM+ more expensive and less effective than cash; PM+ would need to cost <USD 53–175 to beat cash on economic outcomes
Blattman, Jamison & Sheridan (2017, *AER*); Blattman, Chaskel, Jamison & Sheridan (2023, *AER: Insights*)	Liberia (Monrovia)	8-week CBT-informed group therapy by reformed ex-combatants; alone or with USD 200 cash	High-risk young men, N=999	Individual RCT, 2×2 design	2–5 weeks; 1 yr; 10 yrs	Depression/distress index (secondary)	Short-run improvements in depression and distress; no effect at 1 yr; antisocial behaviour −0.2 SD at 10 yrs. No heterogeneity by baseline MH reported	530 (therapy, cash and admin)	n/a (MH)	USD 2.50 per crime avoided (therapy + cash); no formal CBA on mental health
Hidrobo, Alderman, Deyessa, Gilligan, Kalva, Leight, Mulford & Tambet (2026, *JDE*)	Ethiopia (Amhara, Oromia)	WHO group PM+: 5 weekly 90-min sessions by programme staff; alone or with USD 279 cash	PSNP clients screened for mild–moderate depression or impairment (PHQ-9 5–19 or WHODAS≥17), N=3,055	Cluster RCT, 252 villages, 2×2 design	2 m; 14–18 m	MH index (PHQ-9, GAD-7, PSS-10, PCL-C, WHODAS)	gPM+: −0.06 SD (ns); cash: +0.06 (ns); both: +0.10 (ns). Screened sample: no heterogeneity by baseline severity reported	gPM+ not reported; cash 279	n/a	No positive effects of therapy alone; cash improves assets and savings (0.22 SD)
McKelway, Banerjee, Grela, Schilbach, Sequeira, Sharma, Vaidyanathan & Duflo (2023, *Annals of Internal Medicine*)	India (Tamil Nadu)	6-week phone-based CBT; alone or with a one-time USD 12 cash transfer	Low-income adults aged 55+ living alone (unscreened), N=1,120	Individual RCT, 2×2 design	3 weeks; 3 months	Geriatric Depression Scale (0–15); WHODAS functional impairment	CBT: no effect at either horizon; cash: −1.0 GDS points ($p\approx0.06$) and −2.9 WHODAS points at 3 weeks, gone by 3 months. No heterogeneity by baseline depression reported	CBT 19; cash 12	n/a	Cash judged more cost-effective than phone CBT; no effect of either on food security
Baranov, Haushofer & Jang (2020, *EDCC*)	Kenya (Kibera, Nairobi)	Light-touch positive-psychology exercises (gratitude, self-affirmation, aspirations) with daily SMS reminders	Informal-settlement adults (unscreened), N=220	Individual RCT	Short run (weeks); 1 and 3 yrs for lab attendance	Psychological well-being index; beliefs; aspirations	Gratitude +0.3 SD, but no effect on psychological well-being, beliefs, aspirations, cognitive control or discounting. No heterogeneity by baseline distress reported	Near zero	n/a	—

Notes: Effects are intent-to-treat estimates on the paper's main mental-health outcome, in control-group standard deviations (SD) where reported that way; percentage-point (pp) effects on depression prevalence are reported where that is the headline measure. Cost/SD divides the per-person cost by the SD effect at the follow-up indicated; n/a when the effect is not statistically different from zero or no cost is reported. Costs in nominal USD. Each Effect cell also states whether the paper reports heterogeneity of the mental-health effect by baseline distress or depression.

Table A2: Published psychedelics RCTs with $N \geq 75$

Trial	Published	Population	Country	Experimental design	Outcomes and timing	Main findings
Mendota State Hospital alcoholism study	Ludwig et al. (1969), *American Journal of Psychiatry*	Male inpatients with alcoholism in a 30-day inpatient treatment program; $N = 176$	US	**Intervention:** LSD 3 μg per kg of body weight with hypnosis and psychotherapy ($n = 44$), with psychotherapy ($n = 44$), or alone ($n = 44$), vs. no LSD ($n = 44$); half of each arm randomized to disulfiram after discharge. **Frequency:** one dosing session. **Guidance:** one 2-hour preparatory session for all; during the session, hypnosis and psychotherapy, psychotherapy, or brief support only in the three LSD arms, and solitary reflection with no drug in the control arm; all patients attend the hospital's group therapy program.	Drinking, social adjustment and symptoms: 3, 6, 9 and 12 months after discharge	All four arms improve from baseline, and no LSD arm differs from the no-LSD arm at any follow-up. Disulfiram has no additional effect.
Spring Grove alcoholism study	Pahnke et al. (1970), *JAMA*	Patients with alcoholism; $N = 135$ randomized, of whom 117 received a single dosing session and 104 were followed up at 6 months	US	**Intervention:** LSD 450 μg, given in two equal doses 45 to 60 minutes apart ($n = 64$ at follow-up), vs. LSD 50 μg, an active placebo ($n = 40$), randomized 2:1. **Frequency:** one dosing session; 18 patients who received more than one session are excluded from the analysis. **Guidance:** about 20 hours of preparatory psychotherapy; therapist and nurse present during the session, with music and eyeshades, aimed at a peak experience; integration sessions afterwards. Same preparation in both arms.	Global adjustment and drinking behavior, rated by an independent team: 6 months (12 and 18 months planned, not reported)	At 6 months, 44% of the high-dose arm vs. 25% of the low-dose arm reach good global adjustment, and 53% vs. 33% reach near abstinence (one-tailed tests).
Johns Hopkins psilocybin–meditation study	Griffiths et al. (2018), *J. Psychopharmacology*	Healthy adults with no regular meditation practice and no prior mystical-type experience (75% psychedelic-naïve); 85 randomized, 75 completers	US	**Intervention:** psilocybin 20 then 30 mg/70 kg with standard support ($n = 25$) or with high support ($n = 25$), vs. psilocybin 1 mg/70 kg (active placebo) with standard support ($n = 25$). **Frequency:** two dosing sessions one month apart. **Guidance:** guided program of meditation and spiritual practice; standard support 7 h of guide meetings, high support 35 h plus group sessions.	Prosocial attitudes, spirituality, meaning, gratitude, forgiveness, community-observer ratings, personality, life satisfaction: 6 months	Relative to low dose, the high-dose/high-support group improves on all 23 longitudinal measures and the high-dose/standard-support group on 14 of 23, including interpersonal closeness, gratitude, meaning, forgiveness, death transcendence and observer ratings. No difference in satisfaction with life or personality.
MAPP1, Phase 3 (MAPS)	Mitchell et al. (2021), *Nature Medicine*	Adults with severe PTSD (CAPS-5 ≥ 35); $N = 90$	US, Canada, Israel	**Intervention:** MDMA 80–120 mg plus 40–60 mg supplement ($n = 46$) vs. inactive placebo ($n = 44$). **Frequency:** three 8 h dosing sessions, one month apart. **Guidance:** manualized psychotherapy with two therapists: 3 preparation and 9 integration sessions of 90 min.	PTSD severity (CAPS-5), functional impairment (SDS): 18 weeks	CAPS-5 falls by 24.4 points with MDMA vs. 13.9 with placebo; 67% vs. 32% no longer meet PTSD criteria; functional impairment also improves relative to placebo.
Compass Phase 1, healthy volunteers	Rucker et al. (2022), *J. Psychopharmacology*	Healthy adults with no psychiatric diagnosis (37% prior psilocybin use); $N = 89$	UK	**Intervention:** psilocybin 25 mg ($n = 30$) or 10 mg ($n = 30$) vs. placebo ($n = 29$). **Frequency:** one dosing session, administered simultaneously to groups of up to six. **Guidance:** one-to-one psychological support from an assigned therapist during the session.	Cognitive function (CANTAB), emotional processing, safety: days 8, 29 and 85 (12 weeks)	No clinically relevant differences between arms in cognition or emotional processing at any follow-up; no serious adverse events. No well-being outcomes reported.
NYU/UNM Phase 2	Bogenschutz et al. (2022), *JAMA Psychiatry*	Adults 25–65 with DSM-IV alcohol dependence and $\geq$4 heavy drinking days in the past 30; $N = 95$ (93 dosed)	US	**Intervention:** psilocybin 25–40 mg/70 kg ($n = 49$) vs. diphenhydramine 50–100 mg, an active placebo ($n = 46$). **Frequency:** two dosing sessions, at weeks 4 and 8. **Guidance:** 12 sessions of manualized psychotherapy (motivational enhancement and cognitive behavioral therapy) over 12 weeks.	Percentage of heavy drinking days over weeks 5–36 (primary); drinks per day; abstinence	Heavy drinking days are 9.7% with psilocybin vs. 23.6% with placebo; drinks per day also lower; abstinence in weeks 33–36 48% vs. 24%. Longest blinded follow-up in the psilocybin literature.
COMP001, Phase 2b (Compass Pathways)	Goodwin et al. (2022), *NEJM*	Adults with treatment-resistant depression (2–4 failed antidepressants; mean MADRS 32); $N = 233$	Czech Republic, Denmark, Germany, Ireland, Netherlands, Portugal, Spain, UK, Canada, US	**Intervention:** psilocybin 25 mg ($n = 79$) or 10 mg ($n = 75$) vs. psilocybin 1 mg, an active placebo ($n = 79$). **Frequency:** one 6–8 h dosing session. **Guidance:** at least three preparation sessions, two therapists present during dosing, integration sessions on day 2 and week 1.	Depression (MADRS): 3 weeks (primary), 12 weeks; response, remission, sustained response	MADRS falls by 12.0 points with 25 mg vs. 5.4 with 1 mg at 3 weeks; 10 mg does not differ from 1 mg. Sustained response at 12 weeks 20% vs. 10%, not significant. Suicidal ideation or self-injury in all arms.
PSIL201, Phase 2 (Usona Institute)	Raison et al. (2023), *JAMA*	Adults 21–65 with major depressive disorder of $\geq$60 days, MADRS ≥ 28 (mean 35); $N = 104$	US	**Intervention:** psilocybin 25 mg ($n = 51$) vs. niacin 100 mg, an active placebo ($n = 53$). **Frequency:** one 7–10 h dosing session. **Guidance:** 6–8 h of preparation with two facilitators, facilitators present during dosing, 4 h of integration.	Depression (MADRS): days 8 and 43 (primary); disability (SDS): day 43; sustained response	MADRS falls by 19.1 points with psilocybin vs. 6.8 with placebo at day 43, with a similar gap at day 8; disability 2.3 points lower; sustained response 42% vs. 11%. No serious adverse events.
MAPP2, Phase 3 (MAPS)	Mitchell et al. (2023), *Nature Medicine*	Adults with moderate-to-severe PTSD (CAPS-5 ≥ 28; 73% severe); $N = 104$	US, Israel	**Intervention:** MDMA 80–120 mg plus 40–60 mg supplement ($n = 53$) vs. inactive placebo ($n = 51$). **Frequency:** three 8 h dosing sessions, one month apart. **Guidance:** manualized psychotherapy: preparation sessions and three 90 min integration sessions after each dosing session.	PTSD severity (CAPS-5), functional impairment (SDS): 18 weeks	CAPS-5 falls by 23.7 points with MDMA vs. 14.8 with placebo; 71% vs. 48% no longer meet PTSD criteria; disability 1.2 points lower.
MM120, Phase 2b (MindMed, now Definium)	Robison et al. (2025), *JAMA*	Adults 18–74 with generalized anxiety disorder, HAM-A ≥ 20 (mean 30); $N = 198$	US	**Intervention:** LSD 25 μg ($n = 39$), 50 μg ($n = 40$), 100 μg ($n = 40$) or 200 μg ($n = 40$) vs. placebo ($n = 39$). **Frequency:** one dosing session. **Guidance:** none; two monitors present for safety, instructed not to engage in psychotherapeutic interventions before, during or after the session.	Anxiety (HAM-A): 4 weeks (primary), 8 and 12 weeks; response, remission	Relative to placebo, HAM-A falls by 5.0 more points with 100 μg and 6.0 with 200 μg at 4 weeks; 25 and 50 μg do not differ from placebo. At 12 weeks, 100 μg: 7.7 points lower than placebo; response 65% vs. 31%, remission 48% vs. 21%.
Johns Hopkins psilocybin smoking cessation pilot[b]	Johnson et al. (2026), *JAMA Network Open*	Psychiatrically healthy adult daily smokers; $N = 82$	US	**Intervention:** psilocybin 30 mg/70 kg ($n = 42$) vs. nicotine patch for 8–10 weeks ($n = 40$). **Frequency:** one dosing session. **Guidance:** 13-week manualized cognitive behavioral therapy program for smoking cessation in both arms.	Biochemically verified smoking abstinence: 6 months (primary)	Prolonged abstinence 40.5% with psilocybin vs. 10.0% with the nicotine patch; 7-day abstinence 52.4% vs. 25.0%. No serious adverse events.
GH001, Phase 2b (GH Research)	Cubała et al. (2026), *JAMA Psychiatry*	Adults 18–64 with treatment-resistant depression (2–5 failed antidepressants; mean MADRS 29); $N = 81$	Europe (16 sites, incl. Poland, Germany, Spain, Czechia, UK)	**Intervention:** inhaled 5-MeO-DMT, up to three escalating doses of 6, 12 and 18 mg ($n = 40$) vs. placebo ($n = 41$). **Frequency:** one dosing day; blinded to day 8, then open-label extension. **Guidance:** none planned; medical supervision and standard-of-care psychological support only.	Depression (MADRS): day 8 (primary); remission	MADRS falls by 15.5 more points with GH001 than with placebo at day 8; remission 57.5% vs. 0%. In the open-label extension 20 of 40 GH001 patients require re-dosing (median 6 weeks).
EPIsoDE, Phase 2b[a]	Mertens et al. (2026), *JAMA Psychiatry*	Adults 25–65 with treatment-resistant depression, withdrawn from antidepressants; $N = 144$ (142 analyzed)	Germany	**Intervention:** psilocybin 25 mg ($n = 47$) or 5 mg ($n = 48$) vs. nicotinamide 100 mg, an active placebo ($n = 47$). **Frequency:** one 6–8 h dosing session with overnight stay at week 0; all arms dosed again at week 6. **Guidance:** structured psychotherapeutic program of seven 2 h preparation and integration sessions.	Depression (HAMD-17 response, primary; HAMD-17 and BDI-II change): 6 weeks	Response 17.0% with 25 mg vs. 12.5% with 5 mg and 10.6% with placebo, not significant. HAMD-17 falls by 4.6 more points and BDI-II by 7.2 more points with 25 mg than with placebo at 6 weeks. More suicidal ideation on dosing days with 25 mg.

Notes: The table lists all peer-reviewed randomized trials we could identify (search date: September 2026) with a between-subjects design that randomize at least 75 participants to a psychedelic or to a control condition (placebo, or a sub-perceptual dose such as 1 mg psilocybin), ordered by publication date. Within-subject (crossover) designs, in which every participant eventually receives the drug and only the order is randomized, are excluded because they identify effects only up to the date of the crossover. Microdosing and ketamine/esketamine trials are excluded. All trials are double-blind except Johnson et al. (2026), which is open-label; Ludwig et al. (1969) gives the control arm no drug, so patients learn their assignment at the dosing session, with blinded raters at follow-up; and Mertens et al. (2026) is triple-blind, with blinded raters as well. Outcomes and timing refer to the randomized (blinded) comparison; several trials add open-label extensions afterwards. Main findings report changes from baseline in the treatment and control arms and their difference, as reported in each paper. The search covered the systematic review of Thomson and Thomacos (2025) (19 studies of healthy participants, of which only Griffiths et al. 2018 reaches $N = 75$), the 2026 living meta-analysis of psilocybin trials for depression in *Nature Mental Health*, other meta-analyses of psychedelic RCTs, and company disclosures. Trials with $N \geq 75$ that are completed or ongoing but not yet peer-reviewed are listed in Table A3. MADRS: Montgomery–Åsberg Depression Rating Scale; HAM-A: Hamilton Anxiety Rating Scale; HAMD-17: Hamilton Depression Rating Scale; BDI-II: Beck Depression Inventory; CAPS-5: Clinician-Administered PTSD Scale; SDS: Sheehan Disability Scale; CANTAB: Cambridge Neuropsychological Test Automated Battery.

[a] Between-subjects comparison only up to week 6: the control arm receives psilocybin 25 mg at week 6, so later outcomes are within-subject.

[b] Open-label. Participants in the nicotine patch arm were offered psilocybin after the 6-month primary endpoint.

Table A3: Completed and ongoing psychedelic RCTs with $N \geq 75$

Trial	Source	Population	Country	Experimental design	Outcomes and timing	Main findings / status
Panel A: Completed trials with topline results in press releases or conference posters						
COMP005, Phase 3 (Compass Pathways)	Compass Pathways (2025)	Adults with treatment-resistant depression; $N = 258$	US	**Intervention:** psilocybin 25 mg ($n = 171$) vs. placebo ($n = 87$). **Frequency:** one dosing session; blinded to 26 weeks, then open-label dosing for all. **Guidance:** preparation, monitored dosing and integration sessions with therapists.	Depression (MADRS): 6 weeks (primary), 26 weeks	MADRS 3.6 points lower than placebo at 6 weeks (95% CI −5.7 to −1.5); separation maintained through 26 weeks.
BPL-003, Phase 2b (Beckley Psytech/atai)	atai/Beckley Psytech (2025)	Adults with moderate-to-severe treatment-resistant depression; $N = 193$	6 countries (not disclosed)	**Intervention:** intranasal 5-MeO-DMT 12 mg ($n = 73$) or 8 mg ($n = 46$) vs. 0.3 mg, an active placebo ($n = 74$). **Frequency:** one dosing session. **Guidance:** minimal psychological support.	Depression (MADRS): days 2, 8, 29 (primary), 57	MADRS falls by 11.1 points with 12 mg and 12.1 with 8 mg vs. 5.8 with placebo at day 29; effects present from day 2 and maintained to day 57.
RECONNECT, Phase 2 (Reunion Neuroscience)	Reunion Neuroscience (2025)	Women with moderate-to-severe postpartum depression; $N = 84$	US	**Intervention:** subcutaneous RE104 (a 4-OH-DiPT prodrug) 30 mg ($n = 49$) vs. 1.5 mg, an active placebo ($n = 35$). **Frequency:** one dosing session. **Guidance:** none.	Depression (MADRS): day 7 (primary), day 28	MADRS falls by 23.0 points with RE104 vs. 17.2 with placebo at day 7; maintained through day 28.
COMP006, Phase 3 (Compass Pathways)	Compass Pathways (2026)	Adults with treatment-resistant depression; $N = 581$ dosed	Multinational (not disclosed)	**Intervention:** psilocybin 25 mg ($n = 296$) or 10 mg ($n = 142$) vs. psilocybin 1 mg, an active placebo ($n = 143$). **Frequency:** two dosing sessions, at weeks 0 and 3; blinded to 26 weeks. **Guidance:** psychological support with therapists, as in COMP005.	Depression (MADRS): 6 weeks (primary), 26 weeks	MADRS 3.8 points lower with 25 mg than with 1 mg at 6 weeks (95% CI −5.8 to −1.8); benefit maintained through 26 weeks. Largest psychedelic RCT to date.
Emerge, Phase 3 (Definium)	Definium Therapeutics (2026a)	Adults 18–74 with major depressive disorder; $N = 149$	US	**Intervention:** LSD 100 μg ($n = 75$) vs. placebo ($n = 74$). **Frequency:** one dosing session; blinded 12 weeks, then 40-week open-label extension. **Guidance:** none.	Depression (MADRS): 6 weeks (primary), 12 weeks	MADRS 8.1 points lower than placebo at 6 weeks.
Voyage, Phase 3 (Definium)	Definium Therapeutics (2026b)	Adults 18–74 with generalized anxiety disorder; $N = 214$	US	**Intervention:** LSD 100 μg ($n = 107$) vs. placebo ($n = 107$). **Frequency:** one dosing session; blinded 12 weeks, then 40-week extension with re-dosing. **Guidance:** none.	Anxiety (HAM-A): 12 weeks (primary)	HAM-A 5.4 points lower than placebo at 12 weeks.
Panel B: Ongoing trials						
Panorama, Phase 3 (Definium)	Definium Therapeutics (2026c)	Adults with generalized anxiety disorder; $N = 245$	US	**Intervention:** LSD 100 μg or 50 μg vs. placebo, randomized 2:1:2. **Frequency:** one dosing session. **Guidance:** none.	Anxiety (HAM-A): 12 weeks (primary)	Enrollment complete; topline results expected September 2026.
uAspire (PSIL301), Phase 3 (Usona Institute)	Usona Institute (2024); NCT06308653	Adults with major depressive disorder; $N \approx 240$	US	**Intervention:** psilocybin 25 mg vs. placebo. **Frequency:** one dosing session; 6-week blinded phase, 1-year follow-up. **Guidance:** psychosocial support.	Depression (MADRS): 6 weeks (primary); durability to 1 year	Enrollment complete (late 2025); results pending.
APPROACH, Phase 3 (Helus Pharma, formerly Cybin)	Cybin (2024)	Adults with major depressive disorder on antidepressants; $N = 220$	US, Europe	**Intervention:** CYB003 (a psilocybin analog) 16 mg ($n = 110$) vs. placebo ($n = 110$), as an add-on to antidepressants. **Frequency:** two dosing sessions, 3 weeks apart. **Guidance:** not disclosed.	Depression (MADRS): 6 weeks (primary)	Dosing complete; topline results expected Q4 2026.
EMBRACE, Phase 3 (Helus Pharma)	Cybin (2024)	Adults with major depressive disorder on antidepressants; $N = 330$	Not disclosed	**Intervention:** CYB003 16 mg ($n = 110$) or 8 mg ($n = 110$) vs. placebo ($n = 110$), as an add-on to antidepressants. **Frequency:** two dosing sessions, 3 weeks apart. **Guidance:** not disclosed.	Depression (MADRS): 6 weeks (primary)	Ongoing.
Elumina, Phase 2b (AtaiBeckley)	AtaiBeckley (2026)	Adults with treatment-resistant depression; $N = 156$	Not disclosed	**Intervention:** buccal DMT (VLS-01) vs. placebo, randomized 1:1. **Frequency:** two dosing sessions, two weeks apart. **Guidance:** not disclosed.	Depression (MADRS): day 29 (primary)	Last patient dosed July 2026; topline results expected Q4 2026.

Notes: The table lists between-subjects randomized trials with at least 75 participants assigned to a psychedelic or to a control condition whose results are available only as company press releases or conference presentations (Panel A), or that are still ongoing (Panel B), as of September 2026. Peer-reviewed trials are listed in Table A2. All trials are double-blind. Details of guidance and countries for the industry trials are taken from company disclosures and trial registrations, which are less complete than published protocols. Phase 3 trials of BPL-003 (AtaiBeckley) and GH001 (GH Research) were being initiated in 2026 with sample sizes not yet disclosed. MADRS: Montgomery–Åsberg Depression Rating Scale; HAM-A: Hamilton Anxiety Rating Scale.

Table A4: Characteristics of experimental participants

Variable:	N	Mean	St. dev	Min.	Pctl. 25	Median	Pctl. 75	Max.
(1) Age	426	34.72	9.92	18	27	33	42	66
(2) Female (0/1)	429	0.62	0.49	0	0	1	1	1
(3) Not white (0/1)	429	0.45	0.50	0	0	0	1	1
(4) Education (0-10)	429	5.70	1.68	1	4	6	7	9
(5) Married (0/1)	429	0.22	0.41	0	0	0	0	1
(6) Monthly Income (0-8)	429	2.77	1.48	0	2	3	4	7
(7) Has children (0/1)	429	0.49	0.50	0	0	0	1	1
(8) Employed (0/1)	429	0.81	0.39	0	1	1	1	1
(9) Employed in the formal sector (0/1)	429	0.42	0.49	0	0	0	1	1
(10) Drinks alcohol (0/1)	429	0.65	0.48	0	0	1	1	1
(11) Uses drugs (0/1)	429	0.31	0.46	0	0	0	1	1
(12) Practices a religion (0/1)	429	0.45	0.50	0	0	0	1	1
(13) Family history of alcoholism (0/1)	429	0.37	0.48	0	0	0	1	1
(14) Family history of depression (0/1)	429	0.44	0.50	0	0	0	1	1
(15) Family history of schizophrenia (0/1)	429	0.07	0.26	0	0	0	0	1
(16) Happiness (0-6)	429	3.03	1.67	0	2	3	4	6
(17) Predicted happiness (0-6)	429	4.79	1.44	0	4	5	6	6
(18) Depression last month (0-6)	429	2.69	1.99	0	1	3	4	6
(19) Happiness last month (0-6)	429	2.89	1.67	0	2	3	4	6
(20) K10 scale score (0-40)	429	17.24	9.30	0	10	17	25	40
(21) Meets moderate or severe psychological distress	429	0.58	0.49	0	0	1	1	1
(22) Flourishing score (0-32)	429	20.58	7.64	0	16	22	26	32
(23) Social desirability score (0-4)	429	2.10	0.82	0	2	2	3	4
(24) Work satisfaction (0-4)	349	2.32	1.07	0	1	3	3	4
(25) Cares what others think (0-4)	429	2.36	1.34	0	1	3	3	4

Notes: Table shows summary statistics from the baseline survey taken by the full set of 429 participants. For the outcome variable definitions that are not obvious, see Appendix B.2. Work satisfaction is only asked to participants that are employed.

Table A5: Balance on baseline characteristics: all participants

	Treatment assigned				Treatment received				Took the placebo (vs no-show)			
	Coef	SE	Control mean	N	Coef	SE	Control mean	N	Coef	SE	Control mean	N
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Age	-1.91	(1.20)	35.05	251	-3.12**	(1.20)	35.64	251	0.71	(1.39)	34.97	238
Not white (0/1)	-0.02	(0.06)	0.47	252	0.00	(0.06)	0.46	252	-0.00	(0.07)	0.46	240
Education (0-10)	-0.00	(0.21)	5.79	252	-0.15	(0.20)	5.87	252	0.47**	(0.21)	5.44	240
Married (0/1)	-0.06	(0.05)	0.25	252	0.02	(0.05)	0.21	252	0.01	(0.05)	0.19	240
Monthly Income (0-8)	-0.01	(0.18)	2.81	252	0.01	(0.18)	2.81	252	0.23	(0.20)	2.61	240
Has children (0/1)	-0.04	(0.06)	0.49	252	-0.06	(0.06)	0.50	252	-0.02	(0.07)	0.52	240
Employed (0/1)	0.02	(0.05)	0.83	252	-0.01	(0.05)	0.85	252	0.10*	(0.05)	0.75	240
Employed in the formal sector (0/1)	0.00	(0.06)	0.42	252	-0.00	(0.06)	0.42	252	0.02	(0.07)	0.42	240
Drinks alcohol (0/1)	0.01	(0.06)	0.65	252	0.00	(0.06)	0.65	252	0.07	(0.06)	0.57	240
Uses drugs (0/1)	0.02	(0.06)	0.29	252	0.00	(0.06)	0.29	252	-0.07	(0.06)	0.38	240
Practices a religion (0/1)	0.00	(0.06)	0.41	252	-0.02	(0.06)	0.42	252	-0.06	(0.06)	0.48	240
Family history of alcoholism (0/1)	0.09	(0.06)	0.35	252	0.00	(0.06)	0.39	252	0.04	(0.06)	0.35	240
Family history of depression (0/1)	0.03	(0.06)	0.46	252	-0.02	(0.06)	0.48	252	0.13**	(0.06)	0.37	240
Family history of schizophrenia (0/1)	0.02	(0.03)	0.06	252	-0.04	(0.03)	0.09	252	0.02	(0.03)	0.06	240
Happiness (0-6)	-0.45**	(0.20)	3.50	252	-0.33	(0.20)	3.40	252	0.74***	(0.21)	2.63	240
Predicted happiness (0-6)	0.02	(0.16)	4.90	252	0.04	(0.16)	4.90	252	0.36*	(0.20)	4.45	240
Depression last month (0-6)	-0.11	(0.24)	2.57	252	-0.08	(0.24)	2.55	252	-0.48*	(0.27)	3.05	240
Happiness last month (0-6)	-0.17	(0.19)	3.16	252	-0.09	(0.19)	3.11	252	0.54**	(0.22)	2.54	240
K10 scale score (0-40)	0.69	(1.14)	15.57	252	-0.15	(1.14)	16.05	252	-3.69***	(1.18)	19.68	240
Meets moderate or severe psychological distress	0.06	(0.06)	0.50	252	-0.01	(0.06)	0.53	252	-0.18**	(0.06)	0.69	240
Flourishing score (0-32)	0.38	(0.98)	20.94	252	0.93	(0.96)	20.69	252	1.70	(1.02)	18.86	240
Social desirability score (0-4)	-0.07	(0.10)	2.12	252	0.11	(0.10)	2.03	252	-0.05	(0.11)	2.08	240
Work satisfaction (0-4)	-0.03	(0.15)	2.40	213	0.02	(0.15)	2.37	213	0.07	(0.16)	2.29	192
Cares what others think (0-4)	0.31*	(0.17)	2.26	252	0.06	(0.17)	2.40	252	0.14	(0.19)	2.24	240
Pooled F-test p-value		0.33				0.42				<0.01		

Notes: The table excludes participants assigned to the all-treated session. Treatment assigned columns compare participants who attended their session and were randomly assigned to receive ayahuasca versus the placebo (control mean is for the placebo group). Treatment received columns compare participants who attended their session and actually received ayahuasca with those that attended and actually received the placebo. Took the placebo vs no-show columns compare participants who attended their session and actually received the placebo to those that did not attend their session. Each coefficient and standard error is obtained from a regression of the covariate (listed in the far-left column) on a dummy for the comparison of interest, controlling for session-by-gender (randomization strata) fixed effects. Standard errors are robust. The pooled F-test p-value corresponds to the p-value from a test of joint significance for all the covariates in the table. *** p<0.01, ** p<0.05, * p<0.1.

Table A6: Balance on baseline characteristics: responded to 3-day follow-up

	Treatment assigned				Treatment received				Took the placebo (vs no-show)			
	Coef	SE	Control mean	N	Coef	SE	Control mean	N	Coef	SE	Control mean	N
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Age	-1.95	(1.21)	35.00	243	-3.17**	(1.22)	35.58	243	1.20	(1.50)	34.27	203
Not white (0/1)	-0.01	(0.07)	0.47	244	0.00	(0.06)	0.46	244	0.01	(0.07)	0.45	205
Education (0-10)	-0.03	(0.21)	5.83	244	-0.17	(0.21)	5.89	244	0.50**	(0.23)	5.41	205
Married (0/1)	-0.06	(0.05)	0.25	244	0.01	(0.05)	0.22	244	-0.04	(0.06)	0.23	205
Monthly Income (0-8)	-0.02	(0.19)	2.81	244	0.00	(0.18)	2.80	244	0.22	(0.22)	2.61	205
Has children (0/1)	-0.02	(0.07)	0.48	244	-0.06	(0.06)	0.50	244	-0.04	(0.07)	0.54	205
Employed (0/1)	0.01	(0.05)	0.85	244	-0.01	(0.05)	0.85	244	0.11*	(0.06)	0.74	205
Employed in the formal sector (0/1)	0.00	(0.06)	0.42	244	-0.01	(0.06)	0.42	244	0.00	(0.07)	0.43	205
Drinks alcohol (0/1)	0.02	(0.06)	0.64	244	-0.00	(0.06)	0.64	244	0.05	(0.07)	0.59	205
Uses drugs (0/1)	0.01	(0.06)	0.29	244	-0.02	(0.06)	0.30	244	-0.09	(0.07)	0.40	205
Practices a religion (0/1)	0.01	(0.06)	0.41	244	-0.00	(0.06)	0.41	244	-0.10	(0.07)	0.49	205
Family history of alcoholism (0/1)	0.07	(0.06)	0.35	244	0.00	(0.06)	0.39	244	0.06	(0.07)	0.34	205
Family history of depression (0/1)	0.03	(0.06)	0.46	244	-0.02	(0.06)	0.49	244	0.12*	(0.07)	0.38	205
Family history of schizophrenia (0/1)	0.01	(0.03)	0.06	244	-0.04	(0.03)	0.09	244	0.03	(0.04)	0.06	205
Happiness (0-6)	-0.47**	(0.20)	3.53	244	-0.30	(0.20)	3.41	244	0.74***	(0.24)	2.66	205
Predicted happiness (0-6)	0.07	(0.16)	4.87	244	0.07	(0.16)	4.87	244	0.31	(0.23)	4.46	205
Depression last month (0-6)	-0.15	(0.25)	2.63	244	-0.05	(0.24)	2.58	244	-0.63**	(0.30)	3.21	205
Happiness last month (0-6)	-0.11	(0.19)	3.12	244	-0.08	(0.19)	3.10	244	0.58**	(0.24)	2.51	205
K10 scale score (0-40)	0.73	(1.16)	15.72	244	-0.02	(1.16)	16.18	244	-3.56**	(1.35)	19.76	205
Meets moderate or severe psychological distress	0.07	(0.06)	0.50	244	0.00	(0.06)	0.54	244	-0.15**	(0.07)	0.67	205
Flourishing score (0-32)	0.54	(0.99)	20.75	244	1.01	(0.97)	20.55	244	1.08	(1.15)	19.24	205
Social desirability score (0-4)	-0.08	(0.11)	2.12	244	0.08	(0.11)	2.04	244	-0.14	(0.13)	2.16	205
Work satisfaction (0-4)	-0.05	(0.16)	2.41	207	-0.02	(0.15)	2.39	207	0.00	(0.17)	2.34	166
Cares what others think (0-4)	0.26	(0.17)	2.31	244	0.05	(0.17)	2.43	244	0.24	(0.21)	2.18	205
Pooled F-test p-value		0.22				0.54				<0.01		

Notes: The table is identical to the first baseline balance table, with the exception that it restricts to participants that responded to the three-day follow-up survey and answered at least one well-being question.

Table A7: Balance on baseline characteristics: responded to 6-week follow-up

	Treatment assigned				Treatment received				Took the placebo (vs no-show)			
	Coef	SE	Control mean	N	Coef	SE	Control mean	N	Coef	SE	Control mean	N
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Age	-1.84	(1.23)	35.12	237	-2.91**	(1.23)	35.64	237	1.35	(1.59)	34.27	194
Not white (0/1)	-0.01	(0.07)	0.47	238	-0.00	(0.07)	0.46	238	0.04	(0.07)	0.42	196
Education (0-10)	-0.05	(0.21)	5.88	238	-0.19	(0.21)	5.94	238	0.53**	(0.23)	5.44	196
Married (0/1)	-0.05	(0.06)	0.25	238	0.03	(0.05)	0.21	238	-0.06	(0.06)	0.25	196
Monthly Income (0-8)	-0.06	(0.19)	2.83	238	0.06	(0.18)	2.78	238	0.34	(0.22)	2.49	196
Has children (0/1)	-0.03	(0.07)	0.49	238	-0.04	(0.07)	0.50	238	-0.00	(0.07)	0.49	196
Employed (0/1)	0.00	(0.05)	0.85	238	-0.01	(0.05)	0.85	238	0.13**	(0.06)	0.73	196
Employed in the formal sector (0/1)	-0.02	(0.06)	0.43	238	-0.00	(0.07)	0.42	238	0.03	(0.07)	0.41	196
Drinks alcohol (0/1)	0.00	(0.06)	0.65	238	0.01	(0.06)	0.64	238	0.11	(0.07)	0.53	196
Uses drugs (0/1)	0.02	(0.06)	0.28	238	-0.03	(0.06)	0.30	238	-0.04	(0.07)	0.37	196
Practices a religion (0/1)	0.00	(0.07)	0.41	238	-0.01	(0.06)	0.42	238	-0.10	(0.07)	0.49	196
Family history of alcoholism (0/1)	0.06	(0.06)	0.35	238	0.00	(0.06)	0.38	238	0.01	(0.07)	0.38	196
Family history of depression (0/1)	0.03	(0.07)	0.45	238	-0.03	(0.06)	0.48	238	0.10	(0.07)	0.39	196
Family history of schizophrenia (0/1)	0.00	(0.03)	0.07	238	-0.05*	(0.03)	0.09	238	0.01	(0.04)	0.08	196
Happiness (0-6)	-0.44**	(0.20)	3.47	238	-0.35*	(0.20)	3.38	238	0.72***	(0.23)	2.66	196
Predicted happiness (0-6)	0.05	(0.16)	4.88	238	0.09	(0.16)	4.85	238	0.31	(0.22)	4.43	196
Depression last month (0-6)	-0.20	(0.25)	2.64	238	-0.18	(0.25)	2.62	238	-0.63**	(0.30)	3.25	196
Happiness last month (0-6)	-0.09	(0.19)	3.10	238	0.01	(0.19)	3.04	238	0.56**	(0.24)	2.46	196
K10 scale score (0-40)	0.51	(1.18)	15.70	238	-0.23	(1.17)	16.15	238	-3.48**	(1.36)	19.70	196
Meets moderate or severe psychological distress	0.07	(0.07)	0.49	238	-0.01	(0.07)	0.53	238	-0.16**	(0.07)	0.67	196
Flourishing score (0-32)	0.15	(1.00)	21.00	238	0.57	(0.99)	20.82	238	1.50	(1.15)	19.20	196
Social desirability score (0-4)	-0.05	(0.11)	2.09	238	0.14	(0.11)	1.99	238	-0.23*	(0.12)	2.20	196
Work satisfaction (0-4)	-0.06	(0.16)	2.43	202	-0.07	(0.15)	2.43	202	0.06	(0.16)	2.34	158
Cares what others think (0-4)	0.27	(0.17)	2.33	238	0.06	(0.17)	2.45	238	0.16	(0.21)	2.28	196
Pooled F-test p-value		0.42				0.12				<0.01		

Notes: The table is identical to the first baseline balance table, with the exception that it restricts to participants that responded to the six-week follow-up survey and answered at least one well-being question.

Table A8: Balance on baseline characteristics: responded to 6-month follow-up

	Treatment assigned				Treatment received				Took the placebo (vs no-show)			
	Coef	SE	Control mean	N	Coef	SE	Control mean	N	Coef	SE	Control mean	N
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Age	-2.13	(1.30)	35.41	223	-3.22**	(1.31)	35.92	223	0.84	(1.57)	35.00	189
Not white (0/1)	-0.02	(0.07)	0.47	224	0.01	(0.07)	0.46	224	-0.01	(0.08)	0.46	190
Education (0-10)	-0.07	(0.22)	5.87	224	-0.19	(0.22)	5.93	224	0.51**	(0.24)	5.42	190
Married (0/1)	-0.05	(0.06)	0.25	224	0.06	(0.06)	0.20	224	-0.07	(0.06)	0.25	190
Monthly Income (0-8)	0.01	(0.19)	2.85	224	0.06	(0.19)	2.84	224	0.33	(0.23)	2.53	190
Has children (0/1)	-0.03	(0.07)	0.49	224	-0.04	(0.07)	0.49	224	-0.03	(0.08)	0.53	190
Employed (0/1)	0.01	(0.05)	0.85	224	-0.04	(0.05)	0.88	224	0.16**	(0.06)	0.72	190
Employed in the formal sector (0/1)	0.01	(0.07)	0.43	224	-0.01	(0.07)	0.44	224	0.05	(0.07)	0.41	190
Drinks alcohol (0/1)	0.01	(0.06)	0.65	224	0.04	(0.06)	0.63	224	0.08	(0.07)	0.55	190
Uses drugs (0/1)	-0.03	(0.06)	0.30	224	-0.03	(0.06)	0.30	224	-0.04	(0.07)	0.34	190
Practices a religion (0/1)	-0.01	(0.07)	0.43	224	-0.02	(0.07)	0.43	224	-0.11	(0.07)	0.53	190
Family history of alcoholism (0/1)	0.04	(0.07)	0.37	224	-0.01	(0.07)	0.39	224	0.05	(0.07)	0.37	190
Family history of depression (0/1)	-0.00	(0.07)	0.49	224	-0.05	(0.07)	0.51	224	0.12*	(0.07)	0.41	190
Family history of schizophrenia (0/1)	0.01	(0.04)	0.07	224	-0.05	(0.03)	0.10	224	0.04	(0.04)	0.05	190
Happiness (0-6)	-0.49**	(0.20)	3.47	224	-0.40*	(0.21)	3.38	224	0.69**	(0.25)	2.63	190
Predicted happiness (0-6)	0.05	(0.16)	4.86	224	0.06	(0.17)	4.85	224	0.21	(0.23)	4.54	190
Depression last month (0-6)	-0.15	(0.26)	2.55	224	-0.17	(0.25)	2.56	224	-0.57*	(0.31)	3.17	190
Happiness last month (0-6)	-0.07	(0.20)	3.17	224	-0.02	(0.20)	3.13	224	0.55**	(0.25)	2.51	190
K10 scale score (0-40)	0.80	(1.20)	15.50	224	0.36	(1.20)	15.83	224	-3.95**	(1.40)	20.07	190
Meets moderate or severe psychological distress	0.07	(0.07)	0.49	224	0.01	(0.07)	0.52	224	-0.17**	(0.07)	0.68	190
Flourishing score (0-32)	0.54	(1.01)	20.94	224	0.50	(1.01)	20.98	224	1.41	(1.18)	19.25	190
Social desirability score (0-4)	-0.10	(0.11)	2.15	224	0.10	(0.11)	2.04	224	-0.09	(0.13)	2.09	190
Work satisfaction (0-4)	-0.02	(0.16)	2.36	192	-0.09	(0.16)	2.38	192	-0.01	(0.17)	2.35	155
Cares what others think (0-4)	0.29	(0.18)	2.29	224	0.09	(0.18)	2.40	224	0.15	(0.22)	2.24	190
Pooled F-test p-value		0.30				0.05				<0.01		

Notes: The table is identical to the first baseline balance table, with the exception that it restricts to participants that responded to the six-month follow-up survey and answered at least one well-being question.

Table A9: Balance on baseline characteristics: responded to 2-year follow-up

	Treatment assigned				Treatment received			
	Coef	SE	Control mean	N	Coef	SE	Control mean	N
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Age	-1.79	(1.35)	35.07	215	-3.25**	(1.34)	35.88	215
Not white (0/1)	0.04	(0.07)	0.44	216	0.03	(0.07)	0.44	216
Education (0-10)	-0.06	(0.22)	5.91	216	-0.16	(0.22)	5.96	216
Married (0/1)	-0.04	(0.06)	0.25	216	0.04	(0.06)	0.21	216
Monthly Income (0-8)	0.06	(0.20)	2.79	216	0.04	(0.19)	2.83	216
Has children (0/1)	-0.00	(0.07)	0.48	216	-0.06	(0.07)	0.51	216
Employed (0/1)	0.01	(0.05)	0.84	216	-0.02	(0.05)	0.86	216
Employed in the formal sector (0/1)	0.01	(0.07)	0.44	216	-0.01	(0.07)	0.45	216
Drinks alcohol (0/1)	0.03	(0.07)	0.64	216	0.05	(0.07)	0.63	216
Uses drugs (0/1)	-0.03	(0.06)	0.30	216	-0.05	(0.06)	0.31	216
Practices a religion (0/1)	0.00	(0.07)	0.44	216	-0.01	(0.07)	0.45	216
Family history of alcoholism (0/1)	0.06	(0.07)	0.38	216	-0.03	(0.07)	0.42	216
Family history of depression (0/1)	0.02	(0.07)	0.48	216	-0.04	(0.07)	0.50	216
Family history of schizophrenia (0/1)	-0.00	(0.04)	0.07	216	-0.07*	(0.03)	0.10	216
Happiness (0-6)	-0.41*	(0.21)	3.48	216	-0.27	(0.22)	3.38	216
Predicted happiness (0-6)	0.09	(0.17)	4.84	216	0.04	(0.17)	4.87	216
Depression last month (0-6)	-0.28	(0.26)	2.54	216	-0.20	(0.26)	2.50	216
Happiness last month (0-6)	-0.07	(0.20)	3.22	216	0.04	(0.20)	3.16	216
K10 scale score (0-40)	0.79	(1.25)	15.22	216	-0.39	(1.24)	15.88	216
Meets moderate or severe psychological distress	0.07	(0.07)	0.47	216	-0.01	(0.07)	0.51	216
Flourishing score (0-32)	0.33	(1.06)	21.21	216	0.81	(1.05)	21.00	216
Social desirability score (0-4)	-0.06	(0.11)	2.10	216	0.10	(0.11)	2.03	216
Work satisfaction (0-4)	-0.06	(0.16)	2.42	183	-0.04	(0.16)	2.41	183
Cares what others think (0-4)	0.36*	(0.19)	2.27	216	0.03	(0.18)	2.45	216
Pooled F-test p-value			0.32				0.11	

Notes: The table is identical to the first baseline balance table, with the exception that it restricts to participants that responded to the two-year follow-up survey and answered at least one well-being question (no-shows didn't receive this survey).

Table A10: Little evidence of negative side effects of ayahuasca

	Increased heart rate (1)	Increased blood pressure (2)	Chest pain or tightness (3)	Agitation (4)	Dizziness (5)	Confusion (6)	Headaches (7)	Visual disturbances (8)	Paranoid thoughts and behaviors (9)	Mood disturbances (10)	Other (11)	Total symptoms (12)
Panel A: Six-Month Follow-Up												
Assigned ayahuasca	2.70	-6.66*	5.82	5.44	-2.16	0.25	-5.63	4.04	-2.40	1.37	5.31	0.08
	(2.72)	(3.42)	(4.27)	(5.92)	(3.81)	(4.11)	(6.23)	(3.30)	(4.18)	(6.33)	(4.78)	(0.23)
Placebo group outcome mean	5.3	10.5	11.4	26.3	11.4	11.4	34.2	7.0	11.4	36.8	15.8	1.8
Observations	223	223	223	223	223	223	223	223	223	223	223	223
Panel B: Two-Year Follow-Up												
Assigned ayahuasca	-0.89	0.65	7.38*	-1.49	-0.89	5.76*	-1.30	4.07	-1.32	-10.05*	6.87	0.09
	(2.96)	(3.78)	(4.29)	(5.69)	(3.90)	(3.40)	(5.97)	(3.08)	(3.51)	(6.00)	(5.97)	(0.23)
Placebo group outcome mean	6.5	9.3	11.2	23.4	9.3	7.5	26.2	7.5	10.3	33.6	25.2	1.7
Observations	216	216	216	216	216	216	216	216	216	216	216	216

Notes: Table shows intent-to-treat effects from a regression of each health symptom on an indicator equal to one for participants assigned ayahuasca, and zero for those assigned the placebo (jurema). At the six-month and two-year follow-ups, participants were asked *Do you experience any of the following? Check all that apply* with checkboxes for each of the symptoms above. Columns (1)–(11) are the share that selected each symptom, scaled to percentage points. *Total Symptoms* is the sum of symptoms checked (0-11). Sample includes participants that came to their session, and excludes the all-treated session. Robust standard errors in parentheses. All specifications include session-by-gender fixed effects. *** p<0.01, ** p<0.05, * p<0.1.

Table A11: Trip intensity predicts well-being changes

	Baseline			Change baseline to 3-day			Change baseline to 6-week			Change baseline to 6-month			Change baseline to 2-year		
	MN	ME	ED	MN	ME	ED	MN	ME	ED	MN	ME	ED	MN	ME	ED
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
Outcome: K10	1.92	1.38	0.62	-2.14**	-1.57**	-1.43***	-2.23*	-1.70***	-1.18**	-0.23	-0.86	-0.67	0.28	-0.28	-0.40
	(1.74)	(.96)	(.78)	(.91)	(.56)	(.45)	(1.32)	(.57)	(.44)	(1.11)	(.59)	(.49)	(.91)	(.56)	(.51)
Outcome mean	16.5	16.6	16.6	-11.0	-11.1	-11.1	-10.3	-10.4	-10.4	-9.1	-9.2	-9.2	-9.2	-9.4	-9.4
N	153	152	152	153	152	152	148	147	147	137	136	136	104	103	103
Session-by-gender fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Outcome: Happiness	-0.14	-0.06	-0.06	0.92***	0.62***	0.37***	0.55*	0.55***	0.23*	-0.02	0.27*	0.13	0.15	0.10	-0.07
	(.3)	(.15)	(.15)	(.25)	(.12)	(.13)	(.29)	(.17)	(.13)	(.23)	(.16)	(.13)	(.24)	(.15)	(.12)
Outcome mean	3.0	3.0	3.0	1.7	1.7	1.7	1.3	1.3	1.3	1.2	1.2	1.2	1.4	1.4	1.4
N	153	152	152	153	152	152	149	148	148	137	136	136	104	103	103
Session-by-gender fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Outcome: Flourishing score	0.51	0.53	0.44	2.63**	1.94***	1.34***	2.17***	1.04**	0.72*	-0.46	0.65	0.72	0.29	0.41	-0.29
	(1.09)	(.77)	(.56)	(1.18)	(.51)	(.39)	(.71)	(.48)	(.37)	(.94)	(.52)	(.46)	(.7)	(.56)	(.38)
Outcome mean	21.7	21.6	21.6	4.3	4.3	4.3	3.8	3.8	3.8	2.8	2.8	2.8	4.9	5.0	5.0
N	153	152	152	153	152	152	148	147	147	136	135	135	104	103	103
Session-by-gender fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Notes: Sample includes all participants that received ayahuasca. MN is Meaningfulness, ED is Ego dissolution, and ME is Mystical experience. Table shows the results of regressing the well-being measure (either baseline or change from baseline to follow-up) on either MN, ED, or ME (each of these variables is standardized), controlling for session-by-gender fixed effects, and in the case of columns 4 to 15, controlling also for the well-being measure at baseline. K10 corresponds to the score, from 0 to 40, on the Kessler-10 distress scale, where participants rate how often they have felt things such as *tired out for no good reason* over the past 3 days. Happiness corresponds to the answer to *In general, how happy would you say you are these days?* on a scale from *Not very happy (0)* to *Very happy (6)*. Flourishing is the score from 0 to 32 from summing answers to eight statements like *I lead a purposeful and meaningful life (0 = Strongly disagree to 4 = Strongly agree)*. Meaningful score corresponds to answer to question *How personally meaningful was the experience?* on a scale from 0 to 7. Mystical experience corresponds to the score (from 0 to 35) on the mystical experience questionnaire, where participants rate on a scale from 0 to 5 the degree to which they experienced phenomena like *Sense of awe or awesomeness* during the ceremony. Ego dissolution corresponds to the score (from 0 to 500) obtained from adding the participant's responses to 5 statements where they rate (on a scale from 0 to 100) the extent to which they experienced things such as *I felt a sense of union with others* during the ceremony. All these outcomes were measured on the three-day follow-up. For detailed outcome variable definitions, see Appendix B.2. Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Table A12: Heterogeneous treatment effects by baseline expectation

	K10				Happiness				Flourishing			
	3-day	6-week	6-month	2-year	3-day	6-week	6-month	2-year	3-day	6-week	6-month	2-year
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Assigned Ayahuasca * Expectation	0.40	-0.59	0.39	0.90	0.10	0.07	0.16	-0.40	-0.14	-0.41	-0.87	-1.50
	(1.04)	(.82)	(.82)	(.83)	(.22)	(.19)	(.2)	(.26)	(.98)	(.69)	(.75)	(.94)
Outcome mean	6.4	7.1	8.5	7.7	4.4	4.1	4.1	4.2	25.1	24.9	24.4	25.6
N	243	237	224	216	244	238	224	216	243	235	221	216
Session-by-gender fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Notes: Sample includes all participants that participated in a session with variation in treatment. Each outcome is regressed on an indicator for treatment assigned, the continuous measure of how useful the participant thinks ayahuasca will be (measured at baseline), and the interaction between the two, controlling for session-by-gender fixed effects and the outcome at baseline. Expectation Usefulness is answer to "At this moment, how much do you expect your experience with ayahuasca in [partner center name redacted] to be useful in improving your well-being?" on a scale from 1 to 10. Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Table A13: Well-being effects are not driven by participants that give socially desirable answers at baseline

	K10				Happiness				Flourishing score			
	3d	6w	6m	2y	3d	6w	6m	2y	3d	6w	6m	2y
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Assigned ayahuasca × Social desirability ≤ Median	-1.43	-1.76**	-2.13**	-0.73	0.71***	0.69***	0.47*	0.28	0.82	0.81	0.13	2.03**
	(1.05)	(0.88)	(1.08)	(1.07)	(0.22)	(0.21)	(0.25)	(0.25)	(0.72)	(0.70)	(0.86)	(0.87)
Assigned ayahuasca × Social desirability > Median	-0.34	-0.51	-1.29	-1.33	0.57*	0.15	0.29	0.87**	-0.20	-1.75	0.52	1.47
	(1.29)	(1.39)	(1.49)	(1.52)	(0.34)	(0.38)	(0.41)	(0.41)	(1.27)	(1.12)	(1.10)	(1.28)
p-value for the difference	0.52	0.45	0.65	0.75	0.74	0.23	0.72	0.22	0.48	0.05	0.79	0.72
Outcome mean	6.42	7.15	8.50	7.69	4.40	4.10	4.07	4.23	25.13	24.87	24.35	25.60
Observations	243	237	224	216	244	238	224	216	243	235	221	216
Session-by-gender fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Notes: 3d, 6w, 6m, and 2y refer to the outcome being measured in the 3-day, 6-week, 6-month, and 2-year follow-up surveys. Sample includes participants that attended their assigned session, except the all-treated session. Social desirability score is a measure of a participant's tendency to give socially desirable answers, measured with true/false answers to statements like, *No matter who I'm talking to, I'm always a good listener*. For this statement, an answer of true is considered to be the socially desirable (and likely false) answer. For more details, see Appendix B.2. The table shows intent-to-treat effects of ayahuasca, separately for those that have a social desirability score above or weakly below the median. All specifications control for the outcome measure at baseline and an indicator for social desirability score below median. Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Table A14: Difference-in-differences effects of believing you received ayahuasca

	K10 (1)	Happiness (2)	Flourishing (3)	K10 (4)	Happiness (5)	Flourishing (6)
Believe took ayahuasca	-1.62*	0.52*	-0.10			
	(0.95)	(0.30)	(0.70)			
Believe took ayahuasca (t+1)				-0.35	-0.12	0.67
				(0.89)	(0.25)	(0.63)
Observations	486	488	478	524	526	520
Participants	243	244	239	262	263	260
Outcome mean	7.8	4.0	24.7	6.8	4.2	25.1
Participant fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Session-by-gender-by-follow-up fixed effects	Yes	Yes	Yes	Yes	Yes	Yes

Notes: The unit of observation is the participant-by-follow-up survey. Regressions include all participants that attended their assigned ceremony. K10 is the Kessler-10 psychological distress score, ranging from 0 to 40. Happiness ranges from 0 (Not very happy) to 6 (Very happy). Flourishing is the score on the Flourishing scale from 0 to 32. Columns 1 to 3 keep only the six-week and six-month follow-up surveys. Columns 4 to 6 keep only the three-day and six-week follow-up surveys. Believe took ayahuasca is a dummy variable equal to one if the participant believes they were given ayahuasca in their assigned ceremony. For the six-week follow-up, this belief variable is determined by the participant's guess of their treatment in the three-day follow-up. Since treatment is revealed at the end of the six-week follow-up survey, the belief variable is set to the truth for the six-month follow-up. Believe took ayahuasca (t+1) is the lead (as opposed to the lag) of the believe took ayahuasca variable. It follows that columns 4 to 6 serve as a placebo, or parallel pre-trends, check. Standard errors are clustered at the participant-level. *** p<0.01, ** p<0.05, * p<0.1.

Table A15: Effects of ayahuasca on employment status

	6 weeks			6 months				2 years			
	Unemployed (1)	Self-Employed (2)	Informal Employee (3)	Unemployed (4)	Self-Employed (5)	Informal Employee (6)	Student (7)	Unemployed (8)	Self-Employed (9)	Informal Employee (10)	Student (11)
Assigned ayahuasca	5.52	-7.48	0.09	0.31	-7.11	-0.08	6.26*	-6.17*	-4.02	-0.71	5.21
	(3.85)	(5.14)	(3.57)	(4.18)	(5.04)	(4.20)	(3.36)	(3.43)	(5.50)	(4.01)	(3.40)
Placebo group outcome mean	11.30	32.17	8.70	12.28	30.70	11.40	7.02	10.28	28.97	9.35	5.61
Observations	235	235	235	224	224	224	224	216	216	216	216
Session-by-gender fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Notes: Table shows intent-to-treat effects from a regression of each variable on an indicator equal to one for participants assigned ayahuasca, and zero for those assigned the placebo (jurema). Sample includes participants that came to their session and answered the endline work module, and excludes the all-treated session. Outcomes are indicators (in percent) from the multi-select employment-status question, which are not mutually exclusive. The employment and formal-employment margins appear in the main work tables. The retired margin is omitted; among participants in this sample, 1 selects retired at the 6-week follow-up, 2 at the 6-month follow-up, and 3 at the 2-year follow-up. Columns (1)-(6) and (8)-(10) control for the same margin from the single-select baseline status question. The student option did not exist at baseline or at the 6-week follow-up. Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Table A16: Effects of ayahuasca on implied hourly earnings

	6 months		2 years	
	Hourly Earnings (1)	ln Hourly Earnings (2)	Hourly Earnings (3)	ln Hourly Earnings (4)
Assigned ayahuasca	9.74	-0.07	15.29	0.01
	(37.09)	(0.19)	(34.27)	(0.14)
Placebo group outcome mean	78.46	3.35	80.35	3.44
Observations	202	196	191	189
Session-by-gender fixed effects	Yes	Yes	Yes	Yes

Notes: Table shows intent-to-treat effects from a regression of each variable on an indicator equal to one for participants assigned ayahuasca, and zero for those assigned the placebo (jurema). Hourly earnings are gross monthly income divided by 4.33 times hours worked last week (4.33 is 52/12, to convert a weekly hours figure to a monthly one), defined for those working positive hours, then winsorized at the 99th percentile in this sample. All columns include dummies for baseline income bracket. Zero hourly earnings (positive hours and zero income) enter columns (1) and (3) as 0 and are missing in the logs. Sample includes participants that came to their session and answered the endline, and excludes the all-treated session. Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Table A17: Treatment effect heterogeneity for economic outcomes two years later

	Employed (1)	Hours Worked (2)	Gross Monthly Income (3)	ln Gross Monthly Income (4)	Economic Index (5)	Savings Index (6m) (6)
Panel A: Main Results						
Assigned ayahuasca	0.05	7.34**	2632.43*	0.21*	0.23***	0.23**
	(0.04)	(2.99)	(1522.31)	(0.11)	(0.08)	(0.10)
Panel B: Heterogeneity by Distress at Baseline						
Assigned ayahuasca × Distressed at Baseline	0.08	5.91	2555.84	0.25	0.21*	0.33**
	(0.06)	(4.39)	(2282.00)	(0.16)	(0.13)	(0.14)
Assigned ayahuasca × Not Distressed at Baseline	0.03	8.80**	2466.03	0.15	0.25**	0.12
	(0.04)	(4.08)	(2228.77)	(0.15)	(0.10)	(0.13)
p-value equal effects	0.579	0.630	0.979	0.675	0.806	0.275
Panel C: Heterogeneity by Age						
Assigned ayahuasca × Age ≤ Median	0.03	6.31	5142.29**	0.55***	0.30**	0.16
	(0.06)	(4.83)	(2238.46)	(0.17)	(0.14)	(0.14)
Assigned ayahuasca × Age > Median	0.07	8.95**	-501.02	-0.10	0.21**	0.25**
	(0.05)	(3.98)	(1273.85)	(0.12)	(0.10)	(0.12)
p-value equal effects	0.619	0.676	0.012	0.002	0.580	0.616
Placebo group outcome mean	0.9	32.5	6294.4	8.3	-0.0	0.0
Observations	216	216	216	209	216	224
Session-by-gender fixed effects	Yes	Yes	Yes	Yes	Yes	Yes

Notes: Table shows intent-to-treat effects from a regression of each variable on an indicator equal to one for participants assigned ayahuasca, and zero for those assigned the placebo (jurema). Columns (1)-(5) are measured 2 years after treatment. Column (6) is measured at the 6-month follow-up. Sample includes participants that came to their session, and excludes the all-treated session. Panel B reports effects separately for participants distressed and not distressed at baseline (participants are considered distressed at baseline if they score 15 or above on the Kessler-10 Psychological Distress Scale). Panel C reports effects separately for participants at or below versus above median age. The regressions in Panel B also include an indicator for not distressed at baseline, and those in Panel C also include an indicator for age at or below the median. Panel C has one fewer observation because age is missing for one participant. Column (1) includes the variable measured at baseline as a control. Columns (3) and (4) include dummies for baseline income bracket as a control. Column (5) is the unweighted mean of employment, ln gross monthly income, and hours worked, each standardized using the mean and standard deviation among participants assigned placebo at the 6-month follow-up; the mean is taken over whichever components are non-missing. Column (6) is the unweighted mean of number of credit types (reverse-coded), number of investment types, savings increase, winsorized savings minus debt, and percent of income saved, each standardized using the mean and standard deviation among participants assigned placebo; the mean is taken over whichever components are non-missing. Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Table A18: Effects of ayahuasca on social media (Instagram) usage

Panel A:	3 days later		2 to 3 weeks later						
	Have Instagram (1)	Willing to Share Handle (2)	Profile is Public (3)	Instagram Posts (4)	ln Instagram Posts (5)	Instagram Followers (6)	ln Instagram Followers (7)	Instagram Following (8)	ln Instagram Following (9)
Assigned ayahuasca	-0.04	0.11**	0.01	-49.57	-0.31	-18.44	-0.17	-130.82	-0.09
	(0.04)	(0.05)	(0.08)	(40.85)	(0.25)	(298.29)	(0.18)	(233.40)	(0.18)
Placebo group outcome mean	0.91	0.80	0.45	178.37	4.19	1007.26	6.39	1362.22	6.79
Observations	240	217	168	165	156	165	164	165	164
Panel B:			3 years later						
Assigned ayahuasca			-0.02	-54.75	-0.43*	-192.99	-0.15	-282.12	-0.15
			(0.08)	(46.15)	(0.25)	(318.28)	(0.20)	(251.20)	(0.18)
Placebo group outcome mean			0.48	189.90	4.33	1253.12	6.50	1798.99	7.08
Observations			166	166	153	166	163	166	164
Session-by-gender fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Notes: Table shows intent-to-treat effects from a regression of each variable on an indicator equal to one for participants assigned ayahuasca, and zero for those assigned the placebo (jurema). Panel A, columns (1) and (2) are from the 3-day follow-up survey. Column (2) is only asked to participants who report having an Instagram account. Panel A, columns (3)–(9) were manually obtained 2 to 3 weeks after the ceremony and only for participants who report having an Instagram account and who are willing to share their Instagram handle. Panel B is a later scrape 3 years after the ceremony (31 to 39 months after the five included sessions, August/September 2026), including recovered handles, plus 5 additional handles that were obtained late and not looked up for the first snapshot; accounts not found are missing. Note that for 157 participants we have all outcomes across both snapshots. The number of observations is lower for the log-transformed outcomes because the zeroes are dropped. Sample includes participants that came to their session and excludes the all-treated session. Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

B Pre-registered outcomes

B.1 Mapping of outcomes to reporting

Table B1: Pre-registered outcomes and main reporting in the paper

	Time after treatment			
Outcome	3 days	6 weeks	6 months	2 years
Panel A. Primary outcomes				
Ego dissolution	Table 1	—	—	—
Mystical experience	Table 1	—	—	—
Meaningfulness of experience	Table 1	Fig. A4	Fig. A4	Fig. A4[a]
Trip characteristics and qualitative information	Table 1	—	—	—
Psychological distress (K10)	Fig. 2	Fig. 2	Fig. 2	Fig. 2
Happiness	Fig. 2	Fig. 2	Fig. 2	Fig. 2
Flourishing	Fig. 2	Fig. 2	Fig. 2	Fig. 2
Employment status	—	Fig. 4A	Fig. 4A	Fig. 4A
Occupation	—	—	Fig. A1	Fig. A1
Hours worked	—	Fig. 4A	Fig. 4A	Fig. 4A
Income	—	—	Fig. 4B	Fig. 4B
Work satisfaction	Fig. A21	Fig. A21	Fig. A21	Fig. A21
Intention to find a new job / leave current job	Fig. A21	Fig. A21	—	—
Intention to change career	Fig. A21	—	—	—
Major decisions	—	Fig. 5	Fig. 5	—
Self-reported prosociality	Fig. A26	Fig. A26	—	—
Dictator game giving	—	Fig. A26	Fig. A26	—
Moral universalism	Fig. A26	Fig. A26	—	—
Self-reported social image concerns	Fig. A26	Fig. A26	Fig. A26	—
Incentivized social image concerns	—	Fig. A26	—	—
Instagram posting[b]	—	Table A18 (2–3 weeks)	—	Table A18 (3 years)
Values questions (Schwartz)	Fig. A27	—	—	—
Choice versus happiness	—	Fig. A27	—	—
Relationship improvement	—	Fig. A25	Fig. A25	Fig. A25
Self-knowledge	—	Fig. A28	—	—
Panel B. Secondary outcomes				
Predicted happiness	Fig. A6	—	—	—
Overall health self-evaluation	Fig. A6	Fig. A6	Fig. A6	Fig. A6
Subsequent ayahuasca use	—	Fig. A11	Fig. A11	Fig. A11
Other psychedelic / drug use	—	Fig. A11	Fig. A11	Fig. A11

Continued on next page

Table B1 continued

Outcome	Time after treatment			
	3 days	6 weeks	6 months	2 years
Health symptoms	—	—	Table A10	Table A10
Credit and debt	—	—	Table 4	—
Savings	—	—	Table 4	Table 4
Behavior change	—	Fig. A25	Fig. A25	Fig. A25
Social image: permission to share the experience	Fig. A26	—	—	—
Self-reported competitiveness	Fig. A28	—	—	—
Self-awareness (awareness scale)	Fig. A28	—	—	—
Big Five personality traits	—	—	Fig. A28	—
Religiosity and spirituality[c]	—	Fig. A28	—	—
Creativity	—	Fig. A29	—	—
Dream recall	Fig. A30	Fig. A30	—	—
Other dream characteristics	Fig. A30	—	—	—
Predicted study effects on depression	—	Fig. A31	—	—

Notes: Each hyperlink points to the primary figure or table reporting the pre-registered outcome at the indicated follow-up survey (in some cases the outcome is reported in additional exhibits too). Dashes mean that the outcome was not measured in that follow-up survey. The division into primary and secondary outcomes is as per our pre-registration: AEA RCT Registry 10400. Note that the two-year follow-up survey covers ceremony attendees only and excludes the all-treated session.

a. Meaningfulness of the experience was pre-registered as a secondary outcome at the two-year follow-up, and as a primary outcome for the other follow-up surveys.

b. We pre-registered the measurement of outcomes related to Instagram posting 2, 4, and 6 weeks after treatment. However, our final measurement was limited to 2-3 weeks and 3 years—these outcomes were not measured for the other time periods.

c. We did not measure religiosity.

B.2 Full survey questions

Baseline demographics and other variables. We ask the following questions in the baseline survey.

Race. [Baseline:] "What is your race?" [White / Black / Yellow / Brown / Indigenous] (note that these are standard categories for race when asked in surveys in Brazil). We code participants as *Not White* if they do not select "White."

Education. [Baseline:] "What is your education level?" [Alphabetization course (0) / Incomplete elementary school (1) / Complete elementary school (2) / Incomplete high school (3) / Complete high school (4) / Incomplete undergraduate degree (6) / Complete undergraduate degree (7) / Post graduate (8) / Masters (9) / PhD (10) / Other:] [Free-text coding: In addition, we use text matches to code responses pertaining to having a technical degree (code 5), currently being a part of an undergraduate program (code 6), and having a second degree in process while also having completed another (code 8).]

Income. [Baseline:] "In the last 12 months, what was your average gross monthly income? Please, consider the average of all your income, including salary, rent, fees, and others." [0 = 0 to BRL500 / 1 = BRL501 to BRL1,000 / 2 = BRL1,001 to BRL2,000 / 3 = BRL2,001 to BRL3,000 / 4 = BRL3,001 to BRL5,000 / 5 = BRL5,001 to BRL10,000 / 6 = BRL10,001 to BRL20,000 / 7 = BRL20,001 to BRL100,000 / 8 = BRL100,001+].

Employment. [Baseline:] "What is your current employment status?" [I am employed in the formal sector (that is, with a contract) / I am employed in the informal sector / I am self-employed / I am unemployed. That is, I have no employment relationship, but I am looking for a job. / I have already retired]. We then code participants as *Employed* if they select one of the first three options, and as *Employed in Formal Sector* if they select the first option.

Religion. [Baseline:] "Do you practice any religion?" [Yes/No].

Work satisfaction. [Baseline:] "How satisfied are you with your current job?" [0 = Very unsatisfied / 1 = Unsatisfied / 2 = Indifferent / 3 = Satisfied / 4 = Very satisfied]. This question is asked to those that report being employed.

Family history. [Baseline:] "Are any of the symptoms below present in your family? Select all the applicable options." [Schizophrenia / Depression / Alcoholism / None]. For each option, we create a variable equal to 1 (and 0 otherwise) if the participant selects the option.

Cares what others think. [Baseline:] "Please indicate below how much do you agree with the following sentence: I care a lot about what other people think of me." [0 = Strongly disagree / 1 = Disagree a little / 2 = Neither agree nor disagree / 3 = Agree a little / 4 = Strongly agree].

Depression last month. [Baseline:] "In the past month, how depressed did you feel?" [1 = Not

very depressed / 2 / 3 / 4 / 5 / 6 / 7 = Very depressed] [Analysis: subtract 1 (0–6)]. Unlike our analysis of effects on happiness, we do not use this variable as a retrospective measure of distress as this question is not comparable with our other measures of distress (which use the Kessler-10 Scale).

Reason for trying ayahuasca. [Baseline:] "What reason(s) best describes why you want or wanted to try ayahuasca in the first place? Select all options that apply." [I wanted to develop/improve my spirituality / I wanted to understand why I am the way I am / I was looking for healing / I wanted to forgive people from the past / I was just curious / I wanted to understand why some patterns were repeating in my life / I was looking for the meaning of life / I wanted to change from the status quo in my life / I witnessed someone's behavior/life improve after they started with ayahuasca / Other (specify)].

Expectancy. [Baseline:] "At this moment, how much do you expect your experience with ayahuasca in [partner center name redacted] to be useful in improving your well-being?" [1 to 10].

Most meaningful experience so far. [Baseline:] "What was the most meaningful experience of your life so far?" [open-text].

Social desirability bias. [Baseline:] To measure a tendency to give socially desirable answers, we ask participants a subset of the Marlowe-Crowne social desirability scale (Crowne and Marlowe 1960) in the baseline survey. In particular, we ask each participant to answer whether each of the following four statements is true or false for them: No matter who I'm talking to, I'm always a good listener / There have been occasions when I took advantage of someone / I sometimes try to get even, rather than forgive and forget / I am always willing to admit when I make a mistake. [True on statements 1 and 4 provides one point each. Similarly, False on statements 2 and 3 provides one point each. The scores from the four questions are summed to provide a final score between 0–4. Higher scores signify greater social desirability.]

Birth date. [Baseline:] "Birth Date (select from calendar)"

Sex. [Baseline:] "What is your sex?" [Female / Male].

Marital status. [Baseline:] "What is your marital status?" [Single / Married / Divorced / Widowed / Other:].

Children. [Baseline:] "How many children do you have?" [0 - none / 1 / 2 / 3 / 4 / 5 or more].

Alcohol use. [Baseline:] "Do you take any alcoholic beverages?" [Yes / No].

Current illicit drug use. [Baseline:] "Do you consume some type of drug?" [Yes / No].

Current drug types. [Baseline:] "What types of illicit drugs do you take? Please select all that

apply." [Weed / Cocaine / MDMA / LSD / Mushrooms / Ketamine].

Spiritual practices. [Baseline:] "Do you perform any spiritual practices?" [Yes / No].

Meditation. [Baseline:] "Which spiritual practices do you practice? Select all that apply." [Yoga / Meditation / Reiki / Thetahealing / Prayer / Other:] [Item used: Meditation].

Subjective experiences. We ask the following questions to measure the acute subjective experiences of the participants that attended the ceremony (with some receiving ayahuasca, others receiving the placebo). We ask these primarily in the 3-day follow-up survey.

Meaningfulness. [3 days; 6 weeks; 6 months; 2 years:] "How personally meaningful was the experience?" [0 = No more than routine, everyday experiences, 1 = Similar to meaningful experiences that occur on average once or more a week, 2 = Similar to meaningful experiences that occur on average once a month, 3 = Similar to meaningful experiences that occur on average once a year, 4 = Similar to meaningful experiences that occur on average once every 5 years, 5 = Among the 10 most meaningful experiences of my life, 6 = Among the 5 most meaningful experiences of my life, 7 = The single most meaningful experience of my life.]

Mystical experience questionnaire (7-item, Pahnke (1963)). [3 days:] "Please rate the degree to which at any time during your Ayahuasca session, you experienced each of the following phenomena." [Loss of feelings of difference between yourself and objects or persons in your surroundings / Loss of your usual sense of time / Feeling that you could not do justice to your experience by describing it in words / Feeling that you experienced something profoundly sacred and holy / Sense of awe or awesomeness / Gain of insightful knowledge experienced at an intuitive level / Feelings of universal or infinite love] [0 = None, 1 = So slight I cannot decide, 2 = Slight, 3 = Moderate, 4 = Strong, 5 = Extreme. Summed to give a score from 0 to 35.]

Ego dissolution (5-item). [3 days:] "Please rate the extent to which you have experienced any of the following statements during your Ayahuasca session. Please, slide the bar to indicate your answer, where 0 is 'No more than usually' and 100 is 'Entirely or Completely."' [I experienced a dissolution of my "self" or ego / I felt a sense of union with others / I felt far less absorbed by my own issues and concerns / I felt more special or important than others (reverse-coded) / I felt especially sure-of-myself (reverse-coded). Summed to give a score from 0 to 500.]

Open-text description of experience. [3 days:] "Describe in detail your experience with the Ayahuasca in the box below. Please be specific about what you saw, heard, and felt." [We use the total word count as another measure of the intensity of the experience.]

Trip domains. [3 days:] "If you had to describe a broad domain that you tripped on, what would that be? Select all that apply." [Family members / Revived old memories / Had visions / Love or peace / Sadness or pain / Confused and disordered thoughts / Relationships with people other

than family members / Insights about bad habits / Insights about how to be happier / Happiness or pleasure / Relationship with nature / Other (Specify)] [We use the number of categories selected, and whether "Had visions" was selected, as additional measures of the intensity of the experience.]

Adverse effects. [3 days:] "We know that some people can have "negative effects" during an ayahuasca session. Did any of the following happen during your trip? Please select all that apply." [Vomit / Diarrhea / Dizziness / Bad trip / Challenging trip / Hypersalivation / Others. Specify: / None of the above]

Perceived treatment status. [3 days:] In your Ayahuasca session, you could take either a regular Ayahuasca dose or a less concentrated Ayahuasca dose. If you had to guess, which one would you say you took? We are going to tell which Ayahuasca dose you took by the end of the next survey, which we will send in 6 weeks. [Answer options: Ayahuasca with regular concentration / Ayahuasca with lower concentration (i.e. weaker)] (Note that we made an error in the wording: we meant the second option to be jurema/the placebo.)

Would take ayahuasca again. [3 days:] "Would you take the Ayahuasca again?" [Yes / No].

Well-being measures. We ask the following questions in the baseline survey and all four follow-up surveys.

Kessler-10 Distress (Kessler et al. 2003). [Baseline; 3 days; 6 weeks; 6 months; 2 years:] "Over the last [two weeks for baseline, three days for 3-day follow-up, two weeks for 6-week follow-up, four weeks for 6-month and 2-year follow-ups], about how often have you felt..." [tired out for no good reason / so depressed that nothing could cheer you up / depressed / worthless / nervous / so nervous that nothing could calm you down / hopeless / restless or fidgety / so restless you could not sit still / that everything was an effort] [0 = Never, 1 = A little of the time, 2 = Some of the time, 3 = Most of the time, 4 = All the time. Summed to give a score from 0 to 40. Score of 15+ indicates moderate or severe psychological distress (Yiengprugsawan et al. 2022).] [Kessler-6: items 2, 4–5, 7–8, and 10; summed to a score from 0–24.]

Happiness. [Baseline; 3 days; 6 weeks; 6 months; 2 years:] "In general, how happy would you say you are these days? Please use the scale below to indicate." [0 = Not very happy / 1 / 2 / 3 / 4 / 5 / 6 = Very happy]

[Baseline, retrospective:] "In the past month, how happy have you felt?"

[3-day, prospective:] "Now please predict how happy you will be in 6 weeks."

Flourishing Scale (Diener et al. 2010). [Baseline; 3 days; 6 weeks; 6 months; 2 years:] "Below are eight statements with which you may agree or disagree. Please indicate your agreement

with each item." [I lead a purposeful and meaningful life / My social relationships are supportive and rewarding / I am engaged and interested in my daily activities / I actively contribute to the happiness and well-being of others / I am competent and capable in the activities that are important to me / I am a good person and live a good life / I am optimistic about my future / People respect me] [Baseline coding: 0 = Strongly disagree, 1 = Disagree a little, 2 = Neutral, 3 = Agree a little, 4 = Strongly agree.] [Follow-up coding: 0 = Strongly disagree, 1 = Disagree a little, 2 = Neither agree nor disagree, 3 = Agree a little, 4 = Strongly agree.] [The aggregate outcome sums scores from the responses to each question and thus ranges from 0–32.]

Broader health and side effects. As secondary outcomes, we ask:
[3 days; 6 weeks; 6 months; 2 years:] "All in all, how would you describe your state of health these days?" [0 = Very Poor / 1 = Poor / 2 = Fair / 3 = Good / 4 = Very Good].

[6 months; 2 years:] "Do you experience any of the following? Check all that apply." [Increased heart rate / Increased blood pressure / Chest pain or tightness / Agitation / Dizziness / Confusion / Headaches / Visual disturbances / Paranoid thoughts and behaviors / Mood disturbances / Other negative health issue (Specify) / None].

Drug use. We measure self-reported use of ayahuasca, other psychedelics, marijuana, and cocaine.

[6 weeks; pledge signed:] "We understand that you signed the pledge of not taking ayahuasca again until finishing this survey at the time of registration, but your payment will not be affected and you will not be punished in any way if you took ayahuasca again after the experiment session, so please report this honestly."

Other psychedelic use. [6 weeks:] "Have you used any other psychedelic drug since [ceremony date]?" [Yes / No] "Note: weed is not a psychedelic."

Other psychedelics. [6 weeks:] [If Other psychedelic use: "Yes".] "Which psychedelic drug have you used since [ceremony date]? Please select all that apply." [LSD / Mushrooms/psilocybin / Ecstasy/MDMA / Other. Specify:].

Used ayahuasca since. [6 months:] "Have you taken ayahuasca any times since the ceremony on [ceremony date]?" [Yes / No].

[2 years:] "Have you taken ayahuasca any times since [six-month survey month/year]?" [Yes / No]. (Where a six month-survey record doesn't exist for an individual, the date of the ceremony is used.)

Illicit drug use. [6 months:] "Have you used any illicit drug since [ceremony date]?" [Yes / No].

[2 years:] "Have you used any illicit drug since [6-month survey month/year]?" [Yes / No]. (Where a six month-survey record doesn't exist for an individual, the date of the ceremony is used.)

Illicit drug types. [6 months:] [If Illicit drug use: "Yes".] "Which illicit drug(s) have you used since [ceremony date]? Please select all that apply." [LSD / Mushrooms/psilocybin / Ecstasy/MDMA / Weed / Cocaine / Other. Specify:].

[2 years:] [If Illicit drug use: "Yes".] "Which illicit drug(s) have you used since [6-month survey month/year]? Please select all that apply." [LSD / Mushrooms/psilocybin / Ecstasy/MDMA / Weed / Cocaine / Other. Specify:]. (Where a six month-survey record doesn't exist for an individual, the date of the ceremony is used.)

Employment, work, and occupation. *Work satisfaction.* [3 days; 6 weeks; 6 months; 2 years:] [From 6 weeks: if Employed.] "How satisfied do you feel right now about your current job?" [Very satisfied (4) / Satisfied (3) / Indifferent (2) / Unsatisfied (1) / Very unsatisfied (0)].

New job intentions. [3 days: attendees; 6 weeks: Employed:] "Taking everything into consideration, how likely is it you will make a genuine effort to find a new job within the next year?" [Very likely (4) / Likely (3) / Neutral (2) / Unlikely (1) / Very unlikely (0)].

Career change intentions. [3 days; attendees:] "Taking everything into consideration, how likely is it you will change your career path within the next year?" [Very likely (4) / Likely (3) / Neutral (2) / Unlikely (1) / Very unlikely (0)].

Reconsidering career choices. [3 days; attendees:] [If Career change intentions: "Very likely" / "Likely".] "Please rate to which extent you agree with the following statement: My Ayahuasca experience has made me reconsider my career choices." [Strongly agree (4) / Agree a little (3) / Neither agree nor disagree (2) / Disagree a little (1) / Strongly disagree (0)].

How ayahuasca made participants reconsider their career choices. [3 days; attendees:] [If Reconsidering career choices: "Agree a little" / "Strongly agree".] "In what ways do you think your Ayahuasca experience has made you reconsider your career choices? Select all that apply." [I want to move to a job that is more meaningful. / I want to move to a job where I have more autonomy. / I want to stay in the same job, but I want to be more ambitious. / Other. Specify:].

Employment. [6 weeks; 6 months; 2 years:] "What is your employment status? Select all that apply."
[6-week responses:] [I am employed in the formal sector / I am employed in the informal sector / I am self-employed / I am unemployed / I have already retired].
[6-month and 2-year responses:] [I am employed in the formal sector / I am employed in the informal sector / I am self-employed / I am unemployed / I am retired / I am a student]. [Em-

ployed: formal / informal / self-employed.]

Job transitions. [6 weeks; 6 months:] "Have you made a job transition (that is, leaving a job or starting a new job) since [ceremony date]?"
[6-week responses:] [Yes / No].
[6-month instruction:] "Select all that apply."
[6-month responses:] [Yes, I moved from employed to unemployed / Yes, I moved from unemployed to employed / Yes, I moved from one job to a different one / No, I have the same employment status as I had in [ceremony date]].

[2 years:] "Have you made a job transition (that is, leaving a job or starting a new job) since [6-month survey month/year]?"
[2-year instruction:] "You may select more than one choice if you have made multiple job transitions of different types."
[2-year responses:] [Yes, I moved from employed to unemployed / Yes, I moved from unemployed to employed / Yes, I moved from one job to a different one / No, I have the same employment status as I had in [6-month survey month/year]]. (Where a six month-survey record doesn't exist for an individual, the date of the ceremony is used.)

Income. [6 months; 2 years:] "What was your gross income last month, in reais? If you are not sure, try to guess a rough amount." [0–100,000 reais].

Hours worked. [6 weeks:] "How many hours did you work for income last week?" [0–100].

[6 months and 2 years:] "How many hours did you work for income last week? (Enter 0 if you did not work for income last week)" [0–100].

Occupation. [6 months; 2 years:] [If Employed.] "What is your main occupation?" "Start typing and choose the option that best matches your occupation."

Classification. Occupation responses are matched to 434 titles in Brazil's household-survey classification (COD). This match is done using a combination of an exact merge, manual coding, and keyword rules. We then aggregate these into the 10 major (MJ) and sub-major occupation groups defined under the International Standard Classification of Occupations (ISCO-08). This classification is then used to define a broader occupation category: managerial/professional (MJs 1 and 2), technician (MJ 3), clerical (MJ 4), service/sales (MJ 5), and manual (MJs 0, 6, 7, 8, and 9). Shares exclude responses unclassified at the corresponding level.

Major life decisions. *Pending decisions.* [Baseline:] "Currently, have you been reflecting on taking any of the following decisions? Select all decisions you have been reflecting on." [Quit my job / Break up / Go back to school / Open my own business / Move / Quit smoking / Have a child / Propose to my partner / Retire / Adopt a child / I have not been reflecting on taking any

decisions / Other. Specify:].

Decisions made. [6 weeks; 6 months:] "You mentioned that you are struggling with making the decision about whether to [decision]. What did you decide?" [I decided to do it / I decided not to do it / I have not made a decision on that yet] [Here, [decision] is: quit jobs / break up / go back to school / start your own business / move / quit smoking / have a child / propose / retire / adopt] [Referring to decisions selected at baseline; re-asked if unresolved in the previous survey period].

Credit, savings, and debt. *Share of income saved.* [6 months; 2 years:] [If Income is not 0.] "You said your income last month was [income]. Out of this, what percentage did you save last month, if anything?" [Slider: 0 to 100 percent].

Credit applications. [6 months:] "In the last 6 months, did you apply for any new credit, including increase in credit card limit or any loans?" [Yes / No].

Credit types. [6 months:] [If Credit applications: "Yes".] "Which type(s) of credit did you apply for? Select all that apply." [Student loans / Increase of credit card limits / Mortgage refinances / Increase in the limits of an existing loan / Auto loans / Mortgage or home loans / New credit cards / Other. Specify:].

Investments. [6 months:] "In the last 6 months, did you invest any money in financial services (e.g., pension, stock market, saving account)?" [Yes / No].

Investment types. [6 months:] [If Investments: "Yes".] "Which type of investment did you make? Select all that apply." [Private pension / Public fixed income / Private fixed income / Investment funds / Stock market / Saving account / Crypto / Other. Specify:].

Change in savings. [6 months:] "In the last 6 months, would you say your savings:" [Increased considerably (4) / Increased a little (3) / Remained about the same (2) / Decreased a little (1) / Decreased considerably (0)].

Current savings. [6 months:] "How much money do you currently have saved? (Including cash, money across all your bank accounts, and the value of any financial assets, like stocks. Select "0 reais" if you currently have no savings.) If you are not sure, try to guess a rough amount." [0–1,000,000 reais].

Current debt. [6 months:] "Please give an estimate of the total BRL value of financial and non-financial debt that you currently owe (e.g. loans, borrowed credit. Select "0 reais" if you do not have any debt). If you are not sure, try to guess a rough amount." [0–1,000,000 reais].

Behavior change and relationships. *Relationship to improve.* [Baseline:] "Is there any interpersonal relationship that you expect that Ayahuasca could help with? If yes, could you give the first name and your relationship with this person (e.g. Maria - mother, Ricardo - partner)? If you have no relationship in mind or if you prefer not sharing this, just write NA."

Relationship improvement. [6 weeks; 6 months; 2 years:] [If a relationship was mentioned at baseline.] "In your first survey, you mentioned that you would like your relationship to improve with [person]. How much has your relationship improved with [person] since [ceremony date]?" [A great deal (4) / A lot (3) / Somewhat (2) / Little (1) / Not at all (0)].

Behavior change. [6 weeks:] "Have you noticed any changes in your behaviours in a meaningful/positive way (e.g., started therapy, had better time management) since [ceremony date]?" [Yes / No].

[6 months; 2 years:] "Think of yourself these days compared to yourself in the past, and answer:" "Since [ceremony date], have you noticed any significant change(s) in your behavior that persist to this day?" [Yes / No].

Types of change. [6 months; 2 years:] [If behavior change = "Yes".] "Which behaviors below do you believe have changed the most since [ceremony date]? Select all options that apply." [I improved some health habits, like exercising and eating better. / Self control. I became a person who thinks more before making decisions or saying something. / My relationships with other people, in general. I learned to listen and communicate better. / I improved my relationship with work. / I started going to therapy or opening up more in therapy. / Other].

Social preferences and social image. *Cares what others think.* [3 days; 6 weeks; 6 months:] "To which extent you agree with the following statement: I care a lot about what other people think of me." [Strongly disagree (0) / Disagree a little (1) / Neither agree nor disagree (2) / Agree a little (3) / Strongly agree (4)].

Universalism. [3 days; 6 weeks:] "Suppose you have earned 1,000 reais, but you have to give away the money to two other people. You can't keep any of the money for yourself. Assume that these two people have the same standard of living. How much of your 1,000 reais would you give to each of the following people, if the rest goes to a random stranger from Brazil?" [0–1,000 reais each].
[3 days:] [A person who shares your religious beliefs / A person in your family / A person who lives in your neighbourhood / A random stranger from anywhere in the world / A friend of yours / A person who shares your ethnic background]
[6 weeks:] [A person in your family / A friend of yours / A random stranger from anywhere in the world].

[The in-group score is the average of 1000 minus the worldwide stranger allocation, and the

remaining components (since remaining components are transfers to an ingroup member).]

Allow Centre to Share on Social Media. [3 days:] [Respondents are randomly assigned to see the named or anonymous version.] [Named version:] "Would you allow [center name redacted] to disclose what you just described about your Ayahuasca experience on their Instagram, in which they have over [number redacted] followers? This information would be shared along WITH your full name."

[3-day anonymous version:] "Would you allow [center name redacted] to disclose what you just described regarding your Ayahuasca experience on their Instagram, in which they have over [number redacted] followers? This information would be shared WITHOUT mentioning your name."

[3-day shared instruction:] "At least one person who participated in your session will have their experience shared if they allow us to do so." [Yes, I allow [center name redacted] to share my experience in their social media / No, I do not allow [center name redacted] to share my experience in their social media].

Punishing unfairness toward you. [3 days; 6 weeks:] "How willing are you to punish someone who treats you unfairly, even if there may be costs for you?" [0 = Completely unwilling to do so / 1 / 2 / 3 / 4 / 5 / 6 / 7 / 8 / 9 / 10 = Very willing to do so].

Punishing unfairness toward others. [3 days; 6 weeks:] "How willing are you to punish someone who treats others unfairly, even if there may be costs for you?" [0 = Completely unwilling to do so / 1 / 2 / 3 / 4 / 5 / 6 / 7 / 8 / 9 / 10 = Very willing to do so].

Giving to good causes. [3 days; 6 weeks:] "How willing are you to give to good causes without expecting anything in return?" [0 = Completely unwilling to do so / 1 / 2 / 3 / 4 / 5 / 6 / 7 / 8 / 9 / 10 = Very willing to do so].

Gift-card choices (incentivized social image). [6 weeks:] "In addition to your payment for completing this survey, you now have the possibility to participate in a lottery and win a R$1500-R$5000 gift card for either Hering or Osklen. Note that credit on the gift cards cannot be converted to cash. At Hering you will find affordable clothing and accessories at great prices. At Osklen you will find high-end fashion clothing and accessories from a prestigious brand."

"The gift card you will receive in case you win our lottery will be determined by your choices in this question. You are equally likely to win the lottery regardless of what you choose, but the prize for winning will be determined by your choices. For each line in the table below, please choose Option A or Option B. Option A is always a R$2000 gift card from Hering. Option B is a gift card from Osklen, whose value varies from R$1500 reais to R$5000."

"If you win the lottery, exactly one of your choices below will be randomly selected to be implemented. So you should treat each and every line as if that choice will determine your payment."

"Note: We will randomly select one winner among people who signed up for this study. If you win the lottery, you will be notified once this study ends, by [date]."

[Option A (Hering gift card) / Option B (Osklen gift card)].

"What would you prefer to win between a R$2000 Hering gift card (Option A) and a R$1500 Osklen card (Option B)?"
"What would you prefer to win between a R$2000 Hering gift card (Option A) and a R$1800 Osklen card (Option B)?"
"What would you prefer to win between a R$2000 Hering gift card (Option A) and a R$2100 Osklen card (Option B)?"
"What would you prefer to win between a R$2000 Hering gift card (Option A) and a R$2400 Osklen card (Option B)?"
"What would you prefer to win between a R$2000 Hering gift card (Option A) and a R$2700 Osklen card (Option B)?"
"What would you prefer to win between a R$2000 Hering gift card (Option A) and a R$3000 Osklen card (Option B)?"
"What would you prefer to win between a R$2000 Hering gift card (Option A) and a R$4000 Osklen card (Option B)?"
"What would you prefer to win between a R$2000 Hering gift card (Option A) and a R$5000 Osklen card (Option B)?"
[For those answering the question in the first row, a score of 0 is provided if no option B is selected. Otherwise, a score of 9 minus the first row number chosen for option B is provided. Respondents who choose Option (A) in any row after they chose Option B (Osklen) in an earlier row are excluded. The total score ranges from 0–8.]

Dictator game. [6 weeks; 6 months:] "This task is about dividing money between yourself and another person to whom you are randomly matched, let's call them the recipient. The recipient is also a resident of [city name redacted], but we won't tell you who they are, and we won't tell them who you are. One of the participants that attended your ayahuasca session will be randomly drawn to win 100 reais. If you win the 100 reais, how much would you like to donate to the recipient? You would keep the remaining balance. Think carefully, we will distribute the money based on your answer here if you win the 100 reais. You can choose any amount between 0 and 100 reais. The recipient receives the amount that you decide to transfer to them; you receive the amount that you decide not to transfer and thus to keep. Slide the bar below to indicate how much of your 100 reais endowment do you want to transfer to the recipient." "How much of your 100 reais do you want to transfer to the recipient" [0–100 reais].

Values and hypothetical choices. *Importance of values.* [3 days:] "For each of the following, indicate how important it is in your life." [Friends / Leisure time / Work / Religion / Family / Politics] [Not at all important (0) / Not very important (1) / Rather important (2) / Very impor-

tant (3)].

[Each of the four scenarios is asked twice: which life would be happier, and which option they would choose.]

Happier life in hypothetical choices. [6 weeks:] "Between these two options, taking all things together, which do you think would give you a happier life as a whole?"

[6-week choice preamble:] "At the beginning of the survey, we presented you with four scenarios, each with two options, and asked you which would give you a happier life as a whole. We will now ask you about the same four scenarios we described earlier, but this time we would like to know which option you would choose in real life, if you had to."

Choice in hypothetical choices. [6 weeks:] [Sleep, relative income, and friends:] "If you were limited to these two options, which do you think you would choose?"

Sleep and income. [6 weeks:] "Say you have to decide between two new jobs. The jobs are exactly the same in almost every way but have different work hours and pay different amounts. Option 1: A job paying BRL4,500 per month. The hours for this job are reasonable, and you would be able to get about 7.5 hours of sleep on the average work night. Option 2: A job paying BRL6,000 per month. However, this job requires you to go to work at unusual hours, and you would only be able to sleep around 6 hours on the average work night." [Happiness responses:] [Definitely option 1: sleep more but earn less / Probably option 1: sleep more but earn less / Possibly option 1: sleep more but earn less / Possibly option 2: sleep less but earn more / Probably option 2: sleep less but earn more / Definitely option 2: sleep less but earn more]. [Choice responses:] [Definitely Option 1: sleep more but earn less / Probably Option 1: sleep more but earn less / Possibly Option 1: sleep more but earn less / Possibly Option 2: sleep less but earn more / Probably Option 2: sleep less but earn more / Definitely Option 2: sleep less but earn more].

Concert and birthday. [6 weeks:] "Suppose you promised a close friend that you would attend his or her birthday dinner. However, at the last minute you find out that you have won a ticket for the VIP area to see your favorite musician, and the concert is at the same time as the dinner. This is the musician's last night in town. You face two options: Option 1: Skip your friend's birthday dinner to attend the concert. Option 2: Attend your friend's birthday dinner and miss the concert."
[6-week concert and birthday:] "Which do you think you would choose?" [Responses to both questions:] [Definitely Option 1: attend the concert / Probably Option 1: attend the concert / Possibly Option 1: attend the concert / Possibly Option 2: attend your friend's birthday / Probably Option 2: attend your friend's birthday / Definitely Option 2: attend your friend's birthday] [Referring to the aforementioned options].

Absolute and relative income. [6 weeks:] "Suppose you are considering a new job, and have offers from two companies. Even though all aspects of the two jobs are identical, employees'

salaries are different across the two companies due to arbitrary timing of when salary benchmarks happened to be set. Everyone in each company knows the other employees' salaries. You must choose one of the two companies, which means you must decide between the following two options: Option 1: Your monthly income is BRL5,500, while on average others at your level earn BRL6,600. Option 2: Your monthly income is BRL4,200, while on average others at your level earn BRL3,360." [Responses to both questions:] [Definitely Option 1: higher income but lower than the average / Probably Option 1: higher income but lower than the average / Possibly Option 1: higher income but lower than the average / Possibly Option 2: lower income but higher than the average / Probably Option 2: lower income but higher than the average / Definitely Option 2: lower income but higher than the average].

Friends and income. [6 weeks:] "Say you have been reassigned at your job, and will be moved to a new location. There are two offices where you could request to work. One office is in a city where many of your friends happen to live, and pays 20% less than your current salary. The other office is in a city where you don't know anyone, and pays 10% more than your current salary. Your job will be exactly the same at either office. You must decide between the following two options: Option 1: Make 20% less than your current salary and move to the city with your friends. Option 2: Make 10% more than your current salary and move to a city where you do not know anyone." [Responses to both questions:] [Definitely Option 1: less salary but more friends / Probably Option 1: less salary but more friends / Possibly Option 1: less salary but more friends / Possibly Option 2: more salary but fewer friends / Probably Option 2: more salary but fewer friends / Definitely Option 2: more salary but fewer friends].

[Analysis: The responses presented above, in their current order, receive scores of 5, 4, 3, 2, 1, and 0 respectively. The reported difference refers to the absolute difference between the scores related to happiness and choice.]

Individual characteristics and personality. *Competitiveness.* [3 days:] "How competitive do you consider yourself to be? Please choose a value on the scale below, where 0 means "not competitive at all" and 10 means "very competitive."" [0 = Not competitive at all / 1 / 2 / 3 / 4 / 5 / 6 / 7 / 8 / 9 / 10 = Very competitive].

Awareness. [3 days:] "Please indicate how often you have had each experience over the last 3 days after your Ayahuasca session. Please answer according to what really reflected your experience rather than what you think your experience should be." [I found myself listening to someone with one ear, doing something else at the same time. / I found it difficult to stay focused on what was happening in the present. / I broke or spilled things because of carelessness, not paying attention, or thinking of something else. / I could be experiencing some emotion and not be conscious of it until some time later. / It seemed I was "running on automatic" without much awareness of what I was doing.] [Never (4) / Rarely (3) / Sometimes (2) / Often (1) / Very Often (0); summed to a score ranging between 0 and 20.].

Self-knowledge. [6 weeks:] "Below is a list of statements about your general experiences. Using the scale, please indicate how frequently you experience or engage in each of them." [I'm aware of my abilities and limitations / I "observe" myself / I am realistic about myself / I can "take a step back" from situations to understand them better / I understand my emotions] [Never (0) / Rarely (1) / Occasionally (2) / Frequently (3) / Almost Always (4); summed to a score ranging between 0 and 20.].

Spirituality. [6 weeks:] "Please indicate below to which extent you agree with the sentence: "I am a spiritual person"" [Strongly disagree (0) / Disagree a little (1) / Neutral (2) / Agree a little (3) / Strongly agree (4)].

Big Five. [6 months:] "Here are a number of characteristics that may or may not apply to you. Please indicate the extent to which you agree or disagree with each of the statements." "I see Myself as Someone Who..." [1) ... tends to find fault with others / 2) ... has an active imagination / 3) ... is relaxed, handles stress well / 4) ... is generally trusting / 5) ... is reserved / 6) ... does a thorough job / 7) ... tends to be lazy / 8) ... is outgoing, sociable / 9) ... gets nervous easily / 10) ... has few artistic interests] [Strongly disagree (0) / Disagree a little (1) / Neither agree nor disagree (2) / Agree a little (3) / Strongly agree (4)]. [Using R to denote reverse coding (4 minus the item score), these responses are aggregated into scores for extraversion (5R + 8), agreeableness (1R + 4), conscientiousness (6 + 7R), neuroticism (3R + 9), and openness (2 + 10R)—the Big 5 traits.]

Creativity. [6-week creativity introduction:] "On the next screen, you will be given 1.5 minutes to perform a task that consists of writing as many unusual uses as you can think of for an object. This is the second last question of the survey. Only if you complete all tasks will you receive the 70 reais to thank you for answering this survey."

Unusual uses. [6 weeks:] "Please list as many, as different, and as unusual uses for tin cans as you can think of. Do not restrict yourself to a specific size of can. You can also list uses that require several cans. Do not restrict yourself to uses you are familiar with, but think of as many new uses as possible!" [1.5 minutes; 20 open-text boxes].

Predicted decile. [6 weeks:] "We now would like you to predict how well you did on this task in terms of the number of reasonable uses you came up with, compared to the other respondents. One of the respondents who guess it right will be randomly drawn to win 30 reais." [I am in the top 10% / I am below the top 10% but in the top 20% / I am below the top 20% but in the top 30% / I am below the top 30% but in the top 40% / I am below the top 40% but in the top 50% / I am below the top 50% but in the top 60% / I am below the top 60% but in the top 70% / I am below the top 70% but in the top 80% / I am below the top 80% but in the top 90% / I am in the bottom 10%].

Dreams. *Recall.* [3 days; 6 weeks:] "In the past 3 nights, do you recall having any dreams?" [Yes / No].

Intensity. [3 days:] [If Recall: "Yes".] "How emotionally intense were your dreams in the past 3 nights?" [Not at all intense (0) / Not that intense (1) / Somewhat intense (2) / Quite intense (3) / Very intense (4)].

Tone. [3 days:] [If Recall: "Yes".] "How would you classify your dreams in the past 3 nights? Indicate your answers on a scale from Very negative to Very positive below." [Very negative (0) / Somewhat negative (1) / Neutral (2) / Somewhat positive (3) / Very positive (4)].

Meaning. [3 days:] "How much importance do you attribute to your dreams?" [None at all (0) / Not much (1) / Some (2) / A lot (3)].

Beliefs about therapeutic effects. [6-week treatment disclosure:] "We will now reveal your treatment status: you received a [treatment status] dose of Ayahuasca in your session at [center name redacted] on [ceremony date]. You will not be bound by the pledge that you signed at the time of registration after you submit this survey."

Predicted effect on depression. [6 weeks:] [After disclosure of treatment status:] "Now we will ask you to predict the effects of Ayahuasca for those who took a regular versus a low concentration Ayahuasca dosage on depression. We measured all participants' depression symptoms in the registration form. Participants chose from "Never", "A little of the time", "Some of the time", "Most of the time", and "All the time" for statements like "I feel depressed that nothing could cheer me up". We find that [baseline percentage] of the other participants in your Ayahuasca session had at least mild depression symptoms before they took ayahuasca (meaning that they on average chose at least "A little of the time" for each question). What do you think the percentages of having at least mild depression symptoms would be now for these people, separately by whether they took a regular dose versus a low concentration Ayahuasca dose? Please drag the bar below to indicate your guesses. We will give an additional 30 reais to the person who has the closest guess." "% Having At Least Mild Depression Symptoms for Each Group:" [Treatment Group - Took a Regular Dose of Ayahuasca In Your Session / Control Group - Took a Less Concentrated (i.e. weaker) Dose of Ayahuasca In Your Session] [0–100 percent for each group]. (We erroneously used the wording of less concentrated dose of ayahuasca, rather than the placebo, jurema, a non-psychoactive tea.)

Instagram. *Account ownership.* [3 days:] "Do you have an Instagram account?" [Yes / No].

Willingness to share handle. [3 days:] [If Account ownership: "Yes".] "Would you be willing to share your Instagram @ with our research team? By sharing your Instagram, you allow the research team to follow your profile. With this, we can link your responses with your public

information on Instagram, such as your number of posts, number of followers and people you follow." [Yes, I allow the study account to follow me on Instagram. My handle is: / No, I am not willing to share my Instagram handle]. [Measures observed: a) whether profile was public b) counts of posts, followers and accounts followed — all collected at 2–3 weeks and 31–39 months after the ceremony.]

C Additional experiment details

C.1 Jurema and ayahuasca

Jurema, or *mimosa tenuiflora*, is a shrub native to northeastern Brazil. The lack of MAO-A inhibitors, such as beta carbolines, ensures that the DMT in the jurema brew administered to our control subjects is rendered inactive (Ott 1999; Ruffell et al. 2020). It is broken down in the gut wall and liver and cannot reach the brain to cause 5-HT2A agonist activity. Consequently, placebo participants do not experience psychedelic trips, as confirmed in their responses to our 3-day follow-up questions about the ceremony experience.

Jurema has shown no toxicity in cancer and normal cells, and has antioxidant and antimicrobial actions (Silva et al. 2020). Proven medicinal uses of jurema concern outcomes that are far removed from psychological well-being – for example, topical ointments made from jurema extract have been found to effectively treat venous leg ulcers (Rivera-Arce et al. 2007; Lammoglia-Ordiales et al. 2012). For further information, and a review of the traditional use of jurema among indigenous groups, see Souza et al. (2008).

A serving of ayahuasca contains 9mg of DMT per 50ml, with 50ml given to men, and 40ml given to women.

C.2 Ceremony instructions

Prior to the ceremony, the center provides the following instructions (in Portuguese) to those that signed up (whether for one of our experimental sessions, or for one of the regular sessions outside of the experiment):

RECOMMENDATIONS FOR THE RITUAL WITH AYAHUASCA

For the Ritual:

- *Take a blanket or blanket and cushion to stay comfortable during the session, these items are very important for your comfort and well-being.*
- *Bring a 500 ml bottle of water to keep by your side.*
- *We serve a delicious soup at the end of work.*

- *Bring a plate of sweet or savory (vegetarian), juice or even fruit to share at the end of the ritual.*
- *The participant is not allowed to wear shorts, short skirts or low-cut clothing, remember that you are coming for a rite and we ask your clothes to be discreet and comfortable.*
- *Avoid black clothes, try to wear light colored clothes.*
- *Carrying any type of weapon is prohibited.*
- *It is not permitted to record, film or photograph during the session.*
- *Avoid sexual intercourse two days before the Ritual.*
- *Try to be with yourself and focus on what you are looking for from the experience.*
- *Do not drink alcoholic beverages or use drugs (including psychiatric drugs) two days before the session. During the session, the use of any type of drug is prohibited. We ask that if you use cannabis (marijuana), you do not use it 2 days beforehand.*
- *In the two days before the ritual, please take care of your diet, by not eating red meat, avoiding sexual intercourse, as well as preserving your body and spirit from fights and confusion.*
- *Try to eat up to a maximum of 2 hours before the start. The last meal should be light, preferably without any type of meat, fatty foods, fried foods, spicy, highly seasoned and sweet foods. Give preference to cereals, vegetables and fruits.*

During the ritual:

- *Try to stay connected to your breathing (soft, deep, calm), without unnecessary tension, with your eyes closed and your mind focused on the heart – home of the Natural Being – trying to stick to the guidance, music and calls.*
- *Leave cell phones and any electronic sound devices turned off.*
- *Smokers are not discriminated against, but they are asked not to smoke during the ceremony.*
- *It is not allowed to talk or touch other participants, except the facilitators. It is also important to try to remain seated and calm, avoiding sudden movements that could disrupt the concentration of others.*
- *If you need help and/or notice that someone needs help, call the designated facilitators and Guardians, avoiding any type of personal intervention with other participants, unless requested by a facilitator.*

- *After the Ritual, you may feel sensitive and therefore it is recommended to avoid tense emotional states, arguments, etc. Try, again, to be in peaceful and pleasant environments, if possible, take the next day off and look for a place with plenty of greenery to rest or meditate. The day after the session, avoid alcohol and drugs.*

Restrictions for drinking Ayahuasca:

- *Minors can only participate with written authorization with a notarized signature from their parents or guardians. [Note: this instruction regarding minors applied only to the non-experimental sessions]*
- *People who use antidepressants such as selective serotonin reuptake inhibitors or monoamine oxidation inhibitors (MAOIs) such as fluoxetine, citalopram, paroxetine, sertraline or tranylcypromine should consult their doctors, seeking appropriate authorization, avoiding risks to their health. In this case, they may consider stopping the medication for two days or changing the antidepressant, etc. by a medication from another category.*
- *People with a history of a psychotic break, previous psychiatric hospitalization or who are taking other medications, such as anorexics (weight loss medication) should first contact us for clarification.*
- *People who have consumed alcoholic beverages or heavy drugs two days before the session are prohibited from participating in the session.*

Gratitude!

C.3 Ceremony lecture

Below are excerpts from an English translation of the lecture given for an experimental session in October 2023, on the topic of happiness.

"I ask everyone to go to their mat, because we are going to start the work now, I will also give you some instructions on what this experience will be like... Ayahuasca is a medicine considered one of the oldest in the world, there are records from 100 years ago, 1930. This tea was brought by Raimundo Irineu Serra, from the Atlantic Forest to modern civilization, our Brazilian society knows this medicine from 1930 and Ayahuasca began to be increasingly used. The last census carried out in February 2022, showed that around 576 thousand people practiced this medicine, it is a relatively large number but when we look at a population of around 210 million inhabitants, it represents a little 0.25% of the population. The experience you will have tonight is still a taboo for Brazilian society. It is an experience used for millennia, with the purpose of healing people. Healing can be understood in different ways, Ayahuasca brings us more clarity about our lives, situations, and ourselves. Ayahuasca is used to get to know ourselves. A large part of the population, if you ask, says they know each other, but in reality, we know very little about each other. It's as if we were a machine with enormous potential and we don't know how to use it, as if we were a Ferrari, but we don't know how to drive it. What's the point of having a Ferrari if we don't know how to exploit its potential? We are a Ferrari and

we can know how to use it, if we understand our instruction manual, and understand how we work.

Have you ever heard of the term consciousness expansion? It is a mechanism in which Ayahuasca can bring this to you. Defining expansion of consciousness is not easy, many of us hear about it but don't know exactly what it is. I would like to invite you to a very didactic definition. Imagine that each of you is this room that we are in here and all these objects are characteristics of you, things that are part of you. Now imagine that I turn off the lights, cover all the windows, seal all the cracks in the doors, so that there is total darkness inside this room. Are you still you? It's still you with all your characteristics but you can't see anything because it's dark and you end up bumping into things and you can't find the tools that can help you. Now imagine that I go to the window and make a hole in the window and that through this beam of light you can see a small part of the room. This little light inside the room is called consciousness, it's what [CENTER OWNER'S NAME REDACTED] knows about [CENTER OWNER'S NAME REDACTED] and it's what you know about him and that's why 99% of people when they say they know who they are, they are correct, because they don't they know the whole room, but only that small area. Some people don't understand what happens in their life because they only know what happens in that small area. The expansion of consciousness allows me to go to that window, open it and that beam of light will allow me, for the first time in my life, to illuminate an area of the room that I had never seen before.

Will drinking this tea clear my vision? No! I've been drinking this tea for 15 years and every time it lightens a little more, it lightens little by little, we can access areas, characteristics, and situations that I had never seen before. I always tripped over this chair every day, now I see this chair. A few hours after taking Ayahuasca, the beam of light returns to the size it had before and it's not that it doesn't do anything, because the Ayahuasca process is 100% conscious, everything done today you will remember tomorrow. You may not be seeing the chair but you will remember that you saw the chair. Ayahuasca is not a miracle tool because in the 15 years I have been using it, it has never removed the chair for me, I am the one who has to remove the chair, it just shows me. It clearly shows situations in your life that can be modified so that you can perform better in life. What do I call performance? It depends on each person, what you are looking for in life. The fact is that many people in life believe that performing well in life means having a more satisfying life, being able to fulfill more of their desires, earning more money, this concept changes after this experience, as we begin to have access to things that are outside the clear area, what is inside the clear area were things that we were often taught from an early age, a certain path to personal fulfillment: the path to success, the path to making money in what you do, which are valid and which are really good for us, but the room is not just that and that night you will be able to gain access.

In this culture, we learn a mold that human beings must fit into, mold themselves into to be socially accepted. The problem is that a lot of the time, being socially accepted in this way is not making you complete, happy. You wake up, spend energy, try hard, do your best, but you feel like you're not complete. There's something missing for all of us, I'm nothing different from you because I've been drinking tea for 15 years, but I have many different things from [CENTER OWNER'S NAME REDACTED] 15 years ago. Ayahuasca brings much more clarity to issues in my life, things that I waste less time on, for example things that are bad for me. Today, I banish it from my life or I don't allow it to harm me, as I did in the past, like

negative emotions, negative thoughts.

One of the most wrong things, in my opinion, that they teach children, to everyone, every day, is that pleasure and happiness are very similar things. Pleasure and happiness are extremely different things. If we stop to think about this moment, there are some people in this city who are feeling a lot of pleasure right now, they are living in a wonderful neighborhood in [PLACE REDACTED] called [PLACE REDACTED]. I assure you that they are feeling a lot of pleasure, but are they happy? Certainly not. Part of us learns that we will only be happy if we manage to do everything we want: 'I'll be happy the day I no longer have problems, the day my life is all right, the day I no longer have a headache with nothing,' forget it, this is a childish fantasy, this won't happen, a problem is something that people will always have. And amazingly, problems are good for our growth. Happy people are not people who don't have problems, they are people who learn to manage their problems. Do you realize that it has nothing to do with doing everything I want to do? The unhappiest people I know are the people who do whatever they want to do. Often, happiness lies more in the renunciation of desires than in their fulfillment. I'm not referring to all desires, I'm not saying that pleasure is bad. I am inviting you to analyze your life to understand that many of your sufferings, the problems you have today are associated with the search for this pleasure.

...There's a phrase like this: Don't poke the jaguar with a short stick. I say: don't poke the jaguar with a long stick or any stick, stay away from the jaguar. When we identify something in our lives that is dangerous to our happiness, to our growth, the best thing you can do is stay away from that danger. A strong human being is not one who has no weaknesses, but one who knows the weaknesses he has. When you know yourself, you know your weaknesses, you can prevent yourself from falling into a hole. I stayed away from the jaguar, because the jaguar and I already had something that only hurt me, that only hurt me and I don't want to fall into that again. Each person must identify their temptation. The problems I had were different from what I have today when I arrived in this house 15 years ago, I continue to have problems and challenges not to fall into the hole. Some things we learn from pain, other things you don't need to suffer to learn. Ayahuasca taught me many things about love, when I arrived I had hit my head a lot. Ayahuasca was my last resort, I tried many things to improve my living conditions. I didn't suspect that she would change my life as much as she did. The reference we have for this medicine is not because it is our work, everyone who works with this medicine has had a very beautiful life transformation. She saved our lives and I'm sure she can do that in your life too...

...It has two important active ingredients: the main active ingredient that expands consciousness, which is called dimethyltryptamine or DMT, which is a chemical molecule very similar to a substance we have inside us called serotonin. Serotonin is a neurotransmitter that exists within me, within you, within every living being, which is important for a series of metabolic processes to occur, mainly for the functioning of our central sector, thought, cognition, all of this depends on serotonin. Our brain activity works through serotonin, there are also other substances, but it is the main one. This dimethyltryptamine or DMT is so similar to serotonin that it activates the same serotonin receptors throughout your body and with this, we get the effects of serotonin but with one difference, the quantity. It's as if you've taken a flood of serotonin into your body. But serotonin is modeled in our body, we produce it and it remains at a very high rate, then another substance comes to reduce this rate, Monoamine oxidase (MAO), which destroys excess

serotonin, so there is no point in increasing the rate if I do not inhibit this enzyme that destroys serotonin.

In Ayahuasca, along with DMT, there is a substance called harmaline that temporarily deactivates this enzyme (MAO). Basically, Ayahuasca fills your body with serotonin and doesn't let it out for at least two hours, this is how long it takes for this enzyme to be inhibited. The photosensitive scanner that is placed on top of the human being's head measures brain activity, if it is placed on [NAME REDACTED]'s head, I will notice that 10% of the areas of her brain are illuminated, this is her activity level. Now, if I put it in an hour or so, after the effects of the ayahuasca, I will be able to see 70% of the activity, an activity 7 times greater, a brain activity that you have never had before and you will see that it is completely different.

...You will notice a lot of things, not just defects, problems, errors. Ayahuasca reveals potential that you are unaware of, talents that you are unaware of and are not exploring. That's what it's for, on the one hand, it minimizes the things that get in the way of your life. On the other hand, it shows that we expect others and blame our frustrations. Sometimes what someone else does to me is no worse than what we do to ourselves. Thinking, hurting yourself, cultivating that energy. Ayahuasca works with character, improving us. Character is something that everyone says they have, the 'guy' could be in prison for 50 years and he'll say he has character. We justify many of our defects. The greatest compass for us to know how our character is, it is based on the things we need to do in secret, pay attention to this, the number of things we need to do in secret, shows that we are out of alignment with our truth. Character seems to be something good to be socially accepted. Character is good for one thing, so you don't suffer. When we have character, our life has quality, we move towards one thing. The freedom not to hide anything from anyone, not to be in public what you are hidden. And the freedom for me, [CENTER OWNER'S NAME REDACTED], to give my cell phone to my wife, that is freedom. For me, this is a positive thing. When we start to behave more honestly, more decently, we gain quality of life. I talk a lot to boys, I work with men: 'Men, imagine that you have a serious relationship, when you are on the street with your wife, and a very attractive girl passes by on the other side, who attracts attention, if you have any sense, will you look? Of course not! And if she says the clothes are short, you still agree. Now, what if you are alone? If you don't do it in front of her, why do you do it hidden? This is about being honest, not with your wife, but with yourself.

I don't want to be the man who needs to hide in front of others. Not to brag, I have a lot to change. But for me, change comes when we move towards not wearing a mask, being a single person, a transparent person and not hiding anything from ourselves. It is not with [CENTER OWNER'S NAME REDACTED], my wife, but with my own conscience. Every day I ask myself, if I die today, with what face, will I return home, to the spiritual plane. I won't go back with shame because 15 years ago, I had the courage to live a different life than the one I lived before, to be a better person. Not for my mother to be proud of me, but for me to be proud of myself and live well. It's not about showing off to others, but about cultivating a more satisfying, fuller, healthier life. Much of what I'm talking about may sound subjective, puritanical, trippy, but in 4 hours you'll understand what I wanted to say. Ayahuasca proves itself over time."

C.4 Dealing with repeat participants

Twelve participants entered the study twice – either both times as a no-show (i.e., they were scheduled to a ceremony, did not show up, then later they were scheduled to a second ceremony, and did not show up again), or one time as a no-show and one time as a ceremony attender. These participants were sent the follow-up surveys twice – once relative to the timeline of their first scheduled ceremony, and again relative to the timeline of their second scheduled ceremony. In the analysis, we keep only one set of surveys for each of these participants – i.e., we make it so that they only enter the study once. For the participants that were twice a no-show, we keep only the surveys they answered associated with their first scheduled ceremony. For the participants that were once a no-show and once showed up, we keep only the surveys they answered associated with the ceremony in which they showed up – we keep the latter, rather than the former, to maximize our statistical power for our more central test of the effect of ayahuasca relative to placebo. Since only a handful of participants entered the study twice, our results are nearly identical if we instead include the full set of survey responses, with standard errors clustered at the participant-level.

C.5 Trip reports

In the 3-day follow-up survey, we asked respondents to "Describe in detail your experience with the Ayahuasca in the box below. Please be specific about what you saw, heard, and felt." We list below some example responses among participants that took ayahuasca.

> I felt like I was living through other lives, with everything happening in extreme slow motion – time felt surreal. Most of the time I smiled and cried easily, as if I were in the grace of the divine. I saw myself as a child.

> I experienced a healing sensation across many aspects of my life – for example, forgiving my adoptive mother, my biological mother, biological father, adoptive father, adoptive sister, and ex-boyfriend.

> It was without a doubt the greatest experience of my life. I heard in my mind myself guiding and orienting me throughout the entire session. I saw people from my childhood... I forgave everyone who had hurt me and asked for forgiveness from everyone I had somehow offended, harmed, or caused damage to. I saw many geometric figures with bright colors I had never seen in my life...

> With the second dose I felt like a bird, light and floating. I felt myself dancing, free to be who I am. I was a person who cared a lot about what other people thought of me. I thought I didn't, until I saw myself in a tiny little box. People around me were pointing at me but living their normal lives, while I was stuck in the box. I understood that it's not a mistake to be who we really are. We just need to be happy with ourselves. There were times when my heart felt very sad, but I understand that it was a process that I needed to go through.

Lying down again with my eyes closed, I stopped seeing things. Occasionally, I still saw people with outstretched arms. As I began to feel the effects, I grew frustrated with not experiencing hallucinations. Finally, I realized that I was trying to use ayahuasca to escape reality, just as I had been using marijuana (I used to smoke a lot), TV, social media, and even my relationship. I saw how desperate I was to escape reality and how easily I got upset with people and simple things that brought me back to reality (like someone talking to me). I decided to quit smoking and avoid habits that led me to escape. I also became more patient with others.

I saw my true value and who I am, and realized the importance of addressing my own issues and having that reflected in everything around me. I felt immense joy in gaining insights. Looking at my darker side scared me, but a voice always told me that I needed to confront it to find real happiness in my life. I saw a lot of nature and felt connected to it. I experienced fear, pain, joy, peace, and this cycle repeated. With each cycle, I could see something about myself.

I realized that I was ready to work on something that will help transform people's lives, and that I already knew what it was. I also realized that my existence already helps change places and people, but I needed tools to expand that. I realized that I had to expose myself more to reach more people.

I talked to myself about my internal problems involving my relationship and my work. I reflected a lot on everything and on how the way I treat people influences my life. I had a lot of visuals and I saw myself talking to myself.

I felt total joy, happiness, connection and knowledge of myself and how to act with other people. I felt an ancestral connection and respect for nature and divinities, control and autonomy over myself, and greater clarity about how people are and how they act. I felt the importance of feeling other people's love, letting myself be loved without fear, and knowing that I am not alone and that many people want to help me. I felt immense gratitude and a lot of joy. I also became aware of caring for myself: how to chew food, how to meditate and how to exercise. The experience was very expansive and showed me how to let Love flow in my life. It broke barriers that I had never imagined.

My experience with ayahuasca was fantastic. It became very clear to me which aspects of myself I would improve. My perception of the whole has improved, my intuition is sharper, and my self-esteem has improved. I am more sure of what I want and who I am. Much of what was bad inside me has passed, and I no longer need to be in control of anything or anyone.

I was able to go back to my childhood to relive and heal a trauma, and give new meaning to that experience. I was able to feel the fear and insecurity and bring those feelings to the present and purge them. I released emotions of sadness that I also

carried with me. I felt out of touch with reality at times. I was able to feel healing within myself and I have felt light and at peace ever since. It was rewarding. I didn't feel afraid even when I saw distorted images. I felt safe throughout the entire process.

It was a transformative experience. I saw vivid images with my eyes closed, the most memorable being indigenous people arriving at the location, a colorful forest, and mini multicolored soldiers entering through the top of my head and traversing my body. Following this, I had a deeply revealing insight that took me by surprise and made me feel nauseous. I heard an inner voice guiding me on the changes I needed to make in my life for my personal growth. I cried a lot and felt immense gratitude and a sense of being blessed to have had this experience.

After taking it I lay down. In a few minutes I started to feel that my body and senses were more sensitive. I went into a deep meditation and I couldn't tell if I was awake or dreaming, but I didn't notice time passing and I just felt a sense of peace at the end of the ritual.

I felt genuine happiness and a love I had never felt before. However, I also felt loneliness. What I saw was mostly colors coming out of my chest and out of the facilitators who were present. I saw the fire dance and felt like a playful forest spirit (more specifically the Curupira).

I left healed of great pain. It's amazing how I feel part of nature and how at peace I am. This experience transformed my life! I'm light, happy, calm. I've never felt so good. And the coolest thing is that the cure was here, inside me, but the ceremony opened the gates for this to happen.

C.6 Relation to pre-registration

We pre-registered the experiment in the AEA RCT Registry, with ID #10400, at https://www.socialscienceregistry.org/trials/10400. In the pre-registration we describe two experiments: one in which the center assigned participants to a high or low dose of ayahuasca (diluted-dosage experiment), and a second in which the center assigned participants to a high dose of ayahuasca or a placebo, jurema. In this paper, we report the findings of the latter experiment. As we explain in the pre-registration, the purpose of the diluted-dosage experiment was to isolate the effects of ayahuasca, but there was a first stage problem: even those with the low dose often had meaningful trips. For example, 26% of the low-dose participants reported that their trip was the single most meaningful of their entire lives, and 38% reported having had visions. We successfully addressed this issue by moving to an experiment design with a non-ayahuasca placebo (jurema) group. Other deviations are as follows:

- We mention in the pre-registration that the topic of the lecture alternated between "happiness" and "taming the mind," but we do not report the effects of the lecture variation in this paper.

- We had aimed to reach "ten or so sessions" with the jurema experiment design; but we ran out of funding after completing six sessions, and so we wrote up the paper at that point. Related, our goal was to reach 150-300 people in each of the two treatment arms: ayahuasca versus jurema. We came close to this target, with 126 receiving jurema and 159 receiving ayahuasca (or 126 receiving ayahuasca if we exclude the sixth session in which, by mistake, all participants were given ayahuasca).

- We measured the Instagram outcomes at different time points than we pre-specified. The pre-registration states that we were to measure them at 2, 4, and 6 weeks. We instead measured these outcomes 2 to 3 weeks and 3 years after the ceremony.

- We pre-registered measuring religiosity and spirituality 6 weeks after treatment. However, the one survey question we included is better understood as a proxy for spirituality and not religiosity.

- We mentioned the plan to link our participants to the RAIS administrative labor market data (about our work-related outcomes, we wrote "likely for a separate, future paper with linked RAIS administrative data"). We did not ultimately go through the process to get access to the RAIS data given that the access process is more onerous than previously, and with the administrative data only covering formal sector outcomes, the linkage would have fairly limited use in the current paper, given that only around half of our participants are employed in the formal sector (Figure A20). Our survey measures are more valuable in that they also cover informal employment.